SciPinion

Appendix A: Charge Questions

Science Advisory Panels: State of the Science

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INTRODUCTION

Science advisory panels, as the gate keepers of sound science, serve to ensure that science information is properly vetted prior to their application to support decision making. This survey is designed to help better understand how effective science peer review panels have operated, why some are poorly effective, and what design features would make for the best science peer review panel. Your opinions will remain anonymous.

In his book "*Wiser: Getting Beyond Groupthink to Make Groups Smarter*" [https://www.amazon.com/Wiser-Getting-Beyond-Groupthink-Smarter/dp/1422122999] Cass Sunstein identifies many pitfalls that can occur with group deliberations and decision making. Examples of groupthink include:

- groups often amplify, rather than correct, individual errors in judgment;
- groups fall victim to cascade effects, as members follow what others say or do;
- groups become polarized, adopting more extreme positions than the ones they began with; and
- groups emphasize what everybody knows instead of focusing on critical information that only a few people know.

At the same time, there has been a growing movement to attack science and facts. There is also competing pressures from various sectors to control who gets invited to these science panels. The time has come to learn what actually works and doesn't work in these science panels.

SciPinion is conducting a survey of scientists all over the world, with the goal of assessing the state of the science on science panel deliberations:

- *What has been your experience with science panels?*
- *Are there pitfalls, and how prevalent are these pitfalls?*
- *What steps can be taken to make panel deliberations better?*

The results of this survey will be made available to agencies and organizations that rely on science panels to help make decisions. The results may also be published in a peer-reviewed journal (e.g., see our recent publication on science peer review: https://www.sciencedirect.com/science/article/pii/S0273230019300030).

As you are taking this survey, feel free to save your progress using the green SAVE button on the left under the tabs.

SECTION 1: RECRUITMENT

(ID: 3504)

1.1) How often have you been asked to serve on science panels?

- ◯ Never
- ◯ Rarely (<2 per 5 years)
- ◯ Sometimes (1-2 per year)
- ◯ Often (3+ per year)

Please explain your answer(s)

(ID: 3505)

1.2) How often have you applied to serve on science panels based on a call for experts?

- ◯ Never
- ◯ Rarely (<2 per 5 years)
- ◯ Sometimes (1-2 per year)
- ◯ Often (3+ per year)

Please explain your answer(s)

(ID: 3506)

1.3) How have you learned about opportunities for service on science panels?

- ☐ Personal invite
- ☐ Referral from a colleague
- ☐ Referral from an interested party
- ☐ Public posting (e.g., Federal Register)

Please explain your answer(s)

(ID: 3507)

1.4) What is the maximum time you would volunteer (uncompensated) to take part in a science panel for the following sponsor types?

	1-2 hrs	1-2 days	1-2 weeks of your time	I would never do uncompensated work for a science peer review panel
Government	◯	◯	◯	◯
NGO/science organization	◯	◯	◯	◯
Industry	◯	◯	◯	◯

SECTION 2: PREVIOUS EXPERIENCE WITH SCIENCE PANELS

(ID: 3508)

2.1) How often have you attended/observed science panels as part of your job?

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Often

Please explain your answer(s)

(ID: 3509)

2.2) How often have you attended/observed panels out of scientific curiosity?

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Often

Please explain your answer(s)

(ID: 3510)

2.3) Have you either participated in, observed in person, or observed remotely (by phone or online) science advisory panels for any of the following organizations? (If an organization is not listed, feel free to provide details in the explanation box.)

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	☐	☐	☐
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	☐	☐	☐
Non-US Country-Specific Agencies	☐	☐	☐
Other (e.g., SciPinion, TERA)	☐	☐	☐

Please explain your answer(s)

(ID: 3511)

2.4) Were the roles and responsibilities of the science panel adequately explained in the outset in the panels you participated in?

- ◯ Always
- ◯ Almost always
- ◯ Sometimes
- ◯ Hardly ever

Please explain your answer(s)

(ID: 3512)

2.5) Have you felt encouraged to provide your scientific views openly and candidly?

- ◯ Yes
- ◯ No
- ◯ Sometimes

Please explain your answer(s)

(ID: 3513)

2.6) How often have you observed or experienced any of the following behaviors or processes that provide encouragement during panel deliberations?

	Never	Rarely	Sometimes	Often
Active chairmanship	◯	◯	◯	◯
Clear assignments on pertinent topics	◯	◯	◯	◯
Intrapanel dialogue	◯	◯	◯	◯
Fullsome discussions	◯	◯	◯	◯
Other (please explain)	◯	◯	◯	◯

Please explain your answer(s)

(ID: 3514)

2.7) How often have you observed or experienced any of the following forms of groupthink during science panel deliberations?

	Never	Rarely	Sometimes	Often
Error Amplification	○	○	○	○
Cascade effects (1st speaker is more likely to be supported/not contradicted)	○	○	○	○
Group polarization	○	○	○	○
Over-emphasis of unimportant, shared information at the expense of important unshared information	○	○	○	○

Please explain your answer(s)

(ID: 3515)

2.8) How often have you observed any of the following problems in science panel design, function and/or deliberations?

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	○	○	○	○
Domination of deliberations by a specific member (bully cheerleader)	○	○	○	○
Over reliances on delegated tasks (failure to engage non-tasked members)	○	○	○	○
Over-bearing panel sponsor	○	○	○	○
Deference to panel sponsor	○	○	○	○
Over-bearing stakeholder	○	○	○	○
Discounting of a study based solely on affiliation of investigator or funding source	○	○	○	○
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	○	○	○	○
Other (please explain)	○	○	○	○

Please explain your answer(s)

(ID: 3516)

2.9) Have you observed or experienced designs in panel format or process intended to reduce the influence of these internal pressures/problems (e.g., collection of independent input, blinding, bias training)? If so, were the measures taken successful? Please explain.

- ○ Yes; measures taken were NOT successful (please explain)
- ○ Yes; measures taken were successful (please explain)
- ○ No

Please explain your answer(s)

(ID: 3517)

2.10) What is the primary motivation for you to participate in science peer review panels?

- ☐ Public service
- ☐ Sharing knowledge
- ☐ Resume building
- ☐ Collegial interactions
- ☐ Compensation
- ☐ Other (please explain)

Please explain your answer(s)

(ID: 3518)

2.11) Have you ever opted to NOT participate in a science panel due to the following factors ? (select all that apply)

	Never	Rarely	Sometimes	Often
Schedule conflict	○	○	○	○
Logistics/travel difficulties	○	○	○	○
Controversial nature of topic (e.g., the science has been or will be politicized)	○	○	○	○
Aversion to public forums	○	○	○	○
Insufficient compensation	○	○	○	○
Requirement to file a financial disclosure	○	○	○	○
Health reasons	○	○	○	○
Language barriers	○	○	○	○
Other (please explain)	○	○	○	○

Please explain your answer(s)

(ID: 3519)

2.12) Based on your experience, how transparent is the process by which science panels are selected from the available candidates? (please provide examples where you think the selection process has been especially transparent)

- ○ Transparent; please provide examples
- ○ Vague
- ○ Not transparent
- ○ Cannot answer

Please explain your answer(s)

(ID: 3520)

2.13) Should peer review panel composition be managed to have a balance in perspectives?

- ○ Yes
- ○ No
- ○ Sometimes; please explain

Please explain your answer(s)

(ID: 3521)

2.14) Based on your experience, how transparent is the process by which science panels deliberate their findings and document opinions in their panel reports? (please provide examples where you think the documentation of deliberations has been especially transparent)

- ○ Transparent; please provide examples
- ○ Vague
- ○ Not transparent
- ○ I cannot answer

Please explain your answer(s)

(ID: 3522)

2.15) Does the sponsor for peer review panel (e.g. government agency, third party organization) influence how likely you are to participate? In general, are you willing to participate in a peer review sponsored by: (if No, please explain)

	Yes	No	It depends (please explain)
Industry	○	○	○
Government	○	○	○
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	○	○	○
Science organization (e.g., National Academy of Science)	○	○	○
Independent third party	○	○	○

Please explain your answer(s)

(ID: 3523)

2.16) How often have you ever observed or experienced external public pressures (criticism in trade press or internet; e.g., blogs, etc.) as a result of your participation in a science panel and/or as a result of your opinions within a science panel? If so, who exerted pressure?

	Never	Rarely	Sometimes	Often
Government/administration	○	○	○	○
Industry representative	○	○	○	○
Media/press	○	○	○	○
NGO (Nongovernmental organization)	○	○	○	○
Panel sponsor	○	○	○	○
Your employer (specify type)	○	○	○	○
Other (please specify)	○	○	○	○

Please explain your answer(s)

(ID: 3524)

2.17) Have you observed or experienced designs in panel format/process intended to reduce the influence of these external pressures (e.g., blinding, limited access sessions)? If so, were the measures taken successful?

- ○ Yes; measures taken were NOT successful (please explain)
- ○ Yes; measures taken were successful (please explain)
- ○ No

Please explain your answer(s)

(ID: 3525)

2.18) In your experience, how often are underlying raw data for the most critical studies made available to those who peer review a regulatory risk assessment?

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Always

(ID: 3526)

2.19) How often do current peer review processes provide sufficient opportunity for input from all interested stakeholders on the charge questions assigned to a government sponsored peer review panel?

- ◯ Never
- ◯ Rarely
- ◯ Sometimes
- ◯ Often
- ◯ Always

SECTION 3: INSIGHT ON OPTIMAL PANEL DESIGN AND CONDUCT

(ID: 3527)

3.1) Is it a good idea for regulatory agencies to exclude qualified scientists with industry funding (e.g., EFSA) or grant recipients (e.g., EPA) from serving on science panels?

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	◯	◯	◯
Exclude grant conflicts of interest	◯	◯	◯
Exclude other (please explain)	◯	◯	◯

Please explain your answer(s)

(ID: 3528)

3.2) In your opinion, does sector of employment generally impact an expert's scientific perspective?

- ◯ Most definitely
- ◯ Sometimes
- ◯ No opinion
- ◯ Not an important factor

Please explain your answer(s)

(ID: 3529)

3.3) How important are the following factors in guiding panel selection?

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	◯	◯	◯	◯	◯
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	◯	◯	◯	◯	◯
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	◯	◯	◯	◯	◯
Panel balance on science issue(s)	◯	◯	◯	◯	◯
Others (please specify)	◯	◯	◯	◯	◯

Please explain your answer(s)

(ID: 3530)

3.4) If you rated 'panel balance on science issues' important from the previous question, how do you determine individual panelists opinions on science issues and does the panel composition need to be representative of the underlying scientific community?

(ID: 3531)

3.5) Please rate the importance of the following potential conflicts of interest as a reason for suspecting bias amongst a science panelist.

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	○	○	○	○	○
Having received funding from industry on the topic	○	○	○	○	○
Having received funding from a regulatory agency	○	○	○	○	○
Owning stock in a company that the topic could potentially impact	○	○	○	○	○
Having testified on the subject matter on behalf of a public citizen	○	○	○	○	○
Having testified on the subject matter on behalf of a company/industry/government agency	○	○	○	○	○
Being employed by organization that could be impacted by the subject matter discussed.	○	○	○	○	○
Others? (please specify)	○	○	○	○	○

Please explain your answer(s)

(ID: 3532)

3.6) How should expertise be defined?

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	○	○	○	○	○
# of first/last author publications	○	○	○	○	○
# of presentations at national/international conferences	○	○	○	○	○
Positions of leadership amongst professional societies	○	○	○	○	○
H-index (link to definition)	○	○	○	○	○
Years of experience	○	○	○	○	○
Published on the specific topic	○	○	○	○	○
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the opportunity to publish)	○	○	○	○	○
Degree (BS vs MS vs PhD vs MD)	○	○	○	○	○
Professional certifications (DABT, ASCP, CIH, etc.)	○	○	○	○	○
Personal knowledge of the person's expertise	○	○	○	○	○
Reputation/Experience on other panels?	○	○	○	○	○
Other (please specify)	○	○	○	○	○

Please explain your answer(s)

SECTION 4: PANEL ENGAGEMENT

(ID: 3533)

4.1) How important is transparency of the panel deliberations and what defines transparency for panel deliberations?

	1-not likely to impact an expert's opinion	2	3-equivocal	4	5-very likely to impact an expert's opinion either positive or negative
Open to public	○	○	○	○	○
Recorded discussion/debate	○	○	○	○	○
Documented opinions and recommendations of individual panelists before group deliberations	○	○	○	○	○
Documented opinions of individual panelists after group deliberations	○	○	○	○	○

(ID: 3534)

4.2) How is knowledge of the sponsor or author of the subject matter topic likely to affect an expert's opinions?

- ◯ 1- not likely to affect an expert's opinion
- ◯ 2
- ◯ 3 - equivocal, no effect
- ◯ 4
- ◯ 5- very likely to affect an expert's opinion either positive or negative

Please explain your answer(s)

(ID: 3535)

4.3) How important is it for peer reviewers to have access to underlying raw data for the most critical studies, in order to independently analyze results?

- ◯ Not at all important
- ◯ Not very important
- ◯ Somewhat important
- ◯ Very important

Please explain your answer(s)

(ID: 3536)

4.4) Should the criteria for evaluating the quality and reliability of all studies be the same, regardless of their funding source (academia, government, industry, CRO, etc.)?

- ◯ Yes
- ◯ No

Please explain your answer(s)

(ID: 3537)

4.5) Should the peer review process be conducted independently of the sponsor of the review material?

- ◯ Yes
- ◯ No
- ◯ Sometimes (please explain)

Please explain your answer(s)

SECTION 5: REPORTING OF PANEL RESULTS

(ID: 3538)

5.1) With respect to transparency in reporting, how important are the following?

	1 - not important	2	3 - equivocal	4	5 - very important
Transparency in methods for expert recruiting	◯	◯	◯	◯	◯
Transparency in methods for expert selection (e.g., definitions of expertise)	◯	◯	◯	◯	◯
Transparency in methods for managing conflict of interest & bias	◯	◯	◯	◯	◯
Transparency in the identities of experts engaged	◯	◯	◯	◯	◯

(ID: 3539)

5.2) Some agencies have a show of hands to vote on specific issues (e.g., cancer classification), but may not report the vote tallies, so the degree of consensus cannot be gauged. How important is understanding the degree of consensus amongst the panel?

- ◯ 1 - not important
- ◯ 2
- ◯ 3 - equivocal
- ◯ 4
- ◯ 5 - very important

Please explain your answer(s)

(ID: 3540)

5.3) How important is understanding the degree to which individual panelist(s)'s opinion(s) may stand apart (be an outlier) from the rest of the panel?

- ◯ 1 - not important at all
- ◯ 2
- ◯ 3 - equivocal
- ◯ 4
- ◯ 5 - very important

(ID: 3541)

5.4) Should the opinion of a panelist known to be an expert in a given scientific area be given more weight than a panelist with less expertise in that given area?

- ◯ Yes
- ◯ No, all experts on panel should be given equal weight
- ◯ It depends (please explain)

Please explain your answer(s)

(ID: 3542)

5.5) How should consensus be defined? What best matches your definition of consensus?

- ◯ Majority : > 50%
- ◯ Clear majority: > 75%
- ◯ Near unanimity: > 90%
- ◯ Unanimity: 100%
- ◯ Other? (Please specify)

Please explain your answer(s)

(ID: 3543)

5.6) How important is it to be able to assess relationships between responses amongst individual panelists? (e.g., opinions as a function of sector of employment, years of experience, area of expertise, etc.)

- ◯ 1 - not important at all
- ◯ 2
- ◯ 3 - equivocal
- ◯ 4
- ◯ 5 - very important

SECTION 6: DEMOGRAPHICS

(ID: 3499)

6.1) What is your current sector of employment?

- ◯ Government
- ◯ Academia
- ◯ Industry
- ◯ Consulting
- ◯ Non-Governmental Organization

(ID: 3500)

6.2) Please indicate all sectors you previously worked in.

- [ ] Government
- [ ] Academia
- [ ] Industry
- [ ] Consulting
- [ ] Non-Governmental Organization

(ID: 3501)

6.3) What is your region of residence?

- ◯ North America
- ◯ South America
- ◯ Europe
- ◯ Asia
- ◯ Oceania
- ◯ Middle East
- ◯ Africa

(ID: 3502)

6.4) What is your highest degree?

- ◯ BS
- ◯ MS
- ◯ PhD
- ◯ MD
- ◯ DVM
- ◯ JD
- ◯ Other

Please explain your answer(s)

(ID: 3503)

6.5) How many years of professional experience do you have?

- ◯ <5
- ◯ 5-15
- ◯ 15-25
- ◯ >25

Appendix B.1. Results for SP153

Science Advisory Panels: State of the Science

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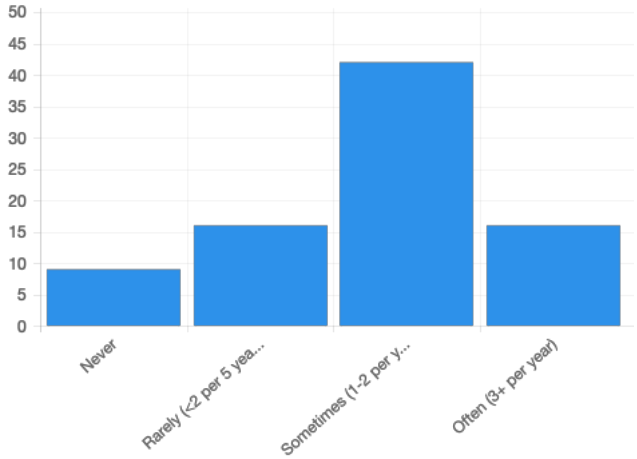
RECRUITMENT

Question 1.1 *(ID: 3504)*

How often have you been asked to serve on science panels?



Legend

Never: 9
Rarely (<2 per 5 years): 16
Sometimes (1-2 per year): 42
Often (3+ per year): 16

answers: 83
skips: 4

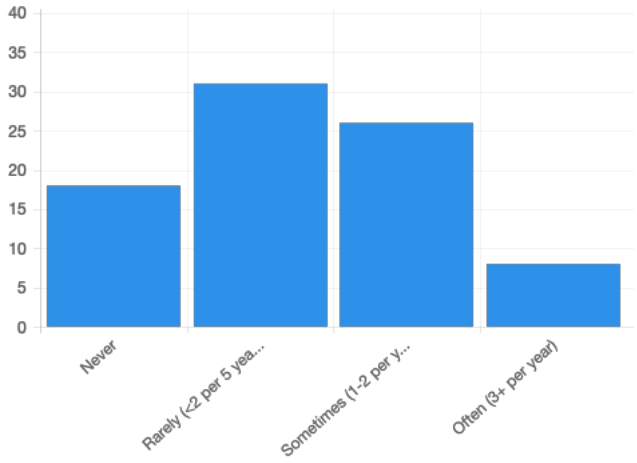
Answer Explanations 33

ANSWER	EXPLANATION
Often (3+ per year)	As the member of the Expert Committee of the Initial Risk Assessment in the Ministry of the Environment, Japan
Sometimes (1-2 per year)	PArticipated in meetings at the international organisation level (IAEA)
Often (3+ per year)	I am a member of 3 panels at present.
Often (3+ per year)	Various research boards, research councils, boards evaluating professors, Arctic Monitoring and Assessment Program boards, IUCN, boards evaluating science submissions, journal appointments etc.
Sometimes (1-2 per year)	Usually I reject most of these requests as most of them come from unclear organizations. I think it makes only sense to contribute for science panels if I have a truely interest in the topic/field, appropriated time capacities and if it is a real open minded setting.
Rarely (<2 per 5 years)	I served on a FIFRA Science Advisory Panel regarding pesticide exposures
Sometimes (1-2 per year)	I have been asked by many scientific journals to review the manuscripts.
Sometimes (1-2 per year)	Depending on the agency and the area of specialty, I am asked to review research proposals.
Never	I did not have the opportunity to be invited in panels of science, if I worked in peer review in different magazines, in doctoral thesis, master's, final careers in my Faculty of Health Sciences at the Catholic University of Cordoba and the National University of Cordoba and Ministry of Government in my province
Sometimes (1-2 per year)	I was the lead for Inhalation Toxicology for the US -Once in Germany and once in the Netherlands.
Rarely (<2 per 5 years)	I mostly write the assessments that the experts agree with, so I can't also be an expert on the panel otherwise it would be conflict of interest.
Sometimes (1-2 per year)	I have joined Scipinion for less than a year and have contributed to two surveys.
Often (3+ per year)	I am a member of 2 panels.
Sometimes (1-2 per year)	I have done panels for IARC, JECFA, ICPS, Health Canada, FDA, EPA among others
Sometimes (1-2 per year)	Not so often anymore, since I left academia and now active as consultant.
Often (3+ per year)	I have participated in several science panels mainly from pharmaceutical companies
Sometimes (1-2 per year)	NIH Study Sections and SciPinion Panel
Sometimes (1-2 per year)	In addition to scipinion, I am invited to participate in grant review panels nationally and internationally

Sometimes (1-2 per year)	I have served on National Institutes of Health Panels, usually 2-3 per year. I have served on one National Science Foundation Panel and one SciPinion panel.
Never	My career was as a Senior Scientist at the Environmental Protection Agency. I gave frequent individual peer reviews for scientific journals, and individual peer reviews for reports for others within EPA and outside of EPA. I sat on internal Review Panels for science merit promotions. There was a rare instance or two in which I attended meetings for reviewers who were tagged to review a larger document - this might be closest I have come to serving on scientific panels. I presided over a number of science panels who had to review EPA documents which I prepared, or that were prepared by contract. I hope my input based on that vantage point of experience is useful here.
Sometimes (1-2 per year)	I was a US Federal employee, and I could not serve on panels convened to peer review any of our products. I did participate in groups that reviewed research, programs, and products of others Federal and non-federal programs, as well as on groups that produced policy and other products.
Often (3+ per year)	I have worked in this area for over 40 years, and get a lot of invitations.
Sometimes (1-2 per year)	1-2 per year now that am retired. Prior to that, served in internal Company science panels at rates that varied depending on business activity: sometimes multiple panels per year, sometimes a gap of 1-2 years before another surge of panels.
Often (3+ per year)	Long-term member of the Science Advisory Board, Previous member of the Drug Safety Technology Evaluation Consortium, Current Board of Trustees and SAB participant for LHASA Inc, Instem KnowledgeScan Special Interest Group (Advisory Body to the KnowledgeScan platform).
Often (3+ per year)	I currently serve on (standing) science panels for the US EPA, US FDA, and NTP. In the past I have served on panels for the WHO, Health Canada, TERA, and a number of industry-sponsored panels (ACC, PCPC, Cosmetics Europe, etc).
Sometimes (1-2 per year)	In my institution (Previously in Yemen or currently in Saudi Arabia), I served as a scientific committee member; for example as a scientific advisory committee.
Often (3+ per year)	I have been on NASA, NSF and NIH study section panels for past several years, serving on 1-2 panels per year for past 5 years .
Sometimes (1-2 per year)	from NSF to student scholarship review
Rarely (<2 per 5 years)	I have tended to be involved in high level panels or working groups to prepare consensus papers. eg I chaired the WHO/FAO consultation or nanomaterials in food, and have collaborated with ILSI on papers related to GM food crops, WHO/FAO JMPR for preparation of monographs on pesticides, OECD for TG development etc. I am now self employed so do less than when I was on a Government salary
Sometimes (1-2 per year)	Not all science panels are in my field of expertise, and, even though I know considerable about a topic, I may never have published in that specific area.
Sometimes (1-2 per year)	Sometimes as reviewer of manuscript in science and depends on my availability
Rarely (<2 per 5 years)	3 panels over ten years.
Sometimes (1-2 per year)	I participate, by invitation, on science advisory panels organized by EPA and industry groups. I also serve as a member of a science advisory board for a contract research organization based on my expertise in inhalation toxicology/aerosol science

Question 1.2 *(ID: 3505)*

How often have you applied to serve on science panels based on a call for experts?



Legend

Never: 18
Rarely (<2 per 5 years): 31
Sometimes (1-2 per year): 26
Often (3+ per year): 8

answers: 83
skips: 4

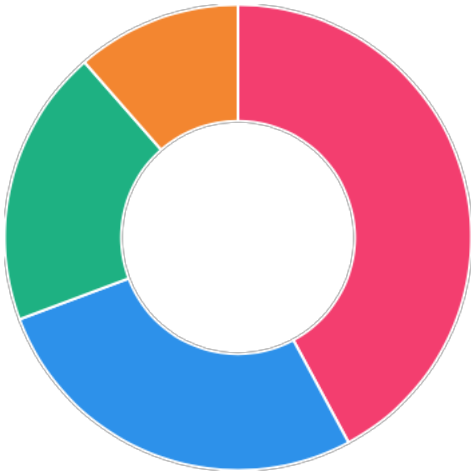
Answer Explanations 28

ANSWER	EXPLANATION
Often (3+ per year)	three per year for the Ministry of the Environment, Japan; two per year for the Tokushima Prefecture, Japan
Never	It has been part of my work duties
Sometimes (1-2 per year)	I applied to SciPinion every time I was invited.
Often (3+ per year)	Various research boards, research councils, boards evaluating professors, Arctic Monitoring and Assessment Program boards, IUCN, boards evaluating science submissions, journal appointments etc.
Sometimes (1-2 per year)	My interest is in current methodologies in risk assessment and in particular contaminants in public drinking water.
Never	Never thought in this direction
Rarely (<2 per 5 years)	Even with my experience, I still have impostor syndrome.
Never	Role at Agency was to assist reviewers in the completion of risk assessment for the Pesticides Program (in house). I also led the Toxicology teams for the Registration Division and the Antimicrobial Division - Both were in house programs toe assure consistency.
Often (3+ per year)	I have been applying for SciPinion panels.
Never	if someone wants to find me, they can ask.
Never	I have been asked to serve in panels and then they say they do not need any more participants.
Rarely (<2 per 5 years)	No need for application when in academia. Interestingly, significant drop in invitations after leaving academia, showing that nowadays affiliation is more important than know-how.
Rarely (<2 per 5 years)	I have applied to serve on panels; however, most of the panels I have served on are through invitation.
Rarely (<2 per 5 years)	When I hav applied it has been because I have been invited to apply
Rarely (<2 per 5 years)	Invitations are made - unsoliticed
Rarely (<2 per 5 years)	I have only recently served on SciPinion panels. I was picked to serve on previous NIH and NSF panels.
Never	Please see my explanation above - just wasn't something I did.
Sometimes (1-2 per year)	I generally do not have to ask.
Sometimes (1-2 per year)	I apply when I have adequate time to devote to a panel. Sometimes consulting or other family demands limit available time.
Sometimes (1-2 per year)	I have self-nominated for some positions (esp. industry-sponsored), and for others have been requested.
Rarely (<2 per 5 years)	I served as a scientific committee for institute accreditation formed by the Ministry of Higher Education in Yemen.

Sometimes (1-2 per year)	When ever I have found time to do so I have applied and served on them as I was selected to serve on them.
Sometimes (1-2 per year)	It depends on available time and types of request.
Rarely (<2 per 5 years)	Unless I feel I have some specific expertise and perspective to offer I tend not to seek participation - particularly as I now work for my self
Sometimes (1-2 per year)	Some panels have greater appeal to command your service. There is little need to apply for panels outside your experience.
Sometimes (1-2 per year)	Depends on my expertise and area of background
Never	I've always been asked to serve.
Rarely (<2 per 5 years)	I seldom nominate myself

Question 1.3 *(ID: 3506)*

How have you learned about opportunities for service on science panels?



Legend

- Personal invite: 59 *(42%)*
- Referral from a colleague: 38 *(27%)*
- Referral from an interested party: 27 *(19%)*
- Public posting (e.g., Federal Register): 16 *(11%)*

answers: 80
skips: 7

Answer Explanations 19

ANSWER	EXPLANATION
Personal invite	I am assigned for the positions by the Ministry and the Prefectural office
Personal invite	Always personal invite.
Referral from an interested party Referral from a colleague Personal invite	I have been asked by my colleagues to offer my services to science advisory panels as a risk assessor with a strong background and experience in Public Health.
Personal invite	Various research boards, research councils, boards evaluating professors, Arctic Monitoring and Assessment Program boards, IUCN, boards evaluating science submissions, journal appointments etc.
Personal invite	Journal editors invited me
Referral from a colleague Personal invite	They first came as colleague referrals. As I became more active, I received personal invites.
	Email
Personal invite	Receiving invites by email.
Personal invite	see above
Public posting (e.g., Federal Register) Referral from a colleague Personal invite	NIH Study Panels are through personal invite. However, there are occasions where I have been referred by colleagues. The few instances I have applied are when I've received e-mails are public posting.
Personal invite	Personal invite
Personal invite	As mentioned, I have been invited to serve on various NIH study sections.
Personal invite	I expressed an interest to Sean Hays to participation in Scipinion endeavor based on professional contact with Sean.
Referral from an interested party Referral from a colleague Personal invite	While in the US Federal government I did not respond to posting in the Federal Register.
Public posting (e.g., Federal Register) Referral from an interested party Personal invite	Most commonly I learn about opportunities through word-of-mouth, email campaigns, or maybe an email forwarded by a colleague. Regarding Question 1.4 below (there is no space for additional comments) -- this question appears to refer to a single panel whereas most of my experiences are on SABs, some of which have multiple meetings throughout the year. Each one is usually no more than 2 days, but over the course of a year can easily be a week or more, esp. if there is additional work (e.g., report writing) involved.
Referral from an interested party Personal invite	As a funded investigator with NASA, I was invited to serve on NCI and NASA and NSF study sections so I applied to them after received their invitations. Similarly I have served as a panel expert on SCIPINION for Tobacco company research in 2016.
Referral from an interested party Referral from a colleague	For some, serving on a science panel is a feather in their cap, such as in consideration for tenure or promotion. For others, serving on such panels is a way to pay forward the benefits of serving your profession. The more you serve, the more you may be recognized and the more colleagues will want you to serve on specific panels.
Personal invite	invited from journal reviewer or headboard

Referral from an interested party Personal invite	I decide whether or not to participate based on time and alignment with my areas of expertise.

Question 1.4 *(ID: 3507)*

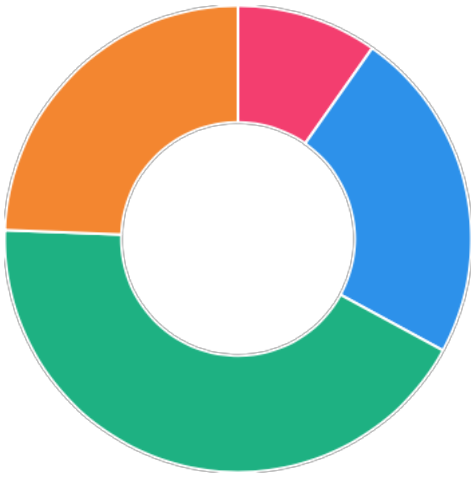
What is the maximum time you would volunteer (uncompensated) to take part in a science panel for the following sponsor types?

	1-2 hrs	1-2 days	1-2 weeks of your time	I would never do uncompensated work for a science peer review panel	Total
Government	**19.51%** 16	**45.12%** 37	**21.95%** 18	**13.41%** 11	82
NGO/science organization	**25.93%** 21	**46.91%** 38	**19.75%** 16	**7.41%** 6	81
Industry	**31.71%** 26	**34.15%** 28	**10.98%** 9	**23.17%** 19	82

PREVIOUS EXPERIENCE WITH SCIENCE PANELS

Question 2.1 *(ID: 3508)*

How often have you attended/observed science panels as part of your job?



Legend

- Never: 8 *(10%)*
- Rarely: 19 *(23%)*
- Sometimes: 35 *(43%)*
- Often: 20 *(24%)*

answers: 82
skips: 5

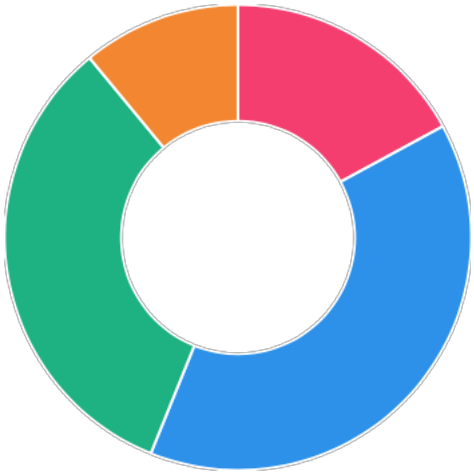
Answer Explanations 24

ANSWER	EXPLANATION
Often	I had been working as a task force member of the International Programme on Chemical Safety, World Health Organization, for more than 20 years
Often	I attend meetings of 4 different panels.
Rarely	I have observed several GRAS panels, and other expert panel groups for food additives
Often	Various research boards, research councils, boards evaluating professors, Arctic Monitoring and Assessment Program boards, boards evaluating science submissions, journal appointments etc.
Sometimes	Usually if there are available via phone or online.
Often	A regular invitee for numerous panels from the National Academy of Sciences to more local panels.
Never	Never got the chance but I routinely evaluate the masters' and PhD students works.
Rarely	Typically completed outside of my full time job.
Often	I participate in the exchanges and work to answer any questions brought up during the discussion as they are happening to come to a conclusion on the topic at hand.
Rarely	Requested by sponsor
Sometimes	EU panels and monitor of large programs (FP7)
Rarely	I have observed mock Study Sections.
Often	As a regulator national level I frequently attended panels at National regional level; when employed at regional level I attended panels at a global level
Sometimes	I have sometimes attended these - for example Scientific advisor panel for a US co for a number of years
Sometimes	My job requires me to serve on Science panels. These involve various duties pertaining to environmental health safety.
Sometimes	I have attended a fair amount of EPA science panels during my 36+ years at EPA for documents and efforts that were of interest based on my own responsibilities at EPA, and have been the organizer on about a half dozen panels who convened to review documents I was the manager (over a contractor effort to prepare the report) and/or writer (sometimes the major writer, at other times the overall manager and partial contributor)
Often	Attended science advisory panels 1-3 times per year past 20 years.
Often	Quarterly meetings of LHASA SAB (Sanofi is a member of the LHASA consortium)

Often	As a Scientist , Res Asst Prof or Assoc Investigator I was expected to serve on several federal agencies panel, so was more than happy to do so!
Never	This is not a part of my job. My choice.
Rarely	On particularly active topics, serving on a science panel is a chance to bring others to general understanding of the issues.
Sometimes	not quite often but sometimes as observer
Never	All three panels were in addition to my job.
Often	Observed numerous FDA CTP and TPSAC panels

Question 2.2 *(ID: 3509)*

How often have you attended/observed panels out of scientific curiosity?



Legend

- Never: 14 *(17%)*
- Rarely: 32 *(39%)*
- Sometimes: 27 *(33%)*
- Often: 9 *(11%)*

answers: 82
skips: 5

Answer Explanations 21

ANSWER	EXPLANATION
Often	I have been attending the various (mostly health) expert committees quite often in Japan
Never	never attended.
Often	Various research boards, research councils, boards evaluating professors, Arctic Monitoring and Assessment Program boards, boards evaluating science submissions, journal appointments etc.
Sometimes	Usually as they pertain to chemicals of interest or related to my interests in hazard identification, risk assessment, risk communication., or there is a current change in regulations.
Rarely	Really only participated when invited.
Rarely	Attended lectures and took part in discussion
Never	N/A
Often	in the first question in the answer I answer what they ask me in this
Sometimes	IMI 2016
Rarely	I have observed mock Study Sections.
Rarely	have rarely attended for this purpose
Sometimes	One motivation to serve on NIH panels is scientific curiosity, since there are often applications from some very good laboratories.
Sometimes	Over my years at EPA, I would attend meetings of panels, sometimes within EPA and other times outside of EPA such as in scientific conferences, simply to learn something and keep up with the science.
Rarely	Although I would like to, there is generally not an opportunity if travel is involved. I have tried to join some by webinar, but that is often frustrating because of issues with a/v quality.
Never	Just never found the time to attend something out of just curiosity, no time!
Never	Because this is my choice.
Sometimes	More frequently now that I am retired. Prior to retirement, there needed to be a clear business link as well besides simple scientific curiosity.
Sometimes	A few years ago, OECD was pushing for animal bioassays that used fewer animals. The notion is quite valid, but some bioassays do not lend themselves to risk analysis because they do not provide for statistical analysis. As a favor to EPA, I traveled to Berlin to participate in their science panel on inhalation studies at my own expense. A reduction in animal use is not the only criteria for conducting bioassays.
Sometimes	if the occasion appears

Never	Too busy with Day Job and professional organization work.
Sometimes	For educational component

Question 2.3 *(ID: 3510)*

Have you either participated in, observed in person, or observed remotely (by phone or online) science advisory panels for any of the following organizations? (If an organization is not listed, feel free to provide details in the explanation box.)

	Participated in	Observed in person	Observed remotely	Total
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	**32.18%** 28	**11.49%** 10	**29.89%** 26	87
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	**27.59%** 24	**11.49%** 10	**20.69%** 18	87
Non-US Country-Specific Agencies	**27.59%** 24	**8.05%** 7	**13.79%** 12	87
Other (e.g., SciPinion, TERA)	**39.08%** 34	**4.60%** 4	**16.09%** 14	87

Answer Explanations 23

ANSWER	EXPLANATION

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	1	0	0
Non-US Country-Specific Agencies	1	0	0
Other (e.g., SciPinion, TERA)	1	0	0

Recently I participated in the SciPinion peer review

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	0	0	1
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	1	0
Non-US Country-Specific Agencies	1	0	0
Other (e.g., SciPinion, TERA)	0	0	0

I have participated of 3 IARC meetings.

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	0	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	0	0	0

Never for these agencies.

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	0	0	1
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	1	1	1
Non-US Country-Specific Agencies	1	1	1
Other (e.g., SciPinion, TERA)	1	1	1

Various research boards, research councils, boards evaluating professors, Arctic Monitoring and Assessment Program boards, boards evaluating science submissions, journal appointments etc.

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	0	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	0	0	0

As a member of Science Advisory Board

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	0	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	0	0	0

Never

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	0	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	0	0	0

None.

I have been a post-doc at IARC.

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	0	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	1	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	0	0	0

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	1	0	0
Non-US Country-Specific Agencies	1	0	0
Other (e.g., SciPinion, TERA)	1	0	0

Health Canada, FAO, American Academy of Asthma Allergy and Immunology, CDC, American Industrial Hygiene Association, Pontifical Academy of Sciences

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	0	0	1
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	1	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	1	0	0

I chaired a panel responsible for writing draft document for inhalation toxicity studies for OECD

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	0	1
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	0	0	0

NAS/NRC Committees

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	0	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	1	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	1	0	0

Scipinion and Ireland and UK and Hong Kong

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	0	1	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	0	0	0

I did not expand much outside of EPA and other US government Agencies such as FDA or USDA.

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	0	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	0	0	0

US EPA, FDA.

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	0	0	1
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	1	0	0

Have helped prepare for several different EPA/FDA advisory panels, but observed remotely versus observation in person. Have helped prepare documentation and strategy for international agencies (Europe, China, India, Japan, and Korea) but did not attend or observe remotely.

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	0	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	0
Non-US Country-Specific Agencies	1	0	0
Other (e.g., SciPinion, TERA)	0	0	0

Scientific System of Kazakhistan; Catalunia Scientific System (marató);

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	0	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	0	0	0

not applicable

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	0	0

I worked at USEPA as their Risk assessment expert for Carcinogenesis and sensitization, and I have reviewed and worked with all submissions which came for review for rule forming from OECD, ECHA, Canadian Agencies. I have also reviewed documents from NASA, ESA for

International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	1
Non-US Country-Specific Agencies	0	1	0
Other (e.g., SciPinion, TERA)	1	0	0

radiation risks to astronauts for about decade or more when I worked at NSRL, Brookhaven Natl Lab.

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	1	0	0
Non-US Country-Specific Agencies	1	0	0
Other (e.g., SciPinion, TERA)	1	0	0

ILSI, Australian and New Zealand Agencies, University collaborations

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	0	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	0	0	0

None apply in my case.

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	1	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	1	0	0
Non-US Country-Specific Agencies	0	1	0
Other (e.g., SciPinion, TERA)	1	1	0

See my answer in 2.2 above.

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	1	0	0
Non-US Country-Specific Agencies	1	0	0
Other (e.g., SciPinion, TERA)	0	0	1

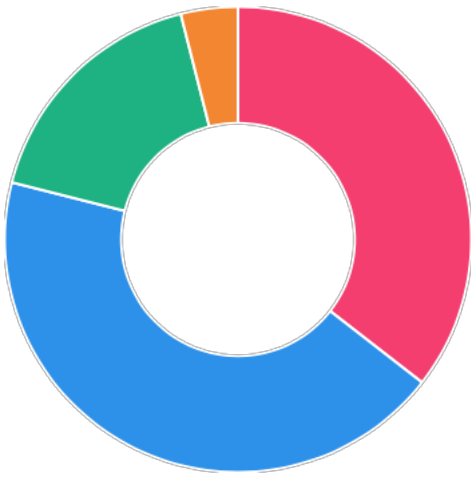
Remotely observer

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	1	0	0

1) Veterans Advisory Board on Dose Reconstruction: Jointly administered by VA and DTRA. 2) NSF proposal review panel (may not qualify as "science advisory panel.") 3) Scientific Review Panel on EMF Risk, State of California.

Question 2.4 *(ID: 3511)*

Were the roles and responsibilities of the science panel adequately explained in the outset in the panels you participated in?



Legend

- Always: 27 *(36%)*
- Almost always: 33 *(43%)*
- Sometimes: 13 *(17%)*
- Hardly ever: 3 *(4%)*

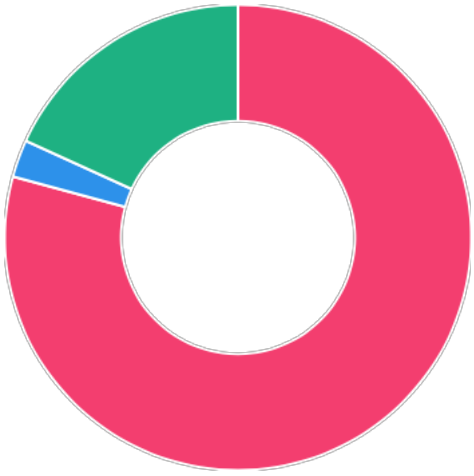
answers: 76
skips: 11

Answer Explanations 18

ANSWER	EXPLANATION
Always	I aprticipated as an official member
Always	Usually there are a list of charge questions and background material provided to the participants.
Hardly ever	Not applicable
Almost always	Most panels have specific instructions and will provide training to ensure you know the information.
Almost always	Yes, almost always I have been informed about the role of the panel.
Hardly ever	The estimable Prof Michele Lamont at Harvard and some European researchers have studied the operation of academic and EU committee panels. Prof. Lamont (and I) think that much more work should be done to ensure that panels know their legal and moral responsibilities and that as required by common law, the chair must ensure that this is done.
Sometimes	little information on depth of the science requested by OECD staff
Almost always	My experience is that the roles and responsibilities are explained at the beginning of the term of the panel, but adequate explanation is often not given to anyone joining a panel mid-term
Always	these were well explained
Almost always	Establishing the mission, boundaries, and role of panel participants was critical in EPA (and similar) panels I observed, participated, or managed. This was done both in writing and usually at the start of panel meetings. When a given panel met over time, there was always an opening segment to review status and updates.
Almost always	The one area in which I often feel there is inadequate information provided is for participants who do not have expertise in the subject matter (e.g., for a broad SAB). Individuals who do not have expertise should be more transparent about this, especially if they are asked to vote on something.
	not applicable
Almost always	excellent POs who were clear on their objectives and needs.
Sometimes	In many cases the expectation was clear and did not require explicit description
	Does not apply.
Always	This step is absolutely critical to making the whole process worthwhile.
Almost always	There can be hidden agendas.
Always	well organized outset for participants

Question 2.5 *(ID: 3512)*

Have you felt encouraged to provide your scientific views openly and candidly?



Legend

- Yes: 61 *(79%)*
- No: 2 *(3%)*
- Sometimes: 14 *(18%)*

answers: 77
skips: 10

Answer Explanations 16

ANSWER	EXPLANATION
Yes	As an expert committee member
Yes	While there maybe group think there are no leading questions that prevent one from expounding on their own judgement.
Yes	If it was an open minded setting.
Yes	Felt encouraged to provide my opinion
Yes	Always encouraged to provide my scientific views At the panels.
Sometimes	That said, both my previous government service and my personality are such that I will be as necessary suitably forthright.
Sometimes	I am semi-retired, not participating in current science activities for SOT, ACT.
Yes	For me I belive all three answers are in fact true (yes, no and sometimes). The no applying when a panel has quite honestly had a preconceived idea about something and has not wanted to hear an opposing view!
Yes	yes - candid
Yes	There was never in my memory an instance where my or other panel members were discouraged in some manner to provide my/their views openly.
Yes	Again, a critical aspect for a science advisory panel.
	not applicable
Yes	When I had funding from NASA, I also served on their study panels and I was usually encouraged to give my honest opinion. Even later without funding from NASA, it was a clearly transparent honest effort. At NSF also it was a honest approach. But at NIH it was a very political process, so that was very demotivating, hence I did not go back there after two times I served there in two different study sections.
Yes	Generally
Yes	See my answer in 2.2 above.
Yes	I always express and freely received by all participant on my point of view

Question 2.6 *(ID: 3513)*

How often have you observed or experienced any of the following behaviors or processes that provide encouragement during panel deliberations?

	Never	Rarely	Sometimes	Often	Total
Active chairmanship	**6.85%** 5	**6.85%** 5	**46.58%** 34	**39.73%** 29	73
Clear assignments on pertinent topics	**6.76%** 5	**9.46%** 7	**39.19%** 29	**44.59%** 33	74
Intrapanel dialogue	**5.48%** 4	**9.59%** 7	**41.10%** 30	**43.84%** 32	73
Fullsome discussions	**1.37%** 1	**13.70%** 10	**49.32%** 36	**35.62%** 26	73
Other (please explain)	**31.25%** 5	**0.00%** 0	**56.25%** 9	**12.50%** 2	16

Answer Explanations 14

ANSWER | EXPLANATION

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	0	1
Clear assignments on pertinent topics	0	0	0	1
Intrapanel dialogue	0	0	0	1
Fullsome discussions	0	0	0	1
Other (please explain)	0	0	1	0

Depending upon the topics

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	0	1
Clear assignments on pertinent topics	0	0	0	1
Intrapanel dialogue	0	0	0	1
Fullsome discussions	0	0	0	1
Other (please explain)	0	0	0	1

Various research boards a.o.

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	0	1
Clear assignments on pertinent topics	0	0	0	1
Intrapanel dialogue	0	0	0	1
Fullsome discussions	0	0	0	1
Other (please explain)				

In some panels, each individual is provided time to ask questions and render opinions as the topics are covered and the discussion progresses.

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	1	0
Clear assignments on pertinent topics	0	0	0	1
Intrapanel dialogue	0	0	0	1
Fullsome discussions	0	0	0	1
Other (please explain)	0	0	1	0

With respect to other, I have seen individuals on panels who hold particular views that could be broadly categorized as anti-corporatist or acting because they disagree with something that is implicitly of interest to a government they disagree with or disagree with the idea that company scientists or their data is useful.

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	1	0
Clear assignments on pertinent topics	0	0	1	0
Intrapanel dialogue	0	0	1	0
Fullsome discussions	0	0	1	0
Other (please explain)	1	0	0	0

As above

	Never	Rarely	Sometimes	Often
Active chairmanship	0	1	0	0
Clear assignments on pertinent topics	0	0	0	1
Intrapanel dialogue	0	0	1	0
Fullsome discussions	0	0	1	0
Other (please explain)	0	0	1	0

Under other I would include "conflict resolution," where panel members either come to a mutual agreement or agree to disagree.

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	0	1
Clear assignments on pertinent topics	0	0	0	1
Intrapanel dialogue	0	0	0	1
Fullsome discussions	0	0	0	1
Other (please explain)				

Whether or not I agreed with what I heard (or oversaw), essentially all of my panel experiences were well organized and conducted professionally.

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	0	1
Clear assignments on pertinent topics	0	0	0	1
Intrapanel dialogue	0	0	0	1
Fullsome discussions	0	0	0	1
Other (please explain)	0	0	1	0

Active Chair: I am presuming a positive role here, but not one that is over-bearing Other: I sometimes observe COI/bias discussions, but this is not always routine.

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	1	0
Clear assignments on pertinent topics	0	0	0	1
Intrapanel dialogue	0	0	0	1
Fullsome discussions	0	0	0	1
Other (please explain)	0	0	1	0

Commentary on the results of the day future steps to be taken.

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	0	1
Clear assignments on pertinent topics	0	0	0	1
Intrapanel dialogue	0	0	0	1
Fullsome discussions	0	0	0	1
Other (please explain)	0	0	0	1

Clear presentations of data and/or clear presentation of research plans also critical to encourage panel deliberations.

	Never	Rarely	Sometimes	Often
Active chairmanship				
Clear assignments on pertinent topics				
Intrapanel dialogue				
Fullsome discussions				
Other (please explain)				

not applicable

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	0	1
Clear assignments on pertinent topics	0	0	0	1
Intrapanel dialogue	0	0	0	1
Fullsome discussions	0	0	1	0
Other (please explain)	0	0	1	0

As described earlier some of the federal agencies have an excellent transparent review panels where honest effort goes to award grants for best applications, but at some this process is just too political, keeping the money revolving within powerful labs, which I find unethical.

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	1	0
Clear assignments on pertinent topics	0	1	0	0
Intrapanel dialogue	0	0	1	0
Fullsome discussions	0	1	0	0
Other (please explain)				

There are always time constraints which often cut short the time for discussions.

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	1	0
Clear assignments on pertinent topics	0	0	1	0
Intrapanel dialogue	0	0	1	0
Fullsome discussions	0	0	1	0
Other (please explain)	0	0	1	0

Active leader were always there to focus on the deliberations

Question 2.7 *(ID: 3514)*

How often have you observed or experienced any of the following forms of groupthink during science panel deliberations?

	Never	Rarely	Sometimes	Often	Total
Error Amplification	**15.49%** 11	**28.17%** 20	**50.70%** 36	**5.63%** 4	71
Cascade effects (1st speaker is more likely to be supported/not contradicted)	**7.04%** 5	**19.72%** 14	**53.52%** 38	**19.72%** 14	71
Group polarization	**7.14%** 5	**25.71%** 18	**52.86%** 37	**14.29%** 10	70
Over-emphasis of unimportant, shared information at the expense of important unshared information	**9.86%** 7	**28.17%** 20	**42.25%** 30	**19.72%** 14	71

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	Never	Rarely	Sometimes	Often
Error Amplification	1	0	0	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	1	0	0	0
Group polarization	1	0	0	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	1	0	0	0

No experinence as such

	Never	Rarely	Sometimes	Often
Error Amplification	1	0	0	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	1	0	0	0
Group polarization	1	0	0	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	1	0	0	0

Various research boards a.o.

	Never	Rarely	Sometimes	Often
Error Amplification	0	1	0	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	1	0	0
Group polarization	0	1	0	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	1	0

I experienced a low error rate as I carefully preselect.

	Never	Rarely	Sometimes	Often
Error Amplification	0	0	1	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	1	0
Group polarization	0	1	0	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	1	0

I have been annoyed that discussions that tend to be circuitous and centering around less impactful topics to the expenses of others..

	Never	Rarely	Sometimes	Often
Error Amplification	1	0	0	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	1	0
Group polarization	0	0	1	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	1	0

see comment about training and Dr. Lamont's work.

	Never	Rarely	Sometimes	Often
Error Amplification	0	0	1	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	0	1
Group polarization	0	0	1	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	1	0

EFSA Opinions are developed by a working group of individuals selected for their individual expertise on the topic being reviewed. I have observed panels with far less relevant expertise on the topic being discussed make fundamental changes to an opinion the has taken a WG years to draft . . .

	Never	Rarely	Sometimes	Often
Error Amplification	0	0	0	1
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	0	1
Group polarization	0	0	0	1

This is a great point. This is something that is common and biases results

Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	0	1

	Never	Rarely	Sometimes	Often
Error Amplification	0	1	0	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	1	0
Group polarization	0	1	0	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	1	0	0

Usually the chairperson has been well-trained to keep discussions to-the-point. However, I have noticed that sometimes the first speaker is followed by support.

	Never	Rarely	Sometimes	Often
Error Amplification	0	1	0	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	1	0
Group polarization	0	0	1	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	1	0

I'm not sure what error amplification is. If the 1st speaker provides a important, useful and appropriate comment, others will support him/her. Occasionally a 1st comment will not be uniformly supported - it is not in my experience that a 1st comment will carry extra weight because it is the first comment. Group polarization happens occasionally. I can recall times when less than totally convincing statistics can sway one group and not another within a panel. Similarly, I can recall when people glom onto "long hanging fruit" (critical comments easy to make and support, but not too complicated and most often not that important) at the expense of the tougher big picture and more complicated issues.

	Never	Rarely	Sometimes	Often
Error Amplification	0	0	1	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	1	0
Group polarization	0	0	1	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	1	0

The role of the chair is critical to moving folks away from each of these items.

	Never	Rarely	Sometimes	Often
Error Amplification	0	1	0	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	1	0
Group polarization	0	1	0	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	1	0

Error amplification can occur when data are either incorrect or unclearly presented, resulting in misunderstanding by panelists and subsequent amplification of the error(s). Also, when trust breaks down and/or if a strong personality begins to dominate discussion, you can occasionally see group polarization. Cascade effect is reasonably common, but not necessarily a problem. The over-emphasis of unimportant information may reflect lack of correct expertise on panel.

	Never	Rarely	Sometimes	Often
Error Amplification				
Cascade effects (1st speaker is more likely to be supported/not contradicted)				
Group polarization				
Over-emphasis of unimportant, shared information at the expense of important unshared information				

Cascade effects and group polarization have been very common.

	Never	Rarely	Sometimes	Often
Error Amplification	0	0	1	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	0	1
Group polarization	0	0	1	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	1	0

This tends to be a more significant issue for diverse panels with experts covering a range of disciplines, yet each is voting on a subject that is not necessarily his/her area of expertise.

	Never	Rarely	Sometimes	Often
Error Amplification				
Cascade effects (1st speaker is more likely to be supported/not contradicted)				
Group polarization				
Over-emphasis of unimportant, shared information at the expense of important unshared information				

not applicable

	Never	Rarely	Sometimes	Often
Error Amplification	0	0	1	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	1	0
Group polarization	0	0	0	1
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	1	0

I saw several of these negative aspects of panel reviews at NIH often, rarely at NASA and the one time I have served at NSF, it was an excellent panel review.

	Never	Rarely	Sometimes	Often
Error Amplification	0	0	1	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	0	1
Group polarization	0	0	0	1
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	0	1

I think the introduced book in the first page of this survey is correct.

	Never	Rarely	Sometimes	Often
Error Amplification	0	1	0	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	1	0
Group polarization	0	0	1	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	1	0

For instance concerning discussion on the health issues from smoking, the chair held a strong bias that prevented discussion and resulted in error amplification and polarization. The results of the panel were later withdrawn by EPA.

	Never	Rarely	Sometimes	Often
Error Amplification	0	1	0	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	1	0	0
Group polarization	0	0	1	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	1	0	0

Scientist expert was always there to rectify any misled discussion

	Never	Rarely	Sometimes	Often
Error Amplification	0	0	1	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	1	0
Group polarization	0	0	1	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	1	0	0	0

You are "leading the witness," here.

Question 2.8 *(ID: 3515)*

How often have you observed any of the following problems in science panel design, function and/or deliberations?

	Never	Rarely	Sometimes	Often	Total
Expertise gaps (key areas of expertise not included in panel members)	5.71% 4	11.43% 8	61.43% 43	21.43% 15	70
Domination of deliberations by a specific member (bully cheerleader)	13.04% 9	17.39% 12	53.62% 37	15.94% 11	69
Over reliances on delegated tasks (failure to engage non-tasked members)	5.80% 4	33.33% 23	46.38% 32	14.49% 10	69
Over-bearing panel sponsor	23.19% 16	27.54% 19	42.03% 29	7.25% 5	69
Deference to panel sponsor	26.09% 18	23.19% 16	40.58% 28	10.14% 7	69
Over-bearing stakeholder	15.94% 11	28.99% 20	46.38% 32	8.70% 6	69
Discounting of a study based solely on affiliation of investigator or funding source	20.29% 14	20.29% 14	47.83% 33	11.59% 8	69
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	13.04% 9	33.33% 23	40.58% 28	13.04% 9	69
Other (please explain)	46.67% 7	6.67% 1	40.00% 6	6.67% 1	15

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ANSWER

EXPLANATION

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	1	0	0	0
Domination of deliberations by a specific member (bully cheerleader)	1	0	0	0
Over reliances on delegated tasks (failure to engage non-tasked members)	1	0	0	0
Over-bearing panel sponsor	1	0	0	0
Deference to panel sponsor	1	0	0	0
Over-bearing stakeholder	1	0	0	0
Discounting of a study based solely on affiliation of investigator or funding source	1	0	0	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	1	0	0	0
Other (please explain)	1	0	0	0

No experience as such

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	1	0
Domination of deliberations by a specific member (bully cheerleader)	0	0	0	1
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	0	1
Over-bearing panel sponsor	0	0	1	0
Deference to panel sponsor	0	0	1	0
Over-bearing stakeholder	0	0	1	0
Discounting of a study based solely on affiliation of investigator or funding source	0	0	0	1
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	1	0
Other (please explain)				

Discounting of a study based on affiliation of investigator or funding source---happens all the time. I think this is part of the instructions for NIH study sections. I was always in the wrong state. A person must be on a coast in the US to get funded. Same thing happened in submitting manuscripts---data were not evaluated---reviewers just didn't like who funded the work and papers were rejected. Politics over evaluating science. I have had it happen often---likely many other times I knew nothing about when it occurred.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	0	1
Domination of deliberations by a specific member (bully cheerleader)	0	0	0	1
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	0	1
Over-bearing panel sponsor	0	0	0	1
Deference to panel sponsor	0	0	0	1
Over-bearing stakeholder	0	0	1	0
Discounting of a study based solely on affiliation of investigator or funding source	0	0	0	1
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	1	0
Other (please explain)				

In my opinion, there are a number of experts that due to the assume "conflict of interest" are excluded from panels (eg industry). There are other ways to deal with the assumed biases they bring to the table. Expertise, should be valued regardless of the source and not presumed invaluable.

Various research boards a.o.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	1	0	0	0
Domination of deliberations by a specific member (bully cheerleader)	1	0	0	0
Over reliances on delegated tasks (failure to engage non-tasked members)	1	0	0	0
Over-bearing panel sponsor	1	0	0	0
Deference to panel sponsor	1	0	0	0
Over-bearing stakeholder	1	0	0	0
Discounting of a study based solely on affiliation of investigator or funding source	1	0	0	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	1	0	0	0
Other (please explain)	1	0	0	0

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	1	0
Domination of deliberations by a specific member (bully cheerleader)	0	1	0	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	1	0	0
Over-bearing panel sponsor	0	1	0	0
Deference to panel sponsor	0	1	0	0
Over-bearing stakeholder	0	0	1	0
Discounting of a study based solely on affiliation of investigator or funding source	0	0	1	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	1	0
Other (please explain)	0	0	1	0

abrupt calling vor votes, refusal to connect different topics (both at IARC)

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)				
Domination of deliberations by a specific member (bully cheerleader)				
Over reliances on delegated tasks (failure to engage non-tasked members)				
Over-bearing panel sponsor				
Deference to panel sponsor				
Over-bearing stakeholder				
Discounting of a study based solely on affiliation of investigator or funding source				
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results				
Other (please explain)				

Over-bearing panel sponsor

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	0	1
Domination of deliberations by a specific member (bully cheerleader)	0	0	0	1
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	1	0
Over-bearing panel sponsor	1	0	0	0
Deference to panel sponsor	1	0	0	0
Over-bearing stakeholder	0	1	0	0
Discounting of a study based solely on affiliation of investigator or funding source	0	0	1	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	1	0
Other (please explain)				

In my personal experience I had frequently observed discussion being driven by ' a character rather than by what the character has to offer in terms of a valuable opinion to the discussion

---

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	0	1
Domination of deliberations by a specific member (bully cheerleader)	0	0	0	1
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	1	0
Over-bearing panel sponsor	0	0	0	1
Deference to panel sponsor	0	0	0	1
Over-bearing stakeholder	0	0	0	1
Discounting of a study based solely on affiliation of investigator or funding source	0	0	0	1
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	1	0	0
Other (please explain)	1	0	0	0

As above. Totally endorse this

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	1	0
Domination of deliberations by a specific member (bully cheerleader)	0	0	1	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	1	0
Over-bearing panel sponsor	0	0	1	0
Deference to panel sponsor	0	0	1	0
Over-bearing stakeholder	0	0	1	0
Discounting of a study based solely on affiliation of investigator or funding source	0	1	0	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert	0	1	0	0

Most of these are pitfalls that can be seen at times. There are scientists who just like to talk at panels, and others who speak rarely - these individuals need to be coaxed into talking; they prefer to state their positions in their written comments. There are times when panel members defer to the sponsor - it is the sponsor that asked them to sit on the panel many times for pay, so no surprise here. Oftentimes a "stakeholder" is himself/herself a contractor who is paid to appear at the behest of the actual stakeholder, so it is their job to be "over-bearing". Similarly, stakeholders send their "over-bearing" scientists to appear...and so on and so forth. At EPA, there is a preference if not a requirement for use of studies that have been published in the open, peer-reviewed literature. We had no choice but to discount studies which may have great merit but were never published in the open literature. I have

verification of the methods & results				
Other (please explain)				

recalled instances where panel members would often do their own analysis and present it to the panel as evidence of their position. This can both helpful and frustrating, as might be imagined.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	1	0
Domination of deliberations by a specific member (bully cheerleader)	0	0	1	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	1	0
Over-bearing panel sponsor	0	1	0	0
Deference to panel sponsor	1	0	0	0
Over-bearing stakeholder	0	0	1	0
Discounting of a study based solely on affiliation of investigator or funding source	0	0	1	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	1	0
Other (please explain)				

Again, a stellar chair will avoid many of these difficulties.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	0	1
Domination of deliberations by a specific member (bully cheerleader)	0	0	0	1
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	0	1
Over-bearing panel sponsor	0	0	1	0
Deference to panel sponsor	0	0	1	0
Over-bearing stakeholder	0	0	1	0
Discounting of a study based solely on affiliation of investigator or funding source	0	1	0	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	1	0
Other (please explain)	0	0	1	0

Failure to adequately address an issue in the interest of time to complete agenda.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	1	0
Domination of deliberations by a specific member (bully cheerleader)	0	1	0	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	1	0	0
Over-bearing panel sponsor	0	0	1	0
Deference to panel sponsor	0	0	1	0
Over-bearing stakeholder	0	0	1	0
Discounting of a study based solely on affiliation of investigator or funding source	0	1	0	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	1	0	0
Other (please explain)				

Expertise gaps sometimes not clearly identified until certain questions arise during panel reviews. If an ongoing/standing panel, we would seek appropriate expert to fill. If deliberations get dominated by a specific member, usually good to somehow get person off of the panel and/or work with the panel Chair to contain. Failure to engage all members is a fault of the sponsor and should be avoided. Key issues with sponsors are identified above - sponsor should not (hard to avoid sometimes) be deferential to the panel, that's why you hired them. If panel is deferential to sponsor, this can be a real problem and need to quickly determine if this is due to lack of proper expertise on the panel or whether the whole process is not working and perhaps need a restart. Overbearing stakeholders are a similar problem but usually can be contained. Have seldom seen a panel discount a study based on affiliation or funding, but have seen individual consultants take this stance. Virtually never for the ad hoc analysis - in fact, only once and it was done somewhat on purpose as the group doing the ad hoc analysis had ignored input not to do this without panel agreement. The panel correctly dismissed these analyses as inappropriate and needing rework.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)				
Domination of deliberations by a specific member (bully cheerleader)				
Over reliances on delegated tasks (failure to engage non-tasked members)				
Over-bearing panel sponsor				
Deference to panel sponsor				
Over-bearing stakeholder				
Discounting of a study based solely on affiliation of investigator or funding source				
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results				
Other (please explain)				

Expertise gaps and over-bearing stakeholders.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	0	1
Domination of deliberations by a specific member (bully cheerleader)	0	0	1	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	1	0
Over-bearing panel sponsor	0	1	0	0
Deference to panel sponsor	0	1	0	0
Over-bearing stakeholder	0	0	1	0
Discounting of a study based solely on affiliation of investigator or funding source	0	0	0	1
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	0	1
Other (please explain)	0	0	0	1

distrust of scientific opinion generated from industry: any industry affiliation is always considered conflicting, rarely NGO-affiliation of academics is conflicting. Any industry funding typically discredits an expert and/or their research, and it seems academics are by default unbiased?

	Never	Rarely	Sometimes	Often

not applicable

Expertise gaps (key areas of expertise not included in panel members)				
Domination of deliberations by a specific member (bully cheerleader)				
Over reliances on delegated tasks (failure to engage non-tasked members)				
Over-bearing panel sponsor				
Deference to panel sponsor				
Over-bearing stakeholder				
Discounting of a study based solely on affiliation of investigator or funding source				
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results				
Other (please explain)				

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	1	0
Domination of deliberations by a specific member (bully cheerleader)	0	0	1	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	1	0
Over-bearing panel sponsor	0	0	0	1
Deference to panel sponsor	0	0	0	1
Over-bearing stakeholder	0	0	0	1
Discounting of a study based solely on affiliation of investigator or funding source	0	0	1	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	0	1
Other (please explain)				

seen these again at NIH, and also rarely at NASA panels, but not at NSF panel.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	1	0
Domination of deliberations by a specific member (bully cheerleader)	0	0	1	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	1	0	0
Over-bearing panel sponsor	1	0	0	0
Deference to panel sponsor	1	0	0	0
Over-bearing stakeholder	0	0	1	0
Discounting of a study based solely on affiliation of investigator or funding source	0	0	0	1
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	1	0
Other (please explain)	0	0	1	0

A relatively common problem is that individuals will profess expertise and make what they see as definitive statements but not be pushed to provide or explain the evidence to support the proposition. There are quite a few activists in science roles who will cherry pick data to support preconceptions and get quite hostile if challenged. The quality of the Chairman becomes critical in managing this

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	1	0	0
Domination of deliberations by a specific member (bully cheerleader)	0	0	1	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	1	0	0
Over-bearing panel sponsor	0	0	1	0
Deference to panel sponsor	0	0	1	0
Over-bearing stakeholder	0	0	1	0
Discounting of a study based solely on affiliation of investigator or funding source	0	0	0	1
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	1	0
Other (please explain)				

See my answer in 2.8 above.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	1	0
Domination of deliberations by a specific member (bully cheerleader)	0	0	1	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	1	0
Over-bearing panel sponsor	0	0	1	0
Deference to panel sponsor	0	0	1	0
Over-bearing stakeholder	0	0	1	0
Discounting of a study based solely on affiliation of investigator or funding source	0	0	1	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	1	0
Other (please explain)	0	0	1	0

Misled discussion and biased deliberations

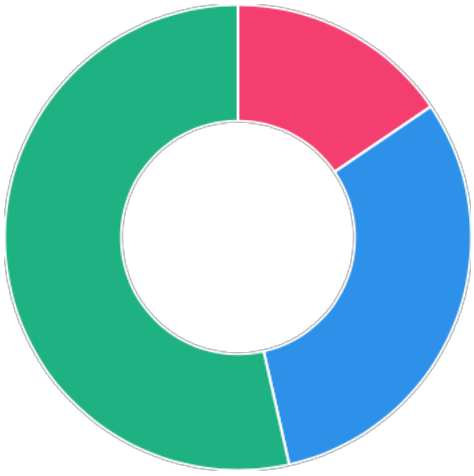
	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	1	0	0	0
Domination of deliberations by a specific member (bully cheerleader)	1	0	0	0
Over reliances on delegated tasks (failure to engage non-tasked members)	1	0	0	0
Over-bearing panel sponsor	1	0	0	0
Deference to panel sponsor	1	0	0	0
Over-bearing stakeholder	1	0	0	0
Discounting of a study based solely on affiliation of investigator or funding source	1	0	0	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	1	0	0	0

Again, you are "leading the witness," here. Maybe I've just been fortunate, but I've never seen the shortfalls you list here.

Other (please explain)				

Question 2.9 *(ID: 3516)*

Have you observed or experienced designs in panel format or process intended to reduce the influence of these internal pressures/problems (e.g., collection of independent input, blinding, bias training)? If so, were the measures taken successful? Please explain.



Legend

Yes; measures taken were NOT successful (please explain): 11 *(15%)*

Yes; measures taken were successful (please explain): 22 *(31%)*

No: 38 *(54%)*

answers: 71

skips: 16

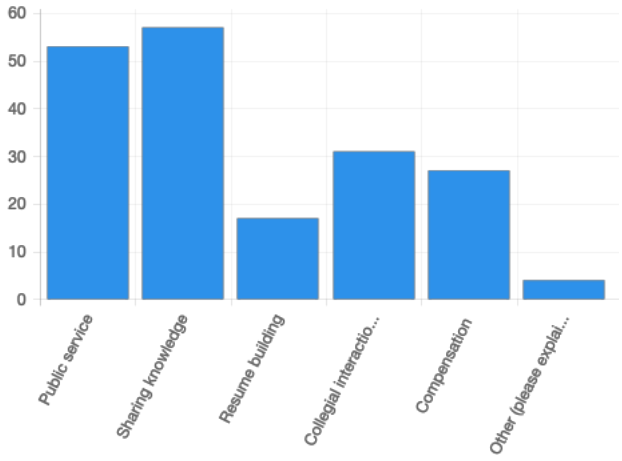
Answer Explanations 18

ANSWER	EXPLANATION
Yes; measures taken were successful (please explain)	The only time I have seen the lack of bias was in an online SciPi I participated in.
Yes; measures taken were successful (please explain)	Explaining that each review is conducted based only on that submission, and not compared to others.
Yes; measures taken were successful (please explain)	active members that tended to impose their positions were removed from the panel.
Yes; measures taken were successful (please explain)	BUT not always. I was recently on a panel that I thought was important. On one issue at least four people in the room (including me) wanted something said but the final report contained what I regarded as the self serving position of one person who I think lobbied the report drafters.
Yes; measures taken were successful (please explain)	Generally effective chairperson draws out discussion from all members
Yes; measures taken were successful (please explain)	yes, exchange of scoring by different groups
No	No not seen to date
Yes; measures taken were successful (please explain)	There are times when panel members need to correct each other, usually this is very collegial.
Yes; measures taken were successful (please explain)	In forming panels at EPA, we took pains to put together panels that had representation from "competing" (if such a word is useful or appropriate) interests, such as the inclusion of industry stakeholders, other government agencies, and NGOs.
Yes; measures taken were successful (please explain)	I have had the occasion as a panel chair to deal with each of the items in question 2.8. For example, with expertise gaps in the panel, one can rely on "lifeline" calls to known experts during the meeting. An overbearing stakeholder can be effectively shut down by taking a break in the meeting and inviting security to attend the meeting restart.
Yes; measures taken were successful (please explain)	Several elements to reduce internal pressures: 1) clear and strict guidelines on sponsorship - i.e., only safety & regulatory personnel could ask questions or engage in panel discussions, 2) Panel was given clear ownership of their role and told part of their role was to resist and identify pressures that they felt were compromising their independence, 3) close work with the panel chair (and in some cases with regulatory agencies) to ensure proper expertise and personalities on panel, 4) control attendance at panel meetings. All of these steps can work well with actions #1 and #4 being particularly effective in limiting pressure from sponsor that was deemed more "business desire driven" than scientific questions and input. #2 and #3 were effective in ensuring a panel knew its role, that the Chair was empowered to deliver an independent review, and that the panel composition was one of proper expertise and compatibility to avoid the domination by one or two panelists.
Yes; measures taken were NOT successful (please explain)	There is significant inconsistency in the way COI is considered/handled. Of concern is that common perception that employees of industry have an automatic bias whereas NGOs and government employees do not. Academicians who have done work for a government agency are often not seen as having a conflict whereas if the work was paid for by industry, it does have a conflict. Often industry scientists who are true experts on a specific chemical are excluded from discussions because of a perceived COI. This is not the best way to deal with COI.
	not applicable

Yes; measures taken were successful (please explain)	I am asked to declare no conflict of interest on the topic.
Yes; measures taken were NOT successful (please explain)	unfortunately, the chairs at NIH panels were not strong enough to counteract bullying top lab review panel members.
Yes; measures taken were successful (please explain)	If the Chairman is calm, knowledgeable and firm they are able to stimulate robust discussion, challenge group think with thought starters and prompt the more aggressive participants to explain their position and cite evidence. Good chairmen will also challenge strong participants to consider and work through evidence against their preferred position to demonstrate their depth of understanding and balance of perspective. Use of break out groups carefully selected to fully explore a subset of an issue can also work.
No	In the 21st century, we live in a contentious society, and some would do most anything to get their way. Often one cannot have an open meeting and still make sure all is done in decency and order.
Yes; measures taken were successful (please explain)	Explanation would be time consuming and tedious. All three panels simply followed logical best practices. You are revealing your list of pet peeves. It just so happens I haven't observed them. It is just now occurring to me that this survey and your setup are all oriented around particular axes to grind. I am not interested in contributing to your ax-grinding, though I would be interested in providing a perspective from outside of your ax-grinding world.

Question 2.10 *(ID: 3517)*

What is the primary motivation for you to participate in science peer review panels?



Legend

Public service: 53
Sharing knowledge: 57
Resume building: 17
Collegial interactions: 31
Compensation : 27
Other (please explain): 4

answers: 73
skips: 14

Answer Explanations 16

ANSWER	EXPLANATION
Sharing knowledge	I like to share knowledge and to learn.
Public service	I think that if one has the opportunity to serve and has value to the overall process; service is an honor and privilege.
Other (please explain) Compensation Sharing knowledge Public service	Looking over my edge. Teaching of myself. I usually learn a lot.
Sharing knowledge	Sharing knowledge and learning.
Public service	This is a good question. Because I have always been a public scientist, it seems important if the issue was important and affected the sectors I have worked in and if I felt it would be useful.
Compensation Resume building Sharing knowledge Public service	All of these mentioned
Other (please explain)	Having recently retired from EPA, I miss the science and interactions with colleagues, and could contribute without taking up too much of my second career activities.
Other (please explain) Sharing knowledge Public service	Assessment of conventional or contrary views about a topic
Sharing knowledge Public service	After a long and interesting career, I feel an obligation to share my knowledge where it could be useful - especially if it can help drive good science and clear understanding of the issues. Regarding the latter, issues can be as simple as identifying data gaps to the more complicated issues of helping to develop regulatory strategies and ensuring overall product safety for the target consumer. In the areas of safety and regulatory compliance it is important to ensure that the "right" things are being done versus convenience and/or a check the box mindset.
Other (please explain) Sharing knowledge Public service	Experience - exposure to alternative viewpoints & expertise in other areas
Compensation Collegial interactions Resume building Sharing knowledge Public service	All of the above.
Compensation Sharing knowledge Public service	To gain more lessons
Public service	I have been assigned solely based on my expertise on the subjects.
Compensation Collegial interactions Resume building Sharing knowledge Public service	I have reviewed on these invited panels to try and ensure that my voice is heard giving my honest, sometimes unwelcome opinion as it wouldn't align with chair's approach, so that the review was done in fair manner, as well as build a reputation for being a fair, tough reviewer adding these valuable skills to my resume as a research and regulatory scientist.
Public service	If my career has benefited from the service of those who came before, my willingness to serve for the public good should also inspire those who follow to serve and ensure connectedness with all other in the field.

Sharing knowledge	share my expertise which will lead to public service

Question 2.11 *(ID: 3518)*

Have you ever opted to NOT participate in a science panel due to the following factors ? (select all that apply)

	Never	Rarely	Sometimes	Often	Total
Schedule conflict	**25.00%** 17	**20.59%** 14	**38.24%** 26	**16.18%** 11	68
Logistics/travel difficulties	**27.94%** 19	**22.06%** 15	**36.76%** 25	**13.24%** 9	68
Controversial nature of topic (e.g., the science has been or will be politicized)	**51.47%** 35	**23.53%** 16	**16.18%** 11	**8.82%** 6	68
Aversion to public forums	**70.77%** 46	**15.38%** 10	**12.31%** 8	**1.54%** 1	65
Insufficient compensation	**57.58%** 38	**27.27%** 18	**13.64%** 9	**1.52%** 1	66
Requirement to file a financial disclosure	**86.36%** 57	**4.55%** 3	**6.06%** 4	**3.03%** 2	66
Health reasons	**73.13%** 49	**19.40%** 13	**7.46%** 5	**0.00%** 0	67
Language barriers	**83.33%** 55	**7.58%** 5	**9.09%** 6	**0.00%** 0	66
Other (please explain)	**85.71%** 12	**7.14%** 1	**7.14%** 1	**0.00%** 0	14

Answer Explanations 13

ANSWER	EXPLANATION

	Never	Rarely	Sometimes	Often
Schedule conflict	0	0	1	0
Logistics/travel difficulties	1	0	0	0
Controversial nature of topic (e.g., the science has been or will be politicized)	0	0	1	0
Aversion to public forums	1	0	0	0
Insufficient compensation	1	0	0	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	1	0	0	0
Language barriers	1	0	0	0
Other (please explain)	1	0	0	0

NA

	Never	Rarely	Sometimes	Often
Schedule conflict				
Logistics/travel difficulties				
Controversial nature of topic (e.g., the science has been or will be politicized)				
Aversion to public forums				
Insufficient compensation				
Requirement to file a financial disclosure				
Health reasons				
Language barriers				
Other (please explain)				

Language barriers

	Never	Rarely	Sometimes	Often
Schedule conflict	0	0	0	1
Logistics/travel difficulties	0	0	1	0
Controversial nature of topic (e.g., the science has been or will be politicized)	1	0	0	0
Aversion to public forums	1	0	0	0
Insufficient compensation	0	1	0	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	1	0	0	0
Language barriers	1	0	0	0
Other (please explain)	1	0	0	0

as above

	Never	Rarely	Sometimes	Often
Schedule conflict	0	1	0	0
Logistics/travel difficulties	1	0	0	0

Language has never been an issue.

Controversial nature of topic (e.g., the science has been or will be politicized)	1	0	0	0
Aversion to public forums	1	0	0	0
Insufficient compensation	1	0	0	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	1	0	0	0
Language barriers	1	0	0	0
Other (please explain)				

	Never	Rarely	Sometimes	Often
Schedule conflict	1	0	0	0
Logistics/travel difficulties	1	0	0	0
Controversial nature of topic (e.g., the science has been or will be politicized)	1	0	0	0
Aversion to public forums	1	0	0	0
Insufficient compensation	1	0	0	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	1	0	0	0
Language barriers	1	0	0	0
Other (please explain)				

I have had rare experience as an actual panel member, and when asked, I participated. In one instance at Scipinion, I was invited to participate but it was outside my area of expertise, so I declined the invitation.

	Never	Rarely	Sometimes	Often
Schedule conflict	0	0	0	1
Logistics/travel difficulties	0	0	1	0
Controversial nature of topic (e.g., the science has been or will be politicized)	1	0	0	0
Aversion to public forums	1	0	0	0
Insufficient compensation	1	0	0	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	1	0	0	0
Language barriers	1	0	0	0
Other (please explain)	1	0	0	0

Composition of the panel or source of sponsorship

	Never	Rarely	Sometimes	Often
Schedule conflict	0	0	1	0
Logistics/travel difficulties	0	1	0	0
Controversial nature of topic (e.g., the science has been or will be politicized)	1	0	0	0
Aversion to public forums	0	1	0	0
Insufficient compensation	1	0	0	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	0	1	0	0
Language barriers	1	0	0	0
Other (please explain)				

In business, logistics/travel difficulties (usually total costs) can occasionally dictate participation in science panels - as can genuine work schedule conflicts. Aversion to public forums occurred rarely - only with very specific groups whom it was felt could not be trusted to work and communicate fairly regarding science. Did miss most of one scientific panel for health reasons many years ago.

	Never	Rarely	Sometimes	Often
Schedule conflict				
Logistics/travel difficulties				
Controversial nature of topic (e.g., the science has been or will be politicized)				
Aversion to public forums				
Insufficient compensation				
Requirement to file a financial disclosure				
Health reasons				
Language barriers				
Other (please explain)				

Schedule conflicts, travel/logistics, and insufficient compensation.

	Never	Rarely	Sometimes	Often
Schedule conflict	0	0	1	0
Logistics/travel difficulties	0	0	1	0
Controversial nature of topic (e.g., the science has been or will be politicized)	1	0	0	0
Aversion to public forums	1	0	0	0
Insufficient compensation	0	0	1	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	1	0	0	0
Language barriers	1	0	0	0
Other (please explain)	0	0	1	0

Other: work load (not enough time to prepare sufficiently/participate)

	Never	Rarely	Sometimes	Often
Schedule conflict				
Logistics/travel difficulties				
Controversial nature of topic (e.g., the science has been or will be politicized)				

not applicable

Aversion to public forums				
Insufficient compensation				
Requirement to file a financial disclosure				
Health reasons				
Language barriers				
Other (please explain)				

	Never	Rarely	Sometimes	Often
Schedule conflict	1	0	0	0
Logistics/travel difficulties	1	0	0	0
Controversial nature of topic (e.g., the science has been or will be politicized)	1	0	0	0
Aversion to public forums	1	0	0	0
Insufficient compensation	1	0	0	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	1	0	0	0
Language barriers	1	0	0	0
Other (please explain)	1	0	0	0

No experience as such

	Never	Rarely	Sometimes	Often
Schedule conflict	0	0	1	0
Logistics/travel difficulties	0	0	0	1
Controversial nature of topic (e.g., the science has been or will be politicized)	0	1	0	0
Aversion to public forums	1	0	0	0
Insufficient compensation	0	1	0	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	1	0	0	0
Language barriers	1	0	0	0
Other (please explain)				

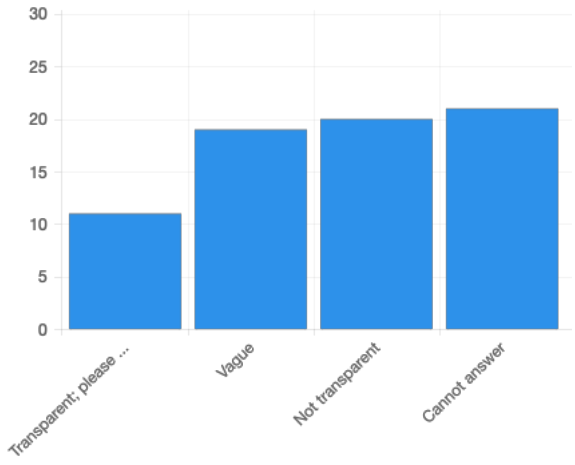
Its not been possible to accept several invitations last few years owing to prior commitments such as research, teaching responsibilities

	Never	Rarely	Sometimes	Often
Schedule conflict	0	1	0	0
Logistics/travel difficulties	0	1	0	0
Controversial nature of topic (e.g., the science has been or will be politicized)	1	0	0	0
Aversion to public forums	1	0	0	0
Insufficient compensation	1	0	0	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	0	1	0	0
Language barriers	1	0	0	0
Other (please explain)				

Serving the public through such panels is one of the ways to say thank you to Government officials and fellow scientists for their support and recognition of your service.

Question 2.12 *(ID: 3519)*

Based on your experience, how transparent is the process by which science panels are selected from the available candidates? (please provide examples where you think the selection process has been especially transparent)



Legend

Transparent; please provide examples: 11
Vague: 19
Not transparent: 20
Cannot answer: 21

answers: 71
skips: 16

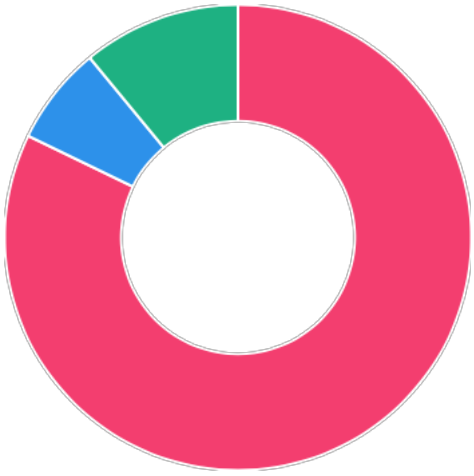
Answer Explanations 23

ANSWER	EXPLANATION
Cannot answer	This is a huge question. SciPi panel is likely transparent to the people selecting candidates. NIH panels are selected in vague fashion based on politics. EPA panels and FDA panels are barely better. Government panels are vague and politically motivated in the US.
Transparent; please provide examples	I am currently being considered for a panel where the processed was explained fairly well. They hired an external party to interview potential peer reviewer candidates. This external party explained the process, provided documents to fill out, questions to be answered, COI forms, etc. This is all to be forwarded to the party for which the review is being conducted and they will make the final decision.
Cannot answer	I have never been involved in the process. i realize that in many panels that applicants and their biographies are put on the web and others are invited to comment on their election to the panel.
Transparent; please provide examples	Selecting a candidate of a particular specialization for dedicated work.
Transparent; please provide examples	Based on profile and reputation.
Cannot answer	I do not know how reviewers are chosen.
Vague	As an example, I commented on this issue with respect to the recent revision to the IARC panel. It just cannot be anymore that people look at papers or through their networks not least because common law requires that people be qualified, experienced in the subject matter (not just what they read) and apply generally accepted rules of art. With the JECFA, there is a process where you have to submit not just COI but a cv and a letter much as you would in a US panel. The proliferation of literature today no longer means that papers alone are sufficient to credential an expert.
Not transparent	Rarely know the pool of potential candidates just those in final panel
Not transparent	Selection of Panel members at EFSA is highly biased by 'who knows who' and the need to meet certain criteria e.g. the need for gender balance, the need to represent a balance of all member states . . .
Vague	vague
Not transparent	It is not my experience that Panels at EPA were formed in an open process - the entire review process did include a lot of public comment and participation, but in my experience at least, panels were formed behind the scenes.
Not transparent	Most panels/Task groups appointed by International NGOs and natonal Governments have been by invitation and it is assumed that the best experts have been chosen for the task.
Cannot answer	Depends entirely on the group convening the panel. I have experienced everything from total mystery t o completely transparent. HESI panels are general translucent, peer review panels for USEPA transparent. FDA panels have been a mixed bag, and I never have a clue as to how DOD empanels a group.
Transparent; please provide examples	I was on EPA's SAB for 6 years. The process is completely transparent except for the COI/bias calls. The TERA process discusses the COI/bias issues in the meeting, but the choice of panelists, while balanced, is generally not transparent. For other ideas see an attached file

	from the EPA inspector general.
Not transparent	Many panels seem to be constituted based on friendhip, acquaintship or familiarity with viewpoints.
Transparent; please provide examples	On two specific projects, which formed long-standing expert panels (i.e., panels which were associated and participated in the project over a period of years) the process was very transparent. First, internal agreement to the purpose and role of the panel in order to ensure understanding of the sponsor's role and the need for the panel - and how its output would be used. Second, a serious effort to identify a highly-regarded expert to serve as chair. The person had to not only be an expert in at least one of the areas needed on the panel but to have a reputation respected by regulatory agencies and their eventual peers on the panel. The person selected for the Chair role needed to be able to control group interactions and ensure that the panel appropriately and completely addressed the charges put forward for the panel's consideration. Third, enroll the Chair in the selection of other panel members - taking pains to generally NOT get other panelists from the same institution as the Chair to avoid potential conflicts. Also, sought input from regulatory agencies regarding appropriate areas of expertise that should be on the panel and recommendations for who these experts could be (the latter was generally NOT provided by the agencies but they were usually quite open to suggesting areas of expertise they felt critical to good scientific review of an issue). Finally, once a panel is formed, if an additional area of expertise was identified as needing to be on the panel, the full panel and especially the Chair, helped to identify candidates and aided in the review of the resumes and final selection. This did a great deal to help make it transparent to the panel as to their independence and the seriousness with which their input was taken.
Cannot answer	Varies.
Transparent; please provide examples	Scopus search for candidates
	do not know
Transparent; please provide examples	When I worked as a task force member of the International Programme on Chemical Safety, WHO, I was assigned as an expert in the area of risk assesment of chemicals which determined assignment as my official duty.
Not transparent	This has never been transparent enough and I think that who ever invited me needed my expertise and my being mid level experience scientist, so my application would not threaten their authority (at NIH panels it was a clear perspective).
Not transparent	There is a strong bias for academics and a general distrust for scientists in industry. The problem with the distrust of industry scientists is that they often know more about the problem than anyone else. A company or their representative cannot disregard frank toxicity by omitting from their SDS because they are libel for anyone who is injured because the label or SDS was fraudulent.
Not transparent	In all three cases, recruitment was based on highly informed word of mouth and search trees.

Question 2.13 *(ID: 3520)*

Should peer review panel composition be managed to have a balance in perspectives?



Legend

- Yes: 60 *(82%)*
- No: 5 *(7%)*
- Sometimes; please explain: 8 *(11%)*

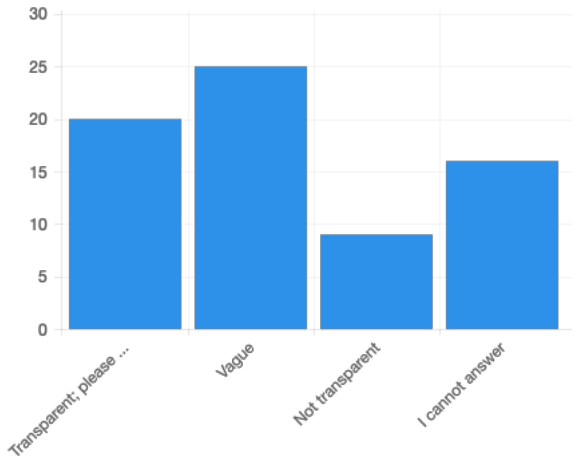
answers: 73
skips: 14

Answer Explanations 15

ANSWER	EXPLANATION
Yes	The panel should have experts in all areas necessary to cover the scientific disciplines necessary. This often is lacking.
Yes	Yes, there is potential to get the exact opposite (a more activist perspective) in panels when experts are eliminated based on their (industry) affiliations. Balance rather than exclusion should be sought. A truly unbiased opinion can only come from someone who has absolutely no knowledge of the subject, which always makes a truly unbiased opinion always so useless.
Sometimes; please explain	This depends on the topic. I usually prefer to have people with diverse background (professional training, position public or industry, etc.) in such panels. In my mind the most important factor is professional expterise!
Sometimes; please explain	That is what the common law requires. Whether this is achieved or not, depends on the state of the art. The law requires generally accepted not unanimity. For example, if you could find people who believed aflatoxin was not a human carcinogen, they are not needed.
Yes	i agree yes
Yes	Successful panels had a good mix of stakeholder group (government, industry, NGO) representation. Management is need to insure this level of representation.
Sometimes; please explain	Panels should include those who espouse a variety of reasonable perspective. Adherents of climate change denial, anti-vaxxers, and believers in the flying spaghetti monster theory of evolution are best kept to a minimum or restricted to public comments.
Sometimes; please explain	Scientific expertise is paramount. Balance in perspective comes afterwards. Often, these two concepts are NOT in conflict.
Yes	Yes, with the caveat that what is looked for is appropriate expertise. The balance of perspective is achieved by having the appropriate experts present and engaged. Simply recruiting a panel based on knowing they will have "different" perspectives can undermine the purpose of expert review. Different is good, expertise is essential.
Sometimes; please explain	If a panel is assembled to provide an expert opinion on a controversial or highly-sensitive matter, the panel should include (but not be dominated by) potentially critical viewpoints - for example, a public workshop on the future of safety assessment I once participated in specifically invited animal welfare organizations to participate, including PETA. They were able to provide delegates well-informed in the science, with reasoned arguments and who's perspectives were very valuable to the overall discussion without dominating it.
Yes	Worldwide distingushed experts of various sacinetific areas were called as peer review panel
Sometimes; please explain	It is ideal if it is balanced but takes time to discuss.
Sometimes; please explain	It depends on the purpose of the panel. If a panel is peer reviewing immunization schedules it makes little sense to have antivaccination activists to provide "balance of perspective". The key is whether the difference in perspective is political/ideological or a genuine question of data interpretation
Yes	Some who serve on a panel represent the general public or a labor union, and in such cases, should not expect equal representation on the panel.
Yes	Duh.

Question 2.14 *(ID: 3521)*

Based on your experience, how transparent is the process by which science panels deliberate their findings and document opinions in their panel reports? (please provide examples where you think the documentation of deliberations has been especially transparent)



Legend

Transparent; please provide examples: 20
Vague: 25
Not transparent: 9
I cannot answer: 16

answers: 70
skips: 17

Answer Explanations 26

ANSWER	EXPLANATION
Vague	Some panels are more transparent than others. Some provide documents prior to meetings for the public and others to review and/or comment on. Some provide public access (webinar, etc.) to the meeting proceedings, whereas some do not. Ideally, a panel would post the draft of the document for public viewing and possibly comment well ahead of meeting time, allow the public to hear the meeting (and post for later viewing), provide access to public and panel comments, and draft versions. Also, COIs should be requested for panel members.
Transparent; please provide examples	CTNBio (National technical committee on biosafety), in Brazil, science foundations in Brazil (FAPESP).
Transparent; please provide examples	Specialized panels have to deliberate with transparency to justify their findings and the panel position.
Transparent; please provide examples	Research councils.
Vague	Sometime things never continue.
Not transparent	Over the years I have found that scientific bias highly influences the opinions of government employees in defense of their opinions
Transparent; please provide examples	In which I participate: doctoral theses, masters, paper review and in government ministries
Transparent; please provide examples	publications of the Research Institute for Fragrance Materials, RIFM, publications of CTNBIo (everything is transparent).
Vague	I would have preferred that "it depends" as an answer. I have seen good examples and really bad examples. I would say that with one exception, the panels I have been on have tried to include the record of decision implicitly. I think that this is because most of the people I have worked with have some government experience and know you need to be clear about how you got from here to there.
Transparent; please provide examples	NAS/NRC panels seek consensus in all reports. If consensus is not reached, alternative/minority views are presented
Vague	Borm & Driscoll (2019) Particle and Fibre Toxicology- state of the art on PSLT
Vague	vaue
Transparent; please provide examples	NIH panels have always been transparent; the summary statements are also based on written reasons.
	At EPA, Panel reports always went through at least one and often more than one round of open review through an FR notice, as well as open meetings. These reports included individual panel member written contributions if such were part of the panel review process. I don't recall an EPA-sponsored behind-the-scenes science panel deliberation.
Transparent; please provide examples	WHO/IPCS documents; EFSA reports; EMA reports
I cannot answer	Again this is highly variable.

Transparent; please provide examples	TERA's process for documenting deliberations is generally open and transparent and is one of the few groups that documents the COI/bias calls. Other reviews can be transparent about the deliberations but not so much for COI/bias issues.
Vague	Panel views of what was presented or discussed are presented at the end of the session as a response to the proceedings prior to report writing.
Transparent; please provide examples	I have seen two variations on the transparent process. In one, the panel is provided with the available data, allowed to question the scientists who conducted the studies/analyses, and provided with the sponsor's charges or key questions. The panel then goes into an "executive session" and privately discusses the data and the questions they have been asked. After this private discussion, the panel provides a written response to the sponsor's questions and any additional recommendations they have. This works well - especially with short-term panels or in the initial meetings of a long-term panel. As long-term panels become more familiar with their role and confident in their relations with the sponsor, the executive session becomes a more open discussion session with the sponsor and other scientists present - and sometimes participating in that discussion. These have been the most transparent and useful of the panel deliberations as the sponsor gains insight into the nuances and various concerns of different individuals on the panel. However, confidence of the panel in their independence from the sponsor and their trust in the data provided are essential for this process to work well.
	not applicable
Transparent; please provide examples	I offer my findings as a member of the expert committee of Initial Risk Assessment of the MInistry of the Environment, in the meetings
Transparent; please provide examples	On study panels I served, most panel members opinions were written in, reviewed by all of us and then finalized by chairs, rarely have I seen any disregard for opinions from the least experienced member, except in one NIH panel.
I cannot answer	The panel should keep the record/dialog that includes at least what kind of ideas/opinions, those were against, were exchanged even they went to a trash can in the process of discussion.
Not transparent	The disastrous IARC review of glyphosate is a classic example
Vague	I cannot think of any that were especially transparent.
Transparent; please provide examples	In all three cases, the panels followed widely accepted best practices.

Question 2.15 *(ID: 3522)*

Does the sponsor for peer review panel (e.g. government agency, third party organization) influence how likely you are to participate? In general, are you willing to participate in a peer review sponsored by: (if No, please explain)

	Yes	No	It depends (please explain)	Total
Industry	**68.12%** 47	**14.49%** 10	**17.39%** 12	69
Government	**78.57%** 55	**15.71%** 11	**5.71%** 4	70
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	**76.81%** 53	**11.59%** 8	**11.59%** 8	69
Science organization (e.g., National Academy of Science)	**82.61%** 57	**15.94%** 11	**1.45%** 1	69
Independent third party	**71.64%** 48	**17.91%** 12	**10.45%** 7	67

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ANSWER

EXPLANATION

	Yes	No	It depends (please explain)
Industry	1	0	0
Government	0	0	1
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	0	0	1
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	1	0	0

Depends on the organization and the topic.

	Yes	No	It depends (please explain)
Industry	0	0	1
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	0	0	1
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	1	0	0

i would be worried that there is an a prior expectation of the response to the charge questions being posed unless these "interest groups" have a third party conduct an independent selection process for the panel.

	Yes	No	It depends (please explain)
Industry	1	0	0
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	1	0	0

Sponsor will not affect the review report.

	Yes	No	It depends (please explain)
Industry	0	0	1
Government	0	0	1
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	0	0	1
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	1	0	0

This depends strongly on the topic and specific setting. Again the most important aspect is professional expertise.

	Yes	No	It depends (please explain)
Industry	0	0	1
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	1	0	0

It would depend on a project's completion(data). All data must be shared with the Panel.

	Yes	No	It depends (please explain)
Industry	1	0	0
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	0	0	1
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	0	0	1

It Depends because if the deck is stacked and there's no fair way to fight, I wouldn't sign up to walk into that. I'd want to know who, what, and why, they were organizing the panel.

	Yes	No	It depends (please explain)
Industry	0	0	1
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	0	1	0

As long the purpose of a panel was consistent with public science (e.g. a GRAS affirmation), I would not rule it out.

	Yes	No	It depends (please explain)
Industry	0	0	1
Government	0	0	1
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	0	0	1
Science organization (e.g., National Academy of Science)	0	0	1
Independent third party	0	0	1

Generally depends upon subject matter and personal expertise along with past experiences about how well reviews are conducted and supported by panel organization

	Yes	No	It depends (please explain)
Industry	0	0	1
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	0	0	1
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	0	0	1

For me it would mainly depend upon whether I may be potentially be conflicted by doing so

	Yes	No	It depends (please explain)
Industry	0	1	0
Government	0	1	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	0	1	0
Science organization (e.g., National Academy of Science)	0	1	0
Independent third party	0	1	0

no

	Yes	No	It depends (please explain)
Industry	0	0	1
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	1	0	0

I didn't join and stay at EPA for 36 years by accident. I was an "environmental scientist" by training. If I felt confident in believing that any sponsor was after a one-sided opinion, I would hesitate to participate. In my experience at EPA, I encountered instances where industry backed review comments were agenda-laden, and in fairness, so were some environmental backed review comments. In the field of risk and exposure assessment (my specific expertise is exposure assessment), things are not always black and white. I would be open to participating in an industry-sponsored peer review panel, depending on the circumstances. I would guess that there are more circumstances for non-industry sponsored efforts that I would be more comfortable in.

	Yes	No	It depends (please explain)
Industry	0	0	1
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	0	0	1
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	0	0	1

Participation in industry or advocacy group panels will depend on the question to be answered - only panels aiming at a focusing on a science based decision will be of interest.

	Yes	No	It depends (please explain)
Industry			
Government			
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates			

All of the above.

Foundation)			
Science organization (e.g., National Academy of Science)			
Independent third party			

	Yes	No	It depends (please explain)
Industry	0	0	1
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	0	0	1

Depends - Purpose of panel and it's compensation are clear and panel is not biased towards a particular viewpoint (i.e. no stacked juries)

	Yes	No	It depends (please explain)
Industry	0	0	1
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	1	0	0

If the study is to improve mankind.

	Yes	No	It depends (please explain)
Industry	0	1	0
Government	0	1	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	0	1	0
Science organization (e.g., National Academy of Science)	0	1	0
Independent third party	0	1	0

When I worked as a task force member of the International Programme on Chemical Safety, I assured and pledged to work solely on my knowledge as an expert

	Yes	No	It depends (please explain)
Industry	0	0	1
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	0	1	0

As explained earlier, due to severe time limitations it has not been possible to review for unknown agencies or entities where there is little transparency of who the stakeholder is, so it has limited my applications to federal agencies usually, with a rare review such as SCIPINION.

	Yes	No	It depends (please explain)
Industry	0	0	1
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	1	0	0

It may represent conflict of interest

	Yes	No	It depends (please explain)
Industry	1	0	0
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	1	0	0

At least I will be constructive in any cases.

	Yes	No	It depends (please explain)
Industry	1	0	0
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	1	0	0

My participation would be dependent on the credibility of the process regardless of the sponsor. In my experience government, industry NGOs etc are all equally likely to be biased and conflicted. In many respects the industry sponsors are more likely to actively manage bias and conflict of interest due to the (mis)perception that they are less likely to be data driven

	Yes	No	It depends (please

In some cases, the sponsor will not ensure full expression of multiple points of view or are locked into some "buddy system" in which they feed off of each other.

			explain)
Industry	0	1	0
Government	0	0	1
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0
Science organization (e.g., National Academy of Science)	0	1	0
Independent third party	0	1	0

Question 2.16 *(ID: 3523)*

How often have you ever observed or experienced external public pressures (criticism in trade press or internet; e.g., blogs, etc.) as a result of your participation in a science panel and/or as a result of your opinions within a science panel? If so, who exerted pressure?

	Never	Rarely	Sometimes	Often	Total
Government/administration	**64.71%** 44	**13.24%** 9	**17.65%** 12	**4.41%** 3	68
Industry representative	**64.71%** 44	**23.53%** 16	**11.76%** 8	**0.00%** 0	68
Media/press	**62.32%** 43	**13.04%** 9	**14.49%** 10	**10.14%** 7	69
NGO (Nongovernmental organization)	**65.22%** 45	**17.39%** 12	**11.59%** 8	**5.80%** 4	69
Panel sponsor	**71.01%** 49	**14.49%** 10	**13.04%** 9	**1.45%** 1	69
Your employer (specify type)	**81.54%** 53	**7.69%** 5	**10.77%** 7	**0.00%** 0	65
Other (please specify)	**78.13%** 25	**9.38%** 3	**12.50%** 4	**0.00%** 0	32

Answer Explanations 15

ANSWER

EXPLANATION

	Never	Rarely	Sometimes	Often
Government/administration	0	0	0	1
Industry representative	1	0	0	0
Media/press	1	0	0	0
NGO (Nongovernmental organization)	1	0	0	0
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)				

At CTNBio.

	Never	Rarely	Sometimes	Often
Government/administration	0	0	0	1
Industry representative	0	1	0	0
Media/press	0	0	0	1
NGO (Nongovernmental organization)	0	0	0	1
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)				

working in a committee that analyzes GMOs

	Never	Rarely	Sometimes	Often
Government/administration	1	0	0	0
Industry representative	1	0	0	0
Media/press	1	0	0	0
NGO (Nongovernmental organization)	0	1	0	0
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)	1	0	0	0

My comment would be that I tend to ignore it the few times this has come up in the past 30 years or so I expect because I am usually defending government or cognizant authority views. I do take the time to be patient with the activist on the other end of the line so to speak which takes time but attempts to be respectful.

	Never	Rarely	Sometimes	Often
Government/administration	0	0	1	0
Industry representative	1	0	0	0
Media/press	0	0	1	0
NGO (Nongovernmental organization)	1	0	0	0
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)				

Accusation s of bias and criticism for involvement in aspartame reviews

	Never	Rarely	Sometimes	Often
Government/administration	0	1	0	0

university/ institute

Industry representative	0	1	0	0
Media/press	0	1	0	0
NGO (Nongovernmental organization)	0	1	0	0
Panel sponsor	0	0	1	0
Your employer (specify type)	0	0	1	0
Other (please specify)	1	0	0	0

	Never	Rarely	Sometimes	Often
Government/administration	1	0	0	0
Industry representative	1	0	0	0
Media/press	1	0	0	0
NGO (Nongovernmental organization)	1	0	0	0
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)	1	0	0	0

NIH panels are sworn to secrecy.

	Never	Rarely	Sometimes	Often
Government/administration	0	1	0	0
Industry representative	0	1	0	0
Media/press	1	0	0	0
NGO (Nongovernmental organization)	1	0	0	0
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)	0	1	0	0

My answer is not specific to my participation, because, as noted, I have rarely "participated" but rather observed, managed, etc. One such instance was in a 9/11 panel which I assisted EPA's Region 2 (NYC) to conduct. It met monthly in the 2004-2006 time frame, and the biggest detractors were the public who had no issue with disrupting the public meetings.

	Never	Rarely	Sometimes	Often
Government/administration	1	0	0	0
Industry representative	0	1	0	0
Media/press	1	0	0	0
NGO (Nongovernmental organization)	1	0	0	0
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)	1	0	0	0

When I was involved with a report on mercury in fish attributed to coal-fired utility boilers, there was pressure both from energy industries as well as from commercial fishing groups.

	Never	Rarely	Sometimes	Often
Government/administration				
Industry representative				
Media/press				
NGO (Nongovernmental organization)				
Panel sponsor				
Your employer (specify type)				
Other (please specify)				

This two-part question cannot be answered in the format provided.

	Never	Rarely	Sometimes	Often
Government/administration	0	1	0	0
Industry representative	1	0	0	0
Media/press	0	1	0	0
NGO (Nongovernmental organization)	1	0	0	0
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)	0	1	0	0

Colleagues with a contrary viewpoint

	Never	Rarely	Sometimes	Often
Government/administration	0	1	0	0
Industry representative				
Media/press	0	1	0	0
NGO (Nongovernmental organization)	0	0	1	0
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)				

I personally (i.e., by name) have never experienced public pressure from any of the above. The process or outcome of a review I have been a participant in has occasionally been critiqued by the government regulators (this was rare and I can only think of a couple occasions), similarly media criticism has been rare and usually limited to questioning the process due to financial compensation of the panelists. For NGO's this is a more mixed bag - a panel's review or opinion may well be criticized if it does not align with the NGO's prior public position on an issue. Good science is not always the purpose of a NGO's stance and this needs to be clearly understood by a panel participant.

	Never	Rarely	Sometimes	Often
Government/administration				
Industry representative				
Media/press				

not applicable

NGO (Nongovernmental organization)				
Panel sponsor				
Your employer (specify type)				
Other (please specify)				

	Never	Rarely	Sometimes	Often
Government/administration	1	0	0	0
Industry representative	1	0	0	0
Media/press	1	0	0	0
NGO (Nongovernmental organization)	1	0	0	0
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)	1	0	0	0

No experience as such

	Never	Rarely	Sometimes	Often
Government/administration				
Industry representative				
Media/press				
NGO (Nongovernmental organization)				
Panel sponsor				
Your employer (specify type)				
Other (please specify)				

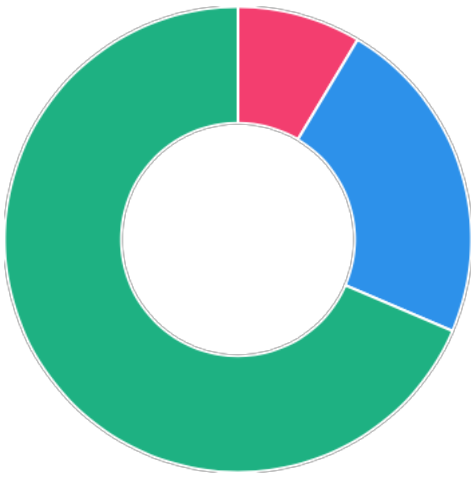
Does not apply.

	Never	Rarely	Sometimes	Often
Government/administration	1	0	0	0
Industry representative	1	0	0	0
Media/press	1	0	0	0
NGO (Nongovernmental organization)	1	0	0	0
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)				

Occasionally, the general public has been hyped on a particular view. In those cases, a little background and explanation of the pertinent facts disarms the pressure.

Question 2.17 *(ID: 3524)*

Have you observed or experienced designs in panel format/process intended to reduce the influence of these external pressures (e.g., blinding, limited access sessions)? If so, were the measures taken successful?



Legend

- Yes; measures taken were NOT successful (please explain): 6 *(9%)*
- Yes; measures taken were successful (please explain): 16 *(23%)*
- No: 48 *(69%)*

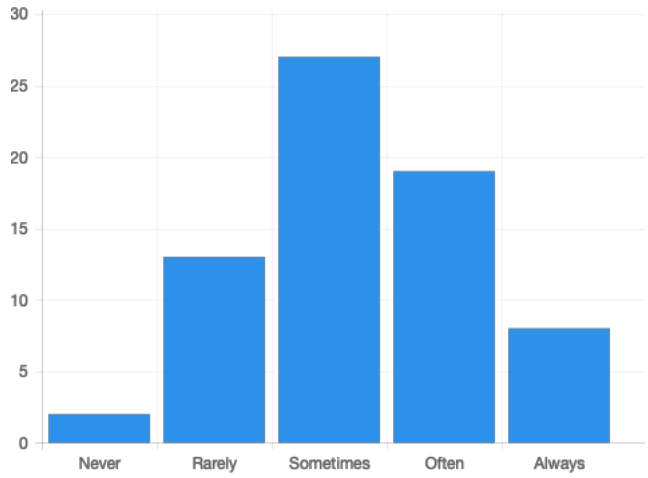
answers: 70
skips: 17

Answer Explanations 15

ANSWER	EXPLANATION
Yes; measures taken were successful (please explain)	Only in the SciPi panel
Yes; measures taken were successful (please explain)	See above!
Yes; measures taken were successful (please explain)	Although some panels I have been on were really controversial meaning that at first both the relevant industry and NGOs were mad, my sense is that staying on the positive and following rules generally works.
Yes; measures taken were NOT successful (please explain)	NAS/NRC committees are under non-disclosure agreements and very sheltered from access and all contacts from outside referred to panel manager
No	no
Yes; measures taken were successful (please explain)	Individuals must note conflict of interest.
No	In EPA, most panels are open and transparent. There are times when we structure review panels to operate behind the scenes, but these were for more esoteric efforts of low interest to the public.
Yes; measures taken were NOT successful (please explain)	I chaired the West Virginia MCHM Elk River spill. TERA suggested an open meeting. West Virginia did not agree, thinking that the public would bias the panel (it would not have done so). The public meeting the next day raised the issue of COI, which was addressed during the panel meeting, but otherwise not viewable by the public.
Yes; measures taken were NOT successful (please explain)	Broad representation by leading experts in scientific areas usually limits the external pressure, but as noted above, with some NGO's the use of scientific panels is rejected as biased simply based on the fact that the panelists were either compensated for their time (hence the opinions were "bought") or that the NGO had not been given a specific place on the panel for their expert to participate. Even using panelists who a NGO had praised in the past was unsuccessful if the outcome did not meet the NGO's expectations. Key to overcoming problem this seems to be a very proactive, public approach to the panel's work by 1) peer-review publication of data, 2) transparency of data and the panel's composition and expertise with regulatory agencies (in advance), and 3) an external relations approach to sharing information with multiple NGOs in order to get a broad consensus as to the approach being taken.
Yes; measures taken were successful (please explain)	Some (portions of) panels are closed to the public, which can help in certain circumstances.
Yes; measures taken were successful (please explain)	Blinding
	not applicable
Yes; measures taken were successful (please explain)	I could recognize that every panel was selected based on his/her expertise.
No	I am really good at spotting your bias, but not so good at accepting my own bias.
Yes; measures taken were successful (please explain)	Again, simple, intuitive best practices were followed.

Question 2.18 *(ID: 3525)*

In your experience, how often are underlying raw data for the most critical studies made available to those who peer review a regulatory risk assessment?



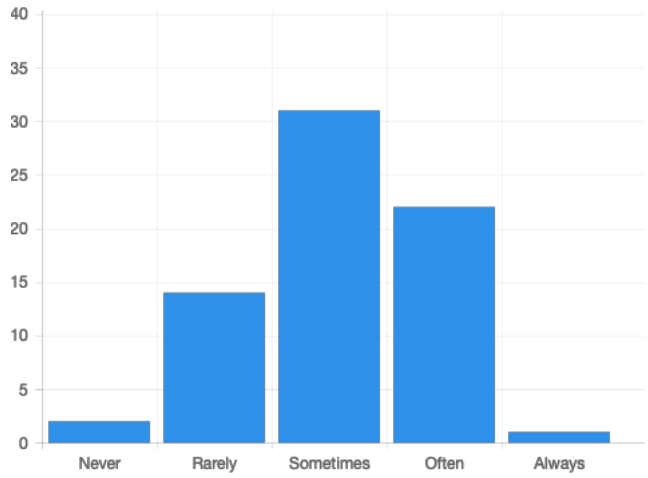
Legend

answers: 69

skips: 18

Question 2.19 *(ID: 3526)*

How often do current peer review processes provide sufficient opportunity for input from all interested stakeholders on the charge questions assigned to a government sponsored peer review panel?



Legend

answers: 70

skips: 17

Question 3.1 *(ID: 3527)*

Is it a good idea for regulatory agencies to exclude qualified scientists with industry funding (e.g., EFSA) or grant recipients (e.g., EPA) from serving on science panels?

	Yes	No	Sometimes (please explain)	Total
Exclude industry conflicts of interest	**35.29%** 24	**45.59%** 31	**19.12%** 13	68
Exclude grant conflicts of interest	**38.24%** 26	**48.53%** 33	**13.24%** 9	68
Exclude other (please explain)	**31.43%** 11	**57.14%** 20	**11.43%** 4	35

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ANSWER	EXPLANATION
Exclude industry conflicts of interest: 0 / 0 / 1 Exclude grant conflicts of interest: 1 / 0 / 0 Exclude other (please explain):	Commonly in NIH study sections reciprocal funding occurs. One person funds a buddy and the buddy funds the first person. Or other favors are traded---One person on the editorial board will approve a manuscript that has been rejected many times in exchange for person one getting a grant funded. If grant recipients were excluded from serving on panels part of this would stop.
Exclude industry conflicts of interest: 0 / 1 / 0 Exclude grant conflicts of interest: 0 / 1 / 0 Exclude other (please explain): 0 / 1 / 0	It should not be assumed that just because a scientist is employed by a government agency or industry that they are somehow automatically bias. Many scientists are employed in industry, academia, as well at the government at some point in their career. It does not necessarily affect their point of view or bias them.
Exclude industry conflicts of interest: 1 / 0 / 0 Exclude grant conflicts of interest: 1 / 0 / 0 Exclude other (please explain): 1 / 0 / 0	Exclude all possibly biased scientists
Exclude industry conflicts of interest: 0 / 1 / 0 Exclude grant conflicts of interest: 0 / 1 / 0 Exclude other (please explain):	There are other ways for preventing biases then to exclude experts in the field based on a presumption of bias based on their affiliations.
Exclude industry conflicts of interest: 0 / 1 / 0 Exclude grant conflicts of interest: 0 / 1 / 0 Exclude other (please explain): 0 / 1 / 0	This strongly depends on the expertise and personality of these scientist. If these scientist providing leading edge insights and have a strong unbiased personal record it is wise to include them.
Exclude industry conflicts of interest: 1 / 0 / 0 Exclude grant conflicts of interest: 1 / 0 / 0 Exclude other (please explain): 1 / 0 / 0	Also exclude those who have their interest of any kind
Exclude industry conflicts of interest: 0 / 0 / 1 Exclude grant conflicts of interest: 0 / 0 / 1 Exclude other (please explain):	Removing the conflict of interest ensures that no one is getting an unfair advantage or that a competitor is being left out.
Exclude industry conflicts of interest: 0 / 0 / 1 Exclude grant conflicts of interest: 0 / 0 / 1 Exclude other (please explain): 1 / 0 / 0	At least on my side of the ocean, the issue is the credibility of the science and scientist which I think is clear. I think it matters a lot if e.g. an industry scientist has testified on an issue that needs to be re-examined, that is a reason to bar him or her. On the grant issue, at least at face value, if the grant goes to the university and does not involve personal compensation and what is being considered has been credibly published, and considering the science and the scientist issue, there should not be a barrier. I am not enthusiastic about people from consulting companies which is a prejudice but I just don't know how I could defend such participation to someone in the local coffee shop.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	0	1
Exclude grant conflicts of interest	0	0	1
Exclude other (please explain)			

only exclude based on clear funding or employment conflicts of interest for the particular review, not how they are otherwise funded

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	1	0
Exclude grant conflicts of interest	0	1	0
Exclude other (please explain)			

Exclusion is not the best procedure. Disclosure of conflic of interest (grants, industry support) is vital

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	1	0	0
Exclude grant conflicts of interest	1	0	0
Exclude other (please explain)			

Industry members ok

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	1	0	0
Exclude grant conflicts of interest	1	0	0
Exclude other (please explain)			

It is a good idea to exclude when there is a conflict of interest, but in the example of EFSA anyone with industry links is excluded from all panels regardless of whether they have a conflicted with the subject being reviewed or not!!

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	1	0
Exclude grant conflicts of interest	0	1	0
Exclude other (please explain)	0	1	0

no

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	1	0	0
Exclude grant conflicts of interest	1	0	0
Exclude other (please explain)	1	0	0

If there is clearly a defined conflict of interest, it is a good idea to exclude anyone.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	0	1
Exclude grant conflicts of interest	0	0	1
Exclude other (please explain)	0	0	1

Most of the time it's not good form to exclude highly qualified individuals from panels because of their affiliation.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	0	1
Exclude grant conflicts of interest	0	1	0
Exclude other (please explain)	0	1	0

Industry expert should be allowed to present their data and views, but not participate in fina decision by panel (cf EMA process)

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	1	0
Exclude grant conflicts of interest	0	1	0
Exclude other (please explain)	0	1	0

Balance pf perspectives and exclusion of scientists are not the same thing.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	0	1
Exclude grant conflicts of interest	0	0	1
Exclude other (please explain)	0	0	1

COI is different from bias. Exclude COI, unless the expert is critical to the discussion, but balance the biases.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	0	1
Exclude grant conflicts of interest	0	0	1
Exclude other (please explain)	0	0	1

Any potential or existing conflicts of interest should be disclosed to the meeting attendees and in any reports of the session.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	0	1
Exclude grant conflicts of interest	0	0	1
Exclude other (please explain)			

In general, industry helps to fund many studies and is actively encouraged by governments and academia to do so. Thus, the simple fact of industry funding should be identified, but not necessarily a basis for exclusion. Exclusion should only be based on whether the scientist would gain significant additional, personal monetary gain based on the outcome of the regulatory agency's decision. Regarding grant participants, generally these should not be viewed as disqualifying a scientist. Grant recipients are probably the best experts on their topics and are usually at the current cutting edge of the science. Very rarely should a grant

recipient be excluded unless a very specific conflict of interest is identified - and while this might occur, I cannot think of a situation that I think would justify excluding a grant recipient.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	1	0
Exclude grant conflicts of interest	0	1	0
Exclude other (please explain)	0	1	0

No scientist with appropriate expertise should be excluded. It might be appropriate to exclude an individual from a vote, but not from the deliberations.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	1	0
Exclude grant conflicts of interest	0	1	0
Exclude other (please explain)			

this question implicitly discredits scientists who are funded by industry - the type of funding should not determine the credibility of any scientist. Every scientist should be assumed to have an ethical commitment to sound science. Anyone may be biased by its working surroundings, but this is valid for scientists from academia, government and industry (eg no one is totally unbiased)

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	1	0	0
Exclude grant conflicts of interest	1	0	0
Exclude other (please explain)	1	0	0

Any conflict of interest should be declared

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	1	0
Exclude grant conflicts of interest	0	1	0
Exclude other (please explain)	0	1	0

All should participate as long as stakeholders representation is well balanced and individual interests clearly stated up front

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	1	0
Exclude grant conflicts of interest	0	1	0
Exclude other (please explain)	1	0	0

The scientists with greatest expertise are also those who would be excluded. The greatest conflict of interest i have encountered is ideological and active membership of organisations such as Greenpeace and Friends of the Earth has invariably indicated a lack of open mindedness, scientific expertise and willingness to engage in good faith

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	0	1
Exclude grant conflicts of interest	0	0	1
Exclude other (please explain)			

It depends on each particular case and the level of conflict of interest.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	1	0
Exclude grant conflicts of interest	0	0	1
Exclude other (please explain)	0	0	1

Exclusion on the basis on anything besides veracity is an opening to a failed panel. Getting not just good scientists based on past achievements, but those who can truly address the issues because of their current knowledge of the critical issues should be the first criteria for selection on a panel.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	0	1
Exclude grant conflicts of interest	0	1	0
Exclude other (please explain)			

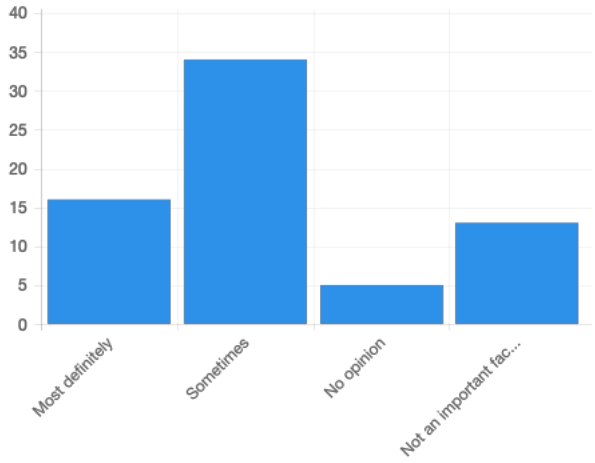
If the panel is expected to review the data on a specific compound or product, scientists who work for the company that manufactures the product should not participate because their objectivity would be questioned.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	1	0	0
Exclude grant conflicts of interest	1	0	0
Exclude other (please explain)	1	0	0

In all cases, opinions expressed including important subjective components. Therefore, in all cases, there are compelling arguments against panelists having real or perceived COIs. "Perceived" COIs are important for the credibility of the panel findings, apart from how real the effects of the COIs actually are.

Question 3.2 *(ID: 3528)*

In your opinion, does sector of employment generally impact an expert's scientific perspective?



Legend

Most definitely: 16
Sometimes: 34
No opinion: 5
Not an important factor: 13

answers: 68
skips: 19

Answer Explanations 19

ANSWER	EXPLANATION
Sometimes	While sometimes this can be a factor, it certainly is not always the case.
Sometimes	Any opinion rendered has to be grounded in sound science and well documented. I believe public scrutiny would keep most of the special interests in check. Although there will always be those who will propose ideas or in line with their own interests.
Most definitely	Very evident in EPA panels
Most definitely	Industry view is different from academic view.
Sometimes	Internal, or confidential information, can absolutely influence what you know to be true.
Most definitely	Mostly, government scientists stay in their lane and know what the job is. See my above comment about training and calibration.
Not an important factor	No it is quite possible to give an independent opinion on a panel regardless of ones employment!
Sometimes	sometimes it can
Sometimes	An employee from a tobacco company may not always be truthful about the danger of cigarette smoking.
Sometimes	It's realistic to expect someone with an employment bias (like myself) to closely examine the assumptions and parameter assignments within an exposure/risk assessment to see if they can lead to results leaning in one direction or the other.
Sometimes	Often there are organizational policies which could color a person's viewpoint. Often people indicate they are speaking independt of policy.
Most definitely	Yes, whether an individual is in industry, academia, government, or NGO definitely does impact and expert's perspective - though usually not in an adverse manner. Clearly and individual with extensive experience in industry will be fairly conscious of the costs of studies and tends to think more in a manner of what is needed for "clearance". Similarly a government scientist often thinks more of the many critics of their actions (Congress, NGO, media, etc.) and tend to be somewhat more conservative and demanding of clear cut results from a study. Academics can fall very much along a continuum but usually are looking for research opportunities and where can more work be done versus a "this is sufficient" attitude. NGO's also, by virtue of their reason for existing, have specific goals and targets that they wish to achieve (actually somewhat similar to industry scientists. Often, NGO work is less well funded and/or has been given less broad input. That said, all of these outlooks are valid and a good outcome generally reflects good input from all of these sources.
Sometimes	Of course a scientists working environment can impact their perspective, this can affect their critical evaluation of research data (everything from it's reliability to it's interpretation & importance)
Sometimes	While most think about the impact of working for industry, there is insufficient recognition that some regulatory scientists may not have an understanding of the implications/consequences of their work, so default to a precautionary principle even when data are available to support a more rigorous scientific approach.
Not an important factor	should not be a factor at all. A scientist is a scientist - we all have been trained in academia and received a degree that qualified us as scientists
Sometimes	Some industry or government agencies may impact

Most definitely	Not 100% but usually yes.
Not an important factor	Consider global warming. Everyone knows that the climate of the earth has gone from ice ages to heat waves that have occurred before man was prominent on the earth. EPA cannot issue an injunction against a volcano for spewing mega tons carbon dioxide into the atmosphere. It is not trying to stop a warming phase that the earth is in, but how best to deal with the effects of warming.
Most definitely	Each sector has a set of expressed and unexpressed (or even unrecognized) sets of assumptions. The best you can hope for is a balance of sectors represented.

Question 3.3 *(ID: 3529)*

How important are the following factors in guiding panel selection?

	1- not important	2	3	4	5- very important	Total
Subjective factors (perception as a 'good' reviewer, personal knowledge)	4.62% 3	12.31% 8	15.38% 10	30.77% 20	36.92% 24	65
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	1.54% 1	6.15% 4	13.85% 9	32.31% 21	46.15% 30	65
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	7.58% 5	15.15% 10	30.30% 20	18.18% 12	28.79% 19	66
Panel balance on science issue(s)	3.13% 2	3.13% 2	23.44% 15	35.94% 23	34.38% 22	64
Others (please specify)	31.25% 5	6.25% 1	18.75% 3	25.00% 4	18.75% 3	16

Answer Explanations 15

ANSWER

EXPLANATION

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	0	0	1
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	0	1
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	0	1	0
Panel balance on science issue(s)	0	0	0	0	1
Others (please specify)	0	0	0	1	0

The consideration of balance in panel diversity will depend upon the subjects concerned in the discussion

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	0	0	1
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	1	0	0	0
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	1	0	0	0
Panel balance on science issue(s)	0	0	0	0	1
Others (please specify)	0	0	1	0	0

Speaking the same language, or a good command of the same language.

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	0	0	1
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	0	1
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	1	0	0
Panel balance on science issue(s)	0	0	1	0	0
Others (please specify)	1	0	0	0	0

Subjective factors based on evidence.

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)					
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)					
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)					
Panel balance on science issue(s)					
Others (please specify)					

Panel balance on science issues

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	1	0	0
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	1	0
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	0	1	0
Panel balance on science issue(s)	0	0	1	0	0
Others (please specify)					

Panel members need to be diversified to get the most unbiased decisions.

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	0	1	0
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	1	0
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	1	0	0	0
Panel balance on science issue(s)	0	0	0	1	0
Others (please specify)					

If is fair to consider one's past experience with individuals when composing a panel, as well as the experience of others you may trust - "subjectivity" is reasonable in my opinion. Good reviewers often have "objective" factors in their favor as well. For science, I think it is less important to balance with regard to demographic factors.

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	0	1	0
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	0	1
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	1	0	0
Panel balance on science issue(s)	0	0	0	1	0
Others (please specify)	0	0	0	1	0

Other: A good panel member has to be willing to listen to others and change their initial opinion, but able to stand on their own opinion if they think it is correct.

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	1	0	0	0
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	0	1
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	0	0	1
Panel balance on science issue(s)	0	0	0	1	0
Others (please specify)	0	0	0	1	0

Contextual awareness of the objective of the panel assignment or responsibility. Polite yet candid appraisal of the information presented.

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	0	1	0
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	0	1
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	0	0	1
Panel balance on science issue(s)	0	0	1	0	0
Others (please specify)	0	0	0	0	1

Obviously knowledge/expertise in an area is a core criteria as are demographic factors (which bring in other experiences and knowledge which while pertinent may not be directly reflected in a CV). Balance on science issues is good, but expertise and demographic diversity are more pertinent - good science should outweigh opinions on an issue. Other important factors are the personality of the panelist: panelists who dominate a discussion or dismiss other views are usually not helpful, nor are panelists who while experts give an appearance of being on the panel solely due to compensation. Conflict of interest areas are also key to identify in panel selection.

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)					
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)					
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)					
Panel balance on science issue(s)					
Others (please specify)					

Objective factors, panel diversity, and panel balance on science issues.

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	0	1	0
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	1	0
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	0	0	1
Panel balance on science issue(s)	0	0	0	1	0
Others (please specify)	0	0	0	0	1

balance sector of employment

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	0	0	1
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	1	0
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	0	0	1
Panel balance on science issue(s)	0	0	0	1	0
Others (please specify)	0	0	0	0	1

Representing all stakeholders

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	0	1	0
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	1	0	0	0
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	1	0	0
Panel balance on science issue(s)	0	0	0	0	1
Others (please specify)					

Some of the best reviewers will have less papers or years of experience but more knowledge and quality of experience. A smart and actively engaged regulatory reviewer will work through the full toxicology package of 5 new chemicals in a year and get a better grasp of normal variability in animal studies than a researcher working for 10 years. for example. Quality in review has a lot to do with the mindset of the reviewer in addition to specific knowledge

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	0	1	0
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	1	0	0
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	0	1	0
Panel balance on science issue(s)	0	0	0	1	0
Others (please specify)					

Many resumes contain listings of publications but do not provide how much input was contributed to the project. For instance a pathologist or statistician may be listed in 100 publications without any knowledge of the trouble involved in generating the data or precautions for exposure to workers of the public.

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	0	0	1
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	0	1
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	1	0	0	0
Panel balance on science issue(s)	0	0	0	0	1
Others (please specify)					

I quit. I don't have time to engage in your research any further than I already have. This survey bodes ill for your project. I'll hit "Submit" and be done.

Question 3.4 *(ID: 3530)*

If you rated 'panel balance on science issues' important from the previous question, how do you determine individual panelists opinions on science issues and does the panel composition need to be representative of the underlying scientific community?

user-250140

> It is always quite important to consider the opinions of stakeholders in many subjects, howevr there should be discretion with respect to scientific judgment and also with conflicts of interest

slakhan

> Publications, survey before hand, call before, etc.

user-882135

> incomprehensible question

user-218578

> by analyzing the CV.

user-682356

> i would develop a questionnaire that would determine the opinions from the pool of panel experts. Yes, the compensation does need to represent the scientific community

user-583854

> There is a pervasive view by governmental employees to try and dominate discussion in support of their bias toward a particular outcome, usually regulatory.

user-971376

> Scientific relevance and answer to research questions.

user-360126

> Panel should be balanced on science issues as it will diversify the opinion and minimizes the effect of monopolizing on the opinion on the scientific discussion

user-202825

> They should be identical when it comes to topics in which the panelists discuss public health issues

cc3951

> The people putting the panel together should either personally know the individuals and their stance, or have publication backing as to where they would likely fall in the debate.

user-915125

> It is not always possible to determine individual panelists opinions, but we may have an idea through their area of expertise, publications, interviews, etc.

user-795046

> see above

user-483354

> Yes

user-781647

> In selecting the composition it hard to address this (unless one has prior knowledge of the panellists) except maybe be using the baseline assumption that a balance will be achieved by having a broad base of appropriate scientific backgrounds

SandraPerezRial

> via participation in social networks

user-236490

> I don't try to determine opinions on previous science issues, unless they directly pertained to the subject that is being discussed.

user-935881

> Panelists opinions are based on their previous writings, their affiliation, and any personal knowledge one may have on them. It is beneficial for the panel to be composed of scientists whose opinions and writings span the range of the germane issues in the review.

user-280873

> Panel needs scientific experts covering all areas of importance for charge question

user-24419

> I think it would be impossible to ensure that the panel is statistically representative of the scientific community. Preponderance of opinion is a moving target.

user-960199

One read's their papers and presentations on the topic of interest. The panel composition needs to address the problem formulation. balance is secondary.

user-313910

The panel should be comprised of well know unbiased fair minded scientist and policy makers. This can be assessed by their past behavior and positions.

user-368866

Only in cases where you know the involved persons well, you can judge on their scientific viewpoints. The panel can usually not represent the entire scientific community.

sab2x

I rated panel balance as of more minor importance. If there is true divergence of opinion on a scientific issue, then yes, panel composition should reflect this and have experts in "both areas" of thinking. While a panel needs to be open to unusual or conflicting opinions, creating a panel simply to reflect differences of opinion risks losing quality of expertise. In short, if seeking the individual's opinions on an issue, they need to be grounded on good science, not gut feels or prevailing opinions.

user-152430

Based on scientific expertise relevant to the question at hand.

user-930056

Generally determined from publication records.

user-550063

Yes. The panel composition is like a "sample" of relevant scientific community

user-243913

Absolutely. One sees their publications and experience and only then invites them to serve on panel.

user-199556

Publications, presentations at conferences, personal knowledge (direct or indirect), affiliation, resume

goldfish

My idea is that which sectors of employment, which type of opinion are matter. As I mentioned above, what will be discussed and how these discussion process will be used in panel organizer/public are valuable. I think a final decision of panel is often biased by who are there since they are specific small numbers of people.

BC007

If there is genuine scientific debate on an issue there needs to be experts from the various sides of the debate. A more common issue is that a particular topic will require a multidisciplinary approach. In these cases it is important to not only cover the different disciplines but also to ensure there are good cross discipline experts that can translate issues across discipline boundaries. for example - in toxicology there is often a need for epidemiologists and animal toxicologists in a discussion. Each discipline may be well represented for expertise but there needs to be someone who can cross the boundary and persue questions such as if the animal study shows X but an epi study in Y number of subjects does not detect X does the animal study over predict for humans (ie the animal is more sensitive to effect X). Even if the epi is non definitive what does the lack of a signal in a certain group size tell us about the uncertainty direction in the animal studies. This cross disciplinary feedback allows null results in one area to inform considerations in another if manged well.

rchiesa

It should be representative.

user-424155

If each scientist is known in a particular that should provide some basis for selection. Just do not ask academics for recommendations for industry representatives or vice versa. The farther the person is from a specific field of study, the less likely they will provide pertinent solutions to the problem at hand. Find the company that's setting the standards for a given issue and chose their best scientist. The same is true of academics, get the person that leading the research in the area.

user-618938

yes the panel composition need to be representative of the underlying scientific community

user-750802

The panel organizer should ask the panel candidates if they have a bias related to the topic under review. For example, if the panel is reviewing the safety of an approved drug, the panel organizer may exclude scientists who think that the FDA approves too many unsafe drugs.

user-347440

Publications, opinions regarding science issues

Question 3.5 *(ID: 3531)*

Please rate the importance of the following potential conflicts of interest as a reason for suspecting bias amongst a science panelist.

	1 - low	2	3	4	5 - high	Total
Having ever received funding on the topic (regardless of funding source)	22.22% 14	23.81% 15	26.98% 17	17.46% 11	9.52% 6	63
Having received funding from industry on the topic	15.87% 10	20.63% 13	28.57% 18	19.05% 12	15.87% 10	63
Having received funding from a regulatory agency	20.63% 13	23.81% 15	33.33% 21	14.29% 9	7.94% 5	63
Owning stock in a company that the topic could potentially impact	6.35% 4	11.11% 7	17.46% 11	20.63% 13	44.44% 28	63
Having testified on the subject matter on behalf of a public citizen	12.90% 8	20.97% 13	29.03% 18	14.52% 9	22.58% 14	62
Having testified on the subject matter on behalf of a company/industry/government agency	11.48% 7	16.39% 10	27.87% 17	18.03% 11	26.23% 16	61
Being employed by organization that could be impacted by the subject matter discussed.	7.94% 5	9.52% 6	26.98% 17	23.81% 15	31.75% 20	63
Others? (please specify)	42.86% 6	7.14% 1	28.57% 4	7.14% 1	14.29% 2	14

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ANSWER

EXPLANATION

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	0	1	0	0	0
Having received funding from industry on the topic	1	0	0	0	0
Having received funding from a regulatory agency	0	1	0	0	0
Owning stock in a company that the topic could potentially impact	1	0	0	0	0
Having testified on the subject matter on behalf of a public citizen	0	1	0	0	0
Having testified on the subject matter on behalf of a company/industry/government agency	0	1	0	0	0
Being employed by organization that could be impacted by the subject matter discussed.	0	0	0	1	0
Others? (please specify)	0	0	1	0	0

It is difficult to exclude influnce from scientists of industries or any affliations

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	0	1	0	0	0
Having received funding from industry on the topic	0	1	0	0	0
Having received funding from a regulatory agency	0	1	0	0	0
Owning stock in a company that the topic could potentially impact	0	0	0	0	1
Having testified on the subject matter on behalf of a public citizen	0	0	1	0	0
Having testified on the subject matter on behalf of a company/industry/government agency					
Being employed by organization that could be impacted by the subject matter discussed.	0	0	1	0	0
Others? (please specify)					

I don't think any of these necessarily disqualify a potential applicant. If a decision impacts an individual financially, then I would be worried about intentional bias.

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	1	0	0	0	0
Having received funding from industry on the topic	0	0	1	0	0
Having received funding from a regulatory agency	1	0	0	0	0
Owning stock in a company that the topic could potentially impact	0	0	0	0	1
Having testified on the subject matter on behalf of a public citizen	0	0	0	0	1
Having testified on the subject matter on behalf of a company/industry/government agency	0	0	0	0	1
Being employed by organization that could be impacted by the subject matter discussed.	0	0	0	0	1
Others? (please specify)	1	0	0	0	0

COI for Environmental Defence is the same as COI for e.g. big pharma what not

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	0	1	0	0	0
Having received funding from industry on the topic	0	1	0	0	0
Having received funding from a regulatory agency	0	1	0	0	0
Owning stock in a company that the topic could potentially impact	0	0	0	0	1
Having testified on the subject matter on behalf of a public citizen	0	1	0	0	0
Having testified on the subject matter on behalf of a company/industry/government agency	0	1	0	0	0
Being employed by organization that could be impacted by the subject matter discussed.	0	0	0	0	1

The marks of "2" for most of these items is based on the phrase "it depends."

Others? (please specify)					

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	1	0	0	0	0
Having received funding from industry on the topic	1	0	0	0	0
Having received funding from a regulatory agency	1	0	0	0	0
Owning stock in a company that the topic could potentially impact	0	0	1	0	0
Having testified on the subject matter on behalf of a public citizen	1	0	0	0	0
Having testified on the subject matter on behalf of a company/industry/government agency	1	0	0	0	0
Being employed by organization that could be impacted by the subject matter discussed.	0	0	1	0	0
Others? (please specify)	0	0	1	0	0

Possible personal gain from participation by providing a desired viewpoint

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	1	0	0	0	0
Having received funding from industry on the topic	1	0	0	0	0
Having received funding from a regulatory agency	1	0	0	0	0
Owning stock in a company that the topic could potentially impact	0	0	0	0	1
Having testified on the subject matter on behalf of a public citizen	0	0	1	0	0
Having testified on the subject matter on behalf of a company/industry/government agency	0	0	1	0	0
Being employed by organization that could be impacted by the subject matter discussed.	0	0	0	0	1
Others? (please specify)					

To me, the funding question is not significant as long as source of funding is transparent. Someone needs to fund research (industry/government/academia/private) so source not really an issue, simply indicates that their is support for the research being done by that investigator. Big red flag is if the outcome of a panel can have a significant financial impact on the panelist - then the question of owning stock, being employed by an organization impacted, or simply having future funding dependent upon outcome of the panel becomes a high concern for a conflict of interest.

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)					
Having received funding from industry on the topic					
Having received funding from a regulatory agency					
Owning stock in a company that the topic could potentially impact					
Having testified on the subject matter on behalf of a public citizen					
Having testified on the subject matter on behalf of a company/industry/government agency					
Being employed by organization that could be impacted by the subject matter discussed.					
Others? (please specify)					

Owing company stocks or working directly or indirectly for the company.

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	0	0	1	0	0
Having received funding from industry on the topic	0	0	0	1	0
Having received funding from a regulatory agency	0	0	1	0	0
Owning stock in a company that the topic could potentially impact	0	0	0	0	1
Having testified on the subject matter on behalf of a public citizen	0	1	0	0	0
Having testified on the subject matter on behalf of a company/industry/government agency	0	0	0	0	1
Being employed by organization that could be impacted by the subject matter discussed.	0	0	0	1	0
Others? (please specify)	0	0	0	0	1

Employment or active membership in an advocacy organization, PAC, etc.

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	0	1	0	0	0
Having received funding from industry on the topic	0	1	0	0	0
Having received funding from a regulatory agency	0	1	0	0	0
Owning stock in a company that the topic could potentially impact	0	0	0	1	0
Having testified on the subject matter on behalf of a public citizen	0	1	0	0	0
Having testified on the subject matter on behalf of a company/industry/government agency	0	1	0	0	0
Being employed by organization that could be impacted by the subject matter discussed.	0	0	1	0	0
Others? (please specify)					

I don't really like answering this question, even though it asks about "potential" COI. None of these mean there is definitely a COI; all of them could raise a potential COI.

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	1	0	0	0	0
Having received funding from industry on the topic	1	0	0	0	0
Having received funding from a regulatory agency	1	0	0	0	0
Owning stock in a company that the topic could potentially impact	0	1	0	0	0
Having testified on the subject matter on behalf of a public citizen	1	0	0	0	0
Having testified on the subject matter on behalf of a company/industry/government agency	1	0	0	0	0
Being employed by organization that could be impacted by the subject matter discussed.	0	1	0	0	0
Others? (please specify)					

usually the scientists having received funding on the topic, or are employed by an organization impacted by the subject matter have generate the strongest scientific knowledge base on the subject matter

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	0	0	0	0	1
Having received funding from industry on the topic	0	0	0	0	1

I think all could be biased.

Having received funding from a regulatory agency	0	0	0	0	1
Owning stock in a company that the topic could potentially impact	0	0	0	0	1
Having testified on the subject matter on behalf of a public citizen	0	0	0	0	1
Having testified on the subject matter on behalf of a company/industry/government agency	0	0	0	0	1
Being employed by organization that could be impacted by the subject matter discussed.	0	0	0	0	1
Others? (please specify)					

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	0	1	0	0	0
Having received funding from industry on the topic	0	0	1	0	0
Having received funding from a regulatory agency	0	1	0	0	0
Owning stock in a company that the topic could potentially impact	0	1	0	0	0
Having testified on the subject matter on behalf of a public citizen	0	0	0	0	1
Having testified on the subject matter on behalf of a company/industry/government agency	0	0	1	0	0
Being employed by organization that could be impacted by the subject matter discussed.	0	0	1	0	0
Others? (please specify)	0	0	0	0	1

Being a member of or receiving funding from an activist NGO. Collaborating with class action solicitors on cases related to the issue.

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	0	1	0	0	0
Having received funding from industry on the topic	0	0	1	0	0
Having received funding from a regulatory agency	0	1	0	0	0
Owning stock in a company that the topic could potentially impact	1	0	0	0	0
Having testified on the subject matter on behalf of a public citizen	0	0	0	1	0
Having testified on the subject matter on behalf of a company/industry/government agency	0	0	0	1	0
Being employed by organization that could be impacted by the subject matter discussed.	1	0	0	0	0
Others? (please specify)					

Look for current activity, not past success. Get representatives that work or serve in impacted regions. They will know the specific issues at hand. Blue ribbon or not, get the people invested in the problem.

Question 3.6 *(ID: 3532)*

How should expertise be defined?

	1 - not important	2	3 - equivocal	4	5 - vey important	Total
# publications,	0.00% 0	4.76% 3	28.57% 18	25.40% 16	41.27% 26	63
# of first/last author publications	4.69% 3	7.81% 5	25.00% 16	32.81% 21	29.69% 19	64
# of presentations at national/international conferences	9.38% 6	7.81% 5	31.25% 20	25.00% 16	26.56% 17	64
Positions of leadership amongst professional societies	3.13% 2	20.31% 13	28.13% 18	23.44% 15	25.00% 16	64
H-index (link to definition)	4.84% 3	11.29% 7	38.71% 24	24.19% 15	20.97% 13	62
Years of experience	0.00% 0	6.35% 4	25.40% 16	34.92% 22	33.33% 21	63
Published on the specific topic	0.00% 0	0.00% 0	17.46% 11	34.92% 22	47.62% 30	63
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the opportunity to publish)	0.00% 0	7.94% 5	17.46% 11	38.10% 24	36.51% 23	63
Degree (BS vs MS vs PhD vs MD)	1.59% 1	3.17% 2	15.87% 10	33.33% 21	46.03% 29	63
Professional certifications (DABT, ASCP, CIH, etc.)	6.35% 4	15.87% 10	33.33% 21	25.40% 16	19.05% 12	63
Personal knowledge of the person's expertise	4.76% 3	6.35% 4	14.29% 9	33.33% 21	41.27% 26	63
Reputation/Experience on other panels?	6.35% 4	4.76% 3	22.22% 14	36.51% 23	30.16% 19	63
Other (please specify)	42.86% 6	0.00% 0	7.14% 1	14.29% 2	35.71% 5	14

Answer Explanations 11

ANSWER	EXPLANATION

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	0	0	0	1
# of first/last author publications	0	0	0	0	1
# of presentations at national/international conferences	0	0	0	0	1
Positions of leadership amongst professional societies	0	0	0	0	1
H-index (link to definition)	0	0	0	0	1
Years of experience	0	0	0	0	1
Published on the specific topic	0	0	0	0	1
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the opportunity to publish)	0	0	0	0	1
Degree (BS vs MS vs PhD vs MD)	0	0	0	0	1
Professional certifications (DABT, ASCP, CIH, etc.)	0	0	0	0	1
Personal knowledge of the person's expertise	0	0	0	0	1
Reputation/Experience on other panels?	0	0	0	0	1
Other (please specify)	0	0	0	0	1

Any specific experience or degrees may count on his/her merits

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	1	0	0	0
# of first/last author publications	0	0	0	0	1
# of presentations at national/international conferences	0	0	0	1	0
Positions of leadership amongst professional societies	0	0	0	1	0
H-index (link to definition)	0	0	0	1	0
Years of experience	0	0	0	1	0
Published on the specific topic	0	0	0	0	1
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the	0	0	0	1	0

Panel members can also be person without a visible track record e.g. from regulatory agencies.

opportunity to publish)					
Degree (BS vs MS vs PhD vs MD)	0	0	1	0	0
Professional certifications (DABT, ASCP, CIH, etc.)	0	0	1	0	0
Personal knowledge of the person's expertise	0	0	0	1	0
Reputation/Experience on other panels?	0	0	0	0	1
Other (please specify)					

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	1	0	0	0
# of first/last author publications	1	0	0	0	0
# of presentations at national/international conferences	1	0	0	0	0
Positions of leadership amongst professional societies	0	1	0	0	0
H-index (link to definition)	0	0	1	0	0
Years of experience	0	0	1	0	0
Published on the specific topic	0	0	0	1	0
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the opportunity to publish)	0	0	1	0	0
Degree (BS vs MS vs PhD vs MD)	0	0	1	0	0
Professional certifications (DABT, ASCP, CIH, etc.)	0	1	0	0	0
Personal knowledge of the person's expertise	0	0	0	0	1
Reputation/Experience on other panels?	0	0	0	0	1
Other (please specify)	0	0	0	1	0

Other: scientific integrity

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	0	0	0	1
# of first/last author publications	0	0	0	0	1
# of presentations at national/international conferences	0	0	0	0	1
Positions of leadership amongst professional societies	0	0	0	0	1
H-index (link to definition)	1	0	0	0	0
Years of experience	0	0	0	0	1
Published on the specific topic	0	0	0	0	1
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the opportunity to publish)	0	0	1	0	0
Degree (BS vs MS vs PhD vs MD)	0	0	0	0	1
Professional certifications (DABT, ASCP, CIH, etc.)	0	0	0	0	1
Personal knowledge of the person's expertise	0	0	0	0	1
Reputation/Experience on other panels?	0	0	0	0	1
Other (please specify)	1	0	0	0	0

seems obvious

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	0	0	1	0
# of first/last author publications	0	0	0	1	0
# of presentations at national/international conferences	0	0	0	1	0
Positions of leadership amongst professional societies	0	0	1	0	0
H-index (link to definition)	0	0	1	0	0
Years of experience	0	0	0	1	0
Published on the specific topic	0	0	0	1	0
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the opportunity to publish)	0	0	1	0	0
Degree (BS vs MS vs PhD vs MD)	0	0	0	1	0
Professional certifications (DABT, ASCP, CIH, etc.)	0	1	0	0	0
Personal knowledge of the person's expertise	0	0	0	1	0
Reputation/Experience on other panels?	0	0	1	0	0
Other (please specify)	0	0	0	1	0

Having served on grant agency programs, I feel it is important for the panel member to have received at least one competitive grant.

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	0	0	1	0
# of first/last author publications	0	0	0	1	0
# of presentations at national/international conferences	0	0	1	0	0
Positions of leadership amongst professional societies	0	1	0	0	0
H-index (link to definition)	0	1	0	0	0
Years of experience	0	0	1	0	0
Published on the specific topic	0	0	0	1	0
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the	0	0	1	0	0

For # publications, authorship order, etc, the presumption is that the publications are pertinent for the work being reviewed.

opportunity to publish)					
Degree (BS vs MS vs PhD vs MD)	0	0	1	0	0
Professional certifications (DABT, ASCP, CIH, etc.)	0	0	1	0	0
Personal knowledge of the person's expertise	0	0	0	1	0
Reputation/Experience on other panels?	0	0	0	1	0
Other (please specify)					

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	0	0	1	0
# of first/last author publications	0	0	1	0	0
# of presentations at national/international conferences	0	0	1	0	0
Positions of leadership amongst professional societies	0	0	1	0	0
H-index (link to definition)	0	0	1	0	0
Years of experience	0	0	0	1	0
Published on the specific topic	0	0	0	0	1
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the opportunity to publish)	0	0	0	0	1
Degree (BS vs MS vs PhD vs MD)	0	0	0	1	0
Professional certifications (DABT, ASCP, CIH, etc.)	0	0	0	1	0
Personal knowledge of the person's expertise	0	0	0	1	0
Reputation/Experience on other panels?	0	0	0	1	0
Other (please specify)	0	0	0	0	1

If looking at academics in particular, the level and nature of funding obtained via grants/grant proposals, especially NIH funding, is a good marker of expertise and peer recognition. Number of publications and links to publications are not always good predictors as often industry and government scientists have much smaller publication lists due to employer requirements.

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,					
# of first/last author publications					
# of presentations at national/international conferences					
Positions of leadership amongst professional societies					
H-index (link to definition)					
Years of experience					
Published on the specific topic					
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the opportunity to publish)					
Degree (BS vs MS vs PhD vs MD)					
Professional certifications (DABT, ASCP, CIH, etc.)					
Personal knowledge of the person's expertise					
Reputation/Experience on other panels?					
Other (please specify)					

Degrees AND experience.

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	0	0	1	0
# of first/last author publications	0	0	0	0	1
# of presentations at national/international conferences	1	0	0	0	0
Positions of leadership amongst professional societies	0	0	0	1	0
H-index (link to definition)	0	0	0	0	1
Years of experience	0	0	0	1	0
Published on the specific topic	0	0	0	0	1
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the opportunity to publish)	0	0	0	0	1
Degree (BS vs MS vs PhD vs MD)	0	0	1	0	0
Professional certifications (DABT, ASCP, CIH, etc.)	1	0	0	0	0
Personal knowledge of the person's expertise	0	0	0	0	1
Reputation/Experience on other panels?	1	0	0	0	0
Other (please specify)					

Years of experience are important but we should listen from young folks. Reputation might be biased. Personal knowledge (not years) of the discussed topic is quite important. Publications could be a good indicator. # of presentations at conference is not important, however, invitation to many international conferences mean something.

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	0	0	1	0
# of first/last author publications	0	1	0	0	0
# of presentations at national/international conferences	0	0	0	1	0
Positions of leadership amongst professional societies	0	0	1	0	0
H-index (link to definition)	0	0	1	0	0
Years of experience	0	0	0	1	0
Published on the specific topic	0	0	1	0	0
Experience with the specific topic even without a publication history (e.g.,	0	0	0	0	1

Good panels will combine breadth of expertise with depth of expertise. Breadth gives perspective, balance and proportionality, and depth allows pivotal issues to be pursued in detail and resolved. Generally breadth and depth will require different backgrounds and experience

regulator with proven experience on the topic but did not have the opportunity to publish)					
Degree (BS vs MS vs PhD vs MD)	0	0	0	0	1
Professional certifications (DABT, ASCP, CIH, etc.)	0	0	1	0	0
Personal knowledge of the person's expertise	0	0	0	0	1
Reputation/Experience on other panels?	0	0	0	0	1
Other (please specify)	0	0	0	0	1

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	0	1	0	0
# of first/last author publications	0	0	1	0	0
# of presentations at national/international conferences	0	0	1	0	0
Positions of leadership amongst professional societies	0	1	0	0	0
H-index (link to definition)	0	1	0	0	0
Years of experience	0	0	1	0	0
Published on the specific topic	0	0	0	1	0
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the opportunity to publish)	0	0	0	1	0
Degree (BS vs MS vs PhD vs MD)	0	0	1	0	0
Professional certifications (DABT, ASCP, CIH, etc.)	0	0	1	0	0
Personal knowledge of the person's expertise	0	0	0	1	0
Reputation/Experience on other panels?	0	0	1	0	0
Other (please specify)					

The higher one goes in academics or industry, the less time they will commit to the panel. Get as many young guns as you have old guard members.

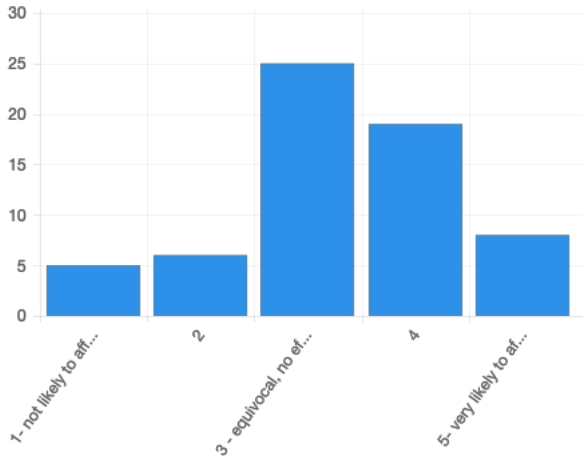
Question 4.1 *(ID: 3533)*

How important is transparency of the panel deliberations and what defines transparency for panel deliberations?

	1-not likely to impact an expert's opinion	2	3-equivocal	4	5-very likely to impact an expert's opinion either positive or negative	Total
Open to public	**11.48%** 7	**9.84%** 6	**24.59%** 15	**36.07%** 22	**18.03%** 11	61
Recorded discussion/debate	**9.84%** 6	**16.39%** 10	**24.59%** 15	**27.87%** 17	**21.31%** 13	61
Documented opinions and recommendations of individual panelists before group deliberations	**9.84%** 6	**8.20%** 5	**22.95%** 14	**40.98%** 25	**18.03%** 11	61
Documented opinions of individual panelists after group deliberations	**9.68%** 6	**8.06%** 5	**27.42%** 17	**32.26%** 20	**22.58%** 14	62

Question 4.2 *(ID: 3534)*

How is knowledge of the sponsor or author of the subject matter topic likely to affect an expert's opinions?



Legend

1- not likely to affect an expert's opinion: 5

2: 6
3 - equivocal, no effect: 25
4: 19
5- very likely to affect an expert's opinion either positive or negative: 8

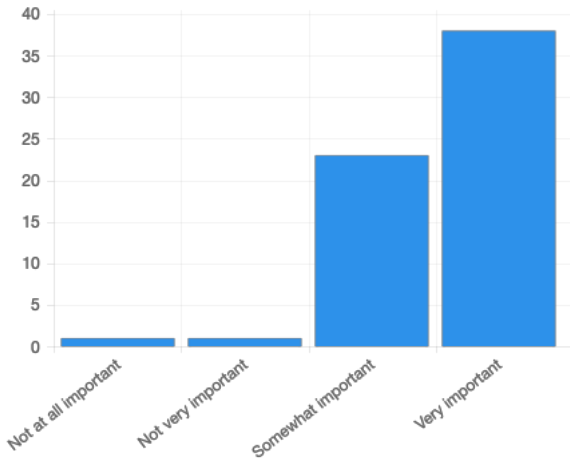
answers: 63
skips: 24

Answer Explanations 11

ANSWER	EXPLANATION
3 - equivocal, no effect	It depends but I see some influnce on the opinions of experts from their agencies or employers
4	should not affect opinion if person is a professional.
1- not likely to affect an expert's opinion	If the expert is unbiased and the setting is not pressuring there should be no impact of the sponsor.
4	It depends.
5- very likely to affect an expert's opinion either positive or negative	I have frequently observed this behaviour (positive and negative!)
4	"knowledge of the sponsor" is much less important than "author of the subject matter". If the author is a recognized expert in the topic area, and I (as a reviewer) am familiar with the breadth and integrity of his/her work, I would go into a review with an expectation that the current work is of equal integrity.
3 - equivocal, no effect	For poorly informed sponsor's experts may feel inclined to educate sponsor
4	Prior opinions of sponsors or authors of the subject matter are very likely to give an expert a preliminary going in expectation (positive or negative). This initial attitude can set a tone for the panel which may need consideration. Good experts are unlikely to be swayed in their final opinion by initial thoughts or knowledge of sponsor, but as indicated can impact tone of at least the initial discussions.
5- very likely to affect an expert's opinion either positive or negative	Prior knowledge pertaining to the scientific and/or personal credibility of a sponsor or author clearly will affect the expert's consideration of evidence/data presented by them
3 - equivocal, no effect	A good reviewer will nt serve on any panel where there is conflict of interest.
3 - equivocal, no effect	They need to be independent thinkers with no strings attached.

Question 4.3 *(ID: 3535)*

How important is it for peer reviewers to have access to underlying raw data for the most critical studies, in order to independently analyze results?



Legend

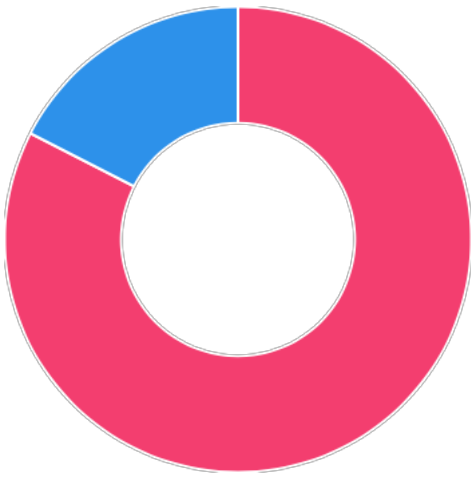
answers: 63
skips: 24

Answer Explanations 12

ANSWER	EXPLANATION
Very important	Close examination of original data is indispensable
Very important	Results could be skewed or analyzed incorrectly.
Somewhat important	This depends on the goal of the review. Moreover, it depends on the wealth of data and the given time slot.
Very important	If asked. My experience is that every time I or one of my colleagues working on a section asked for raw data, the primary author gave over. I should say in one memorable case, I asked the American co-author of data an expert group was considering for clarification and he was not aware his name was on the paper and had no idea what the data were and the other authors refused to provide it.
Somewhat important	It can upon occasion be of importance
Somewhat important	If reviewers think it important to duplicate and/or redo the analysis, than having the data is very important. This is not an expectation of the panel's work, however. Still, knowing all the details of the study (design, analytical chemistry, laboratories involved, etc), seeing how the data was gathered and tabulated, and so on and so forth, could be important.
Somewhat important	Depends on the question and what are the critical studies
Very important	If a reviewer is unable to access the original raw data, then the reviewer is assessing the opinions of others and not the results of the actual studies. The raw data should be available should the peer reviewer have questions about interpretation or numbers. This is a critical point.
Very important	Critical. Knowledge depends on analysis and interpretation of data. These both are subject to bias and error, as is the underlying data.
Very important	I prefer to look at original raw data to ensure the study has not tried to bend their conclusion to support their applications.
Very important	The principle deficiency of the peer review process for published papers is lack of access to raw data. Also the main strength of industry studies is that regulators get every data point for every individual animal or subject in a study enabling a genuine peer review to occur.
Somewhat important	Particularly from non-peer reviewed sources, the data must be available.

Question 4.4 *(ID: 3536)*

Should the criteria for evaluating the quality and reliability of all studies be the same, regardless of their funding source (academia, government, industry, CRO, etc.)?



Legend

Yes: 52 *(83%)*

No: 11 *(17%)*

answers: 63

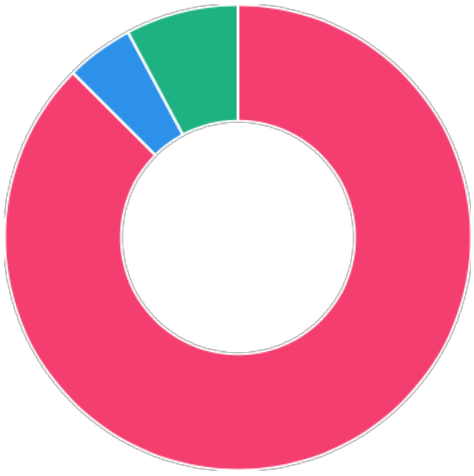
skips: 24

Answer Explanations 8

ANSWER	EXPLANATION
No	There might be some influence from government or industries
Yes	maybe stricter for parties that may have conflicts of interest
No	Criteria change with the goal of a scientific review e.g. criteria for a scientific work for publication differ strongly from review of a company concept.
Yes	respecting some of the comments I made above.
No	I dont think so - different motivations
Yes	Absolutely, no study should get a pass, i.e., easier criteria, simply based on funding source.
Yes	A clear reproducible sets of data are most important, and regardless of funding source any application needs to use carefully planned experiments to support their conclusion.
Yes	The age of the data is not as important as many think. Many great bioassays were conducted prior to GLPs. That should not diminish the value in evaluating the issues at hand.

Question 4.5 *(ID: 3537)*

Should the peer review process be conducted independently of the sponsor of the review material?



Legend

- Yes: 56 *(88%)*
- No: 3 *(5%)*
- Sometimes (please explain): 5 *(8%)*

answers: 64
skips: 23

Answer Explanations 9

ANSWER	EXPLANATION
Yes	Peer review process should be transparent and independent from sponsors of review material.
Sometimes (please explain)	The quality of the material and question can be dependent on the sponsor and the review process can be dependent on this. Also depending on the impact of the outcome on public or private sector...
No	based on q4.4
Yes	This is the desirable situation
Sometimes (please explain)	Depends on the amount of materiala nd the amount of time for the review
No	Often the sponsor can provide key information as to intent of study design, objectives for the overall research program (or a specific study), or many other nuances that are helpful during a review process.
Yes	so there is no avenue for any COI.
Sometimes (please explain)	The sponsor or generator of the material being reviewed should always have the opportunity to provide input to the panel and to respond to specific issues before a review is finalised but the actual review panel is usually best not to include the generator of the material being reviewed
Sometimes (please explain)	If there is any question of the validity of work from a specific author or laboratory, a peer review of the critical publications would be in order.

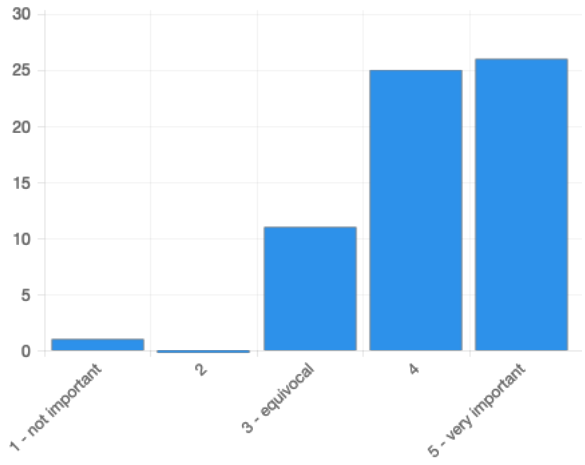
Question 5.1 *(ID: 3538)*

With respect to transparency in reporting, how important are the following?

	1 - not important	2	3 - equivocal	4	5 - very important	Total
Transparency in methods for expert recruiting	0.00% 0	0.00% 0	30.00% 18	35.00% 21	35.00% 21	60
Transparency in methods for expert selection (e.g., definitions of expertise)	0.00% 0	0.00% 0	17.74% 11	37.10% 23	45.16% 28	62
Transparency in methods for managing conflict of interest & bias	1.64% 1	4.92% 3	14.75% 9	32.79% 20	45.90% 28	61
Transparency in the identities of experts engaged	0.00% 0	1.64% 1	24.59% 15	32.79% 20	40.98% 25	61

Question 5.2 *(ID: 3539)*

Some agencies have a show of hands to vote on specific issues (e.g., cancer classification), but may not report the vote tallies, so the degree of consensus cannot be gauged. How important is understanding the degree of consensus amongst the panel?



Legend

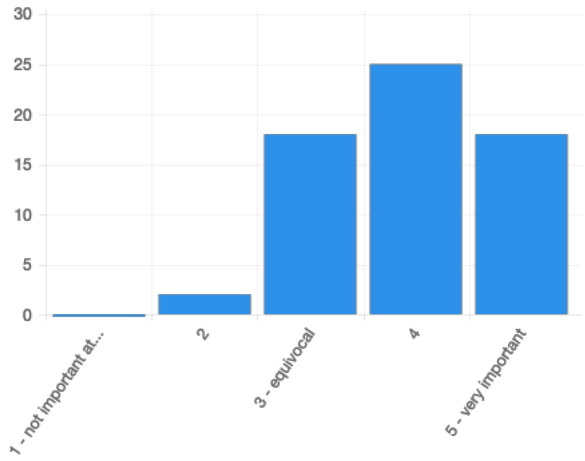
answers: 63
skips: 24

Answer Explanations 12

ANSWER	EXPLANATION
5 - very important	It should better be transparent with regard to degree of consensus.
3 - equivocal	In specific issues it can become very critical e.g. if huge budgets or long-lasting consequences are linked to the issue.
1 - not important	It is important to know whether a vote has taken place. If this has been forced, it means that someone was pretty upset. That said, in the international agencies, on the two times I said we had to vote on an issue, some people got pretty upset but rapidly retreated from the position that was being disputed. Obviously I knew I had the votes. In the case I alluded to above where what I regarded as the majority position was in effect over-ruled by one person, those not familiar with the issue in effect abstained.
4	It has a degree of importance as it gives an indication of confidence of the panel in the decision that has been taken
4	Of course it depends on the specific issue being "voted on", but it can be important if the topic is of importance and the panel is either split or nearly unaminous.
3 - equivocal	My experience is that minority opinions are described when consensus is not reached. This was the experience in my Agency.
5 - very important	Please note well that voting is NOT consensus. Consensus is defined differently by groups, but generally means the opinion of most or all after everyone has been able to speak their minds, or is the opinion that all can live with even thought not all may agree.
5 - very important	Given that there can be multiple interpretations of a given data set, as well as differing depths of knowledge, I think the degree of consensus is a very important marker. Wide disagreement would indicate a very complex issue with multiple possible interpretations which could vary based on a reviewers expertise, background, experience, etc.
5 - very important	Degree of consensus may be considered a surrogate for uncertainty
4	it needs to be very transparent.
5 - very important	For most OECD and WHO panels I have been on full or near full consensus is required for any substantive finding. In many cases an explanation of why a particular issue or classification cannot be resolved is more valuable than a conclusion that lacks consensus
4	You have to keep the bullies in check.

Question 5.3 *(ID: 3540)*

How important is understanding the degree to which individual panelist(s)'s opinion(s) may stand apart (be an outlier) from the rest of the panel?



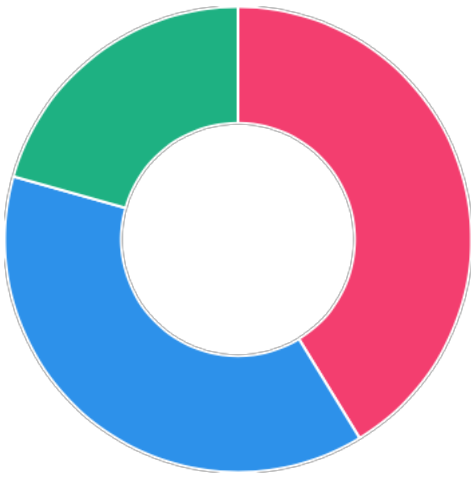
Legend

1 - not important at all: 0
2: 2
3 - equivocal: 18
4: 25
5 - very important: 18

answers: 63
skips: 24

Question 5.4 *(ID: 3541)*

Should the opinion of a panelist known to be an expert in a given scientific area be given more weight than a panelist with less expertise in that given area?



Legend

- Yes: 26 *(41%)*
- No, all experts on panel should be given equal weight: 24 *(38%)*
- It depends (please explain): 13 *(21%)*

answers: 63
skips: 24

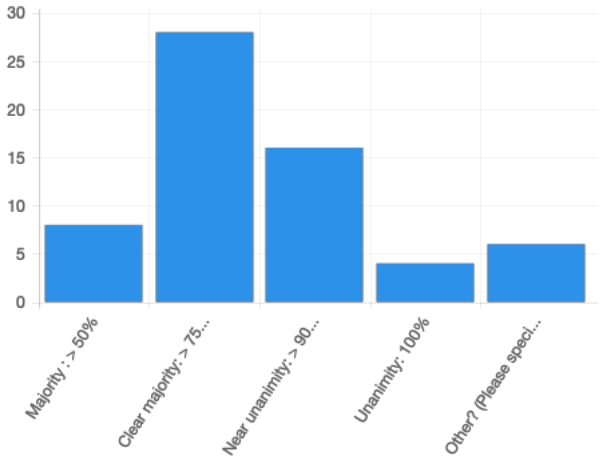
Answer Explanations 17

ANSWER	EXPLANATION
Yes	In scientific assessment, the opinion of panelists of a given scientific area should have weight.
It depends (please explain)	as long as the expert is not biased. Hard to figure that one out
It depends (please explain)	All opinions should be judged against data. If they are not really supported they are not valuable and may be even political.
Yes	if the issue requires scientific understanding this is essential e.g. in a panel for animal experiments a fundamental understanding of legislative, scientific and technical aspects are fundamental.
It depends (please explain)	How do you grade expertise?
It depends (please explain)	Everyone needs to explain their positions. Dr. Lamont's work indicates that panels tend to defer to the person or people in the room with the most knowledge.
It depends (please explain)	In general, all experts have the opportunity for stating opinion, however, for some topics of review, the lack of expertise can be a reason for deferral to those more experienced
It depends (please explain)	it depends. are they conducting a peer review of that topic? if so, then the level of expertise is important.
It depends (please explain)	I have upon occasion observed an entire panels decision being swayed by the strength of character of a panel member who is likely least qualified in terms of expertise! This surely cannot be right?
It depends (please explain)	Naturally if there is a specialized aspect to a given study - say an overall risk assessment that has components of exposure, epidemiology, risk communication, etc - individuals on the panel with more experience in these types of specialized topics should be deferred to as appropriate. In such cases, that individual's opinion should carry more "weight".
It depends (please explain)	This is part of the scientific discussion in the panel. If the panel is convinced, based on scientific discussion, that a conclusion is correct, initial possibly different opinions are of no interest.
It depends (please explain)	on the case and the context
No, all experts on panel should be given equal weight	Presuming a panel has the opportunity to discuss their opinions and questions (either in person or on-line) an expert in a given area should be able to convince his/her colleagues regarding the appropriateness or reasons for their opinion. If an expert from another area is not convinced, this does not mean the other panelist should be given less weight, but rather that the area is complex and/or the discussion has not been focused enough to resolve differences.
Yes	Experts reach that stage after gaining experience over years.
It depends (please explain)	It depends on how the opinions are supported.
It depends (please explain)	A lack of expertise in general does not equate to a lack of understanding of a specific issue. The greatest expert can still be wrong. What is important is the logic and reasoning behind the positions. What evidence/data etc is being offered for the contrary view. In some cases the outlier may simply misunderstand what a particular assay or technique is capable of revealing in which case the expert opinion must prevail. In each case however the issue needs to be explored and the root cause of disagreement identified and resolved.

No, all experts on panel should be given equal weight	An adequate discussion of dissenting points of view must be addressed. This kind of tension in the data is what spurs additional research.

Question 5.5 *(ID: 3542)*

How should consensus be defined? What best matches your definition of consensus?



Legend

Majority : > 50%: 8
Clear majority: > 75%: 28
Near unanimity: > 90%: 16
Unanimity: 100%: 4
Other? (Please specify): 6

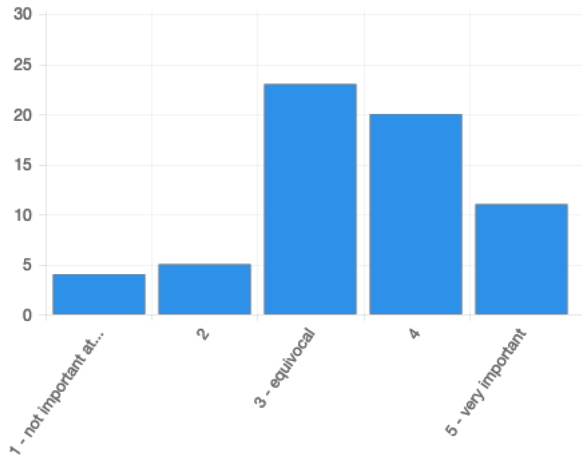
answers: 62
skips: 25

Answer Explanations 16

ANSWER	EXPLANATION
Other? (Please specify)	The definition of consensus can depend upon scientific areas
Unanimity: 100%	Otherwise - the vote should be explained (especially for issues such as carcinogenicity).
Unanimity: 100%	I think that consensus means that everyone discussed the topic and agreed. Therefore, 100%
Other? (Please specify)	Consensus is a process whereby everyone comes to an agreement. Unanimity is everyone agrees with the consensus.
Near unanimity: > 90%	This is what common law says.
Unanimity: 100%	by definition, a consensus opinion is one which everyone agrees to support
Near unanimity: > 90%	In an ideal world I would like to see near unanimity with the doubts of those not convinced being captured as 'uncertainties'
Clear majority: > 75%	Its a toss-up between "clear majority" and "near unanimity"
Other? (Please specify)	Consensus as I see it, is an agreement among participants and that you are prepared to stand by the decision taken. There may have been scinetific discussion and even voting involved, but if you are not happy with the decision you should file a separate opinion.
Other? (Please specify)	Consensus ought be defined by the group itself unless the sponsor has a pre-existing definition. Generally consensus used by our panels was 100% agreed or could live with the conclusion.
	see my comment above. Consensus generally means the opinion of most or all after everyone has been able to speak their minds, or is the opinion that all can live with even thought not all may agree. Unanimous consensus is wonderful when it can be achieved.
Near unanimity: > 90%	Complete unanimity would be best, but there are always outliers and/or differences in interpretation which could prevent a 100% consensus. That said, the word consensus means agreement or accord with a conclusion, thus near unanimity (90%) is best. Have a 75% majority sounds good, but unless there are only 4 people on a panel, 75% would mean that potentially meaningful number of other experts disagree with a conclusion - and that should spark further research/additional data to rectify.
Clear majority: > 75%	science by consensus?
Other? (Please specify)	It depends on the issue. If it's relatively minor, simple majority is ok, if it is one of the crucial issues of the panel and it is very consequential, then a clear majority should be ok. Dissent should be adequately recorded and publicized.
Near unanimity: > 90%	If a panel is properly constituted consensus or near consensus should always be possible. The consensus conclusion however may well be that the science is not yet resolved in which case the principle point of disagreement and the underlying uncertainty should be documented with a consensus that the appropriate issues and arguments have been accurately portrayed.
Other? (Please specify)	In many cases, consensus of the issue may be 100%, but the basis for the consensus is often quite different among the panelists. This is why dissenting views are most important.

Question 5.6 *(ID: 3543)*

How important is it to be able to assess relationships between responses amongst individual panelists? (e.g., opinions as a function of sector of employment, years of experience, area of expertise, etc.)



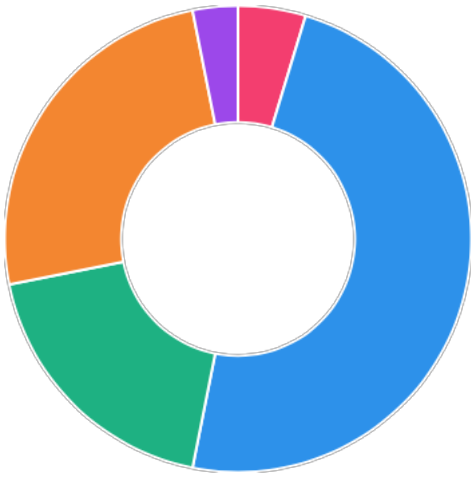
Legend

1 - not important at all: 4
2: 5
3 - equivocal: 23
4: 20
5 - very important: 11

answers: 63
skips: 24

Question 6.1 *(ID: 3499)*

What is your current sector of employment?



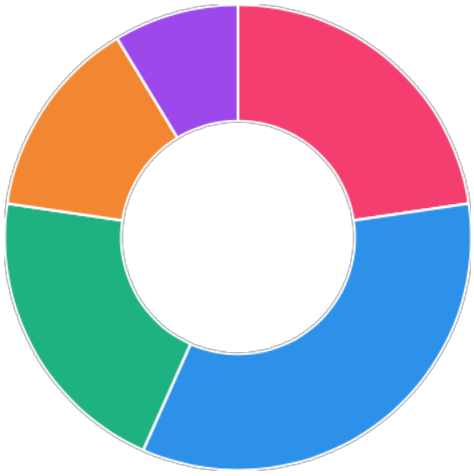
Legend

- Government: 3 *(5%)*
- Academia: 31 *(48%)*
- Industry: 12 *(19%)*
- Consulting: 16 *(25%)*
- Non-Governmental Organization: 2 *(3%)*

answers: 64
skips: 23

Question 6.2 *(ID: 3500)*

Please indicate all sectors you previously worked in.



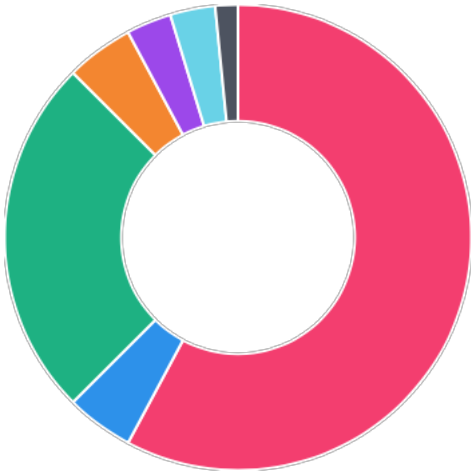
Legend

- Government: 34 *(23%)*
- Academia: 51 *(34%)*
- Industry: 31 *(21%)*
- Consulting: 21 *(14%)*
- Non-Governmental Organization: 13 *(9%)*

answers: 64
skips: 23

Question 6.3 *(ID: 3501)*

What is your region of residence?



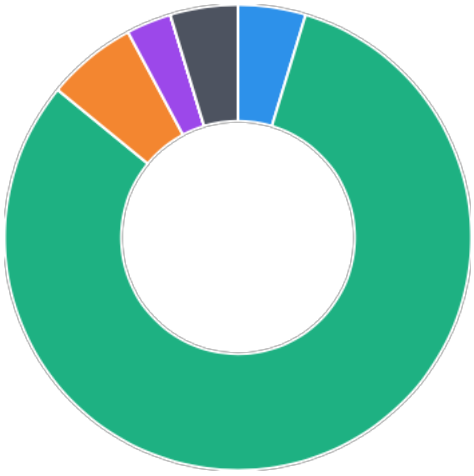
Legend

- North America : 37 *(58%)*
- South America: 3 *(5%)*
- Europe: 16 *(25%)*
- Asia: 3 *(5%)*
- Oceania: 2 *(3%)*
- Middle East: 2 *(3%)*
- Africa: 1 *(2%)*

answers: 64
skips: 23

Question 6.4 *(ID: 3502)*

What is your highest degree?



Legend

- BS: 0 *(0%)*
- MS: 3 *(5%)*
- PhD: 52 *(81%)*
- MD: 4 *(6%)*
- DVM: 2 *(3%)*
- JD: 0 *(0%)*
- Other: 3 *(5%)*

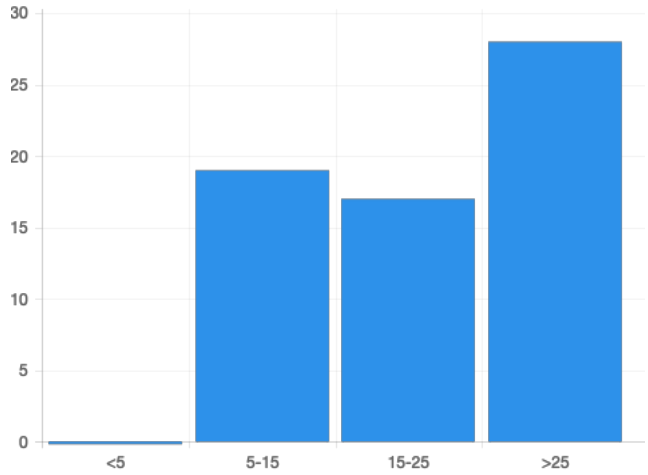
answers: 64
skips: 23

Answer Explanations 8

ANSWER	EXPLANATION
PhD	I am an expert in the risk assessment of chemicals, food and the environment in those areas PhD is the highest dgree.
PhD	Toxicology
Other	MD
MS	MS in Engineering.
Other	professor
Other	POST DOCTORATE
PhD	Academic experience was a post-doc. Grant writing/submissions, helping manage laboratories, training students, etc. were all part of that prior to my going to an industry position. In industry for 30+ years, now an independent consultant.
DVM	I hold a DVM, a PHD, a Doctor of Science and a Diplomate @ EBVS

Question 6.5 *(ID: 3503)*

How many years of professional experience do you have?



Legend

answers: 64

skips: 23

Appendix B.2 Results for SP150

Science Advisory Panels: State of the Science

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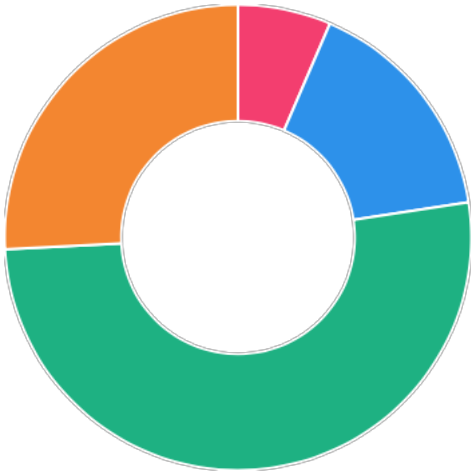
RECRUITMENT

Question 1.1 *(ID: 3447)*

How often have you been asked to serve on science panels?



Legend

- Never: 2 *(6%)*
- Rarely (<2 per 5 years): 5 *(16%)*
- Sometimes (1-2 per year): 16 *(52%)*
- Often (3+ per year): 8 *(26%)*

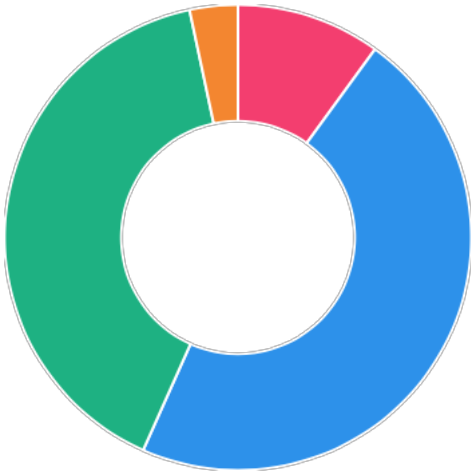
answers: 31
skips: 0

Answer Explanations 15

ANSWER	EXPLANATION
Often (3+ per year)	I have been involved in Science panels in the European Food Safety Authorithy (EFSA) and presently in the Joint FAO/WHO Expert Committee on Food Additives (JECFA)
Sometimes (1-2 per year)	I participate in USDA-NIFA Science panels
Sometimes (1-2 per year)	I have served primarily on EPA science advisory panels ranging from a regular to ad hoc member of the Agency's Clean Air Science Advisory Committee for ozone and for particulate matter. Served on various advisory panels for TERA and Versar where they convened science advisory panels to review EPA generated documents on various compounds and issues.
Often (3+ per year)	I was member of several EU scientific committees and do consulting to industry and government
Often (3+ per year)	RCAC with DFA and Board of Science Counselors for NTP with NIH.
Sometimes (1-2 per year)	Due to academic position, have been asked to serve on a variety of topics
Often (3+ per year)	I have served for three years on a science panel for a major corporation that meets once or twice a year. I have also participated in a few SciPinion panels.
Sometimes (1-2 per year)	This is about an average request rate for various panels to review proposals, research projects, and guidelines for regulatory agencies.
Sometimes (1-2 per year)	More sol lately than 3 years ago.
Rarely (<2 per 5 years)	I have not always accepted invitation to serve because I served for many years as Editor in Chief for both the American Society of Agronomy and the Soil Science Society of America.
Often (3+ per year)	It should be mentioned that the frequency of invitations varies from year to year.
Rarely (<2 per 5 years)	I currently serve on an EPA Board of Scientific Counselors and in a previous employment (more than 20 years ago) served on an expert panel that assessed a hazardous waste site in connection with allegations of health effects. I believe my industry affiliation, despite decades of professional experience, has precluded more opportunity to serve the science and the public.
Often (3+ per year)	Have served on federal science panels and institutional panels.
Often (3+ per year)	Answer is predominately for past activities, but do have a current commitment
Often (3+ per year)	Only serve on FDA panels as a SGE

Question 1.2 *(ID: 3448)*

How often have you applied to serve on science panels based on a call for experts?



Legend

- Never: 3 *(10%)*
- Rarely (<2 per 5 years): 14 *(47%)*
- Sometimes (1-2 per year): 12 *(40%)*
- Often (3+ per year): 1 *(3%)*

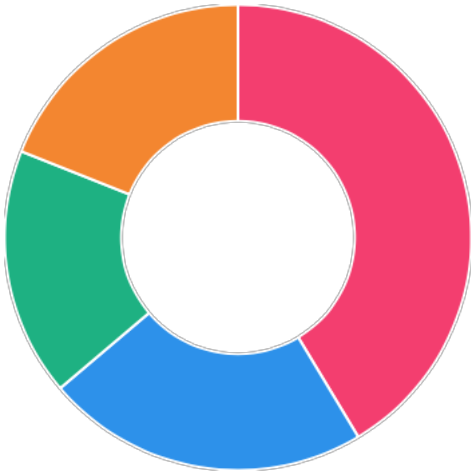
answers: 30
skips: 1

Answer Explanations 13

ANSWER	EXPLANATION
Rarely (<2 per 5 years)	I have been appointed by EFSA as external expert on a three-year mandate basis twice. For JECFA I have been included in the roster of experts for the period 2016-2021.
Sometimes (1-2 per year)	Based on mys agriculture sciences expertise, I participate in panels.
Rarely (<2 per 5 years)	Once or twice self nominated to EPA advisory panels. Otherwise service on all other science advisory panels was due to the group selecting me because of my areas of expertise.
Never	Always recruited.
Sometimes (1-2 per year)	I have varied interests and have lectured on many topics; have deep knowledge of several disciplines
Sometimes (1-2 per year)	I was asked to apply to serve on an EPA science panel by an SAB staff member a few years ago, but was not selected to serve. I have also applied to serve on a couple of SciPinion panels.
Rarely (<2 per 5 years)	I have plenty of requests to consider rather than search for involvement. Very rarely will some topic arise in which i am very interesting in independently pursuing.
Rarely (<2 per 5 years)	More so lately than 3 years ago.
Rarely (<2 per 5 years)	I have not always accepted invitation to serve because I served for many years as Editor in Chief for both the American Society of Agronomy and the Soil Science Society of America.
Sometimes (1-2 per year)	In looking to serve the public and science based on my areas of expertise, I have submitted my name for consideration to several entities/regulatory agencies, science bodies, but have rarely been offered placement on these panels.
Rarely (<2 per 5 years)	I have rarely sort this out, usually, I am approached to provide my background/expertise to the panel.
Sometimes (1-2 per year)	Usually only apply if invited.
	SGE appointment is for several years and have reapplied

Question 1.3 *(ID: 3449)*

How have you learned about opportunities for service on science panels?



Legend

- Personal invite: 24 *(41%)*
- Referral from a colleague: 13 *(22%)*
- Referral from an interested party: 10 *(17%)*
- Public posting (e.g., Federal Register): 11 *(19%)*

answers: 31
skips: 0

Answer Explanations 10

ANSWER	EXPLANATION
Personal invite	Invitation from Program Leaders.
Personal invite	Groups seek me for my areas of expertise.
Personal invite	Always invited.
Referral from an interested party Referral from a colleague	As above; colleagues often refer me when they believe I might be able to contribute
Public posting (e.g., Federal Register) Referral from a colleague Personal invite	As noted above I have been personally invited by an EPA staff person to apply for membership on an SAB panel. I have also had colleagues suggest that I apply, perhaps three times over the past 5 years, and I receive emails from agencies announcing the opportunity to apply for membership on science panels. I read about such opportunities in professional journals as well.
Referral from an interested party Referral from a colleague Personal invite	These are usually based on personal contacts made previously where those tending the invitation are aware of my expertise.
Referral from an interested party	Recommended for EPA CAAC by U S. Chamber of Commerce. Was selacred
Personal invite	I mostly have served as a result of a personal invite.
Public posting (e.g., Federal Register) Personal invite	I was invited to serve on the TLV Committee in the mid-1980s by two members of the group as they were familiar with my publication history and, frankly, they needed my help. The TLV Committee is an all volunteer effort and obtaining library services and the level of effort is considerable, so few individuals are interested. Federal Register responses account for other committee appointments.
Referral from an interested party Referral from a colleague Personal invite	I have generally received a personal invite from a chair, but have also been asked to be involved by a colleague and sometimes recommended because of my expertise.

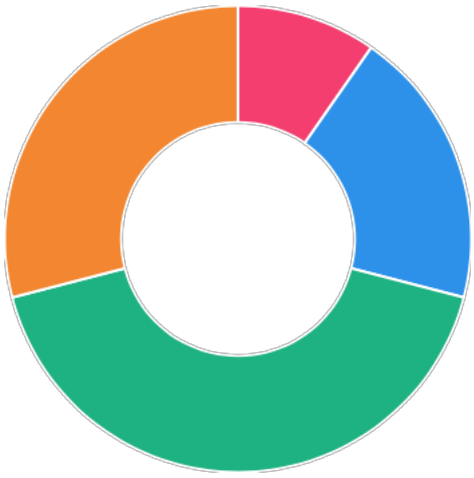
Question 1.4 *(ID: 3450)*

What is the maximum time you would volunteer (uncompensated) to take part in a science panel for the following sponsor types?

	1-2 hrs	1-2 days	1-2 weeks of your time	I would never do uncompensated work for a science peer review panel	Total
Government	**9.68%** 3	**48.39%** 15	**35.48%** 11	**6.45%** 2	31
NGO/science organization	**6.45%** 2	**51.61%** 16	**32.26%** 10	**9.68%** 3	31
Industry	**12.90%** 4	**41.94%** 13	**6.45%** 2	**38.71%** 12	31

Question 2.1 *(ID: 3428)*

How often have you attended/observed science panels as part of your job?



Legend

- Never: 3 *(10%)*
- Rarely: 6 *(19%)*
- Sometimes: 13 *(42%)*
- Often: 9 *(29%)*

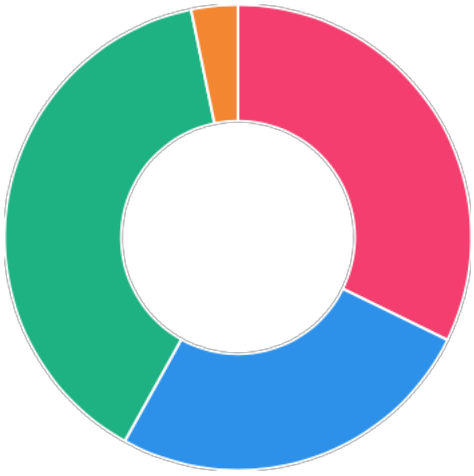
answers: 31
skips: 0

Answer Explanations 17

ANSWER	EXPLANATION
Never	I am an Associate Professor at University of Tuscia (Viterbo, Italy) and my position in the academia does not necessarily require to attend/observe science panels. It has always been my personal choice to attend/observe science panels, being entitled to.
Sometimes	Science panel participation is part of my job.
Often	I was a U.S. Public Health Services officer assigned to the Environmental Protection Agency for 20 years. During that time, I wrote and defended chapters in NAAQS documents, provided advice to EPA program offices, attended CASAC meetings for review of various documents, chairs an EPA Air Toxics panel, and the list goes on.
Rarely	I work at an university
Never	Not required.
Rarely	I have audited a couple in my time; mainly through invite or interest
Often	While working for EPA I regularly attended meetings of science panels as part of my job, including service as Deputy Director of EPA's Science Advisory Board for seven years where I attended a science panel meeting nearly every week. Since leaving EPA and engaging in consulting I attend such meetings once every year or two on topics relevant to my consultancy. I have also served on an advisory panel as part of my consultancy job and have participated in a couple of SciPinion panels as well.
Often	More often when I was employed by USDA-ARS, however, as a retired professional while still holding a courtesy appointment at a University, i continue to receive several offers to attend and observe panels.
Sometimes	I attended EPA IRIS and FIFRA meetings sporadically from 2008 thrugh 2014
Sometimes	We also have internal science panels that I both have chaired and served on at my university.
Often	Since the terms "Never, Rarely, Sometimes and Often" are not defined in question 2.1, I assume that the rules provided in Questions 1.1 and 1.2 apply here too; nevertheless, the frequency of panels varies from year to year.
Sometimes	Actively participated in about 4 panels over the past 10 years.
Rarely	This is something I have rarely done. Usually, this is an experience I have undertaken on my own outside the duties of my position.
Rarely	I have only attended one expert panel as an observer, and was there on behalf of an interested party.
Often	I have been a frequent member of SABs in my career, and because of past and current employment responsibilities, have been and continue to be a presenter to or observer of SABs
Rarely	In recent year, the answer is never. In prior years the answer was rarely.
Often	I serve as Health Advisory Board Secretary for twice annual external review meetings in Ann Arbor. I serve as WHO Secretariat or invited expert for external review meetings 1-3 times per year.

Question 2.2 *(ID: 3429)*

How often have you attended/observed panels out of scientific curiosity?



Legend

- Never: 10 *(32%)*
- Rarely: 8 *(26%)*
- Sometimes: 12 *(39%)*
- Often: 1 *(3%)*

answers: 31
skips: 0

Answer Explanations 12

ANSWER	EXPLANATION
Rarely	Being in the academic field, my commitment to improving my knowledge has always been important to my profession. For this reason I have attended quite a few panels purely out of scientific curiosity (e.g. harmonization/setting up of official OECD guidelines for my specific field of research).
Sometimes	I am always interested in learning science other than my field.
Sometimes	If the topic was in my area, I was typically an invited member of the panel. For some CASAC documents, I observed the meeting because the topic was relevant to my scientific interests.
Sometimes	EPA Public
Rarely	As above, if there is a topic that is of strong interest to my work
Rarely	I have attended two meetings of science panels twice in seven years to learn more about a topic..
Rarely	Again, I have plenty of project to be kept busy rather than look for more. If the topic is of high interest and relevant to my work, then i may attend as session.
Sometimes	The NRC, NTP and WHO committees invited my participation as a voting member. These were valuable and I met and am still friends/colleagues with members of those activities. People who choose not to participate are missing out on free continuing education courses so to speak given by the most notable experts in toxicology.
Sometimes	Since the terms "Never, Rarely, Sometimes and Often" are not defined in question 2.2, I assume that the rules provided in Questions 1.1 and 1.2 apply here too.
Never	Unfortunately, this is not something I have ever had the time to do.
Rarely	Most often attend for either responsibilities to the SAB or as an external contributor.
Rarely	NTP BSC

Question 2.3 *(ID: 3430)*

Have you either participated in, observed in person, or observed remotely (by phone or online) science advisory panels for any of the following organizations? (If an organization is not listed, feel free to provide details in the explanation box.)

	Participated in	Observed in person	Observed remotely	Total
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	**74.19%** 23	**25.81%** 8	**35.48%** 11	31
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	**41.94%** 13	**16.13%** 5	**29.03%** 9	31
Non-US Country-Specific Agencies	**45.16%** 14	**6.45%** 2	**6.45%** 2	31
Other (e.g., SciPinion, TERA)	**74.19%** 23	**12.90%** 4	**6.45%** 2	31

Answer Explanations 16

ANSWER	EXPLANATION

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	1
Non-US Country-Specific Agencies	1	0	0
Other (e.g., SciPinion, TERA)	1	0	0

I have participated in person.

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	1	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	1	1	0

Already explained above my role in these types of groups.

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	1	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	0	0	0

Ongoing with EPA and NTP. Biotech USA-EU meeting.

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	0	0	1
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	1	0	0

Have been asked to observe for FDA panel; also involved in drug-industry panels

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	1	1
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	1	1	1
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	1	0	0

While working for EPA I managed a staff that ran science panels, and I also served as the Designated Federal Official for certain panels. I also served as EPA's official representative to WHO, OECD and IPCS panels, and, as a consultant, I have attended an EFSA meeting. In addition I have served on a couple of SciPinion panels.

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	0	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	0	0	0

I have observed for industry organizations.i have participated on behalf of industry organizations

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	0
Non-US Country-Specific Agencies	1	0	0
Other (e.g., SciPinion, TERA)	1	0	0

EPA, USDA, etc. participations were both "on-site" and one remotely via teleconference; Non-US agencies were remote participation on panels involving the country's equivalent of NSF; I have participated remotely in a SciPinion panel, I think

I participated in South Korea Agencies (e.g., NRF, KRI, MSIT, Ministry of Education)

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	0	0	1
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	0	0	0

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	1
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	1	0	0

When at EPA, I was on the TERA panel that reviewed coal tar shampoo for dandruff treatment

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	1	0	0
Non-US Country-Specific Agencies	1	0	0
Other (e.g., SciPinion, TERA)	1	0	0

I have served as a review member for all of the above plus some additional statewide agencies.

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	1	0	0
Non-US Country-Specific Agencies	1	0	0
Other (e.g., SciPinion, TERA)	1	0	0

The German MAK Commission was one of the more interesting international meetings. The USAID meeting on the Nepal dietary intervention project was perhaps the most controversial.

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	1	0	0
Non-US Country-Specific Agencies	1	0	0
Other (e.g., SciPinion, TERA)	1	0	0

I have mainly participated in FDA science advisory panels. But have had involvement in a couple of others.

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	0	0	0
Non-US Country-Specific Agencies	1	0	0
Other (e.g., SciPinion, TERA)	1	1	0

I was also on a panel convened by the American Council on Science and Health, chaired by Dr. C. Everett Koop.

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	1	1
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	1	1	1
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	1	0	0

Currently engaged in TERA panel; have recently served on a business SAB review of its internal programs.

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	1	0	0
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	1	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	1	0	0

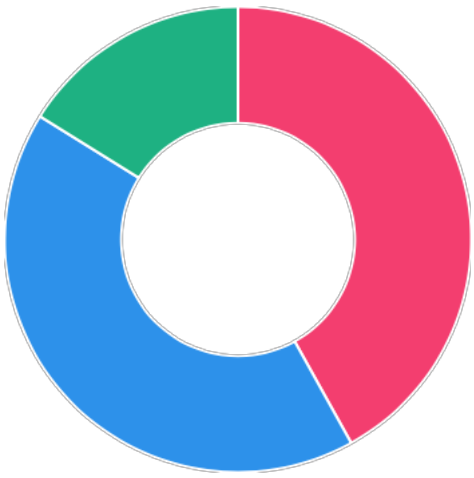
National Academies peer review (other?)

	Participated in	Observed in person	Observed remotely
US Agencies (e.g., EPA, FDA, OSHA, CPSC)	0	0	1
International Agencies (e.g., WHO, IARC, EFSA, JECFA)	1	0	0
Non-US Country-Specific Agencies	0	0	0
Other (e.g., SciPinion, TERA)	1	1	1

WHO and NSF Health Advisory Board participated in; CIR observed in person; USEPA SAB and NTP BSC observed remotely

Question 2.4 *(ID: 3431)*

Were the roles and responsibilities of the science panel adequately explained in the outset in the panels you participated in?



Legend

- Always: 13 *(42%)*
- Almost always: 13 *(42%)*
- Sometimes: 5 *(16%)*
- Hardly ever: 0 *(0%)*

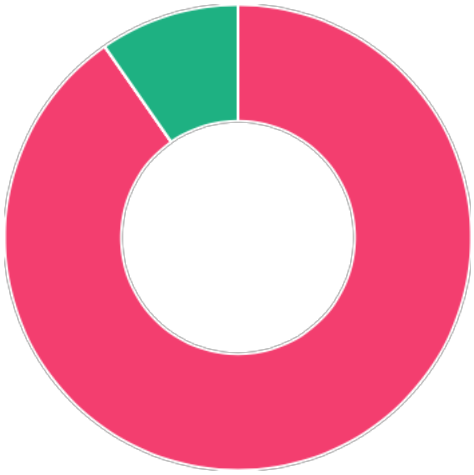
answers: 31
skips: 0

Answer Explanations 12

ANSWER	EXPLANATION
Always	Having taken part in science panels organized by EFSA, JECFA, OECD, SciPinion, roles and responsibilities were always adequately explained and communicated.
Always	Guidelines are always provided.
Almost always	The Designated Federal Official or the chair of the advisory panel always addressed the panel's charter and our responsibilities but did not always specifically address our role -- maybe because it was self evident.
Almost always	This very much depends on the agency/organization. Eu has always terms of reference, WHO often has only specifc tasks
Always	Were asked to review documents and provide synopsis or summary of our parts and comment freely on others
Always	Yes, in my experience the roles and responsibilities of the science panel members were adequately explained at the outset of the project.
Always	Instructions were always clear
Almost always	Certainly at the TERA meeting.
Sometimes	I've been on several Natl Academy of Sciences Panels, and I think NAS has an issue about the "charge" to their committees-- the sponsor has a right to craft a "charge" and have members focus on it, but members have a right to opine BEYOND the charge, once they have fulfilled the original request. NAS in my experience has discouraged this, which means that silly charge questions that cry out for expansion are left as is.
Always	NRC reads the charge and the composition of the committee. NRC explains that it is impossible to eliminate potential bias, but that every effort is made to balance potential bias of the members.
Almost always	Certainly, for the FDA yes, but for others this has not always been as well outlined.
Always	Roles were well explained but often a lot of questions came up during the meetings.

Question 2.5 *(ID: 3432)*

Have you felt encouraged to provide your scientific views openly and candidly?



Legend

- Yes: 28 *(90%)*
- No: 0 *(0%)*
- Sometimes: 3 *(10%)*

answers: 31
skips: 0

Answer Explanations 12

ANSWER	EXPLANATION
Yes	I've never recorded any conditioning.
Yes	My reviews are open and candid.
Yes	I am known to not be a "wall flower" and no panel chair needed to encourage me to provide comments and opinions on the topic at hand.
Yes	In most cases, yes. Some politisized panels in certain EU agencies do not encourage this
Yes	As above; depends on the moderator of the group/panel
Yes	Yes, I have always felt encouraged to provide my scientific views openly and candidly
Yes	When one is established in a career and there is no consequence to airing one's opinion, one can be strong and candid
Sometimes	More at the TERA mtg than at the EPA mtg
Yes	always the case
Yes	I would never participate in something where I did not think I could give my true opinion, otherwise, I do not see the point of spending my time on it.
Yes	However, I am outgoing and don't shy away from speaking up in a group. Some people aren't as comfortable.
Yes	Exception is IARC Monographs program, which does not strongly encourage or allow for external observer input.

Question 2.6 *(ID: 3433)*

How often have you observed or experienced any of the following behaviors or processes that provide encouragement during panel deliberations?

	Never	Rarely	Sometimes	Often	Total
Active chairmanship	**0.00%** 0	**6.67%** 2	**40.00%** 12	**53.33%** 16	30
Clear assignments on pertinent topics	**0.00%** 0	**6.67%** 2	**33.33%** 10	**60.00%** 18	30
Intrapanel dialogue	**6.67%** 2	**3.33%** 1	**26.67%** 8	**63.33%** 19	30
Fullsome discussions	**0.00%** 0	**10.00%** 3	**43.33%** 13	**46.67%** 14	30
Other (please explain)	**12.50%** 1	**25.00%** 2	**62.50%** 5	**0.00%** 0	8

Answer Explanations 15

ANSWER

EXPLANATION

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	1	0
Clear assignments on pertinent topics	0	0	0	1
Intrapanel dialogue	0	0	1	0
Fullsome discussions	0	0	0	1
Other (please explain)	0	0	1	0

A thorough discussion takes place in every scientific panel.

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	1	0
Clear assignments on pertinent topics	0	0	0	1
Intrapanel dialogue	0	0	0	1
Fullsome discussions	0	0	0	1
Other (please explain)	0	0	1	0

A good chairperson actively does the above. Sometimes the panel engaged more directly with Agency staff for requests for additional analyses or information.

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	0	1
Clear assignments on pertinent topics	0	0	0	1
Intrapanel dialogue	0	0	0	1
Fullsome discussions	0	0	1	0
Other (please explain)				

Good interactive group leads to dynamic discussion and fostering of new or collaborative ideas that promote a better working environment and consensus

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	1	0
Clear assignments on pertinent topics	0	0	0	1
Intrapanel dialogue	0	0	0	1
Fullsome discussions	0	0	0	1
Other (please explain)	0	1	0	0

The role of the chair is a key role that is usually taken very seriously by the individual serving as chair and by the officials from the sponsoring organization. While at EPA's science advisory board we engaged in extensive discussions about chair selections and "auditioned" potential committee chairs based on their performance as committee members and sub-group leads, but sometimes I have observed that despite all the care in chair selection, an individual serving as chair did not take the time to fully prepare in advance and I have also occasionally observed that officials from the sponsoring organization neglected to prepare the chair sufficiently. Most often I had the good fortune to serve as Designated Federal Official, or panel member, on panels that were run by articulate, engaged and committed chairs and when this was the case the meetings ran smoothly and resulted in good outcomes On a few occasions I have seen chairs that had not prepared beforehand or who did not keep the meetings focused on the task at hand or who let one of two panel members disrupt the meeting with the result that the meetings did not run smoothly, the panel members and sponsoring agencies were frustrated because a good outcome was not achieved and time was not well spent. As a designated federal officer I sometimes had the difficult task of providing constructive feedback to chairs who did not perform well to improve in the future. In my experience a great deal of care was taken to craft specific and clear charge questions to the panel to maximize the likelihood of useful advice. Thus, the assignments tended to be clear. It has been my experience that scientists are not shy and are eager to engage in discussions about their areas of expertise. Thus, the panel members tended to engage in rich and often lively discussions. Regarding fulsome discussion, usually the lively dialog noted above resulted in useful feedback, but occasionally certain members go beyond their area of expertise and offer advice (e.g. on regulatory implementation) in a manner that is not useful. On the topic of other, I have rarely observed inappropriate behavior where one panel member was rude to another member(s), monopolized the discussion, and/or had an axe to

grind. When this did happen the result was frustration, and sometimes anger, among the other panel members and sponsoring organization.

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	0	1
Clear assignments on pertinent topics	0	0	0	1
Intrapanel dialogue	0	0	0	1
Fullsome discussions	0	0	1	0
Other (please explain)				

Those selected for these panels are generally based on their previous experience so you would expect complete and open processes.

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	0	1
Clear assignments on pertinent topics	0	0	1	0
Intrapanel dialogue	1	0	0	0
Fullsome discussions	0	1	0	0
Other (please explain)				

n/a

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	1	0
Clear assignments on pertinent topics	0	0	1	0
Intrapanel dialogue	0	0	1	0
Fullsome discussions	0	0	1	0
Other (please explain)	0	0	1	0

It depends who is the chair and whether members feel encouraged to contribute.

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	0	1
Clear assignments on pertinent topics	0	0	0	1
Intrapanel dialogue	0	0	0	1
Fullsome discussions	0	0	0	1
Other (please explain)	1	0	0	0

Nothing further to add, except I always learn something new especially from disciplines with which I am not familiar.

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	1	0
Clear assignments on pertinent topics	0	0	1	0
Intrapanel dialogue	0	0	0	1
Fullsome discussions	0	0	1	0
Other (please explain)	0	0	1	0

Sometimes the Agency/Organization facilitator/representative plays an important role in panel deliberations; the interaction (and interpersonal dynamics) of panel chair and agency facilitator can also affect these deliberations

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	1	0
Clear assignments on pertinent topics	0	1	0	0
Intrapanel dialogue	0	0	1	0
Fullsome discussions	0	1	0	0
Other (please explain)	0	1	0	0

This may be asked later, but a common observation of panelists is that many/most have little appreciation for the chemical that is being reviewed - they know their individual field of expertise, but have little knowledge of the toxicological/epidemiological database for specific chemistry.

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	1	0
Clear assignments on pertinent topics	0	0	0	1
Intrapanel dialogue	0	0	1	0
Fullsome discussions	0	0	1	0
Other (please explain)				

From most of my experiences, I have usually seen positive panel deliberations even if people do not agree.

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	0	1
Clear assignments on pertinent topics	0	0	1	0
Intrapanel dialogue	0	0	0	1
Fullsome discussions	0	0	0	1
Other (please explain)				

Most of the panels on which I have served have functioned quite well.

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	1	0
Clear assignments on pertinent topics	0	0	1	0
Intrapanel dialogue	0	0	0	1

Government SABs severely limit time for inputs from external observers, and do not allow adequate time for SAB members to further query or follow-up on external observer inputs. Frequently (and this is from direct observation), even if external comments are submitted to government SABs, SAB members do not take adequate time to review the comments for their applicability to the SAB charge.

Fullsome discussions	0	0	1	0
Other (please explain)				

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	0	1
Clear assignments on pertinent topics	0	0	0	1
Intrapanel dialogue	0	0	0	1
Fullsome discussions	0	0	1	0
Other (please explain)	0	0	1	0

A few panel members dominating the dialogue

	Never	Rarely	Sometimes	Often
Active chairmanship	0	0	1	0
Clear assignments on pertinent topics	0	0	0	1
Intrapanel dialogue	1	0	0	0
Fullsome discussions	0	0	0	1
Other (please explain)				

If intrapanel dialogue is meant as outside of public then government advisory panels don't allow this. If it is meant during open discussion then sometimes.

Question 2.7 *(ID: 3434)*

How often have you observed or experienced any of the following forms of groupthink during science panel deliberations?

	Never	Rarely	Sometimes	Often	Total
Error Amplification	9.68% 3	35.48% 11	41.94% 13	12.90% 4	31
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0.00% 0	22.58% 7	51.61% 16	25.81% 8	31
Group polarization	10.00% 3	23.33% 7	53.33% 16	13.33% 4	30
Over-emphasis of unimportant, shared information at the expense of important unshared information	12.90% 4	12.90% 4	51.61% 16	22.58% 7	31

Answer Explanations 17

ANSWER

EXPLANATION

	Never	Rarely	Sometimes	Often
Error Amplification	0	0	0	1
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	1	0	0
Group polarization	0	0	0	1
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	0	1

Due to the influence of stronger personalities in the panels Error Amplification and Group Polarization often occur. When discussing very specific topics about which information is not shared by all the mebers of the panel, over-emphasis of unimportant, shared information is used as a distraction by some members of the panel in order to influence opinions, making it difficult to come to an objective and well-structured scientific conclusion.

	Never	Rarely	Sometimes	Often
Error Amplification	0	0	1	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	1	0
Group polarization	1	0	0	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	1	0	0	0

Discussion takes place unbiased.

	Never	Rarely	Sometimes	Often
Error Amplification	0	1	0	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	1	0
Group polarization	0	1	0	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	1	0

The above things seldom happen because the Chair or a panel member speaks up and gets the group back on track.

	Never	Rarely	Sometimes	Often
Error Amplification	0	0	1	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	0	1
Group polarization	0	0	1	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	1	0

Clearly the exception.

	Never	Rarely	Sometimes	Often
Error Amplification	0	1	0	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	1	0	0
Group polarization	1	0	0	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	1	0	0

Depends on the moderator as to how these potential pitfalls occur

	Never	Rarely	Sometimes	Often
Error Amplification	0	0	1	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	1	0
Group polarization	0	0	1	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	1	0

In my experience the degree to which this occurs depends on the type of panel meeting and how the meeting type facilitates or minimizes interactions among the members. In my experience the care to which panel members were chosen with sufficient expertise and were provided with a clear understanding of what types of advise was desired and how it could help also played a big role in minimizing or facilitating group think. As importantly providing the members with adequate background information and encouraging the chair to be on the alert for and to work to minimize group think are key factors in minimizing the occurrence of group think. This includes engagement by the responsible official(s) from the sponsoring organization being on the alert for group think and communicating with the chair that it may be occurring. In face to face and open public meetings I have observed group think less often than in anonymous panels that meet remotely, not face-to-face. Also, even in face-to-face meetings I have observed that group think most often occurs when the panel members

strayed beyond their expertise. In such cases I noted a tendency to engage in error amplification, cascade effects and, perhaps most often, overemphasis of unimportant information.

	Never	Rarely	Sometimes	Often
Error Amplification	0	1	0	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	1	0
Group polarization	0	1	0	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	1	0

Group dynamics are difficult to predict but these are best estimates.

	Never	Rarely	Sometimes	Often
Error Amplification	0	0	1	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	1	0
Group polarization	0	0	1	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	1	0

The make-up of the personalities of a panel often dictate how the panel discussion will go.

	Never	Rarely	Sometimes	Often
Error Amplification	0	1	0	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	1	0	0
Group polarization	0	0	0	1
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	1	0

This is a general impression from my recollections of the EPA meetings I attended.

	Never	Rarely	Sometimes	Often
Error Amplification	0	0	1	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	0	1
Group polarization	0	0	1	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	1	0

My biggest complaint about science panels is that most of what I do (risk assessment) requires input from many different disciplines. However, since academia fetishizes expertise in narrow fields (my own view is that scholars who are narrow are afraid of multidisciplainary experts who know all that they know, but more...), what happens is that in order to keep the panel of manageable size, there is "room" for only one expert in each of many fields. This results in monologue rather than dialogue-- for example, if a groundwater fate-and-transport question comes up in a risk assessment panel, the one person who is PERCEIVED as the expert on that field will be asked to opine, and his/her word becomes the "consensus."

	Never	Rarely	Sometimes	Often
Error Amplification	0	1	0	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	1	0	0
Group polarization	0	0	1	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	1	0	0	0

The TLV Committee debate on the benzene occupational limit is memorable for the level and depth of discourse. Yes, it gave me a tremendous headache (worse than any hangover), but the fellows who engaged in that rigorous debate became life-long dear friends. The most important thing is never take the debate personally, but dissect and support the positions taken with real data.

	Never	Rarely	Sometimes	Often
Error Amplification	0	0	1	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	0	1
Group polarization	0	0	1	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	0	1

I must point out that my interpretation of the terms "Never, Rarely, Sometimes and Often" is somewhat subjective/qualitative in this case.

	Never	Rarely	Sometimes	Often
Error Amplification	0	0	0	1
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	1	0
Group polarization	0	0	0	1
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	0	1

By far the worst example of groupthink and polarization has been with some California State Agencies in which the science was poorly described, was inaccurate, and yet virtually all panel members developed harmony around the consensus views - this has occurred with at least 2 prominent State Agencies in that State.

	Never	Rarely	Sometimes	Often
Error Amplification	0	1	0	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	1	0
Group polarization	0	1	0	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	0	1

I would say this biggest issue I have seen is the concept of someone getting stuck on an unimportant point and not wanting to let it go. I call it the "dog with the bone" experience and it frustrates me greatly as it can be very hard to get a group to sometimes move past that especially if the chairperson is not "in control".

	Never	Rarely	Sometimes	Often
Error Amplification	0	0	1	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	1	0

Polarization may precede the discussion, and can be very challenging to overcome. Regarding the last point, it is hard to know what important information is not shared.

Group polarization	0	0	0	1
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	1	0	0

	Never	Rarely	Sometimes	Often
Error Amplification	0	0	1	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	1	0
Group polarization	0	1	0	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	1	0

SABs generally encourage consensus reports, individual minority reports, although permitted, are frequently discouraged by SAB peers. SABs can engage is extended discussions, some with resulting erroneous conclusions, by focusing on an indisputable factual error that could have been simply addressed in inputs from external observers were allowed at the time of discussion (i.e., external inputs are often limited to fixed time periods on the agenda, and often not in close time proximitry to erroneous factual discussions.

	Never	Rarely	Sometimes	Often
Error Amplification	0	0	1	0
Cascade effects (1st speaker is more likely to be supported/not contradicted)	0	0	1	0
Group polarization	0	0	1	0
Over-emphasis of unimportant, shared information at the expense of important unshared information	0	0	1	0

It all depends on the topic, expertise of the panel, ego of panel members(notoriety),...

Question 2.8 *(ID: 3435)*

How often have you observed any of the following problems in science panel design, function and/or deliberations?

	Never	Rarely	Sometimes	Often	Total
Expertise gaps (key areas of expertise not included in panel members)	3.23% 1	29.03% 9	41.94% 13	25.81% 8	31
Domination of deliberations by a specific member (bully cheerleader)	3.23% 1	16.13% 5	54.84% 17	25.81% 8	31
Over reliances on delegated tasks (failure to engage non-tasked members)	13.33% 4	33.33% 10	30.00% 9	23.33% 7	30
Over-bearing panel sponsor	35.48% 11	38.71% 12	16.13% 5	9.68% 3	31
Deference to panel sponsor	35.48% 11	45.16% 14	16.13% 5	3.23% 1	31
Over-bearing stakeholder	16.13% 5	45.16% 14	29.03% 9	9.68% 3	31
Discounting of a study based solely on affiliation of investigator or funding source	22.58% 7	25.81% 8	32.26% 10	19.35% 6	31
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	25.81% 8	25.81% 8	29.03% 9	19.35% 6	31
Other (please explain)	33.33% 2	16.67% 1	16.67% 1	33.33% 2	6

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ANSWER

EXPLANATION

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	1	0	0	0
Domination of deliberations by a specific member (bully cheerleader)	0	0	1	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	0	1
Over-bearing panel sponsor	1	0	0	0
Deference to panel sponsor	1	0	0	0
Over-bearing stakeholder	1	0	0	0
Discounting of a study based solely on affiliation of investigator or funding source	1	0	0	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	1	0	0	0
Other (please explain)	1	0	0	0

I faced, sometimes, domination of deliberations by a specific member/some members of science panels about matters related to specific and unshared information.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	1	0
Domination of deliberations by a specific member (bully cheerleader)	0	0	1	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	1	0	0
Over-bearing panel sponsor	0	1	0	0
Deference to panel sponsor	0	1	0	0
Over-bearing stakeholder	0	1	0	0
Discounting of a study based solely on affiliation of investigator or funding source	0	0	1	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	1	0
Other (please explain)	0	1	0	0

Panel members follow the guidelines set by the panel leader.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	1	0
Domination of deliberations by a specific member (bully cheerleader)	0	0	1	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	1	0
Over-bearing panel sponsor	1	0	0	0
Deference to panel sponsor	1	0	0	0
Over-bearing stakeholder	0	0	1	0
Discounting of a study based solely on affiliation of investigator or funding source	0	0	1	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	1	0
Other (please explain)				

The biggest concern usually related to an over-bearing stakeholder who was on the panel and clearly ignored the bulk of the science that did not support their position.

FDA RCAC mostly.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	1	0
Domination of deliberations by a specific member (bully cheerleader)	0	0	0	1
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	1	0
Over-bearing panel sponsor	0	0	1	0
Deference to panel sponsor	0	0	1	0
Over-bearing stakeholder	0	0	1	0
Discounting of a study based solely on affiliation of investigator or funding source	0	1	0	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	1	0	0
Other (please explain)				

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	1	0	0
Domination of deliberations by a specific member (bully cheerleader)	0	1	0	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	1	0	0
Over-bearing panel sponsor	1	0	0	0
Deference to panel sponsor	1	0	0	0
Over-bearing stakeholder	1	0	0	0
Discounting of a study based solely on affiliation of investigator or funding source	1	0	0	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	1	0	0	0
Other (please explain)				

On rare occasion, one contributing group member may be overly dogmatic; this is somewhat uncomfortable and others may not be able to re-direct this member

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	1	0	0
Domination of deliberations by a specific member (bully cheerleader)	0	0	1	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	1	0	0
Over-bearing panel sponsor	0	1	0	0
Deference to panel sponsor	1	0	0	0
Over-bearing stakeholder	0	0	1	0
Discounting of a study based solely on affiliation of investigator or funding source	0	0	1	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	1	0
Other (please explain)				

In my experience sponsoring organizations usually ensure that panel members with sufficient and appropriate expertise are available for each scientific area under consideration. While with EPA's science advisory board staff a great deal of care and effort was spent with the program offices to understand the exact nature of the scientific question(s) to be asked and perhaps even more time and effort to develop focused charge questions and to identify experts with the required expertise to fully address the breadth and magnitude of scientific issues covered by the charge questions. I have observed attempts by certain panel members to dominate deliberations. At the risk of overgeneralization in my experience I observed this type of behavior most often by certain academics and certain members of advocacy groups. Regarding failure to engage non-tasked members my experience is that committee chairs are usually on the lookout for this and call upon committee members to provide input, even for those areas they were not assigned, and especially if a member had been silent or seemingly disengaged. In my experience I have only observed two attempts by a panel sponsor (in these cases the EPA program office staff lead) to engage in over-bearing behavior and this was while panels were being set up and charge questions developed, not during a meeting. In each case we at the EPA science advisory board staff pushed back. I have never seen a science advisory committee show deference to a panel sponsor. I have seen committee ask for clarification about why a panel sponsor has asked a particular question and/or how will the information be used, but this was not to defer to the sponsor but rather to answer the question in such a way that the answer would be most useful and usable. I have observed over-bearing behavior by a stakeholder once or twice, and my recollection is that in both instances it was by an environmental NGO that did not like a decision made by EPA so they attacked the science review process as a calculated means to win a court case because court decisions against EPA are almost always, if not always, decided based on process not merit. In one memorable instance the NGO mounted a major attack on the process used by EPA to vet science panel members for apparent conflicts of interest via an orchestrated campaign in the media and on Capital Hill because of their anger over an agency clean air act decision. In a regulatory arena there is always concern that conflicts of interest, both real conflicts of interest and appearances of conflicts of interest, will bias decisions and/or will bias the acceptance of decisions if there is a belief that the decision is unfair. Thus, studies conducted by those who would benefit from a decision going one way or another are viewed with skepticism. I have heard panel members question the validity of such studies with the effect that other panel members seemed to discount the study as well. Scientists tend to love to solve problems and I have seen occasions where a panel member conducts a back of the envelope "meta-analysis" overnight and presents it to his/her fellow panel members the next day. I seem to recall that such exercises were primarily for clarification purposes to make sense of the data and not really to sway opinion, but it did seem to me that they influenced thinking by other panel members and they clearly did not benefit from independent verification.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	1	0
Domination of deliberations by a specific member (bully cheerleader)	0	1	0	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	1	0	0
Over-bearing panel sponsor	0	1	0	0
Deference to panel sponsor	0	1	0	0
Over-bearing stakeholder	0	0	1	0

Some of these problems more often occur when industry is included, especially those wanting to skew guidelines for their favor, i.e., EPA science advisory panels

Discounting of a study based solely on affiliation of investigator or funding source	0	1	0	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	1	0
Other (please explain)				

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	1	0
Domination of deliberations by a specific member (bully cheerleader)	0	0	1	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	1	0
Over-bearing panel sponsor	0	0	1	0
Deference to panel sponsor	0	1	0	0
Over-bearing stakeholder	0	0	0	1
Discounting of a study based solely on affiliation of investigator or funding source	0	0	0	1
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	1	0	0
Other (please explain)				

EPA tended to favor certain NGO agendas.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	1	0
Domination of deliberations by a specific member (bully cheerleader)	0	1	0	0
Over reliances on delegated tasks (failure to engage non-tasked members)	1	0	0	0
Over-bearing panel sponsor	1	0	0	0
Deference to panel sponsor	1	0	0	0
Over-bearing stakeholder	0	1	0	0
Discounting of a study based solely on affiliation of investigator or funding source	1	0	0	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	1	0	0	0
Other (please explain)	1	0	0	0

The key to panel composition is to balance the potential (or even real) bias of committee members.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	1	0
Domination of deliberations by a specific member (bully cheerleader)	0	0	1	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	1	0
Over-bearing panel sponsor	0	1	0	0
Deference to panel sponsor	0	1	0	0
Over-bearing stakeholder	0	1	0	0
Discounting of a study based solely on affiliation of investigator or funding source	0	0	1	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	1	0
Other (please explain)	0	0	0	1

An in Question 2.7, I must point out that my interpretation of the terms "Never, Rarely, Sometimes and Often" is somewhat subjective/qualitative. Regarding my selection of "Often" to the last item ("Other") of the current Question, it refers to a lack of "balance" in panel composition: such a balance is, admittedly, difficult to achieve, as it would require consideration of many parameters such as sufficient representation of agencies, industry and academia as well as a distribution of "senior" and "junior" panel members among different areas of expertise. Sometimes (but of course not always) junior panel members (e.g an assistant professor or a new agency hire) are less vocal than senior panel members. In some cases, only junior panel members may represent a key area of expertise (especially if it involves new technologies) and that area consequently receives less attention/visibility than those represented by senior panel members.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	0	1
Domination of deliberations by a specific member (bully cheerleader)	0	0	1	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	0	1
Over-bearing panel sponsor	0	0	1	0
Deference to panel sponsor	0	0	1	0
Over-bearing stakeholder	0	0	0	1
Discounting of a study based solely on affiliation of investigator or funding source	0	0	0	1
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	0	1
Other (please explain)	0	0	0	1

Again, panelists only have a limited range of expertise and when the discussion falls to areas outside of that expertise, they willingly and ignorantly sign on or acquiesce (agree) with the majority of the panel - in effect, they are not understanding key parts of the science and story and therefore are weakening the panel. Overall the panel then becomes collectively weaker.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	0	1
Domination of deliberations by a specific member (bully cheerleader)	0	0	0	1
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	0	1
Over-bearing panel sponsor	0	1	0	0
Deference to panel sponsor	0	1	0	0
Over-bearing stakeholder	0	0	1	0
Discounting of a study based solely on affiliation of investigator or funding source	0	0	0	1
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	0	1
Other (please explain)				

I often see domination of deliberations by a specific member who does not have expertise on the topic. They almost always advocate for precautionary principle over science, leading to a lack of consensus.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	0	1
Domination of deliberations by a specific member (bully cheerleader)	0	0	1	0

I would say this main issue I have typically encountered is not having needed expertise on a panel or that expertise being dismissed as not important and being discounted.

Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	1	0
Over-bearing panel sponsor	0	1	0	0
Deference to panel sponsor	0	1	0	0
Over-bearing stakeholder	0	1	0	0
Discounting of a study based solely on affiliation of investigator or funding source	0	0	1	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	1	0
Other (please explain)				

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	1	0	0
Domination of deliberations by a specific member (bully cheerleader)	0	0	1	0
Over reliances on delegated tasks (failure to engage non-tasked members)	1	0	0	0
Over-bearing panel sponsor	1	0	0	0
Deference to panel sponsor	1	0	0	0
Over-bearing stakeholder	0	1	0	0
Discounting of a study based solely on affiliation of investigator or funding source	0	1	0	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	1	0
Other (please explain)				

Regarding the last point - perhaps not meta-analysis in a formal way, but panels often integrate disparate types of information to develop new inferences about the topic in question.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	0	1
Domination of deliberations by a specific member (bully cheerleader)	0	0	1	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	1	0
Over-bearing panel sponsor	0	0	1	0
Deference to panel sponsor	0	1	0	0
Over-bearing stakeholder	0	1	0	0
Discounting of a study based solely on affiliation of investigator or funding source	0	0	1	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	0	1
Other (please explain)				

Ad hoc meta-analysis is almost universal in IARC monograph program, with no peer-review other than by self-vested panelists themselves (particularly ironic in that IARC otherwise will not allow for consideration of otherwise unpublished external peer-reviewed science). Increasingly, I have observed SAB members specifically noting that a study under consideration is industry funded/conducted without offering specific criticism of the actual science/conclusions. I have also observed what I view as inappropriate behaviors by SAB members who are members of related government regulatory agencies (e.g., state, other country), and openly advocate for an SAB conclusion that is consistent with the regulatory position of their employment agency (such advocacy creates the appearance that the SAB member is using their individual position as a Panel member to influence an outcome that is consistent with the position of their employer, or even worse, consistent with the position for which they were a lead scientist in developing for their employing agency.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	0	1
Domination of deliberations by a specific member (bully cheerleader)	0	0	1	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	1	0
Over-bearing panel sponsor	0	1	0	0
Deference to panel sponsor	0	1	0	0
Over-bearing stakeholder	0	1	0	0
Discounting of a study based solely on affiliation of investigator or funding source	0	0	0	1
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	0	0	1
Other (please explain)	0	0	1	0

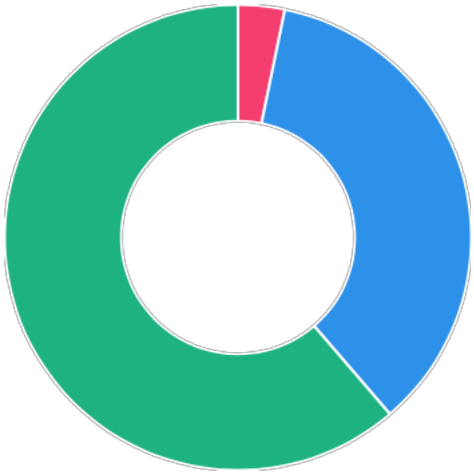
Panelists piggy-backing on other panelists answers, because they appeared to not be prepared.

	Never	Rarely	Sometimes	Often
Expertise gaps (key areas of expertise not included in panel members)	0	0	1	0
Domination of deliberations by a specific member (bully cheerleader)	0	0	1	0
Over reliances on delegated tasks (failure to engage non-tasked members)	0	0	1	0
Over-bearing panel sponsor	0	0	0	1
Deference to panel sponsor	1	0	0	0
Over-bearing stakeholder	0	0	0	1
Discounting of a study based solely on affiliation of investigator or funding source	0	0	1	0
Ad hoc analysis or meta-analysis without full opportunity for independent expert verification of the methods & results	0	1	0	0
Other (please explain)				

I have only served on government advisory committees. So by sponsor I am referring to industry sponsor trying to get a drug or something approved. I also use that for stakeholder and public speakers, sometimes funded by the sponsor.

Question 2.9 *(ID: 3436)*

Have you observed or experienced designs in panel format or process intended to reduce the influence of these internal pressures/problems (e.g., collection of independent input, blinding, bias training)? If so, were the measures taken successful? Please explain.



Legend

- Yes; measures taken were NOT successful (please explain): 1 *(3%)*
- Yes; measures taken were successful (please explain): 11 *(35%)*
- No: 19 *(61%)*

answers: 31
skips: 0

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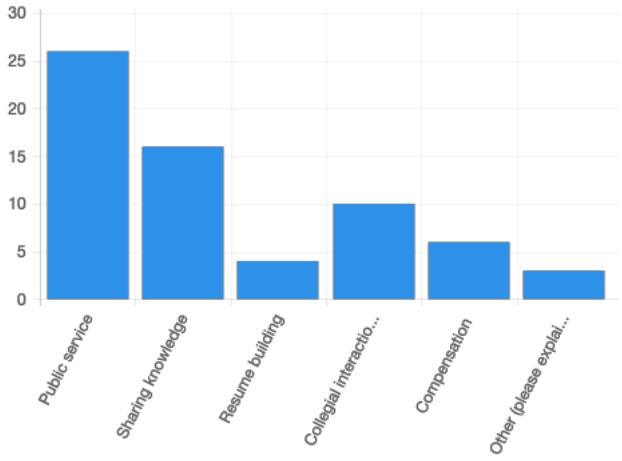
ANSWER	EXPLANATION
No	Concerning the domination of deliberations by a specific member I feel that this is unavoidable in plenary discussions, independently of any criteria for designs in panel format.
Yes; measures taken were successful (please explain)	Deliberate attempt to get experts in all areas the panel needs, strong chairs to keep things from getting out of hand,
Yes; measures taken were successful (please explain)	blinding is often helpful
Yes; measures taken were successful (please explain)	Allowing all panel members opportunity on several occasions to express their opinion
Yes; measures taken were successful (please explain)	My experience is dated and I am aware that thinking has evolved and that much better processes and procedures are in place now than they were when I worked for EPA's SAB. Even in the mid-90's we recognized that bias was of concern so we vetted all panel members using the information gathered from the Office of Government Ethics form (OGE450) regarding real and apparent conflicts of interest. These were minimized by not selecting candidates with real conflicts to serve on panels except on very rare occasions and those with apparent but not conflicts were carefully discussed not only among SAB staff but with agency ethics attorneys as well. At every meeting each panel member declared all real and apparent conflicts publicly both in writing and orally so that every other panel member and all participants from the public would know of these and could take them into account during the panel deliberations. Importantly it also forced each panel member to very clearly and directly examine his/her potential conflicts and motivations during the discussion and report writing and to know that he/she was being scrutinized by his/her peers as well as the agency and the public. I do believe that it helped to reduce the influence of external pressures.
No	I am not aware of any such practices that I have personally experienced.
No	Not specifically.
Yes; measures taken were NOT successful (please explain)	Emphasis on financial conflicts of interest crowds out needed concern about personal biases, ideological blinders, and simple lack of expertise.
Yes; measures taken were successful (please explain)	The best example to control potential bias is the procedures followed by NRC.
Yes; measures taken were successful (please explain)	My only experience with a panel process that recognizes the limitations/pitfalls of traditional (e.g., USEPA SAP) panels is that of SciPinion. Other State and Federal Panels have not, to my knowledge, conscientiously put steps in place to improve the process and outcome (which is by design many times).
No	The panels I've participated in sought to have "balance", by including people who represented a certain sector, but did not have expertise on the topic.
Yes; measures taken were successful (please explain)	I have had to undertake "un-conscience bias" training in the past. I have also had information blinded prior to review. The "un-conscience bias" training was definitely eye-opening and made me aware of things I would not have considered I was biased too.
Yes; measures taken were successful (please explain)	EPA and NAS panels require recusal on specific issues of conflict, and public declaration of such. However, Panel members are largely left to their own interpretation of what conflicts/biases should be revealed. External observers are reluctant to point out such conflicts when they

	are not known to their fellow panelists or the agency conducting the SAB - nobody likes to appear to be besmirching an individual's judgement. EPA does a good job of providing bias training, but in the end, it still is the individual SAB member's responsibility to declare a potential conflict. I do not believe any of the SABs I have participated in actively search for potential panelist conflicts if otherwise undeclared, unless it is self-obvious, e.g., for industry employment, or from the individual's CV.
Yes; measures taken were successful (please explain)	There was independent input initially, but then with the group meeting some of these same problems (as in section 2.8) came out. So my answer is that the measures were semi-successful
No	Panel members are picked by the government for those that I participated in. So must be SGE
Yes; measures taken were successful (please explain)	Meeting materials with clear charge questions and reviewer assignments provided at least 3 weeks in advance.

Question 2.10 *(ID: 3437)*

What is the primary motivation for you to participate in science peer review panels?



Legend

Public service: 26
Sharing knowledge: 16
Resume building: 4
Collegial interactions: 10
Compensation : 6
Other (please explain): 3

answers: 31
skips: 0

Answer Explanations 14

ANSWER	EXPLANATION
Compensation, Collegial interactions, Resume building, Sharing knowledge, Public service	Panel participation provided professional growth.
Public service	No explanation needed.
Collegial interactions, Sharing knowledge	Very interesting and beneficial to engage other colleagues and thought leaders on topics; invaluable when researching a particular topic anc you want to be participating in breaking new ground.
Public service	It sounds corny I know, but I have been blessed to have had many wonderful, diverse opportunities over my career at EPA, as a science advisor to a US Senator, and elsewhere and would like to give back by sharing my experience, to the extent it is useful, to help others.
Other (please explain), Sharing knowledge	Would like change.
Other (please explain), Sharing knowledge, Public service	Serving Science
Sharing knowledge, Public service	I feel especially with government based panels that this is a service and my remarks can offset others with an agenda (again the industry reps); also, i feel my 40 years of professional work has value in mentoring younger researchers.
Sharing knowledge, Public service	When I have the time, serving on the panel is stimulating because often a panelist becomes exposed to the most current thinking on a topic.
Compensation, Collegial interactions, Sharing knowledge	The WHO Committee paid for the written contribution to the report in cash. The US and other international groups are volunteer.
Collegial interactions, Sharing knowledge, Public service	Though Question 2.10 asks for a "primary motivation," it allows selecting multiple answers, so I selected what I currently consider to be main factors motivating my participation in panels. Of course, in earlier stages of my career, "Resume building" was a factor, and if a review panel spans multiple days, compensation also becomes a factor.
Sharing knowledge	Bringing the truth back to scientific matters and concerns.
Collegial interactions, Resume building, Sharing knowledge, Public service	I like to feel that I can contribute to my scientific community.
Public service	Public health is only well served if supported by high quality and diverse peer review.
Other (please explain), Sharing knowledge, Public service	Work for a nonprofit safety organization that values employees on government committees and other non-industry panels. As a SGE I do get compensated for day(s) of meetings and per Diem travel and expenses. The compensation is not high but does cover expense and part of time out of office. As a safety expert I also participate in other invited panels (e.g., National Academy of Sciences [NAS], WHO, professional organizations,...)

Question 2.11 *(ID: 3438)*

Have you ever opted to NOT participate in a science panel due to the following factors ? (select all that apply)

	Never	Rarely	Sometimes	Often	Total
Schedule conflict	29.03% 9	16.13% 5	48.39% 15	6.45% 2	31
Logistics/travel difficulties	43.33% 13	23.33% 7	30.00% 9	3.33% 1	30
Controversial nature of topic (e.g., the science has been or will be politicized)	73.33% 22	13.33% 4	10.00% 3	3.33% 1	30
Aversion to public forums	86.67% 26	10.00% 3	3.33% 1	0.00% 0	30
Insufficient compensation	66.67% 20	23.33% 7	10.00% 3	0.00% 0	30
Requirement to file a financial disclosure	96.67% 29	3.33% 1	0.00% 0	0.00% 0	30
Health reasons	90.00% 27	6.67% 2	3.33% 1	0.00% 0	30
Language barriers	96.67% 29	3.33% 1	0.00% 0	0.00% 0	30
Other (please explain)	75.00% 3	25.00% 1	0.00% 0	0.00% 0	4

Answer Explanations 12

ANSWER	EXPLANATION

	Never	Rarely	Sometimes	Often
Schedule conflict	0	0	1	0
Logistics/travel difficulties	0	0	1	0
Controversial nature of topic (e.g., the science has been or will be politicized)	1	0	0	0
Aversion to public forums	1	0	0	0
Insufficient compensation	1	0	0	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	1	0	0	0
Language barriers	1	0	0	0
Other (please explain)	1	0	0	0

Sometimes schedule conflict prevent panel participation.

	Never	Rarely	Sometimes	Often
Schedule conflict	1	0	0	0
Logistics/travel difficulties	1	0	0	0
Controversial nature of topic (e.g., the science has been or will be politicized)	1	0	0	0
Aversion to public forums	1	0	0	0
Insufficient compensation	1	0	0	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	1	0	0	0
Language barriers	1	0	0	0
Other (please explain)	1	0	0	0

No explanation needed.

	Never	Rarely	Sometimes	Often
Schedule conflict	1	0	0	0
Logistics/travel difficulties	1	0	0	0
Controversial nature of topic (e.g., the science has been or will be politicized)	1	0	0	0
Aversion to public forums	1	0	0	0
Insufficient compensation	1	0	0	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	1	0	0	0
Language barriers	1	0	0	0
Other (please explain)				

Would not say no, unless was scheduled and conflicts could not be worked out.

	Never	Rarely	Sometimes	Often
Schedule conflict	0	0	1	0
Logistics/travel difficulties	0	0	1	0

Controversy was biggest obstacle during USDA employment due to policies, etc.The other responses are self-explanatory.

Controversial nature of topic (e.g., the science has been or will be politicized)	0	1	0	0
Aversion to public forums	0	1	0	0
Insufficient compensation	0	0	1	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	1	0	0	0
Language barriers	1	0	0	0
Other (please explain)				

	Never	Rarely	Sometimes	Often
Schedule conflict	0	0	0	1
Logistics/travel difficulties	1	0	0	0
Controversial nature of topic (e.g., the science has been or will be politicized)	0	1	0	0
Aversion to public forums	0	0	1	0
Insufficient compensation	0	1	0	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	1	0	0	0
Language barriers	0	1	0	0
Other (please explain)				

lack of knowledge/experts

	Never	Rarely	Sometimes	Often
Schedule conflict	1	0	0	0
Logistics/travel difficulties	1	0	0	0
Controversial nature of topic (e.g., the science has been or will be politicized)	1	0	0	0
Aversion to public forums	1	0	0	0
Insufficient compensation	1	0	0	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	1	0	0	0
Language barriers	1	0	0	0
Other (please explain)				

I haven't had that many shots that I've turned them down.

	Never	Rarely	Sometimes	Often
Schedule conflict	0	1	0	0
Logistics/travel difficulties	0	0	1	0
Controversial nature of topic (e.g., the science has been or will be politicized)	1	0	0	0
Aversion to public forums	1	0	0	0
Insufficient compensation	0	1	0	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	1	0	0	0
Language barriers	1	0	0	0
Other (please explain)				

I have resigned from at least one panel (TERA) because I believe my name was abused as providing "political balance" when I was just a token dissenter.

	Never	Rarely	Sometimes	Often
Schedule conflict	0	1	0	0
Logistics/travel difficulties	0	1	0	0
Controversial nature of topic (e.g., the science has been or will be politicized)	1	0	0	0
Aversion to public forums	1	0	0	0
Insufficient compensation	1	0	0	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	1	0	0	0
Language barriers	1	0	0	0
Other (please explain)				

All of the US and international organizations with whom I've worked conduct the proceedings in English. One meeting in Rome on the EU occupational exposure limit for benzene used simultaneous translations similar to those employed in United Nations meetings.

	Never	Rarely	Sometimes	Often
Schedule conflict	0	0	1	0
Logistics/travel difficulties	0	1	0	0
Controversial nature of topic (e.g., the science has been or will be politicized)	1	0	0	0
Aversion to public forums	1	0	0	0
Insufficient compensation	1	0	0	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	1	0	0	0
Language barriers	1	0	0	0
Other (please explain)	0	1	0	0

An for previous questions, I must point out that my interpretation of the terms "Never, Rarely, Sometimes and Often" is somewhat subjective/qualitative. Regarding my selection of "Rarely" to the last item ("Other") of the current Question, it refers to cases when I could not participate due to some family-related issues (I am not sure that these would be covered under either health reasons or logistics...)

	Never	Rarely	Sometimes	Often
Schedule conflict	1	0	0	0
Logistics/travel difficulties	1	0	0	0
Controversial nature of topic (e.g., the science has been or will be politicized)	0	1	0	0

I once decided not to put my name forward for an EPA Advisory Panel because of a potential conflict of interest with a chemical owned by my company.

Aversion to public forums	1	0	0	0
Insufficient compensation	1	0	0	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	1	0	0	0
Language barriers	1	0	0	0
Other (please explain)				

	Never	Rarely	Sometimes	Often
Schedule conflict	0	0	0	1
Logistics/travel difficulties	0	0	0	1
Controversial nature of topic (e.g., the science has been or will be politicized)	0	0	0	1
Aversion to public forums	0	1	0	0
Insufficient compensation	0	1	0	0
Requirement to file a financial disclosure	0	1	0	0
Health reasons	0	1	0	0
Language barriers	1	0	0	0
Other (please explain)				

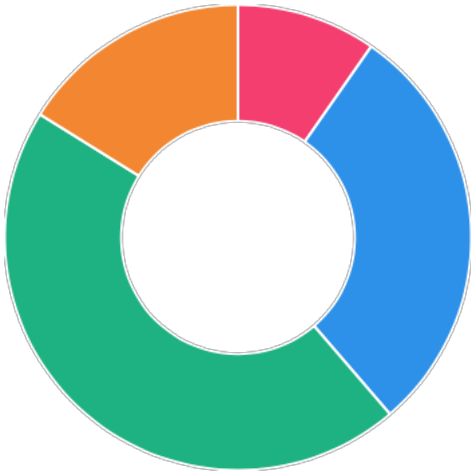
Scheduling is a major issue especially for those panels that are not planned far enough in advance.

	Never	Rarely	Sometimes	Often
Schedule conflict	0	0	1	0
Logistics/travel difficulties	0	0	1	0
Controversial nature of topic (e.g., the science has been or will be politicized)	1	0	0	0
Aversion to public forums	1	0	0	0
Insufficient compensation	0	0	1	0
Requirement to file a financial disclosure	1	0	0	0
Health reasons	1	0	0	0
Language barriers	1	0	0	0
Other (please explain)				

Availability is usually why I wouldn't serve if asked for my SGE work. For other groups it may depend on availability but also compensation for travel.

Question 2.12 *(ID: 3439)*

Based on your experience, how transparent is the process by which science panels are selected from the available candidates? (please provide examples where you think the selection process has been especially transparent)



Legend

- Transparent; please provide examples: 3 *(10%)*
- Vague: 9 *(29%)*
- Not transparent: 14 *(45%)*
- Cannot answer: 5 *(16%)*

answers: 31
skips: 0

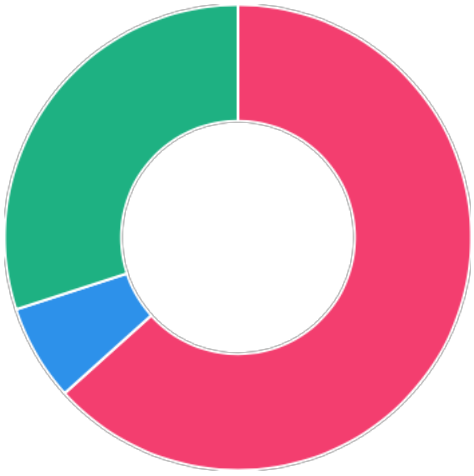
Answer Explanations 17

ANSWER	EXPLANATION
Transparent; please provide examples	I believe panel members are selected based on their expertise.
Not transparent	This is never publicized by the organizing group. One finds out after the fact if they did their job in getting representatives from all areas (stakeholder and public health) and experts in all the needed areas.
Vague	No one has ever explained it to me..
Transparent; please provide examples	Last panel, all members' credentials were shared with all panel members, as it should be.
Transparent; please provide examples	At the time I worked for EPA's Science Advisory Board the process by which candidates were selected were clearly described, made widely public via notice in the Federal Register, and carefully followed. It was not possible to be fully transparent because some of the material used to base final decisions about service on a panel involved highly sensitive and personal financial information
Not transparent	Don't know how the final selection is made even when experts wo would balance the panel have been nominated.
Not transparent	Mostly I see the same people are rotated in different panels giving the impression of selecting experts the selecting committee know and "friends" with and not looking for "out of the box" opinion.
Cannot answer	Really have no idea how every panel selection is based other than the experience and expertise of the final members.
Not transparent	I don't think I have ever understood how panels are selected. It has to be a difficult task and somewhat objective based on who a person knows who is selecting the panel.
Vague	I've not done any such selection myself and have no sense of the obstacles to transparency.
Cannot answer	Based on my experience, the transparency of the selection process is highly variable, depending on agency, country etc. However, I must admit that I have not in general followed this process in detail (e.g. relevant information might have been available upon request...)
Not transparent	In particular, the Federal Panels (e.g., USEPA SAP) are not transparent at all in my experience. Some standing panels (e.g., DARTIC) are a bit more transparent in that these are appointees thru a separate process.
Not transparent	I honestly don't think they are very transparent. I tend to see a lot of the same people on the panels that fall into my area of expertise and I don't think it is because of a lack of people in the field. It seems there is a desire to go with the "known folks".
Not transparent	On most of the panels for which I have served, I haven't been privy to the selection process. Often, I have been nominated by a colleague.
Vague	It is often not clear how panelist expertise is transparently matched to charge of SAB., i.e., SAB members may have strong professional expertise, but not clearly in areas related to the charge of the Panel, e.g., having a human oncologist serve on an SAB directed primarily at interpretation of animal cancer bioassay findings can adversely impact appropriate responses to the charge. Having a panel review an issue for which a key need is interpretation of a pathology response without having any SAB members with strong pathology experience is another problematic issue I have observed.

Not transparent	I don't know how the panels were selected.
Vague	For the government I have been asked many times to submit names of colleagues to participate. They usually also ask for specific expertise and area of the country to get a more diverse group. For other groups not always sure how they pick panelists (often times it may seem to be by notoriety versus expertise or funding from a particular company)

Question 2.13 *(ID: 3440)*

Should peer review panel composition be managed to have a balance in perspectives?



Legend

- Yes: 19 *(63%)*
- No: 2 *(7%)*
- Sometimes; please explain: 9 *(30%)*

answers: 30
skips: 1

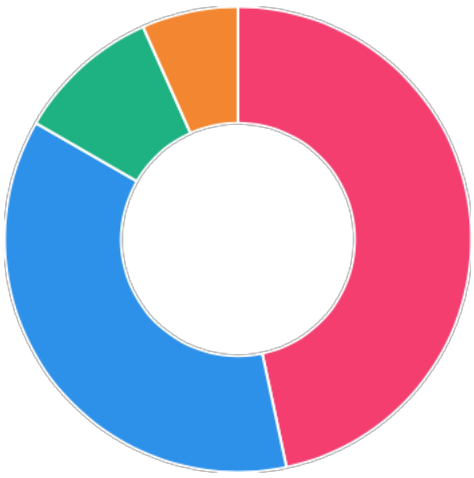
Answer Explanations 19

ANSWER	EXPLANATION
Yes	A balanced approach is always good.
Yes	This is tantamount to having a final product that will withstand litigation and that gives the public confidence in the final report.
No	should only rely on scientific expertise, different perspectives may make work cumbersome
Sometimes; please explain	Only when issue has two sides.
Yes	It benefits all panels to have members from different backgrounds; impartial review of panel should occur.
Yes	Based on my experience monolithic panels do not provide feedback that is as useful as feedback from diverse panels. I think this is because in large part "what you see" is based on "where you sit". Thus, while at EPA, all things being equal regarding expertise, we strove to select diverse panels based on considerations of age, gender, race, geographic locations, work sector, career stage and the like.
Yes	i think for the most part review panels are generally balanced.
Sometimes; please explain	In those cases where a dichotomous split in scientific opinion is known to exist, it is important to canvas both sides' key data sources and methodology, so that a decision can be transparent.
Sometimes; please explain	THe question is really whether competing biases on a panel is a means of finding balance. For example, in Canada, experts at a litigation event are often sequestered so that they can areas of agreement. This sort of dialog is not something I've ever seen at a panel.
Sometimes; please explain	Panels fall prey to the same "phony balance" problem as journalists-- for example, 20 members on climate change should include at most 1-2 fringe scientists who don't accept basic settled science-- 10 plus 10 is unbalanced, not balanced.
Sometimes; please explain	Expertise is most important; balance should be subordinate.
Sometimes; please explain	My concern here is the term "perspectives." I think that the peer review panel composition should be managed to have a balance in scientific perspectives as well as in scientific and professional backgrounds (e.g. balanced representation from agencies, academia, and industry). However I don't think that panels should be managed to have a balance in political, religious, philosophical etc. perspectives
Sometimes; please explain	I think this depends - if it is a matter of obtaining the highest scientific standard or decision based on objective, high-standard science, then what is critical is recruitment of objective, honest, knowledgeable scientists. I think it is necessary to have a balance in stakeholders such that panels with all academics who know little about regulatory science are ill-served.
Sometimes; please explain	Only if participants back up their positions with science/data rather than ideology. If they only back up their positions with ideology, their opinion should be treated separately than those that can back them up with data.
Yes	yes definitely, otherwise what is the point of the peer review panel
No	Panelists should be selected based on credentials, expertise, experience and demonstrated integrity.
Yes	And all too often, industry-employed or industry-funded scientists perspectives are being discouraged from Panel participation. If an SAB is appropriately constituted with appropriate high-quality expertise to review a given charge, inclusion of diverse perspectives should be beneficial to the outcome, i.e., if a SAB member offers an outlandish science claim, that member should expect to be embarrassingly

	challenged by fellow Panel members. Of course, inclusion of such diverse perspectives should be fully and openly declared.
Sometimes; please explain	It is hard to balance compensation - some panelists can't take compensation (e.g. government employees), whereas others need quite a lot to compensate for their time (because they have a high hourly rate, for example).
Yes	Need to have different expertise. I have served on many government advisory meetings when different committees were asked to join depending on their expertise (risk, renal, cardiac,...) depending on the topic.

Question 2.14 *(ID: 3441)*

Based on your experience, how transparent is the process by which science panels deliberate their findings and document opinions in their panel reports? (please provide examples where you think the documentation of deliberations has been especially transparent)



Legend

- Transparent; please provide examples: 14 *(47%)*
- Vague: 11 *(37%)*
- Not transparent: 3 *(10%)*
- I cannot answer: 2 *(7%)*

answers: 30
skips: 1

Answer Explanations 22

ANSWER	EXPLANATION
Transparent; please provide examples	Based on my experience in EFSA and JECFA all deliberation of findings and document opinions have been based on the most relevant comprehensive literature and confidential reports. The findings were accurately reported and conclusions explained.
Transparent; please provide examples	Science panel reviews are honest and transparent.
Transparent; please provide examples	Panel reports are complete and differences of opinion on particular matters are typically included. EPA CASAC reports are totally transparent.
Transparent; please provide examples	EFSA opinions provide full justification and a good account of the process how the opinion was formed. IARC is sometimes dominated by outspoken individuals
Transparent; please provide examples	FDA RCAC and how some complications are communicated to caregivers.
Transparent; please provide examples	Consensus documents should always be included in final recommendations; percentage of votes should also be included for full transparency, as indicated.
Transparent; please provide examples	I've not noted it before my response to this question but I also served as Deputy Director of the Health Effects Division in the Office of Pesticide Programs for three years and worked closely with EPA's FIFRA Science Advisory Panel who reviewed and commented on our major risk assessments. The SAP deliberated in public meetings and produced a draft report before the end of the meeting whose key points were orally stated to the public. No additional point, not publicly stated during the meeting, could appear in the final written report when it was transmitted to the Agency shortly after the meeting.
Transparent; please provide examples	But public comments are not necessarily balanced against panel opinions.
Vague	If there is an agenda by the Chair and certain panel members, the documentation can be manipulated.
Transparent; please provide examples	There are usually full and robust discussions unless a proposal gets triaged. At the end the rankings are created and revisited. In the case of NSF the program officer has the final word on who and who is not funded.
Vague	Panels try to be transparent, but sometimes the sheer workload required to make this happen is difficult to complete.
Vague	It's never completely clear how the final document is arrived at.
Not transparent	NAS panels, in my experience, do not share the document responding to peer review comments.
Transparent; please provide examples	Derivation of the NRC Acute Exposure Guideline Levels (AEGLs) is very specific; the key study (or studies) is identified, the health endpoint specified and the method (e.g., uncertainty factors) is listed. There are perhaps a dozen NRC volumes on AEGLs that were published and these can be accessed easily and for free on the NAS web site.
Transparent; please provide examples	open discussion, conference calls and shared emails following meetings, exchange of draft documents.

Not transparent	USEPA SAP is particularly vague - while you can observe the proceedings, there is little transparency on the minutes and final report.
Vague	This has very much been dependent on the type of panel, certainly for the FDA yes, I would say the process is very transparent with everything documented and reviewed. However, in other circumstances, I sometimes wonder what was the point if the panel as the "conclusion" seems to have been a foregone decision.
Transparent; please provide examples	In most of the panels I have been involved with I participated in preparing the panel report and signed off on it.
Transparent; please provide examples	EPA panel deliberations are generally reasonably transparent, with limitations noted in answers to previous questions. Other panel deliberations, such as NAS, can be far less transparent. After holding an opening session(s) for public input, the panel generally retires to completely closed deliberations for report deliberations, writing and finalization. Unlike EPA panels, NAS panels do not allow for public input prior to finalization of the Panel reports.
I cannot answer	For some committees, the deliberations are explicitly indicated to be confidential so that people can have open and honest discussions and potentially change their positions, without all those details being reported; this seems appropriate. Usually, if there is not a consensus on something, then the different positions and the reasoning behind them is reported and thus is transparent. When there is consensus on a committee determination, then the reasons behind it are reported but as noted, the discussions that led to it including changes in perspectives are not reported and that seems reasonable.
Vague	There are some aspects that are transparent (e.g. public meetings), and others that are necessarily less transparent (e.g. emailing text edits between authors)
Transparent; please provide examples	On meetings I attend there is time for open discussion, statement of each panel members response to the question asked, and time to explain. Again, this is for government advisory panels.

Question 2.15 *(ID: 3442)*

Does the sponsor for peer review panel (e.g. government agency, third party organization) influence how likely you are to participate? In general, are you willing to participate in a peer review sponsored by: (if No, please explain)

	Yes	No	It depends (please explain)	Total
Industry	74.19% 23	3.23% 1	22.58% 7	31
Government	90.32% 28	3.23% 1	6.45% 2	31
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	64.52% 20	12.90% 4	22.58% 7	31
Science organization (e.g., National Academy of Science)	90.32% 28	6.45% 2	3.23% 1	31
Independent third party	67.74% 21	9.68% 3	22.58% 7	31

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ANSWER

EXPLANATION

	Yes	No	It depends (please explain)
Industry	0	0	1
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	1	0	0

I would be willing to participate in a peer review sponsored by Industry only upon compensation.

	Yes	No	It depends (please explain)
Industry	1	0	0
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	1	0	0

I am willing to participate to improve science.

	Yes	No	It depends (please explain)
Industry	1	0	0
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	0	0	1
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	1	0	0

I would participate if I could determine the at the panel would be balanced and the topic was scientifically sound.

	Yes	No	It depends (please explain)
Industry	1	0	0
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	1	0	0

I always provide advice based upon my knowledge independent of the organization sponsoring the peer review panel.

	Yes	No	It depends (please explain)
Industry	1	0	0
Government	0	0	1
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	0	1	0
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	1	0	0

I do not want to serve on EU panles due to a strict CoI and publication of all activities including confidential work, eg for law firms

	Yes	No	It depends (please explain)
Industry	0	0	1
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	0	0	1

Depends on the industry involved and the issue before it.

	Yes	No	It depends (please explain)
Industry	0	1	0
Government	0	1	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	0	1	0
Science organization (e.g., National Academy of Science)	0	1	0
Independent third party	0	1	0

I do not believe sponsor has influence; although I understand that those members who are selected may have tacit interest in promulgating specific agenda items...

	Yes	No	It depends (please explain)
Industry	0	0	1
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	0	0	1
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	0	0	1

My service on industry, advocacy group, and independent third party panels would depend on the type industry, NGO or independent third party, the purpose of the review and the purpose to which the advice would be used.

	Yes	No	It depends (please explain)
Industry	1	0	0
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	0	1	0
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	0	1	0

Depends upon who third party is. NGO's often have biased perspectives. Would not be balanced.

	Yes	No	It depends (please explain)
Industry	0	0	1
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	0	0	1

Often industry wants to stack the deck and gain credibility for their current objective, good or bad. I do not wish to play that game especially when its a "our product out-performs their product" based on these experts on a pane.

	Yes	No	It depends (please explain)
Industry	1	0	0
Government	0	0	1
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0
Science organization (e.g., National Academy of Science)	0	1	0
Independent third party	0	0	1

Depends on the strength of the biases and unstated agenda.

	Yes	No	It depends (please explain)
Industry	1	0	0
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	0	0	1

never had a request from a 3rd party

	Yes	No	It depends (please explain)
Industry	1	0	0
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0

The source of funding should not matter, only the science.

Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	1	0	0

	Yes	No	It depends (please explain)
Industry	0	0	1
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	0	0	1
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	0	0	1

It depends who the sponsor is and what the topic is. There are just issues I do not want to be involved in. For example, I recently received a request from an independent third party to be on a panel to advise regarding drugs used for lethal injection. This is not something I wanted to be involved in.

	Yes	No	It depends (please explain)
Industry	1	0	0
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	0	0	1
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	1	0	0

Participation in NGO panels is dependent on whether the NGO has strongly self-identified and pre-established biases against science-based outcomes.

	Yes	No	It depends (please explain)
Industry	0	0	1
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	0	0	1
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	1	0	0

I've never been asked to be on a peer review carried out by industry or an advocacy group, though I may have done one that was funded by industry through an independent third party. I'd have to be convinces that the sponsor was looking for a scientific review and not simply support for their position.

	Yes	No	It depends (please explain)
Industry	1	0	0
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	0	0	1
Science organization (e.g., National Academy of Science)	0	0	1
Independent third party	0	0	1

As an SGE and with the organization I work I would not participate in an industry sponsored panel, while i serve in my current job. I have participated in NAS panels and depending on the topic other panels.

	Yes	No	It depends (please explain)
Industry	1	0	0
Government	1	0	0
Non-Governmental advocacy group (e.g., World Wildlife Fund, Gates Foundation)	1	0	0
Science organization (e.g., National Academy of Science)	1	0	0
Independent third party	1	0	0

It does not matter on the sponsor. It is important that the experts perform scientifically sound and unbiased peer review independent of the sponsor's affiliation.

Question 2.16 *(ID: 3443)*

How often have you ever observed or experienced external public pressures (criticism in trade press or internet; e.g., blogs, etc.) as a result of your participation in a science panel and/or as a result of your opinions within a science panel? If so, who exerted pressure?

	Never	Rarely	Sometimes	Often	Total
Government/administration	**80.00%** 24	**6.67%** 2	**13.33%** 4	**0.00%** 0	30
Industry representative	**63.33%** 19	**23.33%** 7	**13.33%** 4	**0.00%** 0	30
Media/press	**51.61%** 16	**19.35%** 6	**12.90%** 4	**16.13%** 5	31
NGO (Nongovernmental organization)	**66.67%** 20	**6.67%** 2	**10.00%** 3	**16.67%** 5	30
Panel sponsor	**83.33%** 25	**10.00%** 3	**6.67%** 2	**0.00%** 0	30
Your employer (specify type)	**93.55%** 29	**6.45%** 2	**0.00%** 0	**0.00%** 0	31
Other (please specify)	**88.89%** 8	**0.00%** 0	**11.11%** 1	**0.00%** 0	9

Answer Explanations 11

ANSWER

EXPLANATION

	Never	Rarely	Sometimes	Often
Government/administration	1	0	0	0
Industry representative	0	1	0	0
Media/press	0	0	1	0
NGO (Nongovernmental organization)	0	1	0	0
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)				

Particularly while working for the government, my participation and opinions as part of science panels received some criticism in the media or in blogs by self-proclaimed science watchdogs.

	Never	Rarely	Sometimes	Often
Government/administration	1	0	0	0
Industry representative	0	0	1	0
Media/press	1	0	0	0
NGO (Nongovernmental organization)	1	0	0	0
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)	1	0	0	0

The only time I was attacked by industry was for my doctoral dissertation on the uptake of ozone in mammalian lungs. The industry report basically said "Miller said X was black" when I actually said "X is white". The authors of the report acknowledged they were under pressure to criticize my work.

	Never	Rarely	Sometimes	Often
Government/administration	0	0	1	0
Industry representative	0	1	0	0
Media/press	0	0	0	1
NGO (Nongovernmental organization)	0	0	0	1
Panel sponsor	0	1	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)				

NGOs like to bring up CoIs independent of the science to discredit panel members and communicate this to media

	Never	Rarely	Sometimes	Often
Government/administration	1	0	0	0
Industry representative	1	0	0	0
Media/press	1	0	0	0
NGO (Nongovernmental organization)	1	0	0	0
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)				

Have not experienced external pressure from any entity

	Never	Rarely	Sometimes	Often
Government/administration	1	0	0	0

I personally have never experience public pressures as a result of my participation on a science panel

Industry representative	1	0	0	0
Media/press	1	0	0	0
NGO (Nongovernmental organization)	1	0	0	0
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)	1	0	0	0

	Never	Rarely	Sometimes	Often
Government/administration	1	0	0	0
Industry representative	1	0	0	0
Media/press	1	0	0	0
NGO (Nongovernmental organization)	1	0	0	0
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)				

My personal participation on panels has not been questioned.

	Never	Rarely	Sometimes	Often
Government/administration	1	0	0	0
Industry representative	1	0	0	0
Media/press	1	0	0	0
NGO (Nongovernmental organization)	1	0	0	0
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)				

NOt so far

	Never	Rarely	Sometimes	Often
Government/administration	1	0	0	0
Industry representative	1	0	0	0
Media/press	0	0	0	1
NGO (Nongovernmental organization)	1	0	0	0
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)	1	0	0	0

My presentation to a Congressional committee was criticized by the Milwaukee Journal Sentinel, most probably at the request of University of Missouri researchers who objected to the conclusions presented to that panel.

	Never	Rarely	Sometimes	Often
Government/administration	1	0	0	0
Industry representative	0	1	0	0
Media/press	1	0	0	0
NGO (Nongovernmental organization)	1	0	0	0
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)				

The only real pressure I have experienced was from colleagues for participating in an industry-sponsored panel. I am an academic within a health system and they commented about me working for the "dark side" and advancing the interests of corporations and not patients.

	Never	Rarely	Sometimes	Often
Government/administration	1	0	0	0
Industry representative	1	0	0	0
Media/press	0	1	0	0
NGO (Nongovernmental organization)	0	0	1	0
Panel sponsor	1	0	0	0
Your employer (specify type)	1	0	0	0
Other (please specify)				

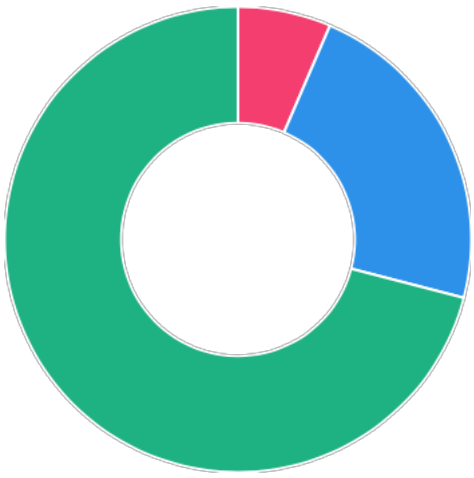
I have occasions when NGO's have questioned my participation on panels.

	Never	Rarely	Sometimes	Often
Government/administration				
Industry representative				
Media/press	0	0	1	0
NGO (Nongovernmental organization)				
Panel sponsor				
Your employer (specify type)	1	0	0	0
Other (please specify)	0	0	1	0

Public comments are allowed for advisory meetings and it is not uncommon for the public to contact me directly to try to sway my opinion before the meeting. They obtain my name and contact through open public disclosure.

Question 2.17 *(ID: 3444)*

Have you observed or experienced designs in panel format/process intended to reduce the influence of these external pressures (e.g., blinding, limited access sessions)? If so, were the measures taken successful?



Legend

- Yes; measures taken were NOT successful (please explain): 2 *(6%)*
- Yes; measures taken were successful (please explain): 7 *(23%)*
- No: 22 *(71%)*

answers: 31
skips: 0

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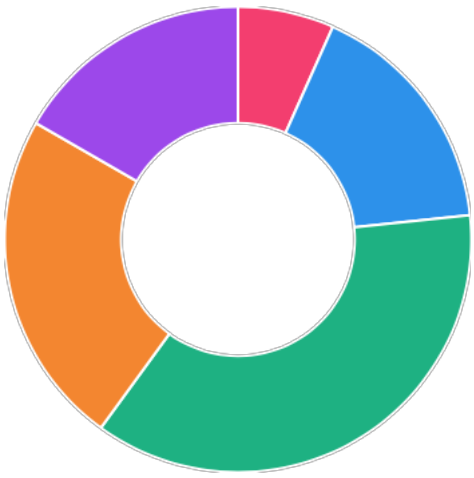
ANSWER	EXPLANATION
Yes; measures taken were successful (please explain)	Deliberate attempt to get experts in all areas the panel needs, strong chairs to keep things from getting out of hand,
Yes; measures taken were NOT successful (please explain)	EFSA tried to have general minutes without naming individual opinions
No	None, no experience
Yes; measures taken were successful (please explain)	EPA routinely closes panel deliberation to the public after an open-hearing process and this seems to be successful in limiting criticisms, etc.
No	I have only been involved in what I would consider traditional panel activities. There was not a process by which outside influences were considered to be a serious issue.
Yes; measures taken were successful (please explain)	With Scipinion and the blinding of results.
Yes; measures taken were successful (please explain)	Deliberations on setting the actual occupational or environmental exposure limits can be closed (e.g., TLV) or open (e.g., AEGLs) to the public. In my experience the debate formats and presentations were no different be the discussions public or private.
Yes; measures taken were successful (please explain)	Of my participation in a past SciPinion Panel, all measures taken were spot on for reducing bias and remaining truly independent and objective.
Yes; measures taken were successful (please explain)	Yes, in general, the use of binding has been used and successful
Yes; measures taken were successful (please explain)	Many reviews have had public sessions including public comment periods. Many panels then have discussion/writing sessions that are only open to committee members and the staff of the organization running the review. This works well to balance getting public input and time for committee discussions that can be honest, even heated. From the point of view of those outside the committee, it must appear opaque. Some committees, all the discussion must be in public. This is transparent, but may tend to inhibit discussion among committee members.
No	Not in government meetings since open in the federal registry. For other scientific panels (e.g., NAS, professional organizations, multi stakeholder panels,...), I have not experienced outside influences.

Question 2.18 *(ID: 3445)*

In your experience, how often are underlying raw data for the most critical studies made available to those who peer review a regulatory risk assessment?



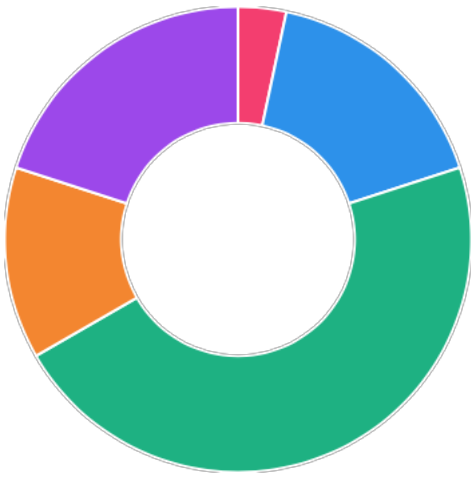
Legend

- Never: 2 *(7%)*
- Rarely: 5 *(17%)*
- Sometimes: 11 *(37%)*
- Often: 7 *(23%)*
- Always: 5 *(17%)*

answers: 30
skips: 1

Question 2.19 *(ID: 3446)*

How often do current peer review processes provide sufficient opportunity for input from all interested stakeholders on the charge questions assigned to a government sponsored peer review panel?



Legend

- Never: 1 *(3%)*
- Rarely: 5 *(17%)*
- Sometimes: 14 *(47%)*
- Often: 4 *(13%)*
- Always: 6 *(20%)*

answers: 30
skips: 1

Question 3.1 *(ID: 3422)*

Is it a good idea for regulatory agencies to exclude qualified scientists with industry funding (e.g., EFSA) or grant recipients (e.g., EPA) from serving on science panels?

	Yes	No	Sometimes (please explain)	Total
Exclude industry conflicts of interest	**32.26%** 10	**41.94%** 13	**25.81%** 8	31
Exclude grant conflicts of interest	**35.48%** 11	**29.03%** 9	**35.48%** 11	31
Exclude other (please explain)	**9.09%** 1	**45.45%** 5	**45.45%** 5	11

Answer Explanations 22

ANSWER	EXPLANATION

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	1	0	0
Exclude grant conflicts of interest	0	0	1
Exclude other (please explain)	0	1	0

In my opinion, it is a good a idea to exclude grant conflicts of interest, when those are related to industry.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	1	0
Exclude grant conflicts of interest	0	1	0
Exclude other (please explain)	0	1	0

It is not a good idea to exclude scientists with funding experience.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	1	0
Exclude grant conflicts of interest	0	1	0
Exclude other (please explain)			

As long as there are no real topical conflicts of interest (COI), knowledgeable, qualified scientists should be included. General funding sources should not constitute a real COI.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	1	0
Exclude grant conflicts of interest	0	1	0
Exclude other (please explain)	1	0	0

The main situation where someone should be excluded is when they have made public comments for or against the topic being reviewed.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	1	0
Exclude grant conflicts of interest	1	0	0
Exclude other (please explain)			

Industry sponsoring is received because the lab has relevant experience, grant recipients may have conflicts if they advise in areas where they could apply for funding

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	1	0	0
Exclude grant conflicts of interest	1	0	0
Exclude other (please explain)			

Conflicts of interest, regardless of source or origin, should inherently be identified and vetted - best course of action is to ask member to recuse him or herself

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	0	1
Exclude grant conflicts of interest	0	0	1
Exclude other (please explain)	0	0	1

I would almost always exclude those with a conflict of interest EXCEPT under exceptional circumstances where there is no other person with comparable experience. In such cases where those with conflicts are selected I think that their conflicts should be made public (i.e., it should be made clear that they are a "wolf in wolf's clothing" selected on the basis of their expertise but they do have a conflict.)

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	1	0
Exclude grant conflicts of interest	1	0	0
Exclude other (please explain)			

In my opinion the grants take over the panels and it becomes a competition for research funding - who has the best idea for the sponsoring agency.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	1	0	0
Exclude grant conflicts of interest	1	0	0

The bias and its influence needs to be avoided

Exclude other (please explain)			

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	0	1
Exclude grant conflicts of interest	0	0	1
Exclude other (please explain)			

Sometimes this should be considered, particularly on topics where there may be documented historical deep distrust or legal actions pending. Avoiding the perception of a biased conclusion is essential.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	1	0
Exclude grant conflicts of interest	0	1	0
Exclude other (please explain)	0	1	0

I think it insulting to suggest a priori that a scientist will let her biases be driven by funding source. Biases usually stem from past experiences not so funding.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	1	0
Exclude grant conflicts of interest	0	0	1
Exclude other (please explain)	0	0	1

Excluding past or present collaborators is essential. Also, it is often a good idea to exclude people on a panel if a project being reviewed is from the same institution.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	0	1
Exclude grant conflicts of interest	0	1	0
Exclude other (please explain)			

There's a big difference between being employed by a company with a financial stake in an outcome and being an EPA grant recipient-- false equivalence.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	1	0
Exclude grant conflicts of interest	0	1	0
Exclude other (please explain)	0	1	0

It is important that real or potential financial or other conflicts be disclosed, but the presentation of data and conclusions of the presenters should always be welcome. The only caveat is with some of the industry presentations to the TLV Committee where we had to limit those interactions since many were superficial dog-and-pony shows....

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	1	0
Exclude grant conflicts of interest	0	0	1
Exclude other (please explain)			

Because there is a conflict of interest!

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	0	1
Exclude grant conflicts of interest	0	0	1
Exclude other (please explain)	0	0	1

I think that conflicts of interest should be evaluated using case-specific information (related to the subject of each review panel); "blanket" exclusions are not rational.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	0	1
Exclude grant conflicts of interest	1	0	0
Exclude other (please explain)			

I believe that if an industry representative can attest to not having any conflict of interest (in outcome, financial stake, etc.) and pledge to only bring their science knowledge to the table, that industry scientists should not be excluded, but included in panels.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	1	0
Exclude grant conflicts of interest	0	0	1
Exclude other (please explain)			

If the grant was used to fund research that is a part of the peer review, then the scientist should be excluded.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	1	0	0
Exclude grant conflicts of interest	1	0	0
Exclude other (please explain)			

I think there needs to be careful consideration before including those who may have a COI. Although it may not be deliberate as I have learned you can have "un-conscience biases" that you may not be aware of and this is more likely if you have a vested interest in something.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	0	1
Exclude grant conflicts of interest	0	0	1
Exclude other (please explain)			

It depends on whether there is any potential for conflict with respect to the issues being deliberated. Simply being a grant recipient should not prevent a qualified expert from serving on a panel.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	0	1
Exclude grant conflicts of interest	0	0	1

Industry conflicts could be permitted if the issue is non-specific to the interests of industry party (e.g., a review of chemical/drug commercially marketed by employer). However, such conflicted individuals could be considered as non-voting experts to the panel on particularly complicated reviews (to avoid error of the science as note previously). Grantees could

Exclude other (please explain)	0	0	1

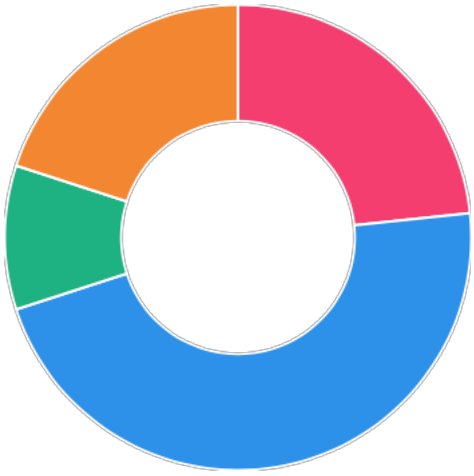
likewise be excluded as voting members if the grant is specific to the issue being reviewed. Government agency SAB members could again be conflicted if their agency employer has taken or is planning to take a regulatory position on a given SAB charge.

	Yes	No	Sometimes (please explain)
Exclude industry conflicts of interest	0	0	1
Exclude grant conflicts of interest	0	0	1
Exclude other (please explain)			

It often is most appropriate to make real or potential conflicts of interest public rather than excluding scientists with expertise. However, a committee should probably have relatively few members with COI, so limiting the number selected also seems reasonable. It is a bit odd, as at EPA, to exclude grant recipients due to COI while allowing industry members with COI.

Question 3.2 *(ID: 3423)*

In your opinion, does sector of employment generally impact an expert's scientific perspective?



Legend

- Most definitely: 7 *(23%)*
- Sometimes: 14 *(47%)*
- No opinion: 3 *(10%)*
- Not an important factor: 6 *(20%)*

answers: 30
skips: 1

Answer Explanations 14

ANSWER	EXPLANATION
Most definitely	In my opinion, those who are employed by government/academia are more likely to provide unbiased opinions, compared to experts that are employed in the industrial sector.
Sometimes	Sometimes, the adage, "where you sit is where you stand" applies. Pro and con positions regarding risk assessment process can be a case in point. Either can impact one's perspective on a given topic.
Sometimes	Almost always this comes from an industry representative.
No opinion	I doubt it
Sometimes	As noted above I think that "what you see" depends on "where you sit". That is why it is good to have very diverse panels with representatives from as many work sectors as possible
Not an important factor	Even though they may have a certain opinion, their opinions are based on scientific facts and therefore, should be listened. I have found industrial scientists to be extremely qualified and ethical when comes to science.
Most definitely	Industry is especially biased, as are their allies whether academic or government scientists, or their customers.
Sometimes	Depends on the individual
Sometimes	The State of California often has public meetings wherein the "Berkeley" notion of a frankly socialist point of view is advocated and that industry-sponsored data is suspect or is disregarded outright. This practice continues to this very day.
Sometimes	The sector of employment may provide different sources of information that affect individual perspectives; this one of the reasons that balanced representation of employment sectors in panel membership should be sought.
Sometimes	In my experience, NGO scientists typically lean toward conservatism/precautionary principle over science.
Not an important factor	No. I don't think a person's employment is the issue, I think it is more are they involved in a project that would lead them to be conflicted or bias.
Sometimes	Not so much scientific perspective, as science policy perspective (what decisions ought to be made in light of the science).
Sometimes	Ironically, I have seen sector employment adversely influence SAB deliberations when the sector is a competing regulatory agency, or when the panelist is employed by an NGO with clearly announced biases. It is rarely an issue with industry employment since such individuals are often the primary target for exclusion from panel membership.

Question 3.3 *(ID: 3424)*

How important are the following factors in guiding panel selection?

	1- not important	2	3	4	5- very important	Total
Subjective factors (perception as a 'good' reviewer, personal knowledge)	6.67% 2	6.67% 2	36.67% 11	23.33% 7	26.67% 8	30
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0.00% 0	0.00% 0	20.00% 6	30.00% 9	50.00% 15	30
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	13.33% 4	6.67% 2	40.00% 12	23.33% 7	16.67% 5	30
Panel balance on science issue(s)	13.33% 4	6.67% 2	26.67% 8	16.67% 5	36.67% 11	30
Others (please specify)	12.50% 1	0.00% 0	12.50% 1	37.50% 3	37.50% 3	8

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ANSWER

EXPLANATION

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	1	0	0
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	0	1
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	1	0	0	0	0
Panel balance on science issue(s)	0	0	0	0	1
Others (please specify)	0	0	0	1	0

The expert should have proved skills in oral/written communication.

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	0	0	1
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	0	1
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	1	0	0
Panel balance on science issue(s)	0	0	0	1	0
Others (please specify)	0	0	0	0	1

The first 2 factors above are critically important for achieving an excellent report on the topic at hand. Willingness to change one's position given the body of discussion on the topic at hand is very important for a responsible panel decision or report.

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	1	0	0
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	0	1
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	1	0	0	0	0
Panel balance on science issue(s)	0	0	0	0	1
Others (please specify)					

Diversity is not relevant, science only matters

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	1	0	0
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	1	0
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	0	1	0
Panel balance on science issue(s)	0	0	0	1	0
Others (please specify)					

Balance is the strong suit for panels

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	0	0	1
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	1	0	0
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	0	0	1
Panel balance on science issue(s)	1	0	0	0	0
Others (please specify)	0	0	0	1	0

I think that a variety of skills are needed to be a good reviewer, including doing one's homework, listening well, being committed to "science for a purpose" by understanding the goals of the review and doing one's best to provide feedback that will be most useful and useable. I also think that wisdom is more a function of experience than just intelligence so expertise metrics are important but they don't trump the need to have fresh viewpoints and to help grow future science leaders. I do not think that panel balance on science issues is critical if by that one means get all viewpoints to the table because for lack of a more elegant way to phrase it this can provide a platform for kooks. (See answer to next question too.)

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	1	0	0	0
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	1	0	0
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	1	0	0
Panel balance on science issue(s)	0	0	0	1	0
Others (please specify)					

Most important should be a balance of expertise on the issue at hand from all sectors.

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	1	0	0
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	0	1
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	1	0	0
Panel balance on science issue(s)	0	0	0	0	1
Others (please specify)					

Need to base on quantitative considerations rather than on opinion and demographic factors.

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	0	0	1
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	1	0	0
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	0	0	1
Panel balance on science issue(s)	0	0	1	0	0
Others (please specify)					

Ideally, one would have a way to demonstrate objectivity in judgement not measured by experience or academic degrees.

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	0	1	0
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	1	0
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	1	0	0
Panel balance on science issue(s)	0	0	1	0	0
Others (please specify)	0	0	1	0	0

Ability to be fair and impartial. This cannot always be known ahead of time in selecting a panel.

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	0	1	0
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	1	0
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	1	0	0
Panel balance on science issue(s)	0	0	0	0	1
Others (please specify)					

nothing to add

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	1	0	0	0
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	0	1
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	0	0	1
Panel balance on science issue(s)	0	0	1	0	0
Others (please specify)	1	0	0	0	0

The answers are by necessity subjective/qualitative; I selected "not important" for the last item ("other") because I think the factors listed above should be adequate in guiding panel selection.

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	0	0	1
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	1	0
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	0	1	0
Panel balance on science issue(s)	0	0	0	0	1
Others (please specify)					

Having expertise on the topic is most important and then being able to view it from different perspectives.

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	1	0	0
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	1	0	0
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	1	0	0	0
Panel balance on science issue(s)	0	0	1	0	0
Others (please specify)	0	0	0	0	1

adequate representation of required areas of expertise.

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	1	0	0
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	0	1	0
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	0	1	0
Panel balance on science issue(s)	0	0	0	0	1
Others (please specify)					

Balance for the sake of balance must be tempered, however, with assumption that all selectees have expertise appropriate to the charge.

	1- not important	2	3	4	5- very important
Subjective factors (perception as a 'good' reviewer, personal knowledge)	0	0	1	0	0
Objective factors (expertise metrics such as degree, years experience, # publications, etc.)	0	0	1	0	0
Panel diversity with respect to demographic factors (gender, age, geographic region, sector of employment, etc)	0	0	1	0	0
Panel balance on science issue(s)	0	1	0	0	0
Others (please specify)	0	0	0	1	0

The committee needs to have the appropriate breadth of scientific expertise to match the issue under consideration, e.g., pathologists, statisticians, risk assessors, expertise in different areas of toxicology. I interpreted this as different than balance, but perhaps that wasn't the intent. Balance sounds like looking for people with potentially the same expertise (e.g., developmental neurotoxicity) but different perspectives on what matters in that area.

Question 3.4 *(ID: 3425)*

If you rated 'panel balance on science issues' important from the previous question, how do you determine individual panelists opinions on science issues and does the panel composition need to be representative of the underlying scientific community?

user-617591

The panel composition should be representative of the underlying scientific community and assessment of individual panelists opinions on science issues should be based on the previously mentioned subjective and objective factors (perception as a 'good' reviewer, personal knowledge, expertise metrics such as degree, years experience, # publications, etc.). Moreover, the experts should belong to as many as possible areas of knowledge involved.

user-303301

Panel balance is important to recommend quality science projects.

user-320359

Panelists perspectives and biases can often be detected in their publications or testimony. This should not exclude them but should be balanced with alternative perspectives, including neutral perspectives. Not all perspectives need to be represented, particularly those that might be considered "fringe" by mainstream science.

user-534276

From the persons area of employment and their previous publications relevant to the topic being considered. Representation of diversity of the scientific community is important for obtaining a final panel report that the public will trust.

user-477751

publications, impact of papers, expertise. Panel composition should reflect standing of individuals in the area

user-118761

From review of resume/CV and/or interviewing panel member

user-125195

I originally answered question 3.3 as follows before reading this question "I left it blank because I don't know what is meant by "Panel Balance on Science Issue(s)". If being for vs. against is the issue then I would rate this as "1" not important. If however, what is meant is that the topic involves several to many scientific dimensions and that panel member should be selected who can cover each of those dimensions then I would rate this as a "5"." And I guess that I am still not exactly certain what is meant by this question, but for the sake of argument, I now have interpreted it to mean that if 99.9% of the scientific community has concluded that climate change is occurring due to human intervention and only 0.1% do not think that climate change is due to human intervention then NO I do not think that there is a need to select a scientist of this opposing viewpoint to serve on the panel. In fact I think that it is counterproductive to do so. Thus, while I originally left the 4th line in the previous question blank I have now changed my answer to a "1"

user-44105

I think you can determine opinions generally by the sector they are from: govt, industry, academia, NGO's.

user-524483

May be based on interpretations/conclusions published in their scientific papers or products - this should be considered in the representation.

user-987586

There needs to be the appropriate expertise on the panel to evaluate the proposal

sounagi

n/a

user-185758

Individual opinions may vary but the tendency of perspectives to track with sector affiliation can serve as a proxy on many issues.

user-74194

when an issue is controversial, you can get a situation where the panel becomes quite polarized as a result of trying to find balance. Not good. This is a difficult problem.

user-684526

Panelists have to have knowledge of what they are reviewing. At the same time, sometimes an outside opinion, i.e. someone not particularly well versed in a subject matter area, can provide some good insights to a panel. So I like to see a balance of people on a panel.

user-153764

The NRC method involves a confidential assessment of potential panel members. The first meeting of each project explains the NRC staff review of panel members, explains the charge to the committee and defines the rules. This is by far the most open, yet discrete, method I have encountered in panel composition. There was no regard for age or gender insofar as I could ever determine; membership was based on publication history and individual member reputation in toxicology, industrial hygiene, medicine and epidemiology.

user-702305

publication record

user-339099

I did not rate the ‘panel balance on science issues’ as important in the previous question, because I do not think that characterizing/determining individual panelists opinions on science issues is a feasible task.

user-786058

Good but tough question to answer in that it is virtually impossible to know the underlying opinions and perspectives of individuals apriori. I think panel composition should be staffed with all the required scientific disciplines to address the topic at hand and also include individuals from various stakeholder sectors if they can indeed add value and knowledge to the panel deliberations - if they can enlighten based on knowledge that others do not possess.

user-432123

Yes the composition should be representative of the underlying scientific community

catherine_sherwin

This is difficult, I think you have to look at their track record of publications, other professional "output" on social media etc. Yes, a panel could be representative of the community, including maybe ideas that are not held by the majority and ideas that are not popular.

RonBrecher

Rather than "balance on science issues" I think it is important to have openmindedness -- willingness of panelists to have their opinions changed in the face of compelling data.

user-919082

Panelist opinions can be gauged by publication record and/or other public positions personally taken or by their employers.. As noted earlier, SABs directed to specific charges must tailor the Panel expertise to addressing the charge needs. Simply adding a scientifically qualified representative from the science community to support diversity, but without expertise related to the charge, will diminish a Panel's effectiveness.

user-846418

One problem here is whether the scientific community is representative of anything other than funding sources. If there were equal dollars funding NGO/advocacy organizations as funding industry, then the balance of those working likely would be very different than it currently is.

user-1830

Can determine based on publications and CVs, blog posts, etc. I think that multiple science-based perspectives should be represented, although it is probably not practical to have it be the same ratio as the underlying scientific community.

user-514954

Sometimes it is possible to gauge their opinion based on their publications and general knowledge of them. In a prefect world, the panel would be representative of the breadth of major opinions. In the real world, this is difficult to achieve.

user-148297

Years of experience, records of accomplishment, publications would be some of the parameters that can be used to assess individual panelists’ opinions.

Question 3.5 *(ID: 3426)*

Please rate the importance of the following potential conflicts of interest as a reason for suspecting bias amongst a science panelist.

	1 - low	2	3	4	5 - high	Total
Having ever received funding on the topic (regardless of funding source)	27.59% 8	20.69% 6	27.59% 8	17.24% 5	6.90% 2	29
Having received funding from industry on the topic	24.14% 7	17.24% 5	27.59% 8	13.79% 4	17.24% 5	29
Having received funding from a regulatory agency	31.03% 9	20.69% 6	31.03% 9	6.90% 2	10.34% 3	29
Owning stock in a company that the topic could potentially impact	13.79% 4	3.45% 1	17.24% 5	27.59% 8	37.93% 11	29
Having testified on the subject matter on behalf of a public citizen	21.43% 6	7.14% 2	14.29% 4	35.71% 10	21.43% 6	28
Having testified on the subject matter on behalf of a company/industry/government agency	17.24% 5	6.90% 2	20.69% 6	31.03% 9	24.14% 7	29
Being employed by organization that could be impacted by the subject matter discussed.	10.34% 3	3.45% 1	10.34% 3	34.48% 10	41.38% 12	29
Others? (please specify)	33.33% 1	0.00% 0	33.33% 1	33.33% 1	0.00% 0	3

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ANSWER	EXPLANATION

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	0	0	1	0	0
Having received funding from industry on the topic	0	0	0	1	0
Having received funding from a regulatory agency	0	0	1	0	0
Owning stock in a company that the topic could potentially impact	0	0	0	0	1
Having testified on the subject matter on behalf of a public citizen	0	0	0	0	1
Having testified on the subject matter on behalf of a company/industry/government agency	0	0	0	0	1
Being employed by organization that could be impacted by the subject matter discussed.	0	0	0	0	1
Others? (please specify)	0	0	0	1	0

If one has served on other panels where a scientist clearly showed bias on the topic, one can most likely expect them to do the same on the current panel. Persons who have taken publicly positions or testimony on behalf of an organization should not be selected for the current panel. The financial disclosure forms weed out those who could have a financial conflict of interest.

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	0	0	0	1	0
Having received funding from industry on the topic	0	0	0	0	1
Having received funding from a regulatory agency	0	0	0	0	1
Owning stock in a company that the topic could potentially impact	0	0	0	0	1
Having testified on the subject matter on behalf of a public citizen	0	0	0	1	0
Having testified on the subject matter on behalf of a company/industry/government agency	0	0	0	1	0
Being employed by organization that could be impacted by the subject matter discussed.	0	0	0	0	1
Others? (please specify)					

All of the above are sources of conflict and bias.

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	1	0	0	0	0
Having received funding from industry on the topic	0	0	1	0	0
Having received funding from a regulatory agency	1	0	0	0	0
Owning stock in a company that the topic could potentially impact	0	0	0	1	0
Having testified on the subject matter on behalf of a public citizen	0	0	0	0	1
Having testified on the subject matter on behalf of a company/industry/government agency	0	0	0	0	1
Being employed by organization that could be impacted by the subject matter discussed.	0	0	1	0	0
Others? (please specify)					

In my experience, passion and money have the most potential to create a conflict of interest

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	1	0	0	0	0
Having received funding from industry on the topic	1	0	0	0	0
Having received funding from a regulatory agency	1	0	0	0	0
Owning stock in a company that the topic could potentially impact	1	0	0	0	0
Having testified on the subject matter on behalf of a public citizen	1	0	0	0	0
Having testified on the subject matter on behalf of a company/industry/government agency	1	0	0	0	0
Being employed by organization that could be impacted by the subject matter discussed.	1	0	0	0	0

In my opinion, a "true" scientist is not biased by any of the above factors; therefore, should not be influenced.

Others? (please specify)					

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	0	0	0	1	0
Having received funding from industry on the topic	0	0	0	0	1
Having received funding from a regulatory agency	0	0	1	0	0
Owning stock in a company that the topic could potentially impact	0	0	0	0	1
Having testified on the subject matter on behalf of a public citizen	0	0	0	1	0
Having testified on the subject matter on behalf of a company/industry/government agency	0	0	0	0	1
Being employed by organization that could be impacted by the subject matter discussed.	0	0	0	1	0
Others? (please specify)					

Very obvious, you cannot have individuals supporting for-profit enterprises on a panel and expect no bias

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	1	0	0	0	0
Having received funding from industry on the topic	1	0	0	0	0
Having received funding from a regulatory agency	1	0	0	0	0
Owning stock in a company that the topic could potentially impact	1	0	0	0	0
Having testified on the subject matter on behalf of a public citizen	1	0	0	0	0
Having testified on the subject matter on behalf of a company/industry/government agency	1	0	0	0	0
Being employed by organization that could be impacted by the subject matter discussed.	1	0	0	0	0
Others? (please specify)					

Again, no credible scientist would sell out his opinion. His/her biases result from training and experience not funding. The funding source is usually a result of the biases developed prior to funding.

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	0	0	1	0	0
Having received funding from industry on the topic	0	1	0	0	0
Having received funding from a regulatory agency	0	1	0	0	0
Owning stock in a company that the topic could potentially impact	0	0	0	1	0
Having testified on the subject matter on behalf of a public citizen	0	0	0	0	1
Having testified on the subject matter on behalf of a company/industry/government agency	0	0	1	0	0
Being employed by organization that could be impacted by the subject matter discussed.	0	0	1	0	0
Others? (please specify)					

Personal injury tort litigation support is always a red flag.

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	0	0	1	0	0
Having received funding from industry on the topic	0	0	1	0	0
Having received funding from a regulatory agency	0	0	1	0	0
Owning stock in a company that the topic could potentially impact	0	0	0	1	0
Having testified on the subject matter on behalf of a public citizen	0	0	0	1	0
Having testified on the subject matter on behalf of a company/industry/government agency	0	0	0	1	0
Being employed by organization that could be impacted by the subject matter discussed.	0	0	0	1	0
Others? (please specify)					

Challenging question to answer in that the overriding matter for me is whether regardless of any of the possible COIs named above, a person can remain open, objective, scientific, truthful, and bring these to bear on the panel discussions and outcomes.

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	0	0	0	0	1
Having received funding from industry on the topic	0	0	0	0	1
Having received funding from a regulatory agency	0	0	0	0	1
Owning stock in a company that the topic could potentially impact	0	0	0	0	1
Having testified on the subject matter on behalf of a public citizen	0	0	1	0	0
Having testified on the subject matter on behalf of a company/industry/government agency	0	0	1	0	0
Being employed by organization that could be impacted by the subject matter discussed.	0	0	0	0	1
Others? (please specify)					

All of these things above can lead to bias, sometimes unknowingly.

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	1	0	0	0	0
Having received funding from industry on the topic	1	0	0	0	0
Having received funding from a regulatory agency	1	0	0	0	0
Owning stock in a company that the topic could potentially impact	0	0	1	0	0
Having testified on the subject matter on behalf of a public citizen	1	0	0	0	0
Having testified on the subject matter on behalf of a company/industry/government agency	1	0	0	0	0
Being employed by organization that could be impacted by the subject matter discussed.	0	0	0	0	1
Others? (please specify)					

Some of these answers might be different if the questions were a little different. For example, someone who received industry funding 20 years ago might be less likely to be suspected of bias than someone receiving ongoing, sustaining funding.

	1 - low	2	3	4	5 - high
Having ever received funding on the topic (regardless of funding source)	0	1	0	0	0
Having received funding from industry on the topic	0	0	1	0	0

As noted in earlier question responses, bias associated with regulatory agency employment can be problematic as well. Owning stock is only important for small entrepreneurial enterprises such as drug spin-off or other technology companies. Ownership of stocks in large enterprises is rarely a factor unless the SAB is threatening a substantial portion of the

Having received funding from a regulatory agency	0	0	1	0	0
Owning stock in a company that the topic could potentially impact	1	0	0	0	0
Having testified on the subject matter on behalf of a public citizen	0	0	0	1	0
Having testified on the subject matter on behalf of a company/industry/government agency	0	0	0	1	0
Being employed by organization that could be impacted by the subject matter discussed.	0	0	0	0	1
Others? (please specify)					

enterprise. A very large conflict not addressed is when a proposed member has offered a position in legal proceedings - such an activity generally does not allow for substantial changes in opinion on issue be addressed by the litigation.

Question 3.6 *(ID: 3427)*

How should expertise be defined?

	1 - not important	2	3 - equivocal	4	5 - vey important	Total
# publications,	0.00% 0	3.45% 1	31.03% 9	34.48% 10	31.03% 9	29
# of first/last author publications	0.00% 0	13.79% 4	37.93% 11	37.93% 11	10.34% 3	29
# of presentations at national/international conferences	0.00% 0	14.29% 4	25.00% 7	39.29% 11	21.43% 6	28
Positions of leadership amongst professional societies	21.43% 6	17.86% 5	42.86% 12	14.29% 4	3.57% 1	28
H-index (link to definition)	10.71% 3	10.71% 3	42.86% 12	32.14% 9	3.57% 1	28
Years of experience	0.00% 0	3.45% 1	17.24% 5	41.38% 12	37.93% 11	29
Published on the specific topic	0.00% 0	0.00% 0	17.24% 5	31.03% 9	51.72% 15	29
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the opportunity to publish)	3.45% 1	3.45% 1	17.24% 5	34.48% 10	41.38% 12	29
Degree (BS vs MS vs PhD vs MD)	0.00% 0	7.14% 2	35.71% 10	32.14% 9	25.00% 7	28
Professional certifications (DABT, ASCP, CIH, etc.)	6.90% 2	6.90% 2	51.72% 15	27.59% 8	6.90% 2	29
Personal knowledge of the person's expertise	3.45% 1	6.90% 2	13.79% 4	41.38% 12	34.48% 10	29
Reputation/Experience on other panels?	3.57% 1	3.57% 1	32.14% 9	39.29% 11	21.43% 6	28
Other (please specify)	33.33% 2	16.67% 1	33.33% 2	16.67% 1	0.00% 0	6

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ANSWER

EXPLANATION

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	0	0	0	1
# of first/last author publications	0	0	1	0	0
# of presentations at national/international conferences	0	0	0	0	1
Positions of leadership amongst professional societies	1	0	0	0	0
H-index (link to definition)	0	0	1	0	0
Years of experience	0	0	0	0	1
Published on the specific topic	0	0	0	0	1
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the opportunity to publish)	0	0	0	1	0
Degree (BS vs MS vs PhD vs MD)	0	0	0	0	1
Professional certifications (DABT, ASCP, CIH, etc.)	0	0	1	0	0
Personal knowledge of the person's expertise	0	0	0	1	0
Reputation/Experience on other panels?	0	0	0	0	1
Other (please specify)	1	0	0	0	0

The reasons for my answers are self evident. The only one that I wish to comment on is the fact that leadership in professional societies does not automatically impart that a person should serve on a panel. Their publications and years of relevant expires and expertise trump that.

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	0	0	1	0
# of first/last author publications	0	0	0	1	0
# of presentations at national/international conferences	0	0	0	0	1
Positions of leadership amongst professional societies	0	0	1	0	0
H-index (link to definition)	0	0	1	0	0
Years of experience	0	0	0	1	0
Published on the specific topic	0	0	0	1	0
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the	0	0	0	1	0

Variety of parameters above is adequate to vet a particular panel member

opportunity to publish)					
Degree (BS vs MS vs PhD vs MD)					
Professional certifications (DABT, ASCP, CIH, etc.)	0	0	0	1	0
Personal knowledge of the person's expertise	0	0	0	1	0
Reputation/Experience on other panels?	0	0	1	0	0
Other (please specify)					

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	0	1	0	0
# of first/last author publications	0	0	1	0	0
# of presentations at national/international conferences	0	0	1	0	0
Positions of leadership amongst professional societies	0	0	1	0	0
H-index (link to definition)	0	0	1	0	0
Years of experience	0	0	1	0	0
Published on the specific topic	0	0	1	0	0
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the opportunity to publish)	0	0	0	0	1
Degree (BS vs MS vs PhD vs MD)	0	0	1	0	0
Professional certifications (DABT, ASCP, CIH, etc.)	0	0	1	0	0
Personal knowledge of the person's expertise	0	0	0	0	1
Reputation/Experience on other panels?	0	0	0	0	1
Other (please specify)					

While all of the above can be excellent indicators of expertise the most important factor is how does that person perform on a science panel, including what expertise do they offer, how well do they communicate, how well do they listen, how open are they to being flexible and helping rather than sticking to preformed ideas - in essence "how well do they play with others?"

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	0	0	0	1
# of first/last author publications	0	0	1	0	0
# of presentations at national/international conferences	0	0	0	1	0
Positions of leadership amongst professional societies	0	0	0	1	0
H-index (link to definition)	0	0	0	1	0
Years of experience	0	0	0	0	1
Published on the specific topic	0	0	0	0	1
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the opportunity to publish)	0	0	1	0	0
Degree (BS vs MS vs PhD vs MD)	0	0	0	1	0
Professional certifications (DABT, ASCP, CIH, etc.)	0	0	0	1	0
Personal knowledge of the person's expertise	0	0	0	0	1
Reputation/Experience on other panels?	0	0	0	0	1
Other (please specify)					

I think these are self-evident; all metrics of experience are important and would be of concern is just one or two did not meet "equivocal"

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	0	1	0	0
# of first/last author publications	0	0	0	1	0
# of presentations at national/international conferences	0	0	0	1	0
Positions of leadership amongst professional societies	1	0	0	0	0
H-index (link to definition)	0	0	0	1	0
Years of experience	0	0	0	1	0
Published on the specific topic	0	0	0	0	1
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the opportunity to publish)	0	0	0	0	1
Degree (BS vs MS vs PhD vs MD)	0	0	1	0	0
Professional certifications (DABT, ASCP, CIH, etc.)	0	0	1	0	0
Personal knowledge of the person's expertise	0	0	0	1	0
Reputation/Experience on other panels?	0	0	0	1	0
Other (please specify)					

A lot of factors go into success as a scientist. Maybe luck should be the "other."

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	0	0	1	0
# of first/last author publications	0	0	1	0	0
# of presentations at national/international conferences	0	1	0	0	0
Positions of leadership amongst professional societies	0	0	1	0	0
H-index (link to definition)	0	0	1	0	0
Years of experience	0	0	0	1	0
Published on the specific topic	0	0	0	1	0
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the	0	0	1	0	0

Expertise based on personal knowledge of a person's research program and personal integrity.

opportunity to publish)					
Degree (BS vs MS vs PhD vs MD)	0	0	1	0	0
Professional certifications (DABT, ASCP, CIH, etc.)	0	0	1	0	0
Personal knowledge of the person's expertise	0	0	1	0	0
Reputation/Experience on other panels?	0	0	1	0	0
Other (please specify)	0	0	0	1	0

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	0	0	1	0
# of first/last author publications	0	1	0	0	0
# of presentations at national/international conferences	0	0	1	0	0
Positions of leadership amongst professional societies	0	0	1	0	0
H-index (link to definition)	0	0	1	0	0
Years of experience	0	0	0	0	1
Published on the specific topic	0	0	0	0	1
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the opportunity to publish)	0	0	0	1	0
Degree (BS vs MS vs PhD vs MD)	0	0	0	0	1
Professional certifications (DABT, ASCP, CIH, etc.)	0	0	1	0	0
Personal knowledge of the person's expertise	0	0	0	0	1
Reputation/Experience on other panels?	0	0	0	0	1
Other (please specify)					

Experience with the topic (e.g., epidemiology, industrial hygiene, specialty area of medicine such as audiology) and substance (e.g., specific chemical) is paramount. Without a clear description of a particular health endpoint (e.g., diminished color vision in relation to occupational styrene exposure) a trained general toxicologist would have no appreciation or understanding of that circumstance.

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	0	0	1	0
# of first/last author publications	0	0	0	0	1
# of presentations at national/international conferences	0	0	0	1	0
Positions of leadership amongst professional societies					
H-index (link to definition)	0	0	0	1	0
Years of experience	0	0	1	0	0
Published on the specific topic	0	0	0	0	1
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the opportunity to publish)	0	0	0	0	1
Degree (BS vs MS vs PhD vs MD)	0	0	0	1	0
Professional certifications (DABT, ASCP, CIH, etc.)	0	0	0	1	0
Personal knowledge of the person's expertise	0	0	1	0	0
Reputation/Experience on other panels?	0	0	1	0	0
Other (please specify)	1	0	0	0	0

I selected "not important" for the last item ("other") because I think the factors listed above should be adequate in defining expertise.

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	0	1	0	0
# of first/last author publications	0	1	0	0	0
# of presentations at national/international conferences	0	1	0	0	0
Positions of leadership amongst professional societies	0	1	0	0	0
H-index (link to definition)	1	0	0	0	0
Years of experience	0	0	1	0	0
Published on the specific topic	0	0	0	0	1
Experience with the specific topic even without a publication history (e.g., regulator with proven experience on the topic but did not have the opportunity to publish)	0	0	0	0	1
Degree (BS vs MS vs PhD vs MD)	0	0	0	1	0
Professional certifications (DABT, ASCP, CIH, etc.)	0	0	0	1	0
Personal knowledge of the person's expertise	0	0	0	1	0
Reputation/Experience on other panels?	0	0	1	0	0
Other (please specify)					

Experience in the specific topic area is I think the most important.

	1 - not important	2	3 - equivocal	4	5 - vey important
# publications,	0	0	1	0	0
# of first/last author publications	0	1	0	0	0
# of presentations at national/international conferences	0	1	0	0	0
Positions of leadership amongst professional societies	0	0	1	0	0
H-index (link to definition)	0	0	1	0	0
Years of experience	0	0	0	1	0
Published on the specific topic	0	0	1	0	0
Experience with the specific topic even without a publication history (e.g.,	0	0	0	0	1

Note comment on experience with a publication is tempered the individual has a specific conflict.

regulator with proven experience on the topic but did not have the opportunity to publish)					
Degree (BS vs MS vs PhD vs MD)	0	0	0	1	0
Professional certifications (DABT, ASCP, CIH, etc.)	0	1	0	0	0
Personal knowledge of the person's expertise	0	0	0	1	0
Reputation/Experience on other panels?	0	0	0	1	0
Other (please specify)					

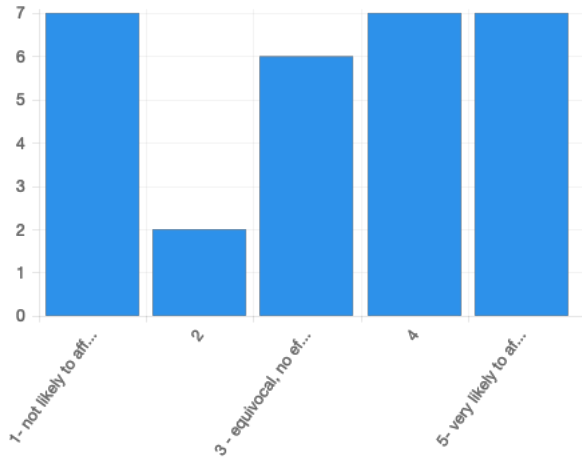
Question 4.1 *(ID: 3417)*

How important is transparency of the panel deliberations and what defines transparency for panel deliberations?

	1-not likely to impact an expert's opinion	2	3-equivocal	4	5-very likely to impact an expert's opinion either positive or negative	Total
Open to public	**21.43%** 6	**7.14%** 2	**28.57%** 8	**14.29%** 4	**28.57%** 8	28
Recorded discussion/debate	**17.24%** 5	**3.45%** 1	**44.83%** 13	**13.79%** 4	**20.69%** 6	29
Documented opinions and recommendations of individual panelists before group deliberations	**10.71%** 3	**0.00%** 0	**25.00%** 7	**42.86%** 12	**21.43%** 6	28
Documented opinions of individual panelists after group deliberations	**10.34%** 3	**13.79%** 4	**20.69%** 6	**27.59%** 8	**27.59%** 8	29

Question 4.2 *(ID: 3418)*

How is knowledge of the sponsor or author of the subject matter topic likely to affect an expert's opinions?



Legend

1- not likely to affect an expert's opinion: 7

2: 2
3 - equivocal, no effect: 6
4: 7
5- very likely to affect an expert's opinion either positive or negative: 7

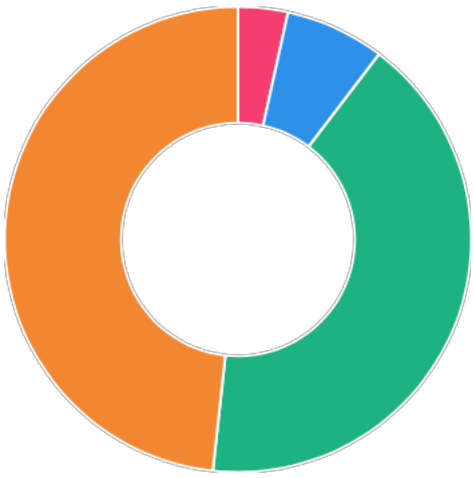
answers: 29
skips: 2

Answer Explanations 11

ANSWER	EXPLANATION
5- very likely to affect an expert's opinion either positive or negative	Based on my experience these conditions could significantly affect the expert's opinion.
1- not likely to affect an expert's opinion	This is not likely to affect an expert's opinion if they are true to the charge at hand. However, there are situations when category number 5 could come into play if the expert is prone to be a priori judgmental.
4	Inherent bias may occur, this is hard to determine a priori
5- very likely to affect an expert's opinion either positive or negative	In my experience one's opinions of the sponsor or the author of the subject matter can strongly influence one's thinking, either positive or negative
3 - equivocal, no effect	Obviously, an opinion could go either way based on previous knowledge
3 - equivocal, no effect	Best for an expert to give an honest opinion.
5- very likely to affect an expert's opinion either positive or negative	People with direct experience who have published in peer-reviewed authoritative science journals on the subject at hand are invaluable.
3 - equivocal, no effect	If the expert remains open, transparent, truthful, and objective, then not likely to affect his/her opinion.
5- very likely to affect an expert's opinion either positive or negative	Being blinded if possible helps with this. I think it is almost impossible to have some opinion if you know who the sponsor or author is. I recently had this experience, I had not looked at the author of the report, I wrote my review, I thought the report was awful and I said so. I was informed by the chair to be more respectful as the report had been written by one of the so-called "leaders" in the field. I found the report sloppy, with spelling and grammtical mistakes, lacking facts and obviously written in a hurry. I didn't think we sould accept it just because of who the author was.
1- not likely to affect an expert's opinion	Most experts I've worked with on panels would not be affected by knowledge of the sponsor or author.
5- very likely to affect an expert's opinion either positive or negative	Industry authored science can be negatively discounted, while government agency conducted science may not be challenged or positively viewed.

Question 4.3 *(ID: 3419)*

How important is it for peer reviewers to have access to underlying raw data for the most critical studies, in order to independently analyze results?



Legend

- Not at all important: 1 *(3%)*
- Not very important: 2 *(7%)*
- Somewhat important: 12 *(41%)*
- Very important: 14 *(48%)*

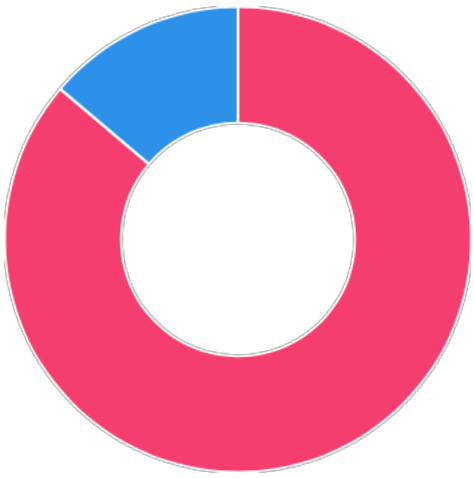
answers: 29
skips: 2

Answer Explanations 13

ANSWER	EXPLANATION
Somewhat important	Raw data will sometimes allow a more adequate assessment of the studies with important consequences on the interpretation of final results.
Somewhat important	If the document is in the peer review literature, this is not critical. If it is in the "gray" literature then it can be very important.
Very important	All data should be shared, if requested.
Somewhat important	It depends on the topic and the question(s) being addressed. However, to the extent that the answer to the charge question hinges on one or a few critical studies then I think it is very important to provide access to the underlying data.
Not very important	Its more important to have statistically analyzed, summary data or results for peer review. Only in rare circumstances would i wish to go through files of raw data.
Not very important	EPA's "secret science" proposal greatly exaggerated the importance of having raw data.
Somewhat important	peer reviewed articles from authoritative science journals are generally sufficient, but in some cases production of original lab data (which was NOT the case in the Johnson study of TCE and cardiac defects in fetal rats) is not forthcoming. this reduces the credibility of the published observations (such as the Johnson study which appeared in Environmental Health Perspectives).
Very important	How can you do an adequate peer review without the underlying data?
Somewhat important	This really depends. The problem in my field is that I would not have the ability to "re-analysis" the data so having access to the raw data would not be that helpful to me and it would just be data out of context using the right algorithms.
Somewhat important	It will be more important to some reviewers than others. Raw data alone isn't very helpful. Any spreadsheets, models, etc. used to analyze the data need also be provided.
Very important	Data summaries as presented in publications may have censured (cherry-picked) conflicting or problematic data not covered in a publication, or inadequate methods description may not allow for meaningful review of data quality.
Somewhat important	The answer to this question really depends upon what the review panel is doing, what it's charge is. If it is being asked to review some higher level questions about approach, e.g., for risk assessment, then the details of individual studies may not be so important.
Very important	I think that it is pretty important, but it does depend on the study and the analysis

Question 4.4 *(ID: 3420)*

Should the criteria for evaluating the quality and reliability of all studies be the same, regardless of their funding source (academia, government, industry, CRO, etc.)?



Legend

- Yes: 25 *(86%)*
- No: 4 *(14%)*

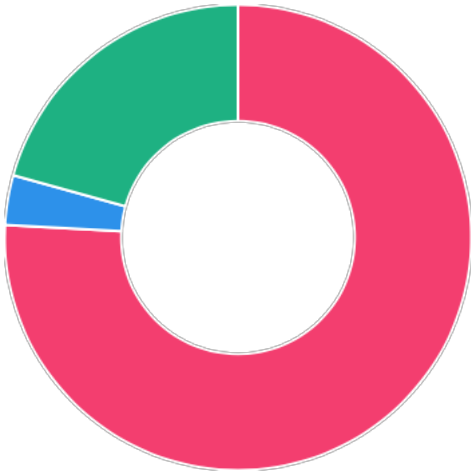
answers: 29
skips: 2

Answer Explanations 10

ANSWER	EXPLANATION
Yes	The GLP compliance is often an added value. However, non GLP studies, if appropriately carried-out can be likewise considered informative and reliable.
Yes	Well designed studies where the Type I and Type II errors are adequately controlled will stand on their own independent of funding source. However, as a statistician I can recognize how the experimental design and power may have been manipulated.
Yes	Problem is that raw data from academia is hard to obtain. Availability of raw data and detailed procedure is essential
Yes	Same vetting process of scientific trial data will lead to less distractions when reviewing the panel summary statement.
Yes	In my opinion the strength of the science is based on the results not who funded the work.
No	Some circumstances may merit the raw data perusal (especially in cases that have clinical or human health implications) than others (more of an environmental angle)
Yes	Information and data from all sources should be considered. Just because a study was funded by NSF does not necessarily mean that data is better than a project funded, for example, by a small state agency.
Yes	If I am understanding the question, there needs to be an objective, standardized approach to evaluating study quality - not all studies are of the same quality because of various factors such as guideline-required, GLP, transparency of genomics data, availability of raw data. Therefore, strict criteria should be established for objective critique of study quality and value.
Yes	In an ideal world, we should strive for consistency, However, this is not always going to be possible due to mainly financial restraints.
Yes	While industry data is often conducted to GLP standards, this does not have to be a driving criteria for study quality if raw data are available.

Question 4.5 *(ID: 3421)*

Should the peer review process be conducted independently of the sponsor of the review material?



Legend

- Yes: 22 *(76%)*
- No: 1 *(3%)*
- Sometimes (please explain): 6 *(21%)*

answers: 29
skips: 2

Answer Explanations 11

ANSWER	EXPLANATION
Yes	In my opinion, if the sponsor is the funding source of the peer review process an unavoidable conditioning, even involuntary would occur.
Yes	See my answer to the previous question.
Yes	Without a doubt, yes
Sometimes (please explain)	I do think that the peer review process should be conducted independently of the person or work unit that sponsored the review material but I don't think it is necessarily improper for an organization to both sponsor a study and have it peer reviewed if the peer review is independent of the study conduct and involves peer reviewers with the proper expertise and without conflicts of interest.
Yes	Lets reduce bias and influence as much as possible!
Sometimes (please explain)	Depends on the sponsor and how committed they are to either honesty/transparency or the bottom line. Think of Elizabeth Holmes and Theranos.
Sometimes (please explain)	I probably do not understand fully this question, as it is not clear to me how the peer review process could be conducted completely independently of the sponsor of the review material (as presumably this sponsor has or had some control in the development and release of that material). The level of sponsor involvement should be considered on a specific case-by-case basis.
Yes	Ideally yes.
Sometimes (please explain)	Yes, the peer review should be CONDUCTED independent of the sponsor. However, I would have no objection to the sponsor being involved in planning the peer review.
Sometimes (please explain)	In some cases, SABs evaluating the performance of industry, academic or government laboratories can be implemented with direct sponsorship from the affected laboratory.
Sometimes (please explain)	As best as can be managed, without using helpful information that the sponsor may be able to provide.

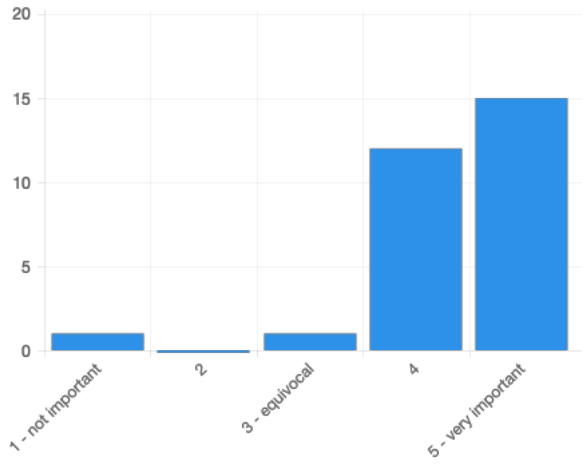
Question 5.1 *(ID: 3411)*

With respect to transparency in reporting, how important are the following?

	1 - not important	2	3 - equivocal	4	5 - very important	Total
Transparency in methods for expert recruiting	**0.00%** 0	**0.00%** 0	**13.79%** 4	**48.28%** 14	**37.93%** 11	29
Transparency in methods for expert selection (e.g., definitions of expertise)	**0.00%** 0	**0.00%** 0	**10.34%** 3	**24.14%** 7	**65.52%** 19	29
Transparency in methods for managing conflict of interest & bias	**0.00%** 0	**0.00%** 0	**3.45%** 1	**24.14%** 7	**72.41%** 21	29
Transparency in the identities of experts engaged	**6.90%** 2	**3.45%** 1	**10.34%** 3	**17.24%** 5	**62.07%** 18	29

Question 5.2 *(ID: 3412)*

Some agencies have a show of hands to vote on specific issues (e.g., cancer classification), but may not report the vote tallies, so the degree of consensus cannot be gauged. How important is understanding the degree of consensus amongst the panel?



Legend

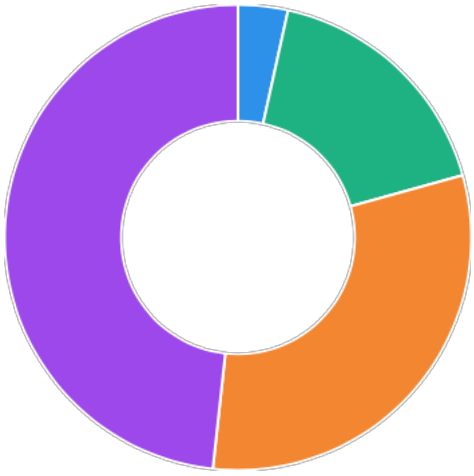
answers: 29
skips: 2

Answer Explanations 13

ANSWER	EXPLANATION
4	Yes, the degree of consensus is an important value.
5 - very important	Without a vote on important areas where there are differences of opinion, it is critically important to have a vote so the final report can adequately discuss areas where consensus is not unanimous.
4	minority opinions should be made public
4	No reason to hide the internal vote; more transparency the better
5 - very important	Because of the potential impact of group think I think it is very important to understand the degree of consensus among the panel. Also it is critical to understand whether the panel members were focused on hazard considerations only or overall risk characterization.
5 - very important	In my opinion, each expert needs to write the reason(s) for his/her vote in either way to be more objective.
4	Individual opinions should be considered in order to understand how this consensus was arrived - is it really unanimous and what are the caveats?
4	Usually a unanimous decision will reflect more strongly on the strength of a proposal/project being reviewed than a split decision.
1 - not important	a minority report can be produced for NRC panels, but this is very rare.
4	I think this depends on what is being voted on, for something it is more essential than others. The issue is in my cases a majority is a majority and so it will not matter if the vote was by one or 10.
5 - very important	Dissenting opinions, and supporting rationale, should be reported. In a court of law, the degree of consensus among judges is reported in the vote count.
5 - very important	For close votes, outsiders can more effectively flag potential controversies surrounding panel recommendations
5 - very important	A vote, unless unanimous, is never consensus, so this question is confusing to me. Often organizations/committee explicitly indicate that consensus is or is not desired. If there are multiple points of view or a majority and minority point of view, these have always been reported as such for committees I've been on, though the exact number of people isn't reported (i.e., no formal voting). What can be harder is when a specific issue is outside the expertise of myself or another committee member; am I agreeing or simply abstaining due to lack of expertise and lack, therefore, of an opinion. I've never dealt with that directly.

Question 5.3 *(ID: 3413)*

How important is understanding the degree to which individual panelist(s)'s opinion(s) may stand apart (be an outlier) from the rest of the panel?



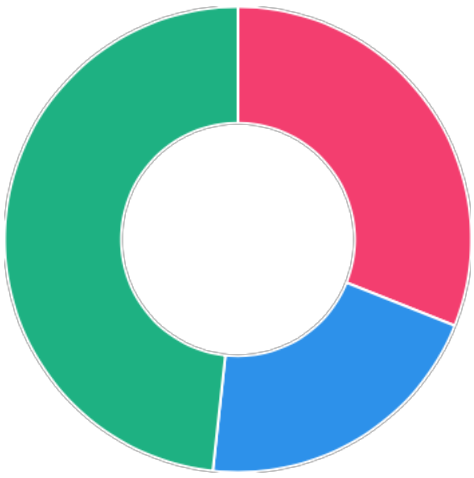
Legend

- 1 - not important at all: 0 *(0%)*
- 2: 1 *(3%)*
- 3 - equivocal: 5 *(17%)*
- 4: 9 *(31%)*
- 5 - very important: 14 *(48%)*

answers: 29
skips: 2

Question 5.4 *(ID: 3414)*

Should the opinion of a panelist known to be an expert in a given scientific area be given more weight than a panelist with less expertise in that given area?



Legend

Yes: 9 *(31%)*

No, all experts on panel should be given equal weight: 6 *(21%)*

It depends (please explain): 14 *(48%)*

answers: 29

skips: 2

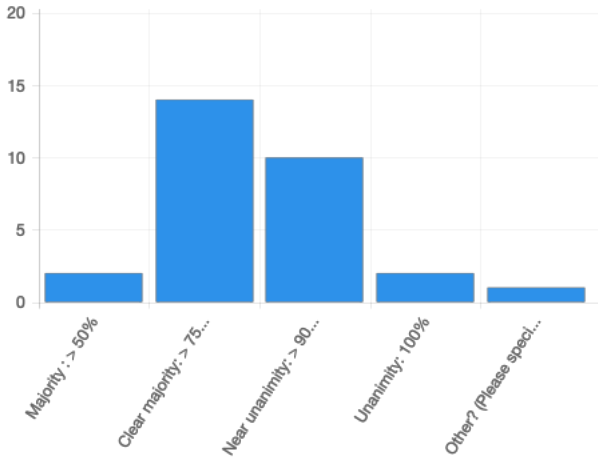
Answer Explanations 19

ANSWER	EXPLANATION
It depends (please explain)	In my opinion this depends on the specific topic treated for a deliberation. If the deliberation is strictly topic-related, the opinions of experts that are more knowledgeable on that specific matter should be given a specific importance.
It depends (please explain)	Some panelists are more knowledgeable about certain aspects of a topic and others will learn from or defer to that knowledge.
It depends (please explain)	Usually more weight will automatically go to the expert with the most knowledge of the topic; however, there are situations where a person with less experience may be more "up to date" with current scientific findings and should be relied upon more.
No, all experts on panel should be given equal weight	I do not wish to consider someone's opinion as more valuable - this is potentially a flaw in how panels discuss topics and allow for one to dominate or direct the overall opinion of the panel.
It depends (please explain)	In my opinion the important issue is context. Without a specific context there are many possibilities so I offer just one hypothetical example. While a person may have less overall expertise in a scientific area he/she may have a better insight into how the sponsor may use the information and may provide more useful and usable advice on the matter.
Yes	It depends on the issue in hand, its implication, given that each panelist writes reason(s) of their opinion and available.
No, all experts on panel should be given equal weight	Should all have equal standings
It depends (please explain)	Can the super-expert convince the other panel members this his/her position is the correct one? Communication skills don't guarantee that an expert has a correct opinion, but being able to convey scientific details to other scientists indicates a solid command of the material and likely considerable expertise in that area.
It depends (please explain)	An expert should be clearly heard, but then other panelists should take that information and not be swayed by the opinion of that one panelist.
It depends (please explain)	the quality of the reasoning expressed should be more important than the credentials, but the latter are clearly important.
No, all experts on panel should be given equal weight	Everybody brings something to the discussion; sometimes this may be a PBPK expert and other times it could be an epidemiologist who explains statistical treatment of data or an industrial hygienist who might explain the difference between personal breathing zone data and area sampling and dermal uptake that can confound/influence panel deliberations
It depends (please explain)	This is a complex question as the answer depends on the definition of expertise/experience, which is in fact a multi-dimensional "quantity."
It depends (please explain)	It depends on how they support opinion. I've seen highly influential university professors disagree with an opinion only because "that's an industry opinion" and have absolutely no science to back up his opposition to the opinion.
Yes	I would think it makes good scientific sense and serves well the overall effort if an expert with particular knowledge in an area or on a chemistry is able to enlighten the other panel members and if that information is indeed truthful, objective, and accurate. That should be the bar for high quality science information.
It depends (please explain)	Depends, sometimes someone does not have extensive expertise in that area of focus can see something that maybe someone else who is newer or outside that area can.

It depends (please explain)	In the question posed, the panelist with less expertise needs to decide whether and when to defer to a more expert panelist. Panelists should be able to justify their opinions and either come to consensus, or agree to disagree, and that disagreement should be reported.
It depends (please explain)	If a dissenting panelist has expertise that is marginal to the charge at hand, that dissent must be particularly articulated, ie., was a fundamental deviation from accepted science practice used?
It depends (please explain)	It depends on the discussion. Sometimes a person with less expertise really doesn't understand the point, and then less weight should be given to their opinion. At other times, the person with less expertise may offer a different (maybe outside of the box) but very important perspective on a point that should be given weight.
It depends (please explain)	As noted above, when committees have quite varied expertise I think it is rare that any member can have an "expert" opinion on every topic. I rely on the statisticians to comment on those details, even if I try to have a general understanding. Similarly, I can't know about every aspect of endocrinology, toxicology, etc. I don't think I've ever been on a panel where the question was so narrow that everyone on the committee had expertise to cover everything. But, then the question is what does "given more weight" mean and how is it implemented. Committees I've been one generally have 2-4 people that cover various areas, so it's not a single panelist.

Question 5.5 *(ID: 3415)*

How should consensus be defined? What best matches your definition of consensus?



Legend

Majority : > 50%: 2
Clear majority: > 75%: 14
Near unanimity: > 90%: 10
Unanimity: 100%: 2
Other? (Please specify): 1

answers: 29
skips: 2

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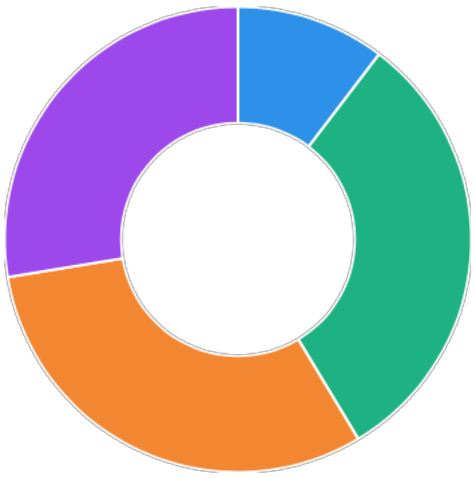
ANSWER	EXPLANATION
Unanimity: 100%	Consensus should be 100% but minority opinions should be in general foreseen and allowed to be reported in the adopted opinion.
Clear majority: > 75%	The only time I would consider consensus to require near unanimity is when the report will have significant public health and regulatory implications. Thus, within a report consensus definition could vary.
Near unanimity: > 90%	Better to have close to unanimous agreement to withstand scrutiny by those who will be reviewing panel's decision
Majority : > 50%	A majority agreeing on the matter and at least a bit more than the majority not vehemently disagreeing and wiling to accept the "consensus'
Other? (Please specify)	It depends on the issue in hand and its implication. For example, the classification of a chemical to carcinogen category needs unanimity, near unanimity or at least clear majority.
Near unanimity: > 90%	I doubt a 100% unanimity is ever achieved, so any deviation from this should be known.
Near unanimity: > 90%	Doesn't consensus mean unanimity? I wanted to leave room for an outlier or two. Also, there should be room for presenting a dissenting opinion as Karl Rozman did in one of EPA's dioxin assessments.
Clear majority: > 75%	It seems there's always a few on a panel who will never waver from their position, even in the face of overwhelming supporting data.
Clear majority: > 75%	I would like to say 100%, but I have never been involved in a discussion where there was "real" unanimity.
Near unanimity: > 90%	Note, however, that consensus does not mean the Panel's conclusions are anymore scientifically valid, only that the selected experts present on the Panel, who may or may not have had expertise appropriate to the charge, reached "agreement". I have often witnessed "consensus" being reached only because multiple members of the SAB did not have the appropriate expertise to adequately judge the recommendations being put forward, but yet they still voted in favor simply to align with colleagues on the Panel (rather than recuse for lack of expertise). Often consensus is reached on based on the strong opinions of a few influential members of the SAB (sometimes, sometimes not, by individuals having the deepest expertise on the topic). Consensus is not a good thing if agreed to by panelists with marginal expertise for the specific problem. Would you want a decision on serious personal medical issue rendered by a consensus decision of physicians who did not have a deep expertise and experience pertaining to your specific medical issue? Of course not, but this is all too often what can happen in SAB consensus recommendations. An example is the IARC monograph review process in which highly talented and expert exposure scientists have full voting privileges on complicated cancer biology evaluations for which they have very limited expertise, but the contribution of their consensus votes can infer a higher degree of confidence of the decision than what is truly warranted.
Unanimity: 100%	When I worked with a volunteer organization that had formal consensus decision-making processes, those who weren't in agreement would indicate whether they disagreed and wanted it noted, but accepted the decision to move forward or if they so disagreed that they wanted further effort to achieve consensus. There was also a process to agree to break from consensus decision-making and decide by voting.

Question 5.6 *(ID: 3416)*

How important is it to be able to assess relationships between responses amongst individual panelists? (e.g., opinions as a function of sector of employment, years of experience, area of expertise, etc.)



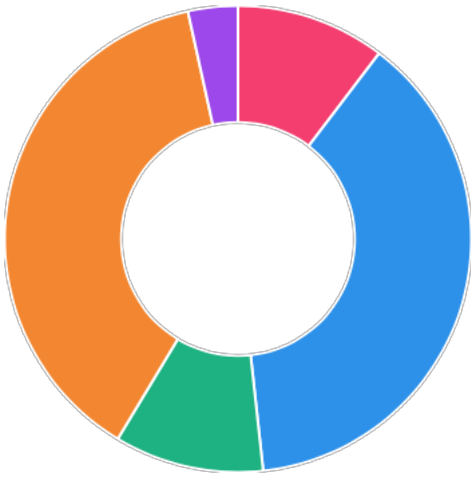
Legend

- 1 - not important at all: 0 *(0%)*
- 2: 3 *(10%)*
- 3 - equivocal: 9 *(31%)*
- 4: 9 *(31%)*
- 5 - very important: 8 *(28%)*

answers: 29
skips: 2

Question 6.1 *(ID: 3451)*

What is your current sector of employment?



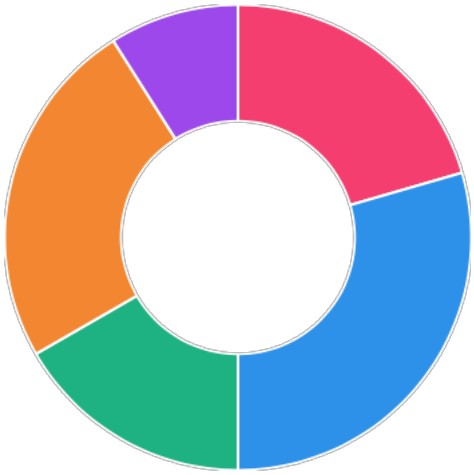
Legend

- Government: 3 *(10%)*
- Academia: 11 *(38%)*
- Industry: 3 *(10%)*
- Consulting: 11 *(38%)*
- Non-Governmental Organization: 1 *(3%)*

answers: 29
skips: 2

Question 6.2 *(ID: 3452)*

Please indicate all sectors you previously worked in.



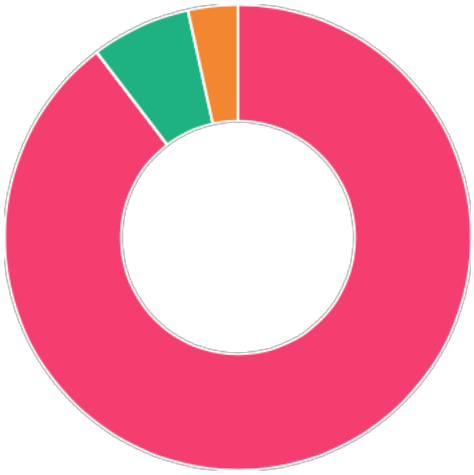
Legend

- Government: 16 *(21%)*
- Academia: 23 *(29%)*
- Industry: 13 *(17%)*
- Consulting: 19 *(24%)*
- Non-Governmental Organization: 7 *(9%)*

answers: 29
skips: 2

Question 6.3 *(ID: 3453)*

What is your region of residence?



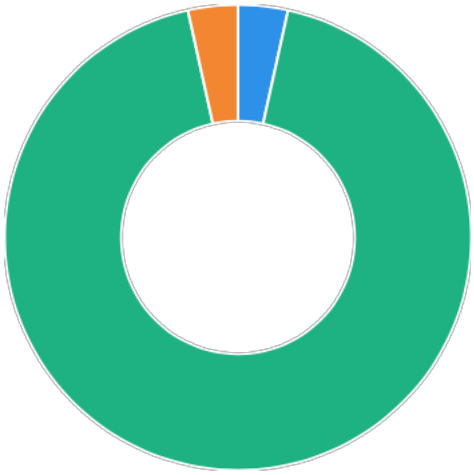
Legend

- North America : 26 *(90%)*
- South America: 0 *(0%)*
- Europe: 2 *(7%)*
- Asia: 1 *(3%)*
- Oceania: 0 *(0%)*
- Middle East: 0 *(0%)*
- Africa: 0 *(0%)*

answers: 29
skips: 2

Question 6.4 *(ID: 3454)*

What is your highest degree?



Legend

- BS: 0 *(0%)*
- MS: 1 *(3%)*
- PhD: 27 *(93%)*
- MD: 1 *(3%)*
- DVM: 0 *(0%)*
- JD: 0 *(0%)*
- Other: 0 *(0%)*

answers: 29
skips: 2

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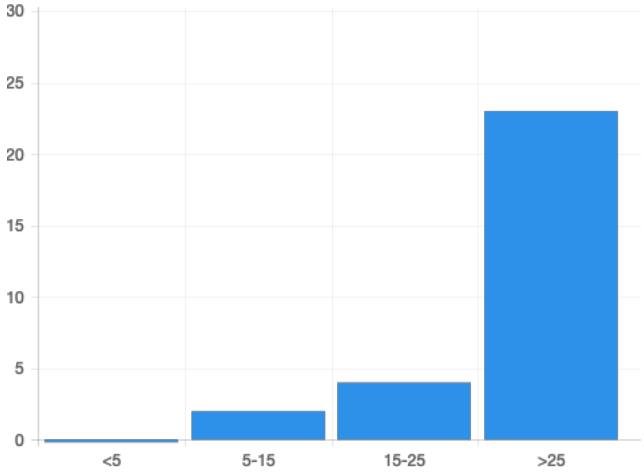
ANSWER	EXPLANATION
MS	I took a full degree in Biological Sciences in the University of "Roma La Sapienza" Rome, Italy in 1978. At that time this was the highest academic degree in Italy, since no PhD courses were available.
PhD	Since 2005, I have been an independent consultant. Prior to that I spent 20 years with EPA, about 2 years with Duke University Medial Center, and about 15 years with The Chemical Industry Institute of Toxicology.
MD	MDCM from McGill University in Montreal, Canada; working in US x 25 years
PhD	I have a Ph.D. in Biology (Genetics) and I am board certified by the American Board of Toxicology
PhD	DPH Doctor of Public Health
PhD	PhD in microbiology and biochemistry

Question 6.5 *(ID: 3455)*

How many years of professional experience do you have?



Legend

answers: 29

skips: 2

Appendix C. Qualitative Survey Methods and Results

C.1. Methods

The methods for conducting this qualitative survey of science panel participants included steps for recruitment, and question formulation as described in the following sections.

C.1.1 Participant Recruitment

The goal of the survey recruitment was to reach out to as many qualified scientists as was feasible and practical. This was accomplished using two approaches conducted concurrently. Under the first approach (voluntary survey), email addresses were compiled for a list of 6,821 possible members and/or observers of science panels. This list was created using SciPinion's internal database, searches for authors of recent publications on science panels and workshop deliberations in online databases (e.g., Pubmed, Google Scholar), searches of profiles on social media databases (e.g., LinkedIn), and general internet searches. An email was sent to members of this list inviting them to participate in the on-line survey (approximately 45 minutes to complete) on a voluntary basis.

Under the second approach (compensated survey), email addresses were obtained for a list of 1,486 scientists who were specifically identified from science panel reports/proceedings/rosters as participating in science panels in the past five years for the following organizations, including: National Academy of Sciences (NAS), United Stated Food and Drug Administration (US FDA), United Stated Environmental Protection Agency (US EPA), International Agency for

Research on Cancer (IARC) and the World Health Organization (WHO). An email was sent to members of this list inviting them to participate in the survey on a compensated basis ($100 to complete the on-line survey that takes approximately 45 minutes).

Both surveys, consisting of identical charge questions provided in **Appendix A,** were initiated on February 19, 2019. Participants were permitted to complete the survey in stages (i.e., save incomplete/draft responses), with email reminders sent periodically during the survey participation period to encourage completion. Participants were not obligated to answer all questions, and were free to skip questions at their own discretion. Both surveys were closed on April 12, 2019, at which time all draft responses were accepted as their final response. For the volunteer survey, 87 participants provided responses to at least some of the charge questions. For the compensated survey, 31 scientists provided responses to at least some of the charge questions.

2.2 Charge Question Formulation

To characterize the demographic attributes of the participants, SciPinion posed questions regarding employment experience and academic background (Questions 6.1-6.5). To evaluate the conduct of science panels, SciPinion organized the survey questions into five sections: (1) Participants' recruitment to science panels; (2) Participants' experience with science panels; (3) Insight on optimal panel design and conduct; (4) Panel engagement; and (5) Reporting of panel results.

SciPinion created the questions for the survey by first drafting a set of questions based on previous experience and general knowledge about the conduct of science panels. The draft questions were reviewed by two parties: (1) the review sponsor was given an opportunity to review the draft questions for completeness and clarity; and (2) an independent senior scientist and former regulator was given an opportunity to review the draft questions for completeness and potential bias. While feedback from these parties was reviewed, the final determination of the wording of charge questions was made by SciPinion. The survey was then finalized and uploaded to the survey website.

All summary statistics, calculations, and figure preparation (e.g., percentages, mean confidence ratings) were performed in Microsoft Excel (version 16.36).

C.2 Results

Demographic data for survey participants are summarized in **Table C.1**. Complete results are provided in **Appendix B**, and key results are summarized in **Figures C.1** though **C.13**.

Table C.1. Demographics Summary of Survey Respondents

		Survey		
Demographics Parameters (n)*		**Volunteer**	**Compensated**	**Combined**
Survey Completion (118)	Answered >90% of Charge Questions	54%	90%	64%
Participated/Observed Science Panels (100)	Participated	39%	65%	46%
	Participated/Observed	23%	26%	24%
	Observed	18%	6%	15%
Current Sector of Employment (93)	Government	4%	12%	6%
	Academia	49%	36%	45%
	Industry	18%	12%	16%
	Consulting	26%	36%	29%
	Non-Governmental Organization	3%	4%	3%
Previous Sectors of Employment (93)	Government	62%	68%	63%
	Academia	81%	76%	80%
	Industry	49%	44%	47%
	Consulting	34%	68%	43%
	Non-Governmental Organization	21%	24%	22%
Region of Residence (93)	North America	59%	92%	68%
	Europe	25%	4%	19%
	All others	16%	4%	13%
Highest Degree (93)	MS	6%	0%	4%
	PhD	81%	96%	85%
	MD	6%	4%	5%
	DVM	3%	0%	2%
	Other	4%	0%	3%
Years Professional Experience (93)	5-15	28%	8%	23%
	15-25	25%	16%	23%
	>25	47%	76%	55%

*Value in parentheses indicates the number of participants who provided responses to specific questions.

Figure C.1. Frequency with Which Respondents Observed or Experienced Behaviors or Processes that Encourage Participation During Panel Deliberations (Question 2.6)

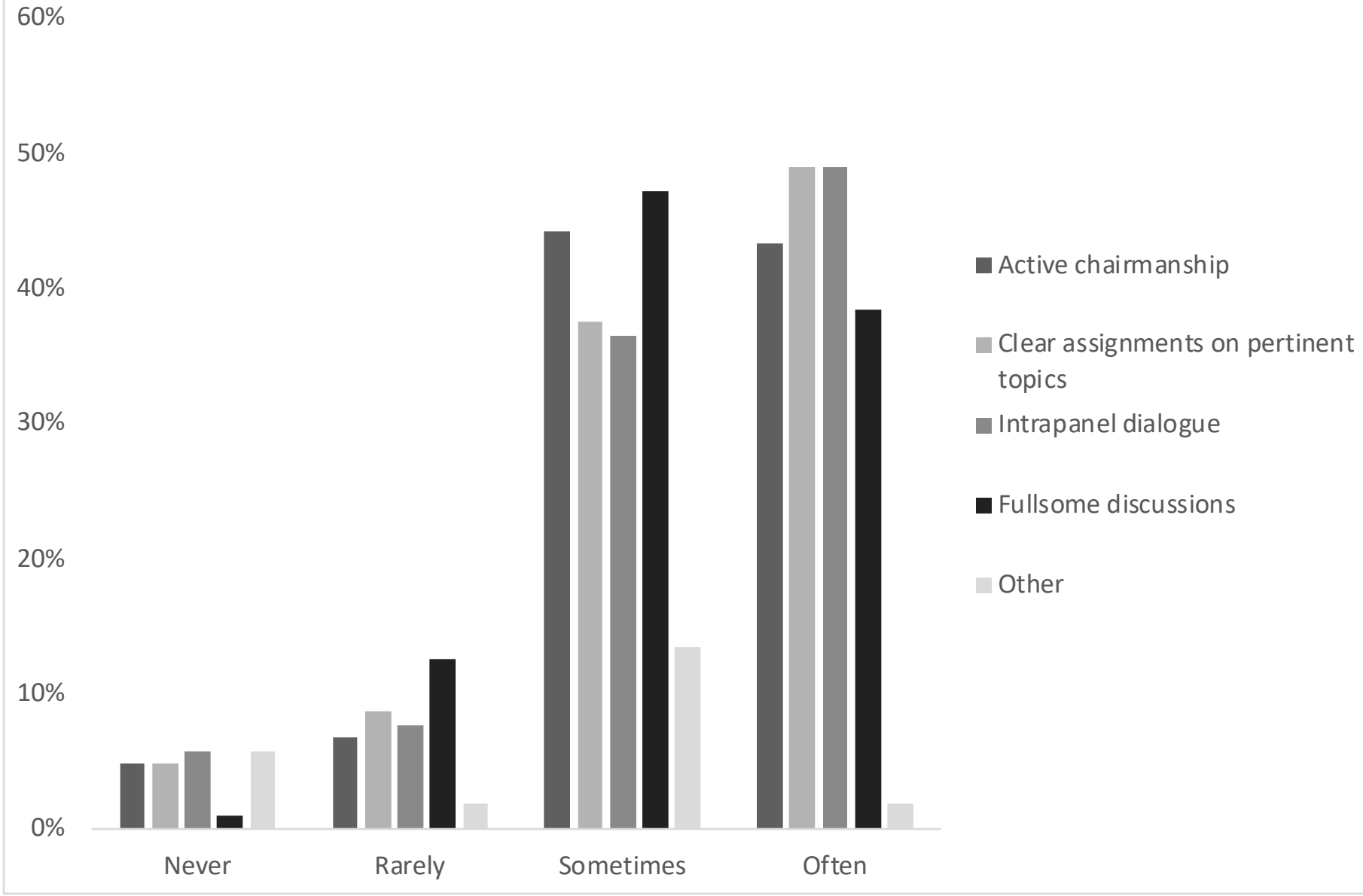


Figure C.2. Frequency with Which Respondents Observed or Experienced Groupthink During Science Panel Deliberations (Question 2.7)

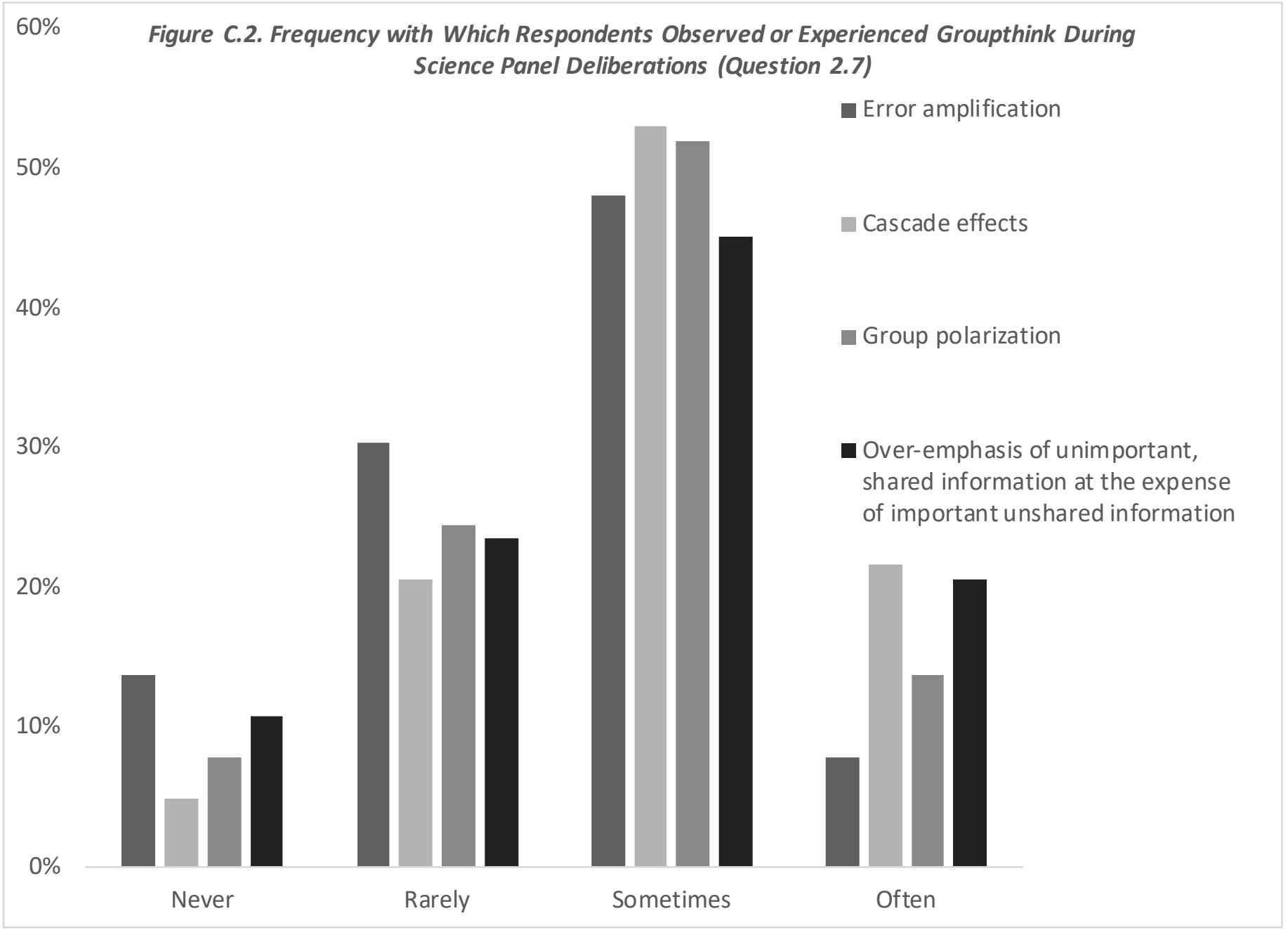


Figure C.3. Frequency with Which Respondents Observed Problems in Science Panel Design, Function and/or Deliberations (Question 2.8)

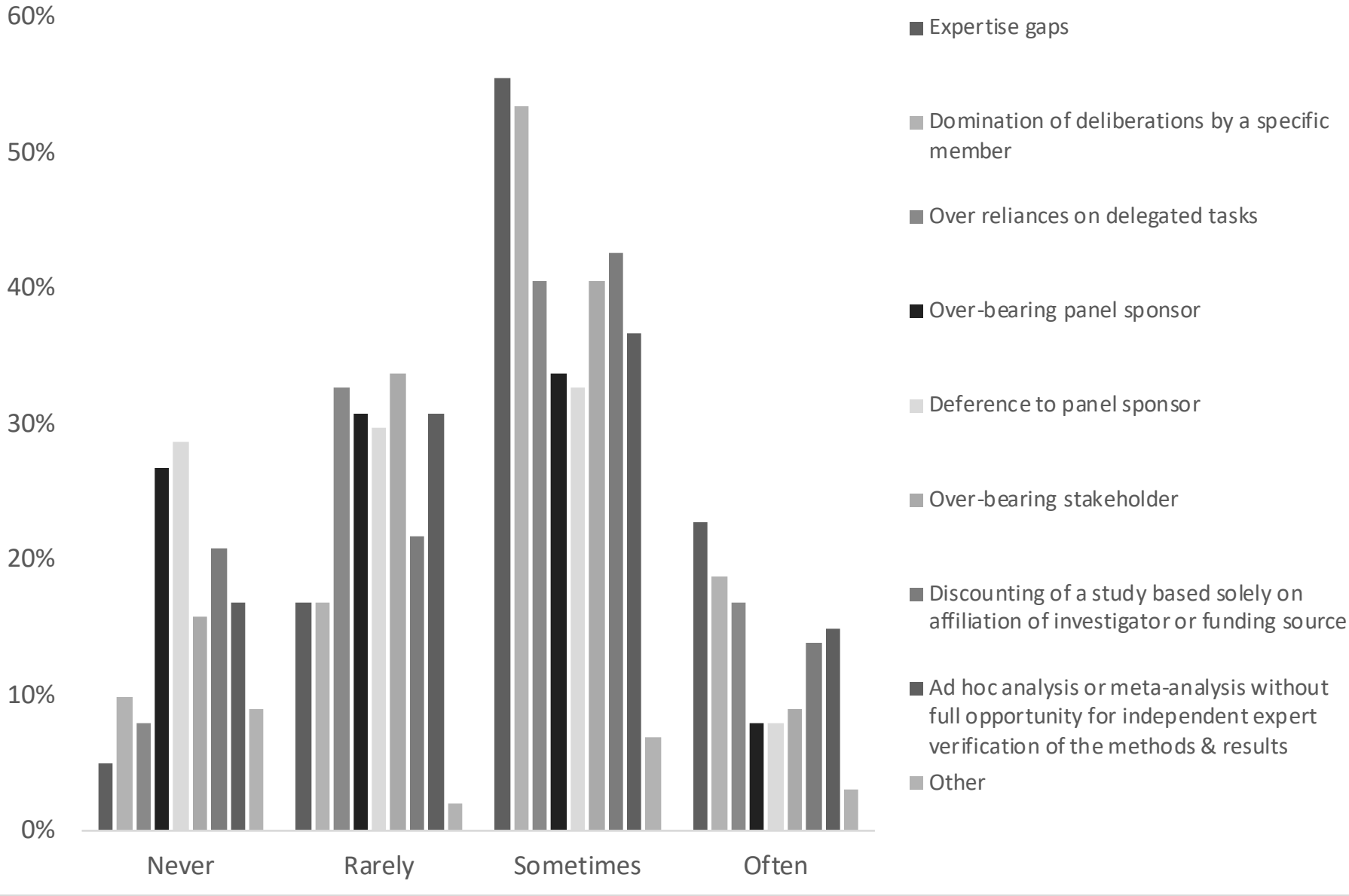
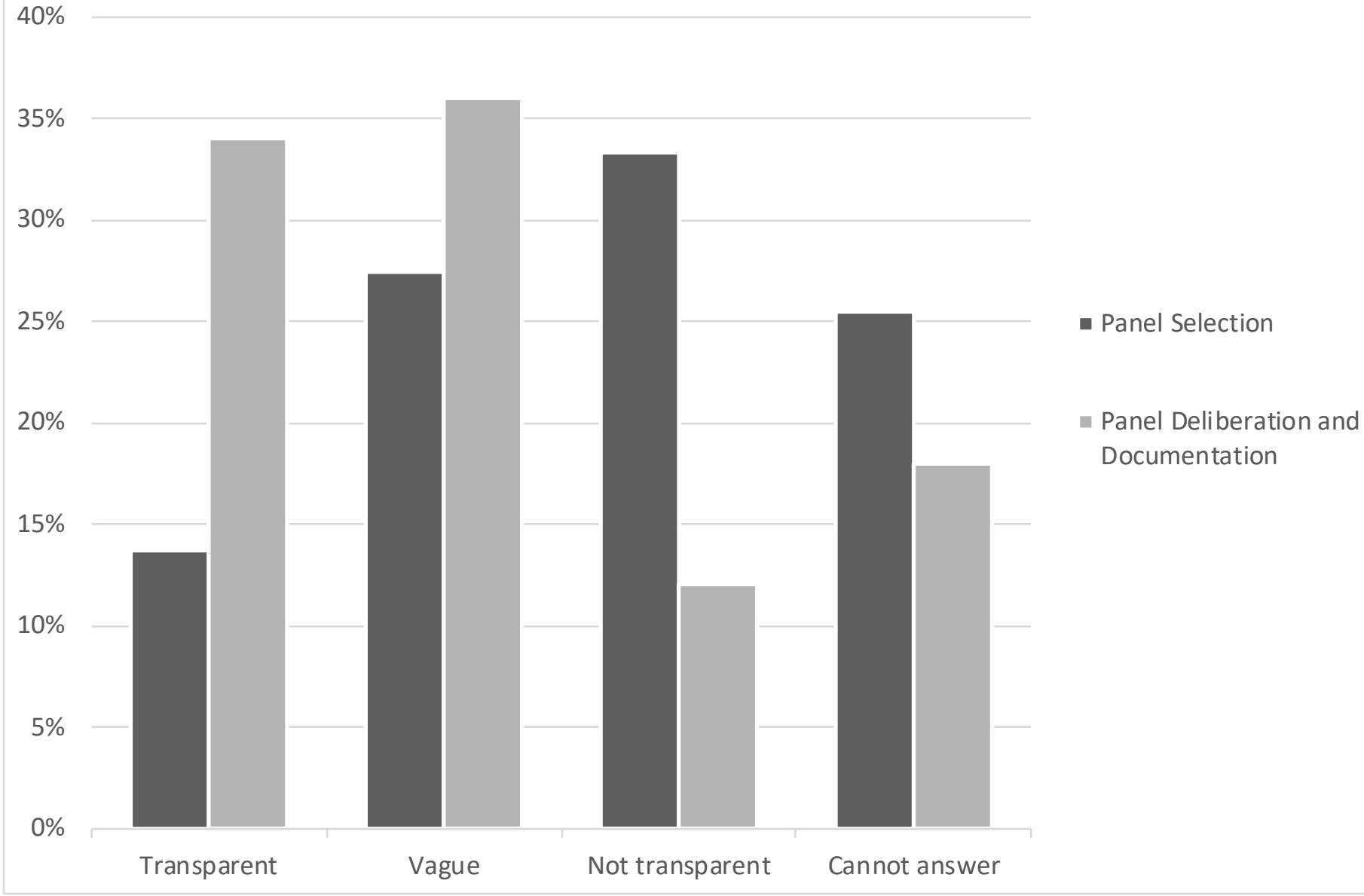


Figure C.4. Degree of Transparency of Panel Selection and Deliberaton/Documentation Observed or Experienced by Respondents (Questions 2.12 & 2.14)



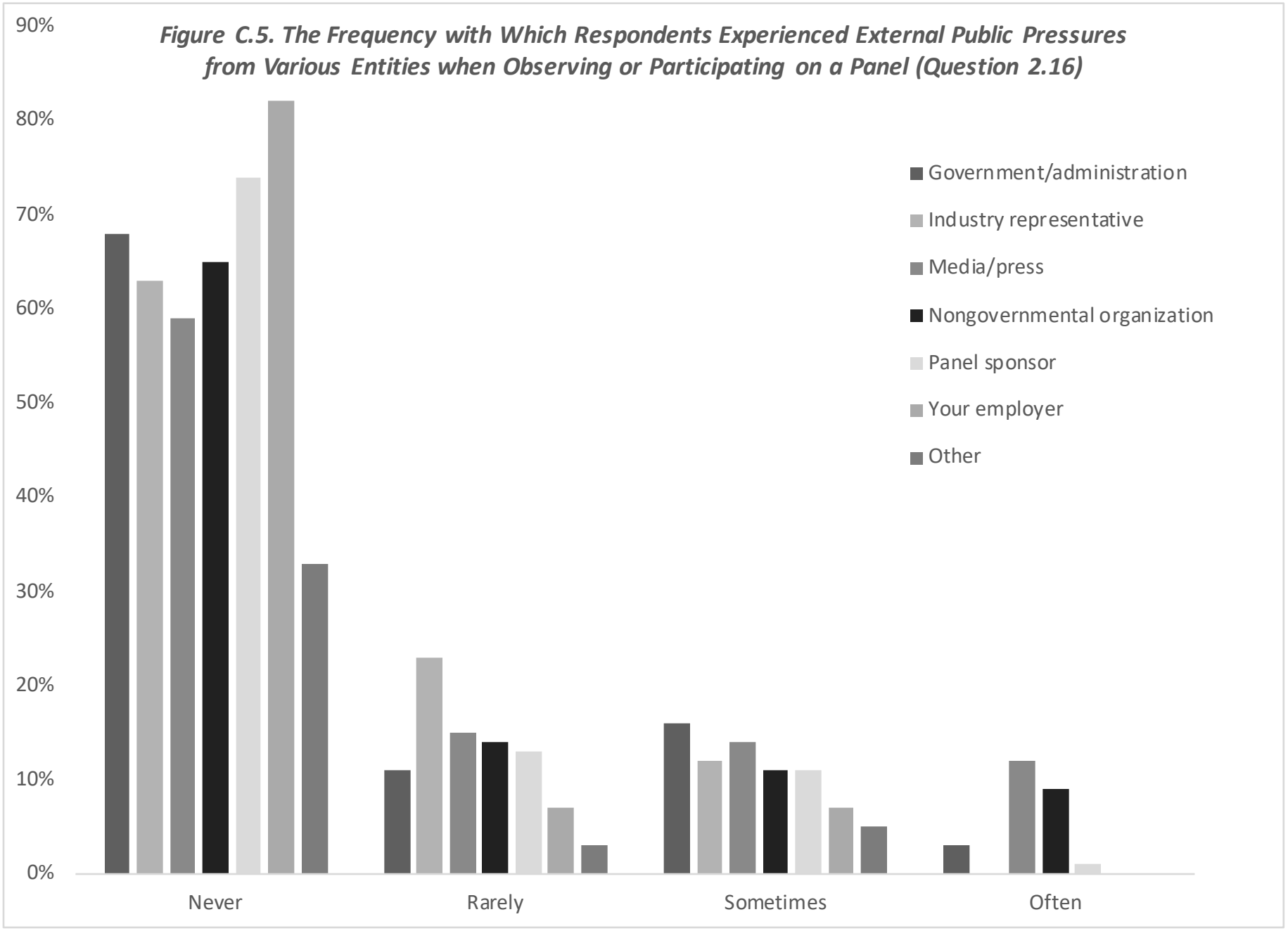


Figure C.5. The Frequency with Which Respondents Experienced External Public Pressures from Various Entities when Observing or Participating on a Panel (Question 2.16)
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Never
Rarely
Sometimes
Often
Government/administration
Industry representative
Media/press
Nongovernmental organization
Panel sponsor
Your employer
Other

Figure C.6. Respondents' Opinions on Whether it is a Good Idea for Regulatory Agencies to Exclude Qualified Scientists from Serving on Science Panels due to Funding Conflicts of Interest (Question 3.1)

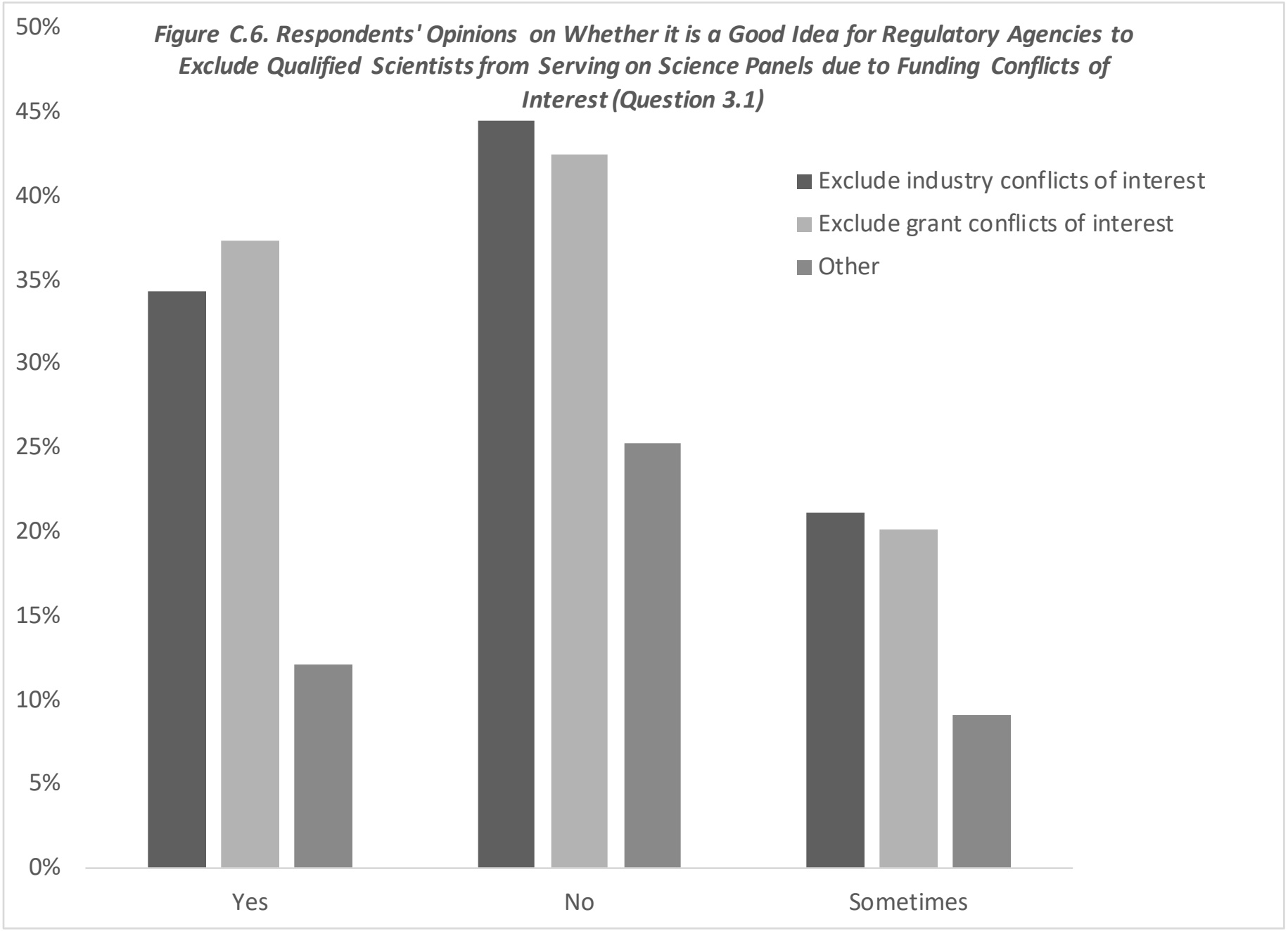


Figure C.7. Respondents' Opinions About Whether Sector of Employment Generally Impacts an Expert's Scientific Perspective (Question 3.2)

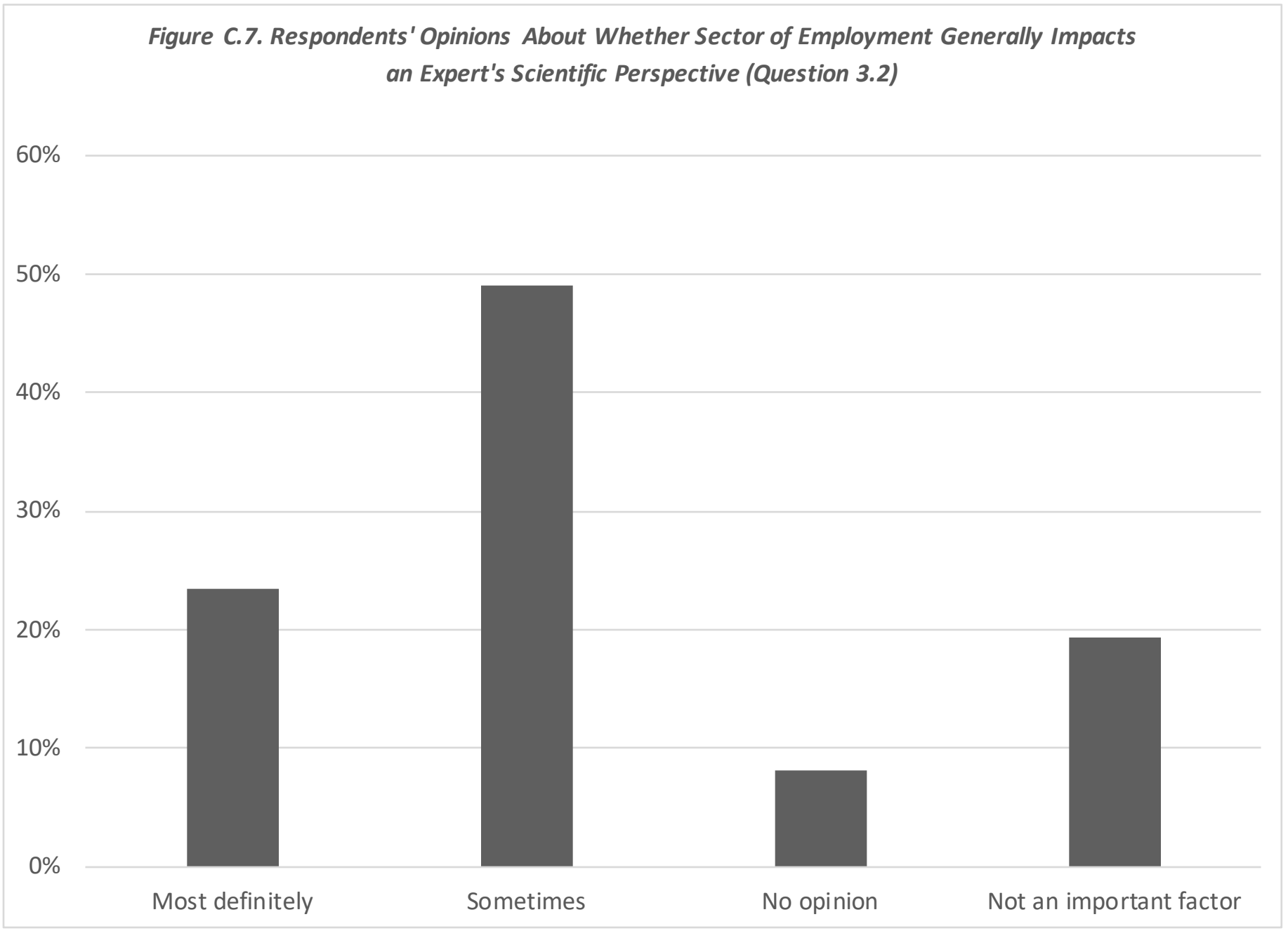


Figure C.8. Respondents' Ratings of the Importance of Various Factors in Guiding Panel Selection (Question 3.3)

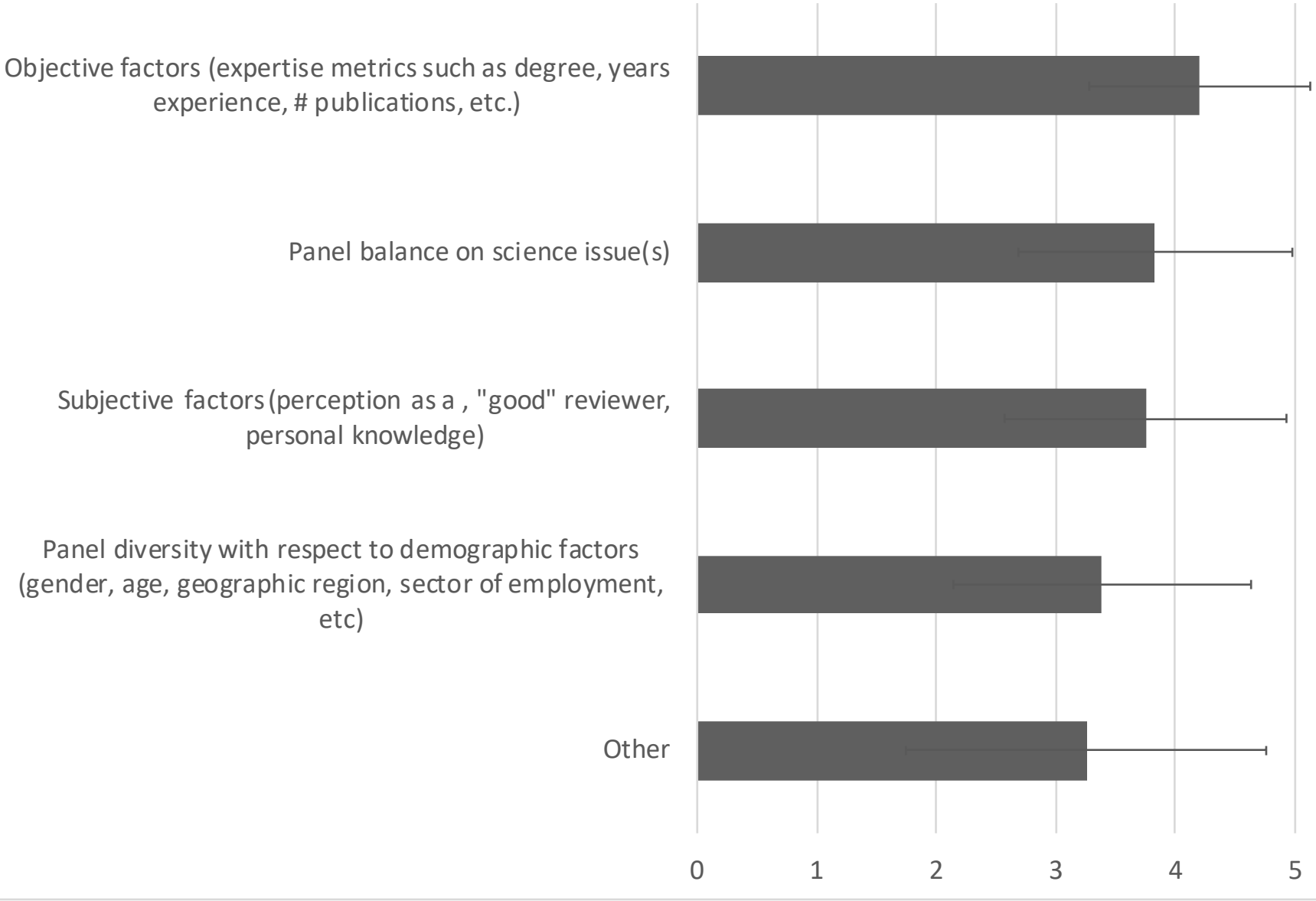


Figure C.9. Respondents' Ratings of the Importance of Various Potential Conflicts of Interest as a Reason for Suspecting Bias in a Science Panelist (Question 3.5)

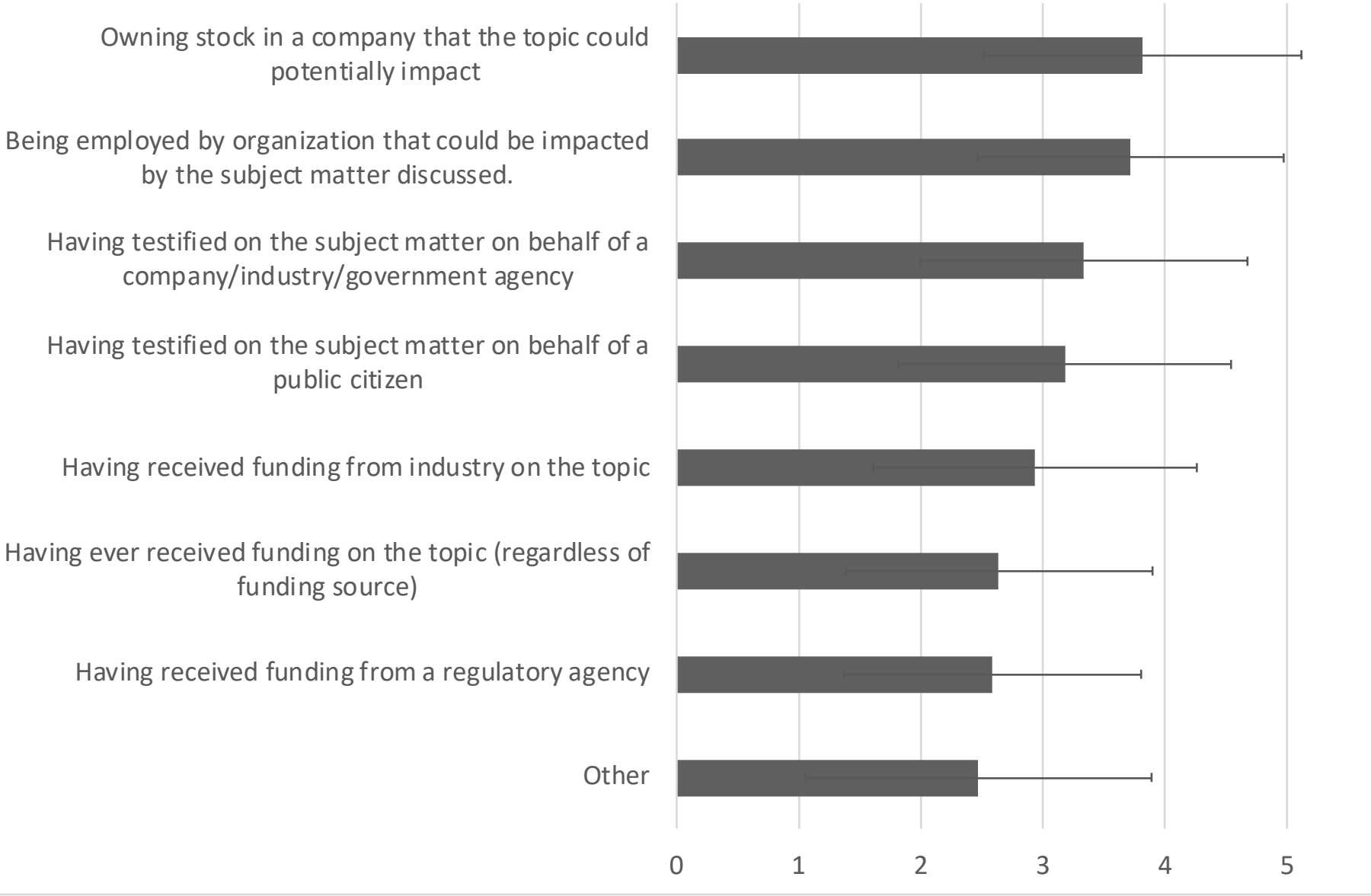


Figure C.10. Respondents' Ratings on How to Define Expertise (Question 3.6)

Figure C.11. Respondents' Ratings on the Importance of Transparency of Different Aspects of Panel Deliberations (Question 4.1)

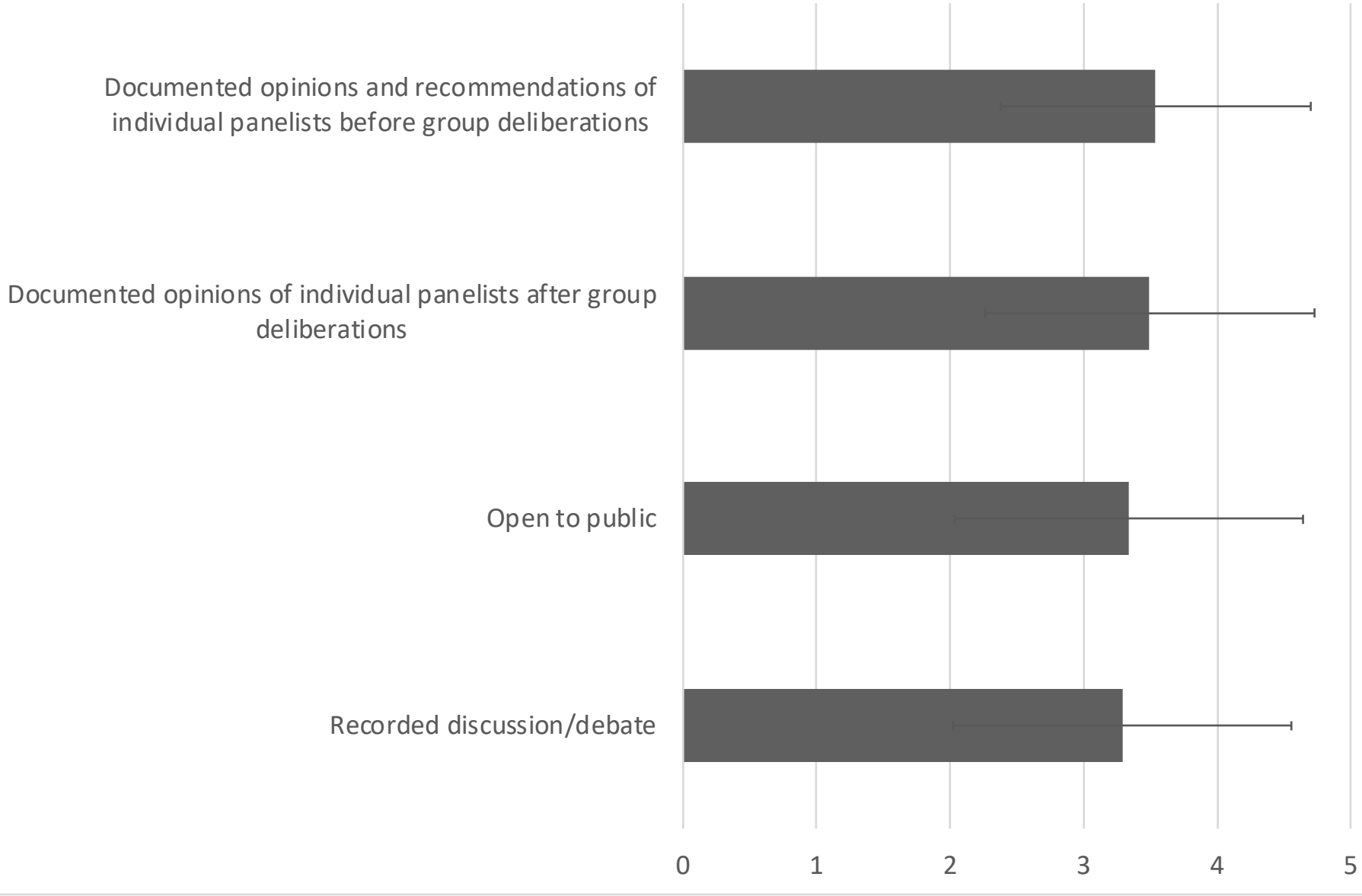


Figure C.12. Respondents' Ratings on the Importance of Transparency of the Methods for Reporting of Panel Results (Question 5.1)

Figure C.13. Respondents' Ratings of the Importance of Panel Consensus and Assessing Response Reltionships (Questions 5.2, 5.2, & 5.6)