Call for nominations of experts and resources
to inform the work of the UN Secretary-General's Scientific Advisory Board

Deadline for nominations: 26 November 2024

The International Science Council (ISC) is seeking nominations of experts to contribute scientific insights and policy advice for the United Nations Secretary-General's Scientific Advisory Board (SAB). This collaboration aims to support the UN with impartial, evidence-based guidance on emerging scientific and technological issues, with an emphasis on complex global concerns where technology, ethics, governance, and sustainability intersect. Selected experts may contribute to roundtable discussions and science briefs addressing high-stakes areas, helping to inform the United Nations Secretary-General and other UN Officials on potential responses to pressing global challenges.

Recently, the Secretary-General and the Scientific Advisory Board agreed on 5 key areas of focus: deep-sea mining, solar radiation modification, biological research on aging, decarbonization, and artificial intelligence verification. From November 2024 to March 2025, the SAB will be organizing expert roundtables and producing science briefs for each theme with the goal of offering experts an opportunity to describe the latest scientific, technological, and environmental issues on each of the 5 areas of focus.

Additionally, the ISC is also seeking the submission of resources (reports, briefs, etc.) from members, partners, and the broader scientific community on the 5 areas of focus in this call to inform the ISC's work on these topics – please see the end of this document for more information. Such resources may also be featured by the SAB on its website, recognized as elements for 'further reading' alongside the results of the SAB expert roundtable discussions and science briefs.

The ISC's role in the SAB

In September 2023, the UN Secretary-General appointed a Scientific Advisory Board (SAB), tasked with providing advice on emerging issues in science and technology to the UN Secretary-General and senior leadership. The Board is composed of seven independent scientists, six UN chief scientists, and supported by several large networks and scientific institutions. As part of the SAB's global network of scientific institutions, the International Science Council (ISC) contributes to the Board's work by offering advice and access to global multi-disciplinary scientific expertise.

The ISC has previously provided input to the SAB through both formal and informal channels. It has shared key ISC publications and facilitated horizon scanning exercises to help identify emerging future trends. Additionally, the ISC has supported collaboration between the SAB and the UN Group of Friends on Science for Action, including around the Summit of the Future in 2024.

Areas of focus for expert nominations

Selected experts will be expected to contribute to the SAB's roundtables and science briefs by addressing the following key overarching and guiding questions for each of the 5 areas of focus:

1. **Current status and future directions**: What are the most recent scientific and technological advancements, and where are we likely headed in the short-term future?

2. **Risks and governance**: What are the primary risks and governance challenges, and how can these be effectively managed?

3. **Implications for the UN**: How do these issues intersect with UN priorities, and what role can the UN play in supporting responsible development and governance in each field?

The 5 areas of focus for this call include:

1. **Deep-sea environment, including impacts of deep-sea mining (DSM)**

Experts will engage in outlining recent advances in the field of DSM, emerging and future considerations (including environmental issues emerging around the practice), and possible roles the UN and other actors could play. Key questions include: What are the most important recent advancements in DSM? Are there technological/scientific breakthroughs that are important to highlight? Who are the most important actors in the advancement of DSM? What are the most important environmental risks around DSM? What processes are in place to manage those risks? Are there new/emerging technologies that may change the DSM landscape in the near future? What steps can be taken to manage those risks?

Planned activities and timeline for deep-sea experts:
-   Substantive inputs (1–2-page issue briefs) on the questions mentioned above to inform the science brief prepared by the SAB, and to form a basis for the science-policy roundtable discussion (mid-November to early December 2024).
-   Participation in a science-policy roundtable on deep-sea mining (29 November and/or 2 December 2024).

2. **Solar radiation modification**

This theme addresses solar radiation modification (SRM) technologies, with experts evaluating the scientific, ethical, and governance dimensions of their potential use and the breadth of impacts (such as on the water cycle, agriculture, health). This area centres on understanding SRM's place within broader climate strategies, exploring the latest advancements in climate intervention science, and assessing risks and deployment thresholds. Experts will address questions like: What are the current breakthroughs in solar radiation modification, and how do they influence the potential for testing and deployment? Who are the influential actors, from research institutions, the private sector, and environmental groups, and what governance frameworks can emerge to mitigate environmental and geopolitical risks? Expert insights will be instrumental in shaping risk management and international cooperation guidelines.

Planned activities and timeline for solar radiation modification experts:
-   Substantive inputs (1–2-page issue briefs) on the questions mentioned above to inform the science brief prepared by the SAB, and to form a basis for the science-policy roundtable discussion (late November to mid-December 2024).
-   Participation in a science-policy roundtable on solar radiation modification (11 December 2024 - TBC).

3. Biological research on aging

Experts will explore recent advancements in understanding the cellular and molecular processes underlying the biology of aging, including the mechanisms that drive aging and the onset of age-related diseases. This theme emphasizes both the scientific breakthroughs in aging research and the broader implications of these findings on public health, ethics, and policy. This area focuses on how this growing body of research can inform sustainable public health planning and global discussions on demographic change and consequent healthcare needs and social implications. Experts will address questions such as: What are the most important recent discoveries in biology related to aging? How might these advancements shape public health policy and strategies for managing age-related diseases? What ethical considerations arise with increased longevity, and how can health systems evolve to address these challenges? Contributions will support UN policy discussions on aging populations and sustainable health planning for future generations.

Planned activities and timeline for biological aging research experts:
- Substantive inputs (1–2-page issue briefs) on the questions mentioned above to inform the science brief prepared by the SAB, and to form a basis for the science-policy roundtable discussion (late December 2024 to January 2025 - TBC).
- Participation in a science-policy roundtable on biological research on aging (January 2025 - TBC).

4. Decarbonization

Experts will contribute insights into the current state and recent advancements in decarbonization technologies and solutions, aligning with UNFCCC goals and discussions at COP meetings. This theme centers on evaluating the latest technological innovations, such as carbon carbon dioxide removal technologies, and understanding their potential roles, risks, and limitations in global decarbonization efforts. Key questions include: What major technological or scientific breakthroughs have recently emerged to enable the decarbonization of economies, industries and the energy sector? Which stakeholders – governments, industries, NGOs – are most influential, and how can they contribute to achieving UNFCCC targets? Experts will also explore the environmental and economic challenges surrounding decarbonization technologies, as well as any new or emerging approaches that could impact the field in the near future. This work seeks to deepen the UN's understanding of the decarbonization landscape, supporting evidence-based discussions on pathways toward reducing global emissions and mitigating climate change.

Planned activities and timeline for decarbonization experts:
- Substantive inputs (1–2-page issue briefs) on the questions mentioned above to inform the science brief prepared by the SAB, and to form a basis for the science-policy roundtable discussion (February 2025 - TBC).
- Participation in a science-policy roundtable on decarbonization (February 2025 - TBC).

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5. Artificial intelligence verification

Experts in AI verification will explore the technical and governance challenges of ensuring unbiased, accountable, and secure AI, with an emphasis on reducing geopolitical risks and addressing inequalities in AI access and development among nations. This area focusses on understanding recent advancements in verification methods, key actors in the AI landscape, and emerging governance solutions. Questions include: What are the most significant advancements in AI verification? Who are the leading stakeholders, and what role do they play in shaping equitable AI access? Experts will address the potential of new technologies to enhance verification and offer guidelines on managing risks. Contributions will be crucial in developing frameworks that support fair and responsible AI at the global level.

Planned activities and timeline for decarbonization experts:
- Substantive inputs (1–2-page issue briefs) on the questions mentioned above to inform the science brief prepared by the SAB, and to form a basis for the science-policy roundtable discussion (March 2025 - TBC).
- Participation in a science-policy roundtable on artificial intelligence verification (March 2025 - TBC).

Expert profile and qualifications

The ISC seeks experts who can provide authoritative, evidence-based insights in one or more of the designated fields. We welcome nominees with the following qualifications:

- Recognised subject matter expertise in one or more of the relevant areas listed above.
- Proven experience engaging in policy-oriented research or providing scientific advice to policy-makers at a senior level, ideally in an international and interdisciplinary setting.
- Knowledge of the ethical, environmental, and social dimensions relevant to their field of expertise.
- Experience in knowledge translation or science communication, with an ability to convey complex scientific issues clearly and effectively to non-experts.
- Capacity to work collaboratively with diverse stakeholders, including government entities, industry, and NGOs, to foster shared understanding and actionable outcomes.

The ISC encourages nominations of experts representing diverse age groups, genders, geographic regions, and disciplinary backgrounds. Regional representation, particularly from developing countries, is an essential aspect of the ISC's commitment to ensuring all scientific perspectives are heard.

Eligibility and nomination process

We strongly encourage ISC Member organizations to nominate experts who meet these criteria. Self-nominations are also welcome, especially from individuals with relevant expertise who may not have direct connections with an ISC Member organization. All nominees are encouraged to submit a CV as well as a nomination letter (for ISC Member nominations) or a cover letter (for self-nominations) via the ISC's online submission form.

Call for resources on the 5 areas of focus

The International Science Council (ISC) will be curating scientific content in the 5 areas highlighted above. The ISC therefore invites its members and partners to submit relevant scientific resources to support its work on the 5 areas of focus described in this call. This includes contributions of scientific articles, research reports, policy briefs, case studies, project assessments, and any other resources that align with the 5 topics: deep-sea mining, solar radiation modification, biological research on aging, decarbonization, and artificial intelligence verification.

By gathering and reviewing these resources, the ISC seeks to gain a comprehensive understanding of the scientific landscape, identify synergies, and discover opportunities for collaboration within its network.

Members, partners and beyond can submit their resources via the ISC's online submission form **by 5 December 2024**.

Contact for additional information

For further information on this call for nominations, please contact James Waddell at
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