

**Board on International Scientific Organizations:  
Strategic Goals, Action Plan, Evaluation Plan, and Anticipated Impact, 2019-2024**

**STRATEGIC GOALS AND ACTION PLAN**

**BISO AND THE NASEM**

The Board on International Scientific Organizations (BISO) sits within the National Academies of Sciences, Engineering, and Medicine's (NASEM) Division on Policy and Global Affairs (PGA). The NASEM is involved in a number of important international programs that also includes the InterAcademy Partnership (IAP), the Committee on Human Rights (CHR), and Partnerships for Enhanced Engagement in Research (PEER) program. BISO's interactions with the International Institute for Applied Systems Analysis (IIASA), the International Science Council (ISC), and over fifteen ISC-related international scientific Unions, Commissions, and Committees complement and enhance this larger institutional activity.

In 2018, PGA identified four major themes on which the work of the Division will focus: U.S. Science and Innovation Policy (Policy); International Networks and Cooperation (Networks); Global Policy and Development (Global); and Science and Engineering Capacity Development (Capacity). Although BISO is assigned to the Networks theme, its work cuts across several others.

**BISO'S MISSION**

BISO's mission is to strengthen science for the benefit of society through U.S. leadership, collaboration and representation in international scientific organizations and programs.

**BISO VISION**

BISO's vision for the future is to optimize and leverage international scientific organizations for the benefit of the U.S. and global scientific community.

**GOALS AND OBJECTIVES**

<p><b>Goal 1 - NETWORKS:</b> Provide vibrant leadership for and participation in the world's scientific organizations, creating and enhancing opportunities for U.S. scientists to contribute to international networks.</p>
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BISO's greatest strength is in its networks. It is active in or coordinates four major high-level types of organizations, including the International Institute for Applied Systems Analysis (IIASA) and the International Science Council (ISC); the ISC-related unions; the U.S. National Committees (USNCs); and the U.S. professional societies involved with the various USNCs.

BISO is recognized internally and externally as an authoritative source and a reliable partner in international science and scientific organizations. BISO will identify and promote opportunities for U.S. scientists to engage in international networks, and for U.S. and/or international organizations to work together. Its networks and close associations will allow BISO to be aware of, create, and act on synergies and emerging opportunities between USNCs and the international scientific organizations.

#### Objective 1 – Guide and influence organizations

- Foster national and international collaborations between the NASEM, IASA, ISC, the international scientific unions, and the USNCs.
- Ensure continued high-level U.S. leadership and scientific engagement in international organizations.
- Provide assistance to U.S.-based leaders in the international organizations to which the NAS adheres.
- Provide thoughtful input on union governance issues and programs, especially programs in developmental stage.

#### Objective 2 – Create and enhance opportunities

- With USNCs, identify key issues that require or would benefit from coordinated approaches that in turn can guide future research directions and activities of USNCs, unions, and related international organizations.
- Promote synergies and develop vehicles for action across USNCs and unions.
- Build synergistic relationships with closely aligned organizations and networks.
- Identify and act on issues and opportunities in which NAS/BISO has special expertise and/or a unique position.

**Goal 2 - SCIENCE** - Advance and promote STEM+<sup>1</sup> research, education, and policy.

BISO and the USNCs will actively promote science and research, both within and across disciplines. BISO and the USNCs will organize activities individually and with other partner entities and organizations that explore areas at the frontier of science and technology, and/or topics at the intersection of science, technology, and policy. Continued effective leadership will enable the U.S. and the NASEM to advance science by addressing scientific and societal challenges of the 21st century.

#### Objective 1- Advance science

- Develop and encourage partnerships and collaborations that foster convergence activities. At the same time, enable the USNCs to identify and promote scientific issues of importance to their own scientific disciplines.
- Foster STEM research and education through unions, USNCs, and NASEM disciplinary boards. This is especially important in frontier areas of science or in areas where science, policy, and global impacts intersect.

#### Objective 2 – Promote STEM

- Identify and promote the roles, contributions, priorities, and activities of the international organizations and USNCs.
- Increase U.S. involvement in the scientific programs and initiatives of the international organizations.

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<sup>1</sup> STEM has traditionally focused on the natural and physical sciences, while the social sciences are an important part of the ISC and BISO portfolios as well. STEM+ highlights the connection to context beyond natural-physical-technical science, even connecting to society itself.

**Goal 3 - WORKFORCE DEVELOPMENT:** Grow a globally-engaged and diverse U.S. STEM+ workforce.

BISO and the USNCs will create opportunities for U.S. students and early career scientists to participate in fellowships and other opportunities related to international organizations and programs. These fellowships will involve a diverse group of applicants and awardees. These programs will also involve opportunities for USNC members and senior scientists engaged with unions to mentor U.S. early career scientists. Many U.S. early career scientists who participate in the programs will continue to be engaged in international programs and collaborations.

Objective 1 – Engage Globally

- Support USNCs' domestic workforce development efforts and activities.
- Involve U.S. early career scientists in union-level international programs.

Objective 2 – Promote Diversity

- Promote greater diversity and inclusion in BISO or USNC domestic and international capacity-building programs.
- Plan and host activities that promote diversity in STEM fields.

**Goal 4 – INTERNATIONAL MOBILITY:** Bring U.S. scientists to the world and bring global science to the U.S. by promoting the U.S. as a destination for high-impact international scientific meetings.

Recognizing that science is global and that both the United States and the world's scientific community benefit from the international circulation of scientists, BISO will assist foreign scientists at all career stages who are experiencing U.S. visa difficulties. It will promote the United States as a study, meeting, and conference destination and provide up-to-date advice to visa applicants and meeting organizers. U.S. visa policies influence study and travel choices of foreign students and scientists, so BISO will continue to actively follow changes that would affect those decisions.

Objective 1 – Assist Foreign Scientists at All Career Stages

- Within the context of our mission, provide visa assistance to visiting scientists, scholars, and students and their hosts around the country.

Objective 2 – Support the United States as a Meeting Destination

- Promote the U.S. as a site for international scientific meetings, congresses, and events.
- Provide advice and assistance to organizers of large scientific meetings in the United States.
- Inform internal and external stakeholders on visa-related protocol and policy developments.

## EVALUATION PLAN

In the past, BISO has used various evaluation and assessment techniques, including balanced scorecards, surveys and questionnaires, a collection of impact stories, and House of Quality (HOQ) tools and techniques to self-evaluate its work. Moving forward, we will apply a Theory of Change approach, which will allow us to better evaluate both the quantitative and the qualitative elements of our work. The following chart describes BISO's four themes and it will evaluate our work using a Theory of Change approach.

Goal	Related Activities	Activity Indicators	Outcomes
<b>NETWORKS:</b> Provide vibrant leadership for and participation in the world's scientific organizations, creating and enhancing opportunities for U.S. scientists to contribute to international networks.	<ul style="list-style-type: none"> <li>-Develop and support collaborations between the NASEM, ISC, unions and USNCs.</li> <li>-Explore new outreach activities to engage the U.S. scientific community in international initiatives.</li> <li>-Nominate U.S. scientists for international scientific and governance positions.</li> <li>-Offer advice to national and international organizations.</li> <li>-Send delegations and submit resolutions to General Assemblies.</li> </ul>	Impact stories related to specific suggestions and recommendations made to international scientific organizations. Impact stories of collaborations. # joint projects created. # collaborations between USNCs and/or unions; # selected / # nominations for leadership positions (i.e. officer, commissions, and special committees). # U.S. resolutions approved / # resolutions submitted.	The international scientific organizations will reflect some of the U.S. thoughts and suggestions, particularly on governance issues and scientific programs. Synergies will be identified and developed. New networks will be developed. Existing networks will be leveraged to build large-scale initiatives. The U.S. will have a strong presence in global STEM+ organizations.
<b>SCIENCE:</b> Advance and promote STEM+ research, education, and policy.	<ul style="list-style-type: none"> <li>-Organize activities that explore areas at the frontier of science, technology, and/or policy.</li> <li>-Plan and host workshops to address STEM+ research gaps.</li> <li>-Collaborate with other NASEM disciplinary boards on joint activities.</li> </ul>	# symposia or workshops organized (with outside funding); # sessions organized at professional society meetings; # publications (with impact metrics); NAS workshop summaries; impact stories. Website analytics, # professional society articles, # conference presentations, # Tweets and impressions; # posts in LinkedIn.	The body of knowledge in STEM+ fields will be expanded. Members of U.S. STEM+ professional societies will be better informed about ISC, union and USNC programs and activities. Links with NASEM disciplinary boards will be strengthened. Current and emerging technologies will be used to better reach the U.S. STEM community.
<b>WORK-FORCE DEVELOPMENT:</b> Grow a globally-engaged and diverse U.S. STEM+ workforce.	<ul style="list-style-type: none"> <li>-Establish USNC travel fellowship programs.</li> <li>-Promote individual membership in Unions that allow it.</li> <li>-Encourage U.S. scientists' involvement in Union and USNC activities.</li> <li>-Reach out to professional societies serving underrepresented minorities (URM).</li> <li>-Appoint diverse experts as delegates.</li> </ul>	# fellowship programs; # fellowships awarded, and of those, # early career awards; # mentoring programs; # Union prizes/awards for U.S. scientists; impact stories of continued union involvement. Statistics related to the diversity of applicants and awardees (gender and race), # activities focused on diversity.	The number of fellowships for U.S. early career scientists and the number of opportunities for U.S. scientists' involvement in international scientific organizations will be increased. The diversity of nominees for union leadership and USNC membership will be increased. The number of travel fellowship URM applicants and awardees will be increased. The national

	-Nominate women and minorities to international leadership positions.		average gender/race PhD rates will be met or exceeded in USNC fellowships.
<b>INTER-NATIONAL MOBILITY:</b> Bring U.S. scientists to the world and bring global science to the U.S. by promoting the U.S. as a destination for high-impact international scientific meetings.	-Help international scientists with visa issues. -Issue statements that clarify latest U.S. immigration policy developments. -Report weekly to the Department of State (DOS) visa cases experiencing delays. -Issue letters of support for U.S. Congress bids and scientific meetings. -Develop Fact Sheets to explain U.S. visa procedures. -Register STEM+ meetings in the U.S.	# visas approved / # applicants contacting the IVO; length wait time; impact stories; # meetings organized between U.S. societies and DOS representatives. #Events in the U.S. submitted / # approved in which BISO or a USNC is involved; # contacts with societies regarding scientific meetings; # letters prepared for meeting organizers; # U.S. Congress bids; # conferences or large scientific meetings registered through the IVO.	To the extent that we can influence decisions, most IVO cases will be resolved prior to U.S. travel. Better international understanding of U.S. visa policies. Union leaders and international delegates are informed that the U.S. welcomes scientific meetings. A proactive approach to issue visas on time for meetings /conferences held in the United States.

### ANTICIPATED IMPACT

Anticipated impact can be organized in short-term, medium-term, and long-term timeframes. The achievement of these outcomes will fulfill BISO's mission and vision.

Short-Term	Medium-Term	Long-Term
-More effective U.S. leadership in governance and scientific positions. -ISC and union programs of interest to U.S. scientific community. -Development of science programs by USNCs, unions and the ISC in areas of current or emerging interest. -Opportunities for U.S. scientists at all career stages. -Resolution of individual visa cases.	-U.S. interests and priorities reflected in international organizations. -New synergies and joint activities created. -New networks established. -New science activities built on BISO/USNC activities. -Early career scientists engaged in USNC and union networks. -Opportunities for U.S. scientists at all career stages. -More international scientific meetings held in the United States.	-U.S. influences sustained and increased in the international organizations. -Networks maintained, expanded, and created. Synergies are identified, and partnerships between scientific unions created. -Knowledge in STEM+ and boundary areas advanced. -U.S. scientists engaged in ISC and union science and governance. -Opportunities for U.S. scientists at all career stages. -U.S. seen as a desirable location for major international meetings.