

The AIBS IDEA Conference

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The American Institute of Biological Sciences (AIBS) is an umbrella organization of biological societies. In 2020, AIBS developed a plan to intentionally assess its current programs, as well as to develop and expand programs and policies to increase diversity, equity, and inclusion (DEI) in the biological sciences. Therefore, AIBS decided, for the next 5 years, to focus its annual meeting of member societies and organizations, the AIBS Council Meeting, on topics related to DEI. In 2021, AIBS was funded by the National Science Foundation and received additional support from the Doris Duke Charitable Foundation for its expanded annual council meeting, Enabling Scientific Societies to Create Inclusive, Diverse, Equitable and Accepting (IDEA) Environments. The IDEA conference was created to engage like-minded organizations committed to increasing diversity in the biological sciences. The conference consists of two meetings, an initial virtual 2-day meeting followed by a virtual 1.5-day workshop. The initial meeting included 27 scientific societies with representatives from five minority-serving scientific organizations. This meeting of the IDEA conference, held 4–5 November 2021, served as a call to action that would allow participants to come together to learn, plan, and strategize. This report provides details of the discussions around characteristics of IDEA environments, barriers to creating IDEA environments, strategies to overcome these barriers, and

opportunities for action. The agenda can be found within the supplemental material.

Conference overview and background

A lack of inclusion, diversity, equity, and acceptance in the biological sciences creates barriers for individuals to join or thrive in successful careers. People who may be gifted scientists are excluded from making contributions because of, for example, gender, gender identity, disability status, sexual orientation, ethnicity, or race. A more inclusive and diverse scientific community will enable more participation and foster better science. But changes in the culture of biology (functions, practices, policies, institutions, societies, and so forth) are needed to improve IDEA.

Scientific societies are in a unique position to foster changes in the culture of biology. They represent a wide variety of individuals and institutions, they have access to multiple fields of biology to impart resources and education, and they can enable networking and idea sharing across multiple disciplines and organizations to enable new approaches. AIBS is committed to changing culture to enhance IDEA in scientific environments.

The purpose of AIBS's 2-day meeting was to increase knowledge, foster conversation, build collaborations, and identify strategies for developing IDEA scientific environments. The activities included presentations about understanding of and experience related to IDEA in scientific careers,

culture, bias and stereotypes, and equity. They also involved a plenary discussion to identify characteristics of desired scientific IDEA environments. Work groups were created to identify barriers to achieving the desired cultures/environments in the context of discussions about IDEA, culture, bias and stereotypes, equity, and so forth; ways to mitigate the barriers; and the roles of biological scientific societies in enabling the desired scientific cultures and environments. Instruction was offered on tools and techniques to develop effective strategies. Work groups were convened to develop strategies for creating IDEA scientific environments. Presentations were given from National Science Foundation-funded LEAPs (Leading Cultural Change through Professional Societies of Biology) research coordination networks about highlights of their work to date. Finally, the next steps were planned out.

The meeting presentations and discussions, including characteristics of IDEA scientific environments, barriers to creating the IDEA environments, and strategies to overcome barriers and create IDEA environments, are summarized below.

Characteristics of IDEA scientific environments

The meeting participants described the characteristics of inclusivity, diversity, equity, and acceptance. In addition, they identified features that run through each of those characteristics, which are necessary to create IDEA scientific environments: communication,

respect, accessibility, and flexibility. The discussions touched on all aspects of biological sciences but largely focused on scientific societies.

Inclusivity. The meeting participants suggested that, in an inclusive scientific environment, all members have access to all levels of the organization, such as membership, presentations, leadership, involvement in the work, and decision-making. In such an environment, people would feel a sense of welcome and belonging, and everyone would make an effort toward collaborative and supportive discussions and activities. The meeting discussions identified multiple ways to improve inclusion. For example, creating manageable microtasks would allow people to be included in committee work to contribute early in their careers. Another example was to create small networking or resource groups of students to give them a chance to learn to interact in a less intimidating environment. These groups could focus on areas of personal interest, culture, or perspective, rather than on exclusively scientific endeavors. This would allow people to get to know one another and to feel a sense of belonging.

Diversity. In addition to the creation of welcoming environments with equitable access to opportunities and resources, the meeting participants suggested that there must be an acknowledgement that everyone has responsibilities toward diversity. People may do more or less, according to their circumstances, but everyone would own and contribute toward the creation of a diverse organization. It should not fall only to minorities or those who are historically disadvantaged to encourage and ensure diversity.

Equity. Scientific organizations must look at each of their core functions and ask whether their policies, programs, and practices are equitable for everyone. For example, the meeting participants suggested asking questions such as *Does everyone have a fair and*

impartial chance at resource distribution? Is there encouragement for everyone to apply for or otherwise have access to the resources? Is there transparency and communication about resources and about access to those resources? Other suggestions for equity considerations included fair compensation and recognition of labor, accommodation of needs, and recognition of strengths and weaknesses. In addition, the meeting participants suggested that equity should be enabled through training and programs that define and promote growth opportunities for everyone.

Acceptance. The meeting participants suggested that the goal of IDEA is creating environments that allow, encourage, and support all of their members in being their full authentic selves. This requires valuation of both scientific products and personal growth and achievement. It would also require accepting others fully as they are and not expecting them to give up part of their culture or identity to belong in scientific spaces. Reconsideration of the accepted norms of excellence—which may not incorporate diversity into decision-making processes such as awards, hiring, and admissions—is also necessary. This is because the beliefs and practices of the past, where IDEA was not incorporated, continue to influence current practice.

Communication. The meeting participants outlined many reasons that communication is important in creating IDEA environments and suggested criteria for effective communication. For example, discussing one another's expectations and identifying barriers requires open and honest communication across diverse groups of people. IDEA organizations must be able to discuss challenging topics while remaining professionally courteous and grounded in facts. The participants must learn to be thoughtful, to be direct, to be deliberate, and to speak with care. The environment should be friendly, even as people are openly communicating their feedback, criticisms, or concerns. (Certain situations,

such as peer review or some meeting interactions, may be more accepting of combative language, but this also needs to be examined in light of language's impact on inclusion and acceptance.) The participants suggested that communication should signal collaboration and bridge building.

Respect. The discussions highlighted the idea that respect is based on an underlying culture of expectation that people are treated well and equitably. In a respectful organization, DEI is centered and infused throughout the society at all levels. For example, other worldviews, experiences, and approaches are considered. Disagreements are handled with openness and good intentions. When mistakes are made, an attitude that celebrates failure honors honesty and the willingness to acknowledge weaknesses.

Accessibility. Scientific societies reach their members through outreach, and the meeting participants regarded accessible societies as those that ensure that meetings, events, and materials are available to everyone. Accessible societies would identify barriers and would ensure that they are removed so that all of their members can participate and contribute fully. The barriers may come from many sources, including, for example, physical or neurological divergence, financial constraints, language differences, or administrative requirements.

Flexibility. The discussants underscored that organizations striving toward IDEA environments must change their cultures and approaches. Leaders and members must be willing to change policies and practices that are not inclusive or that do not support all members equitably. Along with flexibility comes resilience. Change is not often easy, and organizations and their members must remain resilient so that they can work through difficulties instead of accepting defeat when challenges arise. The attendees suggested that flexibility can be fostered through encouraging

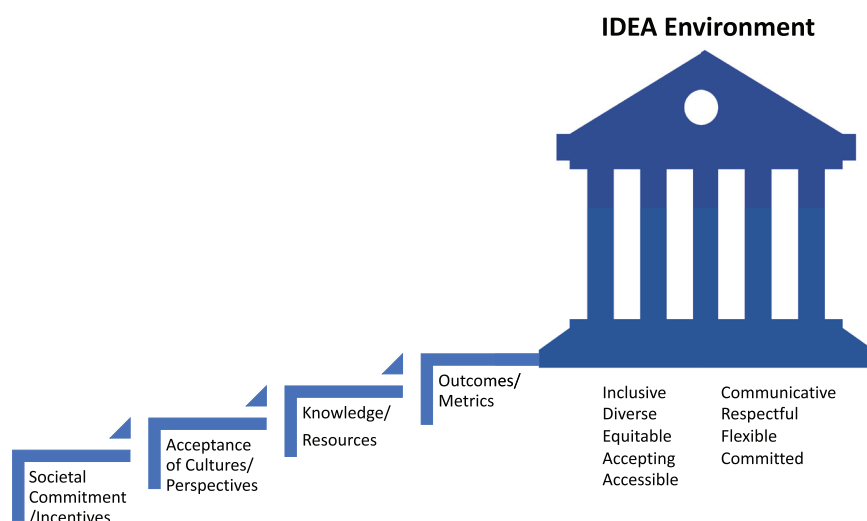


Figure 1. Barriers to creating IDEA environments.

curiosity, openness, empathy, and transparency.

Commitment. IDEA will not just happen in scientific societies or other organizations. The meeting participants discussed that there must be a public commitment to creating a culture that supports IDEA. This means that organizations must be open to new perspectives and ideas, and they must be prepared to push back against resistance to change and support for the status quo. The commitment cannot be only words. Priorities must be placed on activities and the implementation of practices and policies that will create tangible outcomes toward building an IDEA scientific environment.

Barriers to creating IDEA environments

The meeting participants identified barriers to creating IDEA environments, which fell into five categories: societies' ability to commit to DEI; a lack of incentives for DEI work; too little acceptance of multiple cultures and perspectives; inadequate knowledge, tools, and resources for creating IDEA environments; and an insufficient articulation of the desired outcomes and a lack of metrics to assess progress. As figure 1 illustrates, these barriers were identified as critical

factors to overcome in creating an environment with the desired characteristics of inclusivity, diversity, equity, acceptance, communication, respect, accessibility, and flexibility.

Societies' ability to commit to IDEA. The ability of scientific societies to commit to IDEA does not necessarily spring from a lack of desire to create a new culture and environment. In fact, as was clear from the meeting discussions, many societies are eager to do so. However, multiple factors must be addressed to enable these societies to move forward. For example, they often manage with too little money and too few people. The lack of resources can hobble the implementation of major new initiatives, even those as important as IDEA. Infrastructure is also an important consideration. For example, societies may not have the ability to collect necessary data to assess their membership needs or desires related to equity and diversity—or they may not have the technology to support highly networked groups and cross-group communications.

Societies may also need to restructure their governance or leadership. For example, many society leaders have achieved rank in their field and seniority in the society. However, if the society or the field has not had diverse membership over years, the group

with the status to become leaders is also likely to lack diversity. Societies will need to examine their governance policies and consider conferring leadership power to a more diverse group.

A lack of incentives for DEI work. In societies, universities, institutions, and other organizations, incentives are normally based on scientific work and writing. Taking time from research or fieldwork to foster culture change or run IDEA programs does not entail rewards under the current system. Societies will need to think through how to change incentive systems to encourage IDEA work and behaviors. This will likely require a fundamentally different approach to formal policies, as well as individual values, around topics such as publishing, individual versus team approaches and rewards, hiring and tenure, individual performance assessment, and other aspects of work.

As an example, there was discussion of how journals are gatekeepers that decide who and what is published, which has an impact on assessing and evaluating who is hired for positions. The suggestions at the meeting included creating new journals that focus on broader impacts and different impact measures, as well as different definitions of excellence.

Too little acceptance of multiple cultures and perspectives. Accepting multiple cultures and perspectives occurs at many levels, both personal and professional. The meeting participants suggested that there needs to be increased acceptance, through building infrastructure and practices, of many aspects of scientific endeavors. For example, language barriers create accessibility barriers, and there may be a need for more expansive translation of publications. There may also be a need for more opportunities to highlight research from diverse scientists or perspectives. In one discussion, the participants suggested that offering ideas about the impacts on research of diverse cultures and perspectives might improve acceptance

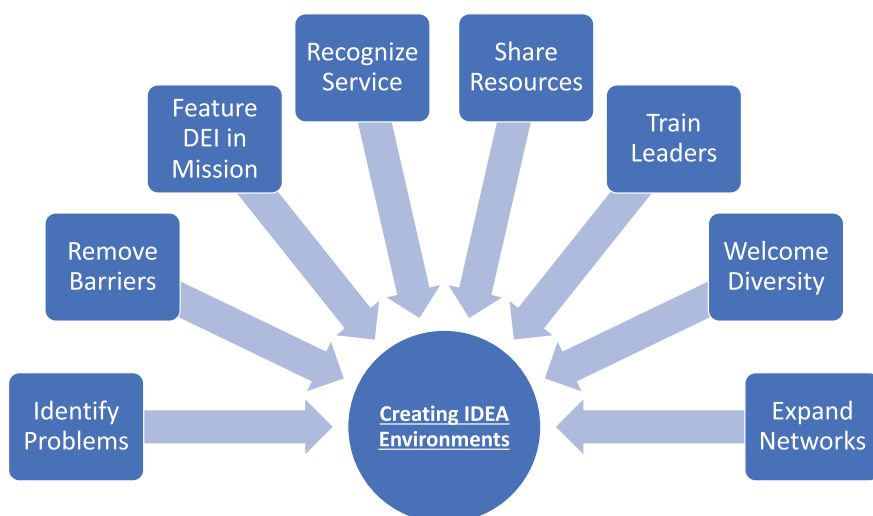


Figure 2. Strategies to create IDEA environments.

of IDEA. This would require societies to consider how their journals could be more accepting of articles about IDEA, as well as encouraging or addressing IDEA concepts within more traditional scientific papers. Another suggestion was the idea that professional development of skills that can enable IDEA (sometimes called *soft skills*) should be a part of formal science training.

Inadequate knowledge, tools, and resources for creating IDEA environments. Understanding IDEA better and learning how to foster it in organizations and individuals were topics of conversation often revisited during the meeting. The proffered suggestions included training society leaders in such topics as organizational change, organizational culture, inclusion, diversity, equity, acceptance, societal culture, personal change, and other topics. Such training would help them to lead their societies differently and provide them with the skills needed to teach others. Other suggestions included offering workshops, discussion groups, networking sessions, and so forth related to IDEA for members at annual meetings and at other points during the year.

Insufficient articulation of desired outcomes and a lack of metrics to assess progress. The meeting participants

suggested that improving IDEA in scientific societies and other biology entities will require better assessment of the current baseline and of progress toward goals. The meeting discussions suggested that all aspects of this assessment need to be addressed. For example, deliberations about goals are needed, as are conversations about operationally defining terms related to the goals (e.g., diversity, inclusion, and so forth). There will need to be decisions about which data to collect and whether a standard instrument could be developed for use across societies. In this context, the discussions also highlighted the need for accountability of leaders in communicating strategies and progress—and of members in helping to implement the strategies and achieve goals.

Strategies to overcome barriers and create IDEA environments

The meeting participants identified strategies to create IDEA environments and discussed the roles of scientific societies in realizing these environments. These roles fell into four categories: elevating IDEA in core missions and actions of societies and recognize and value member contributions to this work, enabling better sharing of ideas and resources, equipping society leadership with knowledge and tools to foster IDEA environments,

and creating initiatives to attract and welcome more diversity of members. As is seen in figure 2, these strategies were considered to be the key inputs needed to create an IDEA scientific environment. Societies' assessment of their organizations and implementation of these strategies were thought to be key components in creating an IDEA environment.

Elevate IDEA in core missions and actions of societies and recognize and value member contributions. Scientific societies can broaden their identities to include fostering IDEA environments and help scientific disciplines and organizations to do the same. Elevating IDEA principles in scientific societies will send a clear message that IDEA is important. In addition to each society's recognizing IDEA principles in its own governance, mission, and core values, the meeting participants encouraged more collaboration across societies. They suggested that a unified and collaborative effort to recognize and promote IDEA values and goals in scientific societies would improve access and engagement of community members to IDEA. This would, in turn, move new policies and practices into the larger biology community. However, in the process of elevating IDEA, the participants cautioned that it is important that the entire society leadership and membership be engaged. Societies should not fall into the trap of making it the duty of marginalized or underserved groups to create IDEA environments. In addition, leaders should share detailed actions plans or road maps with their members, so that everyone is aware of the society's objectives, strategies, and progress.

Enable better sharing of ideas and resources about IDEA environments. Sharing ideas about and resources for IDEA environments should be focused, at least initially, on increasing awareness of IDEA environments, as well as barriers, concerns, and problems in creating them. The meeting participants suggested that there should be listening sessions, networking opportunities,

and training at annual meetings and throughout the year. They expressed the importance of these activities' occurring in a cooperative and empathetic environment that is both safe and challenging. Opportunities for idea sharing should consider the barriers mentioned earlier and make efforts to address them. One example is ensuring that language needs are supported, so that everyone can participate in the communications. It is also important that sharing information about IDEA includes speakers who represent that diversity of experience. It is also important that there is a variety of methods and processes to allow voices to be heard.

Equip society leadership with knowledge and tools to foster IDEA environments. The meeting discussions highlighted the idea that fostering IDEA environments requires changes in organizational factors such as policies and practices, as well as individual thoughts and behaviors. Scientific societies should demonstrate their commitment to IDEA in every aspect of their work, and their leaders must have the tools and training to be able to do this. In addition, these leaders need resources to teach others how to change cultures and behaviors. For example, annual meetings should have welcoming, inclusive, safe, and accessible environments where everyone has an equitable opportunity to participate and take advantage of available information and resources. Leaders need to know how to create these environments in their own organizations and activities and to foster them elsewhere through education and examples.

Create initiatives to attract, welcome, and support more member diversity. There are multiple ways to attract, welcome, and support more member diversity in scientific societies. Some examples discussed during the meeting include developing a welcoming and inclusive student experience by creating networking opportunities at annual meetings and throughout the year. Another example is broadening

participation and community engagement by developing more structured society, university, institution, and affiliation links to improve knowledge and engage shared resources related to DEI. Another example is creating a diverse and equitable support and professional development network for graduate students and early-career scientists. The suggestions also included building infrastructure to help people maintain continuity of connections throughout their careers. Offering multiple different types of mentoring was also discussed, including offering mentoring at meetings, engaging mentors outside one's organization, and fostering peer-to-peer mentoring programs. The discussions highlighted the idea that practices that attract and retain new members should be considered from many angles (such as media interactions or committee engagements), in addition to person-to-person interactions.

Opportunities for action

The meeting discussions highlighted many opportunities to create IDEA environments in scientific societies. These range from short-term quick fixes (such as restructuring meetings to include more diverse participants, supporting childcare, and offering more mentoring opportunities) to longer-term strategies such as training and policy restructuring. The meeting participants agreed that no single group could complete all of these recommendations; however, individual societies and multiorganization teams could work together to accomplish these goals. The following actions would help to move scientific societies toward the goals of culture change toward IDEA environments.

First, they could create an implementation plan that engages a broad range of societies and sets forth actions and activities to continue moving toward IDEA scientific environments. They could create an infrastructure (including funding and staffing) for resource sharing about IDEA across scientific societies. Samples and templates can be shared

of resources such as IDEA policy statements, mission and vision statements that include IDEA principles, action plans and road maps, annual meeting agendas and descriptions, and other information that would benefit multiple societies.

Furthermore, forums can be created for continued cross-society and cross-discipline discussion of creating IDEA environments. These opportunities can be free form but should also accommodate discussions on specific topics of interest, such as incentives and reward systems, language barriers, designing inclusive and equitable meetings, and other aspects of fostering culture change toward IDEA environments. Infrastructure (including funding and staffing) must be built to implement and maintain these forums.

Societies can collaborate in the design and implementation of mentoring programs that encourage and support diverse members at all levels of education and careers. They can also collaborate in the design and implementation of networking opportunities that encourage and support diverse members at all levels of education and careers. These opportunities should create links across societies, institutions, universities, and affiliations. Infrastructure (including funding and staffing) will need to be built to implement and maintain these opportunities.

Societies can convene a forum to discuss, with other societies and journal editors, how to increase coverage and recognition of IDEA in publications. This will involve summarizing the discussions and sharing them with a wide range of stakeholders.

Comprehensive training curriculum can be created for society leaders and members with offerings ranging from IDEA 101 and soft skills to culture change strategies, communication, metrics development, and more. The curriculum should be designed to be delivered in multiple formats (including at annual meetings or online). Leadership training should be structured in a train-the-trainer format, so that leaders can pass the training on to their societies.

Societies and subject matter experts can collaboratively develop a plan for setting goals and measuring progress, including defining metrics and developing data collection tools. Infrastructure (including funding and staffing) will be needed to support implementing the plan, including regular collection, analysis, and reporting of the data.

Next steps

During the meeting, the participating societies and organizations focused their efforts on identifying characteristics of IDEA environments and the actions that societies should take to begin to create them (figures 1 and 2). From these discussions and working sessions, several factors were identified that serve as barriers to creating the IDEA scientific environments

(figure 1). These barriers can be mitigated by like-minded organizations and societies coming together in a mutual commitment to move forward. Individual societies can begin creating IDEA environments by assessing their own commitment to DEI. The creation of multiorganization workgroups that come together to share resources, hold each other accountable, and focus on putting into action many of the recommendations listed as opportunities for action are integral in this process. AIBS remains committed to providing societies with opportunities to share the lessons they've learned, creating opportunities for them to collaborate on projects that provide opportunities for actions, sharing tool and resources, synthesizing information, facilitating action and implementation planning,

and reporting on findings and best practices.

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Supplemental material

Supplemental data are available at BIOSCI online.

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