



Scientific Workforce Diversity Seminar Series Proceedings

How Are Institutions
Transformed to Foster Cultures
of Inclusive Excellence?

June 20, 2024

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Executive Summary

This document captures the proceedings of “[How Are Institutions Transformed to Foster Cultures of Inclusive Excellence?](#)” The National Institutes of Health (NIH) Chief Officer for Scientific Workforce Diversity (COSWD) hosted the seminar on June 20, 2024, as part of its [Scientific Workforce Diversity Seminar Series](#) (SWDSS). Marie A. Bernard, M.D., COSWD, moderated the panel discussion on evidence-informed strategies to enhance inclusion and equity within academic institutions. Seminar speakers shared practical approaches for implementing inclusive practices across the biomedical, social, and behavioral sciences. Additionally, the seminar covered methods for

measuring progress and assessing cultural shifts within academic institutions.

This document summarizes the main points from the speakers’ presentations and the ensuing question-and-answer session. The presentations and responses during the question-and-answer session represent the views of the respective speakers and should not be interpreted as representing the viewpoint of the U.S. Department of Health and Human Services or NIH.

The [seminar recording](#) and panelists’ presentation materials are on the [COSWD website](#).

The seminar featured the following panelists:



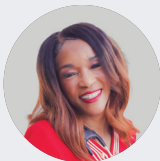
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Opening Remarks

Marie A. Bernard, M.D. – NIH COSWD

Dr. Bernard welcomed participants to the seminar, noting that a scientific enterprise that embraces individuals with diverse perspectives and experiences produces more innovative and impactful research. Evidence shows that inclusive institutions enable researchers to reach their full potential and advance scientific knowledge and discovery.^{1,2} Thus, the seminar focused on evidence-informed strategies, challenges institutions may encounter as they build inclusive institutions, and methods for assessing institutional culture change. Dr. Bernard mentioned that science relies on the contributions of different viewpoints and that integrating these into NIH's scientific workforce can enhance biomedical and behavioral research. For example, a study of more than 2 million scientific papers³ suggests that people from different backgrounds published more widely cited studies, generating improved research and greater scientific discoveries. To fully realize the benefits of a diverse workforce, institutions must champion the belonging and success of all scientists.

Dr. Bernard noted that NIH adheres to applicable federal laws. However, each institution must address any legislative barriers to diversity, equity, inclusion, and accessibility (DEIA) work based on their state laws.

Dr. Bernard then polled the audience to learn more about their experiences related to promoting and fostering inclusion at their institutions:

- When asked how they rated their institution's efforts to promote inclusive practice, 33% of respondents said their organization was "effective," 32% responded "somewhat effective," 22% reported "neither effective nor not effective," 7% responded "extremely effective," and 7% said "not effective."
- When asked about the best outcomes when leaders foster inclusion at their institution, 70% of respondents said it "creates a more welcoming and attractive academic environment," and 25% reported it "improved career advancements for faculty and students."



Putting the A in DEIA – Accessibility and Disability Inclusion at RIT

Lea Vacca Michel, Ph.D., Professor, School of Chemistry and Materials Science, Director of Diversity, Equity, and Inclusion Initiatives for the College of Science, Rochester Institute of Technology

Rochester Institute of Technology (RIT) has nine colleges, including the National Technical Institute for the Deaf. It is the world's first and largest technological college for deaf and hard of hearing (DHH) students, many of whom are mainstreamed with hearing students on campus. RIT supports its more than 1,000 DHH students by incorporating note-taking, individual tutoring with signing faculty, and training of hearing research mentors and professors who work with DHH students.

Dr. Michel noted that DHH individuals are underrepresented in the biomedical and behavioral research workforce. Data show approximately one-third of the adult U.S. population reports hearing loss to some extent, yet less than 0.5% of principal investigators on NIH grants report a hearing disability. Among the barriers that can prevent DHH students from obtaining advanced degrees are poor mentoring, a lack of science identity and role models, communication obstacles, and cultural stigmas.

To address these issues and prepare DHH students for science jobs and higher education, RIT initiated the [Undergraduate Research Training Initiative for Scientific Enhancement \(U-RISE\)](#). This NIH-funded training program helps DHH undergraduate students prepare to enter Ph.D. programs at research-intensive universities in biomedical, biobehavioral, and clinical research. A secondary objective of U-RISE is disseminating evidence-based best practices to assist other institutions in creating more accessible and inclusive environments for DHH students.

U-RISE trains researchers and mentors to better support and mentor DHH students, focusing on five key elements: structure,^{4,5} physical environment,⁶ cultural competency,⁷ communication,^{6,8} and mindset. While concentrating on these elements of support is intended to improve learning

for DHH students, the elements make RIT more accessible and welcoming for all students.

Structure-focused activities include using schedules and support mechanisms, such as mentors providing detailed research syllabi and expectations, captioned videos, meeting notes, and research schedules. RIT addresses the physical environment through actions that enable conducive communications for DHH students, such as safety initiatives (flashing fire alarms, mirrors, and research partners), lab microphones and Bluetooth connectors to cochlear implants, and movable whiteboards. Labs are all free of obstacles at the eye level that can inhibit visual communication. Cultural competency among mentors is improved by encouraging them to learn basic American Sign Language (ASL) and supporting deaf culture by using ASL, when possible, and ASL interpreters. Some professors also teach hearing students ASL basics to help DHH students feel a stronger sense of belonging. Communication support is available through visual resources and technologies such as voice-to-text applications.

Despite these resources, it is essential to acknowledge that concepts can still be lost in translation, especially for students without a science background. To improve the mindset of DHH students, RIT focuses on the social model of disability. In practice, this model involves removing barriers to learning to ensure all students have equal access to research and science.

Dr. Michel noted that a U-RISE goal was for 50% of its participants (five students) to enter doctoral programs within three years of graduation. Although it is too early to assess final U-RISE outcomes, current trainee performance evaluations indicate that U-RISE is on track to transition at least five trainees to doctoral programs.

Programs and Activities to Broaden the Scientific Workforce: The HHMI Freeman Hrabowski Scholars and the Center for the Advancement of Science Leadership and Culture

Blanton S. Tolbert, Ph.D., Vice President of Science Leadership and Culture, Howard Hughes Medical Institute



Dr. Tolbert began by describing the Howard Hughes Medical Institute's (HHMI) three focus areas: discovery science, reshaping research culture, and public engagement. In discovery science, HHMI invests in scientists by equipping them with resources and community to lead scientific breakthroughs. Reshaping research culture involves embedding equity and inclusion into definitions of scientific excellence. Public engagement is devoted to sharing scientific discoveries through content such as classroom media, feature films, and journalism to engage the public.

HHMI has initiated programs for early career scientists and established scientists to influence the scientific pathway by helping participants reach their professional scientific goals. Dr. Tolbert highlighted the [Freeman Hrabowski Scholars Program](#), which supports early career scientists for up to five years, with the opportunity to renew for a second five years. The program is named for Freeman Hrabowski III, Ph.D., President Emeritus of the University of Maryland, Baltimore County (UMBC). Dr. Hrabowski had a 30-year career as a UMBC mathematician and educator and produced a national model for creating a diverse STEM workforce. He transformed UMBC by developing the [UMBC Meyerhoff Scholars Program](#) for individuals committed to advancing equity and inclusion in science.

The Meyerhoff Scholars Program seeks to create inclusive environments that enable students from diverse backgrounds to succeed. [HHMI's Freeman Hrabowski Scholars Program](#) aims to have a similar impact on

the next generations of scientific researchers. Program scholars must meet unique eligibility requirements that include describing their lived experiences and understanding of systemic inequity and inclusion and discussing how they might address these issues in science. For example, candidates are queried about their personal and professional experiences regarding the lack of representation in academia and how these formed their commitment to supporting scientists from traditionally marginalized identities and backgrounds.

[The HHMI Center for the Advancement of Science Leadership & Culture](#) has a key role in HHMI's efforts to center equity and inclusion in scientific research and education across academic career stages. For example, the [HHMI Science Education Alliance](#) supports undergraduate science educators in scaling student access to research experiences.⁹

[HHMI's Gilliam Fellows Program](#),¹⁰ initiated in 2005, is a professional development program that seeks to build a more inclusive scientific ecosystem. It provides joint awards to graduate students and their faculty thesis advisers committed to advancing equity and inclusion in science. The program offers graduate trainees professional development and leadership training, while advisers complete a mentoring skills development course based on culturally responsive mentoring. Since 2005, the Gilliam Fellows Program has supported 300 graduate students with a 97% degree completion rate.



Faculty Institutional Recruitment for Sustainable Transformation (FIRST) Program Goals

Elizabeth Ofili, M.D., M.P.H., Fellow, American College of Cardiology and Professor of Medicine (Cardiology), Morehouse School of Medicine

Dr. Ofili described NIH's [Faculty Institutional Recruitment for Sustainable Transformation \(FIRST\) Program](#), designed to enhance and maintain cultures of inclusive excellence in biomedical and behavioral research. FIRST develops and implements practices to recruit and hire diverse faculty cohorts, develops and implements innovative faculty development programs, and disseminates and sustains culture-change practices.

The FIRST portfolio has three cohorts with 15 total awardees, including two partner institutions and a [Coordination and Evaluation Center \(CEC\)](#) at Morehouse School of Medicine. The CEC is responsible for communication, coordination, and evaluation based on common metrics and data elements, as well as disseminating this information. The CEC has developed a consortium-wide evaluation plan and logic model to answer specific, hypothesis-driven questions. The model uses a realist evaluation (RE) framework to integrate each institution's unique environmental factors and contexts.¹¹ The inputs, implementation, and outcomes are within the context of the specific institutional environment. The model enables understanding of institutional transformation driven by FIRST in terms of factors like applicant pool and participants, as well as publications and other outcomes.

Dr. Ofili explained the C-Change Dimensions of Culture,^{12,13} a measure of assessment that includes multiple elements that look at inclusion and belonging, such as ethical and moral distress, values alignment, aspects of mentoring, and work-life balance, to achieve institutional transformation.

Disseminating and sustaining FIRST's cultures of inclusive excellence is a program priority. FIRST will have consortium-wide dissemination products for NIH-funded academic institutions designed to standardize cultures of inclusive excellence. As part of this effort, NIH is considering how to leverage its programs to enhance scientific workforce diversity.

Dr. Ofili discussed the [NIH Research Centers in Minority Institutions \(RCMI\) program](#) as a model for disseminating FIRST outcomes. The RCMI is a consortium of 22 specialized centers and a coordinating center. Many institutional awardees are Historically Black Colleges and Universities, Native Serving Institutions, and Hawaii-Pacific Islander Institutions. The RCMI has more than 2,200 participating investigators committed to advancing inclusive excellence in research centered on health equity. Program data suggest growth in scientific outcomes and productivity, including publications and R01 funding.¹⁴

MOSAIC: Maximizing Opportunities for Scientific and Academic Independent Careers; Program to Promote Broad Participation at the Faculty Level

Alison Gammie, Ph.D., Director of the Division of Training, Workforce Development, and Diversity, National Institute of General Medical Sciences, NIH



Dr. Gammie began by sharing data from 2016 showing that individuals from underrepresented groups were obtaining Ph.D.s at a level 8 times higher than in 1980. More recent data from 2020 suggest a 12-fold increase compared to 1980.¹⁵ However, these data do not show a similar increase at the assistant professor level, suggesting individuals were choosing not to pursue academic careers. Another set of evidence from 2016¹⁶ demonstrates that programs designed to enhance diversity in the biomedical and behavioral research workforce focused on the undergraduate or predoctoral level rather than the postdoctoral or faculty level.

In response to this evidence, NIH designed the [Maximizing Opportunities for Scientific and Academic Independent Careers \(MOSAIC\) program](#), led by the National Institute of General Medical Sciences (NIGMS). MOSAIC is an NIH-wide initiative to facilitate the progression of promising postdoctoral researchers from diverse backgrounds into independent, tenure-track or equivalent research-intensive faculty positions. When developing MOSAIC, NIH examined [factors in the literature](#) that contribute to effective programs to promote broad participation within biomedical and behavioral research. Among the elements these programs provided were:

- Oversight and support at crucial academic and career transitions
- Mentoring, coaching, and sponsorship
- Skills development
- Activities that help individuals develop a science identity
- Supportive cohorts

MOSAIC has two components: the educational component, which is the institutionally focused research education hub, and the scholar component. MOSAIC has funded four education hubs through the Institutionally Focused Research Education Award to Promote Diversity (UE5, [PAR-21-277](#)). The hubs provide MOSAIC scholars

with professional training, networks, and mentoring to help them advance and succeed in a tenure track or equivalent faculty position. The current UE5 awardees are the American Society for Biochemistry and Molecular Biology (ASBMB), the American Society for Cell Biology (ASCB), the Association of American Medical Colleges (AAMC), and the American Society for Microbiology (ASM).

MOSAIC also has a scholar component, the [K99/R00 Pathway to Independence Awards](#), providing funding at the postdoctoral level for research career development. Additional research funding is available when an individual transitions to a tenure track or equivalent faculty position. MOSAIC scholars can apply to the breadth of topics across NIH. Those who receive awards are distributed among the ASCB, ASBMB, ASM, and AAMC educational hubs. A variety of hub activities support students, including:

- Cohort-building
- Skills development (e.g., faculty search support, research team management, grant writing, communication, and scientific publishing)
- Mentoring and networking
- Career visibility and enhancement
- Institutional engagement

Early program data suggest MOSAIC is reaching a diverse cohort of individuals. Of the 108 MOSAIC scholars (representing five rounds of applications), 76% self-identified as women, and 77% identified as individuals from underrepresented groups. In contrast, currently 10% of NIH Research Project Grant investigators identify as being from underrepresented groups. NIGMS found similar results for K99/R00 awards, with close to 10% of individuals identifying as being from underrepresented groups. The 2021 MOSAIC cohort is the program's first, and approximately 80% of these scholars have progressed to independence, while 21% remain in a career development phase. For the 2022 cohort, 49% of scholars have progressed to independence.

Question-and-Answer Session

Q. What best practices for creating cultures of inclusive excellence would result in measurable changes and more inclusive environments?

Dr. Michel: It is a challenge to determine the measurables we are looking for. In addition to retention rates for students and faculty in the sciences, it is that sense of belonging that all the speakers talked about—feeling like they are a scientist. As far as best practices, one of the most important things is to make sure that our institutions value the hard work in the DEIA space. Too often, we have strategic plans and value statements about how important DEIA work is, without putting a lot of value on it, including providing budgets. We also need to make sure the scientists themselves are involved in creating inclusive spaces. So, it is the scientists getting trained, learning about cultural competency, and inspiring the next generation of scientists. We know that diverse teams do better science. We all have a responsibility to make sure it happens. Therefore, a best practice is to make sure these efforts are valued.

Dr. Tolbert: To add to Dr. Michel's comments, we should focus on policies, practices, and procedures to align equity and inclusion to the institution's mission and vision. Equity and inclusion should be embedded into the definition of excellence in science, because as Dr. Bernard mentioned in the beginning, data demonstrates that diverse teams produce more rigorous and innovative outputs. I would also say increased representation of people from marginalized backgrounds; it is key that they are running labs, teaching in the classroom, and in leadership positions. Also making sure that the culture is such that all individuals feel like they have a sense of belonging, where they can show up and be their true selves and thrive. The last piece is increasing collaboration and team efforts and trying to reduce some of the hypercompetitive nature of science.

Dr. Ofili: Many domains and factors potentially modulate inclusive excellence. Will these faculty be promoted? And how are they promoted? What are the metrics

for promotion? How visible and transparent are these metrics? There is a lot of effort in the programs I described to standardize procedures and have some transparency. But it remains a work in progress.

Dr. Gammie: I agree with my colleagues and will add that it is important to have intermediary indicators of success because it takes time to get concrete outcomes. Intermediary hallmarks of success can include psychosocial measures of student and faculty success. And getting at organizational change, the change of values, and the change of priorities takes more qualitative measures. That is hard work and requires time and skilled people—bringing in colleagues who are good at this is key.

Q. How do you achieve upper-level buy-in for making institutional changes? And how do you deal with resistance?

Dr. Gammie: Most people acknowledge the importance of data. Taking data-informed approaches, gathering data, and having it readily available is key, especially for those facing resistance. It is also crucial that we control the narrative. My colleagues have also mentioned this: If you care about science and excellence in biomedical research, there needs to be a sense of urgency around this.

It's about aligning these efforts with the values of the organization. If they aspire to be a premier institution for biomedical research, then this focus is essential. Meeting resistance can be challenging. Sometimes, you might have buy-in from upper leadership, but encounter pushback at the mid-level, where they may not be fully briefed on the importance of this work. In those cases, you must keep pushing forward and pull in leadership when needed. If you're facing resistance at another level, it's important to do what you can to address it. Sometimes, you'll need to engage higher leadership and say, "I've hit a roadblock here." I don't think anyone is doing it intentionally, but they may not fully understand how this impacts the organization's mission and vision.

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Dr. Ofili: Institutions have their own cultures—you must start where you are. I agree that people believe in data. For instance, with the FIRST program, every major academic institution, along with many others, applied. There was a strong interest in figuring out how to do this work, what strategies are effective, and what practices to eliminate.

Our current challenge is working continuously with what the Coordination and Evaluation Center is asking for, guided by the funding opportunity, while examining things at the institutional, departmental, and individual levels—including the participants in the program, the FIRST faculty, and their mentors. This opens the door for a broad range of data collection. As I mentioned in my presentation, we're starting to see some measures of institutional culture change. These institutions are beginning to get feedback on how their faculty perceive the culture—particularly underrepresented and women faculty. This is the kind of data we need to be diligent about collecting.

If we don't gather this data, we'll never move forward. Despite these challenges, I remain optimistic. These institutions were eager to apply for and secure FIRST funding, and they succeeded. I believe we also have an opportunity to engage other institutions that were interested but not funded, as we begin to understand what the data reveals.

Some institutions are already using the cohort model, but that data isn't being fully collected. This model isn't for everyone, but with patience and persistence, we can wait for the data and share it with upper- and mid-level leadership, department chairs, and others. Ultimately, everyone wants to see successful individuals in their departments, and that's how we'll make it work.

Dr. Tolbert: I want to emphasize the importance of collecting evidence and data, but I also want to acknowledge that this can create an additional burden and barrier for those wanting to do the work, especially when

the data might not exist. In those cases, individuals need expertise and resources to generate the evidence, even before they can have conversations with those in positions of influence and authority.

One opportunity, particularly with early-career scientists, is to consider the attributes we're looking for in future leaders. Change can start locally, within our research environments and labs, through the way we provide opportunities, nurture, mentor, and groom the next generation of scientific leaders. For those of us running research labs or aspiring to be the next generation of scientific leaders, it's important to focus on what we can control within the larger ecosystem and appreciate the impact of local change. We should also be thinking about how we empower the next generation of scientific leaders and how we define what it means to be a leader in science. This is an area where we can see measurable progress in the shorter term, even as broader institutional change takes more time.

Another key point is the importance of educating and explaining to early-career scientists and academics how institutions work. Many of us don't learn about the inner workings of institutions until later in our careers, but it would be beneficial to provide that knowledge earlier—when someone comes in as an assistant professor, for example. Understanding the many dimensions of an institution is critical because various levers need to be pulled to enact effective change.

Dr. Michel: First, it's important to consider that when we promote leaders within our institutions, they should embody the values we want to see in our leadership. You mentioned resistance in leadership, and while sometimes we can change minds with data and evidence, there are times when we can't. In those cases, it's crucial to ensure that the next round of leaders genuinely value diversity, equity, and inclusion (DEI) and prioritize it. That's something we need to focus on.

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Second, as Dr. Gammie mentioned, it's difficult when there's resistance from that middle group. I believe resistance often comes from two sources: lack of understanding and fear—people might not have the tools or education to do their part effectively. As Dr. Tolbert pointed out, education is critical. We need to empower scientists to feel confident using best practices in inclusive mentoring and similar efforts.

Finally, it's essential to ensure that the work we do in the DEI space is valued. Too often, this work is considered “non-promotable labor” and tends to fall on those with marginalized identities. This can lead to outcomes we don't want to see in the data. We need to recognize that when scientists invest their time and effort in these initiatives, it's important to either give them some of that time back or make sure they know their contributions are valued. Show that this work is promotable and significant—that's my key takeaway.

Q: How important is it to establish departmental or organizational policies that explicitly outline values around inclusivity?

Dr. Ofili: This is critically important. One of the ways I can illustrate this through our experience with the FIRST program is the anxiety faculty feel when it comes to assessment. There's a lot of concern about how honest they can be regarding what's happening in their department or institute. The smaller the department, the harder it is to maintain anonymity, no matter how carefully we try—especially when there may only be a few LGBTQ+ individuals, women, or people from Black or Latinx communities.

It's crucial to establish a culture that starts at the top, as others have mentioned. Whether it's the head of a center or institute, leadership needs to demonstrate commitment through transparency—who is being promoted, who is advancing, and what metrics are being used.

We can't underestimate the challenge this poses for individuals participating in these programs, whether

they are administrators, principal investigators, FIRST faculty, or mentors. We're asking them to provide vital information that helps us understand what's working and what isn't. For qualitative measures, we want as much detail as possible. At the same time, we must protect the faculty involved. This is a significant part of my role at the Coordination and Evaluation Center—balancing the need for detailed data with the need to ensure the utmost privacy for the individuals participating.

Dr. Tolbert: It's challenging, given the current climate. This ties back to an earlier part of the conversation—what are we selecting for? Are we selecting individuals who are not only capable of doing the best science and producing top-tier scholarship but who are also committed to mentoring the next generation of scientists? Many of those future scientists will likely come from backgrounds different from their own. What are our values as academic leaders? Do our processes, policies, and procedures align with what we say we're committed to—whether it's providing opportunities for all or advancing equity and inclusion? Inclusivity must be fundamentally ingrained in everything we do.

To go back to the Freeman Hrabowski Scholars Program, we wanted to explore how the candidates think about these issues. What are their experiences with systemic inequities? How have they dealt with the lack of representation in classrooms and research labs? How do they view the world in this context, and how does that shape the way they build their scientific enterprises? Are they fostering broad participation in their labs? This is critical. We must continue selecting for these attributes and qualities in our scientists.

Dr. Gammie: It is key to have your core values in this area written down. This is because it forces a thought exercise—people must think critically about those values and engage in conversations, even some back-and-forth. This process elevates these values to the level of serious, important discourse within the organization. However, having a written document that states these values without embodying them through actions is meaningless. If an organization claims to uphold certain values but behaves in a contradictory way, that's not helpful.

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The next step after defining core values is asking, “What actions are we taking to support these values as an organization?” It’s been mentioned before—this could involve release time, funding, or other ways of acknowledging the importance and value of this work. Ultimately, we’d all prefer to work in an organization where these values are lived, breathed, and embodied. But there’s a danger in relying solely on one individual to carry this out. If that person leaves, a lot of momentum could be lost if the values aren’t more broadly embedded in the culture. So, one of the ways to ensure these values stick is by putting them down on paper.

Dr. Michel: When we recruit faculty, we ask them to write diversity statements. We bring them to our university, but then those statements often seem to go out into the ether, with nothing being done. That’s a disservice both to the candidates and the current faculty.

If we say something is valuable to us, we need to follow it up with action. As you mentioned, Dr. Gammie mentioned, we need to put a budget behind it, give people the power to act, and empower our faculty and staff to invest time and effort into the DEI space. That’s where it matters. The value statement is great and necessary, but without action behind it, it doesn’t carry much weight.

Q: What are your thoughts on fostering institutional culture in ways that benefit the dominant majority and minoritized groups? We are thinking broadly about groups that may be in the minority.

Dr. Tolbert: My thoughts on this generally relate to the question of what we mean when we talk about inclusion. How do we create opportunities and spaces for individuals from all backgrounds? I want to circle back to something Dr. Michel mentioned about the best practices they’re employing at RIT. They’re designing classroom structures and teaching methods that benefit everyone. I fundamentally believe that when we design with equity in mind—especially for the most marginalized individuals—we end up being inclusive of all people.

This approach needs to be part of our strategy. However, we also recognize a two-part challenge here. The numbers are what they are, and the data show us the reality. When certain groups remain highly underrepresented, to me, that’s evidence that something has gone wrong. It signals that we need to adjust our processes to be more inclusive. Ultimately, our policies and approaches should be inclusive for everyone. By designing with equity in mind, especially for those on the margins, we ensure that our practices become inclusive for all.

Dr. Gammie: I was invited to give a talk at a symposium on supporting creativity in the biomedical research workforce. While preparing, I researched the structures that inhibit creativity. It became clear that the same structures inhibiting creativity were causing underrepresentation of various groups in the biomedical research workforce. There is a great opportunity here to leverage the idea of convergence. If you care about creativity and innovation in biomedical research, you should be passionate about diversity, equity, inclusion, and accessibility issues. These efforts create environments that allow people to be their most creative selves in the scientific realm.

This is just one example among many. As Dr. Michel mentioned earlier, the educational innovations we design to help individuals with disabilities end up benefiting everyone—they lift everyone’s boat. These inclusive strategies support all of us. If we continue to emphasize that this is better for everyone, we unlock a powerful tool. It’s not the only reason to do it, but it’s a compelling one.

Many universal design strategies make policies, practices, and education more inclusive for one group, and often for more people. Additionally, it’s crucial to ask our students, faculty, and colleagues directly—talk to them, listen, and learn cultural competency. Doing that legwork makes us more effective in understanding the diverse cultures people come from. The more we do this, the better we can work together to solve problems and empower the next generation of scientists. I’ve often assumed I knew

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what was best for my students, but when I asked them, they sometimes said the exact opposite. So, I've learned that it's often about stepping back, removing our egos, and asking them what they need and what works best for them. That's a good practice that we could all benefit from adopting.

Dr. Ofili: I want to build on the comments about creativity and the importance of engaging with scholars themselves. This was evident to me with the RCMI and FIRST programs, especially during COVID-19. Research by Dr. Gibbs highlighted that underrepresented groups often focus on broader research questions, often related to health equity. We saw this clearly during the pandemic.

In discussions with FIRST faculty, especially those in cohort positions, a recurring question was whether they would have the chance to explore research questions pertinent to their communities. For example, they were interested in community-engaged research. This type of work, driven by their interests, proved beneficial to everyone. During COVID-19, community-engaged research played a crucial role in resolving issues and advancing COVID-19 clinical trials.

The key takeaway is that scientists working on solving these critical problems, regardless of their background, contribute to broader advancements in biomedical research. Their work often has crosscutting benefits that extend beyond specific demographics, ultimately advancing the field.

Q: What are your favorite resources in this area that you would refer people to, and what do you want them to remember from your presentation?

Dr. Gammie: If you're looking for ways to measure change, I would direct you to the NIH Diversity Consortium, a decade-long program nearing its conclusion. One of its key deliverables is a set of measures for evaluating success at the faculty and institutional levels. You can find these resources on the webpage.

It's important to remember that there is no single solution to this complex issue. It's heartening to hear about the many excellent initiatives underway. Each effort is valuable and contributes to the broader goal. While setbacks are inevitable, if we continue to work together and stay focused, progress will be made. There may not be one solution, but many effective and innovative approaches.

Dr. Michel: Since my talk focused on working with DHH individuals, I want to highlight that RIT has excellent resources, such as Tiger Chat, a great voice-to-text program, and other best practices for supporting students with disabilities.

One key takeaway is the value of learning from others. There are so many incredible people working in the DEI space, and we can benefit from sharing best practices. It's crucial to disseminate knowledge through panels, papers, and websites. We don't have time to reinvent the wheel—let's leverage the best ideas from everyone and move forward together.

Dr. Ofili: From a reference standpoint, I would emphasize the importance of collaboration. Even if you're not affiliated with a FIRST or RCMI institution, engaging in collaborations can advance DEIA initiatives. By working together, we can move the data and the agenda forward more effectively. We often don't speak enough about or provide sufficient resources for these collaborations. There are considerable opportunities for synergy between minority-serving institutions and others, leveraging the significant expertise in these institutions.

For actionable takeaways, I encourage you to explore not just the FIRST and RCMI websites but also the presentations and resources available. This will help you understand how to integrate these practices into your work. As Dr. Michel mentioned, dissemination is crucial, and there may be additional funding opportunities from NIH to support such efforts.

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Dr. Tolbert: I want to share three resources I've been using and find valuable. The first is a recent eLife publication¹⁷ that explores using de-identified application materials for the Beckman Foundation. It covers best practices and outcomes, offering insightful content on what we might learn from employing such processes.

Another excellent resource is the National Academies of Sciences, Engineering, and Medicine report, "Advancing Anti-Racism, Diversity, Equity and Inclusion in STEMM Organizations."¹⁸ It provides significant

insights, particularly in the sections that discuss the lived experiences of individuals from marginalized backgrounds in these spaces. This anecdotal data is crucial and helps us understand the broader impact.

Lastly, Dr. Freeman Hrabowski's book,¹⁹ which ties back to the Meyerhoff Program, is a valuable read on setting vision and empowering others. It's an important resource for anyone involved in DEIA efforts, offering guidance on how to support and inspire others.

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