

**DEPARTMENT OF HEALTH AND HUMAN SERVICES
NATIONAL INSTITUTES OF HEALTH
NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES**

**MEETING SUMMARY OF THE
NATIONAL ADVISORY ENVIRONMENTAL HEALTH SCIENCES COUNCIL**

June 6-7, 2023

The 169th meeting of the National Advisory Environmental Health Sciences Council convened as a hybrid meeting on June 6 and 7, 2023. Open session convened at 10:00 am and ended at 3:00 pm June 6. A closed session took place from 3:15 pm to 5:00 pm June 6. Open session began at 10:00 am and adjourned at 3:38 pm on June 7. Dr. Rick Woychik, Director, NIEHS, presided as chair.

(Personnel listed in *italics* below attended in person.)

Participating Council Members

Philip Bourne, PhD
Yulia Iossifova Carroll, MD, PhD (*ex officio*)
Suzanne Fitzpatrick, PhD (*ex officio*)
Andrew Geller, PhD (ex officio)
J. Timothy Greenamyre, MD, PhD
Irva Hertz-Picciotto, PhD
Andrij Holian, PhD
Darryl Hood, PhD
Keri Hornbuckle, PhD
Jani Ingram, PhD
Terrance Kavanagh, PhD
Gary Miller, PhD
Gökhan Mutlu, MD
Trevor Penning, PhD
Maria Savasta-Kennedy, JD
Karen Vasquez, PhD

NIEHS Staff

Kathy Ahlmark
Trevor Archer, PhD
David Balshaw, PhD
Linda Bass, PhD
Sharon Beard
Abee Boyles, PhD
Danielle Carlin, PhD
Toccaro Chamberlain

Jennifer Collins
Gwen Collman, PhD
Yuxia Cui, PhD
Christie Drew, PhD
Beverly Duncan, PhD
Chris Duncan, PhD
Anika Dzierlenga, PhD
Allison Eason
Benny Encarnacion
Kelly Ferguson, PhD
Christine Flowers
Amanda Garton
Nidhi Gera, PhD
Kimberly Gray, PhD
Jenny Greer
Arshya Gurbani
Janet Hall, MD, MS
Astrid Haugen
Michelle Heacock, PhD
Heather Henry, PhD
Jon Hollander, PhD
Mike Humble, PhD
Gary Johnson
Bonnie Joubert, PhD
Melissa Judd-Smarr, PhD
Alfonso Latoni, PhD
Cindy Lawler, PhD
Gerald Lilly, MD, MPH
Mbeja Lomotey, D.Ph..
Lindsey Martin, PhD
John Maruca
Jacqui Marzec
J'Ingrid Mathis
Kimberly McAllister
Elizabeth McNair
Carolina Medina
Parris Milly
Nathan Mitchiner
Srikanth Nadadur, PhD
Sheila Newton, PhD
Liam O'Fallon
Suzy Osborne
Nicole Popovich
Scott Redman
Jim Remington
Robby Robinson

Chris Schur
Thaddeus Schug
Carol Shreffler, PhD
Dan Shaughnessy, PhD
Varsha Shukla, PhD
Maureen Sides
Claudia Thompson, PhD
Brittany Trottier
Fred Tyson, PhD
Leroy Worth, PhD
Rick Woychik, PhD
Alicia Ramsaran Zorn

NIH Staff

Noni Byrnes, PhD, Center for Scientific Review

Members of the Public Present

José Cordero, MD, University of Georgia
Ana Diez Roux, MD, PhD, Drexel University
Ernie Hood, Bridport Services, LLC
Yvonne Maddox, PhD, TA Thornton Foundation
Mark Reed, PhD, San Diego State University
Sarah Tishkoff, PhD, University of Pennsylvania
Carmen Velez Vega, PhD, University of Puerto Rico

OPEN SESSION

The meeting was open to the public on June 6, 2023 from 10:00 a.m. to 3:00 p.m. and on June 7, 2023 from 10:00 a.m. to 3:38 p.m. In accordance with the provisions set forth in Section 552b(c)(4) and 552b(c)(6), Title 5, U.S. Code and Section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. Appendix 2), the meeting was closed to the public on June 6, 2023 from 3:15 p.m. to 5:00 p.m. for consideration of grant applications. Notice of the meeting was published in the *Federal Register*. Dr. Rick Woychik presided as Chair.

I. Call To Order and Opening Remarks, Review of Confidentiality and Conflict of Interest

NIEHS and NTP Director Rick Woychik, Ph.D., welcomed attendees and called the meeting to order. He read the Government in the Sunshine Act. DERT Director David Balshaw, Ph.D., asked Council members in the room and present on the Zoom call to introduce themselves. Council member Andrew Jorgenson, PhD, was unable to attend.

Members of the NIEHS senior leadership team in the room and dialed in via Zoom introduced themselves. Dr. Balshaw went over some of the logistics for the hybrid meeting, and read the conflict of interest statement.

II. Consideration of February 2023 Meeting Minutes

Approval of the February 2023 meeting minutes was moved by Dr. Savasta-Kennedy and seconded by Dr. Holian. Council voted to approve the minutes, with all in favor.

III. Report of the Director, NIEHS

Dr. Woychik briefed Council on Institute developments since the February 2023 Council meeting.

He recognized the nomination of current NCI Director Dr. Monica Bertagnolli to be the next NIH director, which is a Senate-confirmed position. Until she is confirmed, Dr. Lawrence Tabak will continue to serve as Acting Director of NIH.

He turned to budgetary matters. “There’s good news, and there’s challenging news,” he remarked. He noted that there is an approximately 3.5% increase in the NIEHS base Labor-HHS allocation for FY23 for a total of \$914 million. The bulk of the increase came from a \$40 million appropriation to support work in climate change and health. He described the FY24 President’s budget, which is essentially flat from FY23. The budget will not be finalized until the House and Senate weigh in. If it is flat, “flat is good,” he mentioned. With increasing costs in research, salaries, stipends, and other expenses, “the challenge is how do we use a flat budget in FY24 to continue to move environmental health sciences forward?” He asked for input on the budgetary matters going forward.

He summarized what has been a busy start to 2023 in terms of Congressional activities, with NIEHS personnel actively interacting with House and Senate appropriators in several meetings from January through April.

Dr. Woychik reported several recent changes in NIEHS senior leadership, including the appointment of Dr. David Balshaw as DERT Director on April 23.

He described the outcome of the NIEHS Strategic Plan Stakeholder Community Workshop, which was held April 11-14, 2023. More than 400 members of the NIEHS community were invited to participate in the session, which utilized an Open Space meeting format to allow attendees to raise important issues and set the meeting’s agenda. 68 issues and opportunities were raised by the 136 participants, with 8 issues identified as priority areas for NIEHS to pursue over the next five years.

1. Climate change and health
2. Workforce diversity and trainee recruitment
3. Evidence-based interventions, implementation science, and solutions-based research
4. Emerging contaminants
5. Informatics advances
6. Joint effects of chemical and non-chemical stressors
7. Precision environmental health and how to address heterogeneity
8. Developing and building confidence in human-based new approach methods

He listed the NIEHS emerging scientific priority areas:

- Climate Change and Health
- Environmental Justice and Health Disparities
- Computational Biology and Data Science
- Mechanistic and Translational Toxicology
- The Exposome
- Precision Environmental Health

With those priorities in mind, Dr. Woychik discussed progress on the existing strategic plan, focusing first on exposomics. He reviewed several recent developments in that area, and listed meetings designed to promote exposomics on an international scale, including upcoming sessions in Nashville, Italy, Mexico, Israel, and Japan. He described progress in precision environmental health (PEH), mentioning the International Common Disease Alliance and the All of Us research program as examples of PEH collaborative efforts incorporating environmental exposures. Regarding climate change and health (CCH), he reviewed developments in the NIH-wide CCH initiative and went over the CCH strategic framework.

He talked about the importance of collaboration, particularly the work he has done to raise NIEHS's visibility across NIH institutes and establish partnerships with sister institutes. For example, the East Palestine chemical spill has resulted in cross-cutting collaboration among NIEHS, NCI, NIA, NICHD, NINDS, and the CDC, with a potential workshop upcoming to assess possible health impacts and research opportunities. Other examples include ongoing and planned collaborations with NIA, NIAMS, and NCI.

Dr. Woychik concluded his presentation with a review of recent awards and recognitions for NIEHS and extramural personnel.

To frame Council discussion, Dr. Woychik once more projected the eight issues identified at the Strategic Plan Stakeholder Community Workshop. Dr. Geller said he noticed that environmental justice (EJ) and health disparities (HD) were not included in

the list. Dr. Woychik said that those topics permeated much of the discussion at the stakeholder meeting. Noting that those issues are “solidly on our radar screen,” he asked Dr. Sheila Newton to comment. She said that the topics are important to the institute and the administration. She noted that the 8 issues represented topics that happened to percolate to the top of the concerns of the people who happened to be in the meeting. Dr. Geller acknowledged that incorporating EJ and HD into everything being done is one way to address the issues. Dr. Woychik asked Dr. Trevor Archer to comment. Dr. Archer agreed that NIEHS has embraced the issue of EJ, particularly given the history of the institute. He noted that there is an interdivisional working group focused on HD and EJ, and provided examples of its activities. He said EJ and HD have been areas of broad interest and value for the institute.

Dr. Holian, who participated in the stakeholder workshop, noted that there was much in the 8 areas focusing on the exposome and technology, but that there was less on outcomes, particularly chronic diseases such as cancer, along with aging. Dr. Woychik said that one of his interests is to get NIEHS work integrated with the aging and cancer institutes’ research. Dr. Holian said he was also concerned about the training of the medical community to be able to use the data generated by technologies such as AI and exposomics in the future. It could be overwhelming volumes of data that would be difficult to use, he noted. Dr. Woychik replied that that volume of data is what is needed to understand the totality of environmental exposures. He cited the Human Genome Project as an example of the genetics and genomics community working with physicians to bring the information to the bedside to help patients. He said there must be an equivalent effort in terms of the environment, as the physician needs to know about predispositions to disease stemming from environmental exposures. He felt that there must be a comprehensive effort to bring in the medical community, and the information needs to be packaged so that physicians can take it to their patients and let them know how to use it to advance their own health. He noted that the All of Us program is interested in that type of patient interface.

Dr. Penning expressed that the second issue was put too narrowly. He said that reference to diversity of research participants should be added, and allusion to where the work might be done, perhaps not in an academic institution but in a diverse community, for example. He added that in #3, implementation science was especially important. In #7, the concept of multi-omic traits needs to be added, combining and integrating omics data to come up with an explanation for the phenomena actually seen in patients. Dr. Woychik said those were all extremely relevant comments.

Dr. Vasquez said that all of the points should include elements of basic mechanistic research. Referencing #5, she asked if it included artificial intelligence (AI). Dr. Woychik said that it will be important to harness AI in ways that serve EHS interests, with quality data sets. He proposed that there should be a broad-based discussion of AI and

machine learning at the September council meeting. Dr. Vasquez said it would be important to include ethical parameters. Dr. Balshaw mentioned that NASEM was going to have a meeting in the following week on AI and EHS.

Dr. Miller said that the slide Dr. Woychik had presented depicting the NIEHS emerging scientific priority areas captured the majority of the items mentioned in the SP workshop slide. Thus, the institute's thinking appears to be very well aligned with the stakeholders' ideas. Dr. Woychik agreed, noting that the concepts are all interconnected.

Dr. Bourne emphasized that the power of AI has "gone crazy" in the past few months. He alluded to the analogy Dr. Woychik had made with genomics and the global nature of those efforts, but felt that in exposomics there was much individuality across continents. He said there is an opportunity for a more integrated model, and that "going it alone is unsustainable." Dr. Woychik agreed, and said that with the exposomics community, there is an opportunity to do things better and do things right. He expressed that to achieve the goal, "we have to start working together," learning from the mistakes that were made by the genomics community. The future is in sharing and working together collaboratively, he added. Regarding AI and machine learning, he noted that they would be powerful tools to integrate different omics data sets to help understand complex biology.

Dr. Hertz-Picciotto commented that the field knows a tiny, miniscule fraction of the health effects of climate change. Regarding #6 on the list, she said that basic biology must come into consideration of the joint effects of chemical and non-chemical stressors.

Dr. Ingram noted that in working with communities, "partnerships is how to fix the problem." Dr. Woychik said that it is something NIEHS is actively working on. He said that in his meetings with community groups, it has become clear that the issues have been studied, and they want change. He added that community forums are important to the effort, with coordination across federal agencies. Dr. Geller noted that it will be critical to remove impairments to facilitate effective action. Dr. Woychik stressed the importance of partnerships and community engagement to such efforts. Dr. Hood agreed with Dr. Woychik's comments on partnerships, and said that experts on ontologies and data repositories would be natural partners. Dr. Woychik assured Dr. Hood that his approach is to look broadly across NIH. He cited the RadX program as a model. He said he is committed to fostering a collaborative environment to take on these complex issues.

IV. Report of the Director, DERT

DERT Director Dr. David Balshaw briefed Council on DERT activities and accomplishments since the February 2023 Council meeting.

He acknowledged the departures from DERT of Robbie Majors and Aaron Nicholas, and the retirement of Quentin Li. He welcomed new hire Gerald Lilly, MD, and noted that more staff will be joining soon, as there are 20 open recruitments for positions in each DERT branch and the Office of the Division Director. He summarized DERT meetings since the last Council meeting and looked ahead to upcoming DERT meetings.

Dr. Balshaw updated DEIA efforts in the division. He reviewed why DEIA is so important for environmental sciences. He said it will bring a more diverse and inclusive workforce. “We will have a better and stronger research activity, because we will be bringing in diverse perspectives,” he noted. He listed several other factors contributing to accomplishing that goal:

- Promoting an internal culture of DEIA
- Coordination of DEIA efforts
- Building partnerships with MSIs
- International grantee engagement
- New funding opportunities
- Evaluation and analysis

He listed several internally focused DEIA activities, as well as extramural DEIA milestones and activities.

He discussed the new NIH Data Management and Sharing Policy, including the elements of a DMS plan. He went over the requirements for proper grant citation and acknowledgement of NIH funding.

Dr. Balshaw reviewed funding strategies for FY24. Decisions on who to fund are based on a balancing act of several priorities:

- Scientific merit
- Breadth of the portfolio
- ESI/NI and At-Risk
- Continued investment
- Innovation
- Programmatic priority/solicitation
- Investigator-initiated ideas

He summarized current practices, which prioritize investigator-initiated research of documented quality and programmatic alignment. In the five fiscal years FY18-FY22 the top 25 universities received more than half of NIEHS’s funding to universities, totaling \$1.1 billion. The total investment during that period was \$2.3 billion, going to 452

awardees. 74% of that funding went to 60 entities. Most funding for universities goes to R01s and center grants. Six states—CA, NY, MA, NC, TX, and MI—received more than 50% of NIEHS funding.

Dr. Balshaw noted that the cost and count of the tenth percentile payline is volatile but going up. He reviewed the breakdown of how unsolicited, raise to pay, and solicited grants are balanced, with RPGs seeing 71% (\$280 million) of the \$394.6 million total extramural grants for FY22. Of that amount, 160 competing awards received \$72 million, while 436 non-competing awards comprised \$208 million.

Dr. Balshaw mentioned that there had not been a Council discussion on funding strategies since 2017, and provided a context for the discussion: that NIEHS is operating under a new strategic plan, and has a new slate of members of Council, NIEHS Director, and DERT Division Director. He also acknowledged the pending budget challenges for FY24 and FY25.

He requested Council advice on how to balance a number of factors such as maintaining the current 10% payline, preserving the ability to make programmatic 'Raise to pay' decisions, balancing types of research grants, and support throughout the grantee community including applicant organizations with little funding and early-stage investigators.

Dr. Miller led off the Council discussion by stating that the challenges ahead are significant. There is a big risk of having the payline under 10%, because many NIEHS grantees receive funding from other institutes, and if the NIEHS payline goes below 10%, they will stop applying to NIEHS, which would be dangerous to the institute and its mission. He felt that the top 25 universities aspect is an area that could absorb a bit more budget cut, perhaps taking those with P30 and Superfund grants and decrease their out years, they would be able to absorb such cuts better than smaller institutions. Dr. Balshaw asked Dr. Miller about the balance between the 10% payline and RTP. Dr. Miller replied that perhaps the RTP could be cut a bit. He added that the flexibility is good, but he reiterated the danger of the payline dropping below 10%.

Dr. Hertz-Picciotto asked Dr. Balshaw to define what falls under the solicited category. Dr. Balshaw answered that it is anything that is in response to a targeted solicitation. Dr. Hertz-Picciotto agreed with Dr. Miller that keeping to the 10% payline would be very important. She added that diversity efforts should not be cut.

Dr. Penning asked what proportion of the R01s are non-modular. He suggested that perhaps all grants should be made modular. Dr. Balshaw said it has become fairly unusual to get a modular application. Dr. Penning suggested increasing the modular amount from \$250 thousand to \$350 thousand, it may help the situation and save the 10% payline. Dr. Vasquez agreed, and added that Raise to Pay, the RIVER program,

and the ONES program put a lot of money into perhaps not the top science. Reducing the years or amount per year in those programs might help. Investing in the person is a good idea, but that person should also show merit.

Regarding solicited versus unsolicited, Dr. Bourne asked if there was an implication there that the RFAs being issued are not necessary in keeping with where the scientific work is going. He wondered if NIEHS is actually an outlier relative to other ICs in funding breakdowns. Dr. Balshaw said that these questions are struggled with by all of the ICs, but NIEHS is not an outlier. He noted that of the 24 grant-making ICs, there are at least 24 different methods of determining funding strategies. There is no consistency, he said, and provided examples illustrating that point. He said that NIEHS has always tried to foster a balance in its funding strategy.

Dr. Woychik noted that there seems to be confusion about Raise to Pay. He said when there is an RFA or Raise to Pay, they come by cross-referencing the strategic priorities developed from the strategic plan. He said that DERT does a fabulous job of connecting funding strategies with the strategic plan.

V. Phthalates and Preterm Birth: A Pooled Analysis of 16 U.S. Cohorts

In the meeting's scientific presentation, Epidemiology Branch investigator Dr. Kelly Ferguson described her recent work involving hypothetical interventions to reduce racial and ethnic disparities in phthalate exposure and the impact on preterm birth.

In the pooled study of 16 U.S. birth cohorts, the primary research questions were to examine exposure levels by maternal race and ethnicity, and how those differences in exposure levels contribute to preterm birth. The total sample size was just over 6000 births, with 538 preterm.

Using computational tools, the researchers were able to estimate the reduction in preterm birth for some hypothetical interventions. A hypothetical intervention reducing exposure to a phthalate mixture by 50 percent prevented roughly 11 preterm births per 1000 live births. Given the approximate U.S. preterm birth rate of 10 percent, or 100 per 1000 live births, the impact would be substantial.

The preterm birth rate among Black women is 51 percent higher than among all other groups, a disparity attributed to social and environmental exposures. It is also clear that exposure to phthalates disproportionately affects people of color, including pregnant women, at least in part due to differences in use of personal care products. Making the hypothesized reductions in disparities possible will require a combined approach targeting personal care products and diet.

Dr. Ferguson's takeaway points were:

- Exposure disparity: Non-Hispanic Black and Hispanic/Latina participants had exposures that were as high as 94-148% higher than non-Hispanic White participants.
- Preterm birth: Our results provide evidence that if these groups had nearly equal exposure compared to White participants, then they may have fewer preterm births.
- Effect modification: We observed some evidence of effect modification, with larger magnitudes of associations (MBP and MiBP) among Black or Hispanic/Latina participants.

In conclusion, Dr. Ferguson asked and answered the following questions:

- Are the hypothesized reductions worth pursuing?
 - Yes. Reducing the disparities in phthalate exposures were associated with fewer preterm births among systematically marginalized groups.
- Are the hypothesized reductions possible?
 - Yes. The hypothetical exposure distributions we modeled already exist among non-Hispanic White participants.
- How can hypothesized reductions happen?
 - Interventions must account for intersectionality of racism, sexism, and social inequity.
 - Will require combined approach to target both personal care products and diet.
 - Prioritization of actions at the population level (legislative policies, voluntary market removal) rather than the individual level (organic food, fragrance-free items).

Dr. Hertz-Picciotto asked about the heterogeneity of effect in terms of what might potentially be modifiable. Dr. Ferguson said she was unable to measure some of the co-exposures occurring in the study population, such as non-chemical, psychosocial stressors. In one study, which included a questionnaire about stressful life events experienced during pregnancy, mothers who simultaneously experienced high exposure to stressful life events and phthalate had greater odds of preterm birth, compared to women who only had exposure to the phthalate metabolite. She said she hopes to look more at the role of co-exposures in the future.

Dr. Hood asked whether Dr. Ferguson had any information on preconception bundles. She replied that she did not have any information on the level of prenatal care.

Dr. Miller said that he loved the combination of studies, as an elegant method, but the challenge is that phthalate exposure is associated with many things, and may be a biomarker of some other chemical associated with the phthalates. He felt that it

highlights the need to do the type of study Dr. Ferguson had conducted in conjunction with a broader look that uses more of an exposomics approach to see what other classes of compounds are associating with an exposure like phthalates. He asked how those approaches might be merged together. He said that we live in a complex environment, and we must determine a way to capture more of that environment. Dr. Ferguson agreed that identifying a broader approach would be an important next step.

Dr. Balshaw said he was intrigued by Dr. Ferguson's suggestion that a large policy intervention could be stronger than personal intervention. Dr. Ferguson said she was very interested in the idea of a personal level intervention, as that is what people want to hear. She noted that there have been studies suggesting that changing individual habits could reduce exposure level, but they have not been consistent across studies. Individual level interventions are really difficult, she added. Changing the make-up of products could potentially have a broader effect. Public pressure for such changes could be effective.

Dr. Savasta-Kennedy noted that cosmetics and personal care products are regulated by an act from 1938 law that has not been updated since. Dr. Ferguson said that even updated labeling for accurate ingredient lists would be valuable.

Dr. Woychik asked whether people interested in reading ingredient lists would understand that phthalates are included. Dr. Ferguson noted that some products are labeled "phthalate-free" in stores like Whole Foods, but that raises further equity issues. Dr. Woychik asked for some examples of personal care products that include phthalates, and whether there are alternatives to phthalates. Dr. Ferguson replied that phthalates are often used to carry fragrance.

Dr. Ingram asked whether the problem got worse with the pandemic and thereafter, when everything became packaged. Dr. Ferguson said she was concerned about that issue.

Dr. Hertz-Picciotto referred to the importance of preterm birth as an outcome. She noted that there was an "astounding reduction" in preterm births during the COVID lockdown. She said that the field is starting to converge on what some of the factors at work may be. Preterm birth also puts offspring at risk for neurodevelopmental issues, and is likely to be a harbinger of later in life problems for the children.

Dr. Savasta-Kennedy noted that phthalates can be hidden under fragrances is due to industry lobbying it as a trade secret. She speculated that the reduction in preterm births during the pandemic may have been due to reduction in use of hair care products, particularly among Black women.

Dr. Geller discussed work at EPA to develop high throughput methods to look at consumer products. He asked Dr. Ferguson what else could be done to reduce preterm births aside from reducing phthalate exposures. She replied that there are not a lot of things that clinicians can advise their patients to do to prevent preterm births. She added that that is the difficulty with personal level advice, because there are so many different sources of phthalate exposures.

VI. CSR's Initiatives to Strengthen Peer Review

Dr. Noni Byrnes, Director of the Center for Scientific Review (CSR), briefed the Council on CSR's initiatives to strengthen peer review.

She provided details on CSR's mission and scope, which includes the peer review of 76% of NIH applications in FY23. Since 2019, CSR has had a strategic framework for optimizing peer review, including efforts involving study sections, review process, and reviewers.

The ENQUIRE process (Evaluating Panel Quality In Review) was launched in 2019. It is a systematic, data-driven, continuous process to evaluate study sections, with about 20% of CSR study sections assessed per year. ENQUIRE integrates data and input from the community to determine whether changes in study section or scope are needed to facilitate the identification of high impact science. Stage 1 is scientific evaluation, conducted by an external panel of scientifically broad senior scientists. Stage 2 is process evaluation, conducted by a panel of NIH extramural staff with a broad perspective. Recommendations are then considered by the CSR Advisory Council. The process takes 12-18 months from initiation to implementation of new or restructured study sections.

Thirteen scientific clusters comprising 152 study sections have been completed or are in progress. The ENQUIRE process generally results in substantive changes in study sections by elimination or merging of smaller, boutique panels, refreshing scientific guidelines, new study sections, or incorporation of growing/emerging scientific areas.

Dr. Byrnes discussed the effort to simplify review of NIH research project grant (RPG) applications, which aims to facilitate the overarching goal of peer review, which is to identify the strongest, potentially highest-impact research.

Two CSR Advisory Council working groups formulated initial recommendations for a new peer review framework for RPGs, taking into consideration substantial feedback from the external community. The recommendations were then considered by NIH leadership and additional input sought from the extramural community through a Request for Information (RFI). The simplified framework groups the five criteria into three main factors.

- Factor 1: Importance of the Research (Significance, Innovation; individually scored 1-9)
- Factor 2: Rigor and Feasibility (Approach; individually scored 1-9)
- Factor 3: Expertise and Resources (Investigators, Environment; not individually scored, evaluated as either “appropriate” or “gaps identified”)
 - Most “Additional Review Criteria” remain unchanged
 - Most “Additional Review Considerations” are removed from first-level peer review

The changes will tentatively be implemented with October 2024 receipt dates (Feb./Mar. 2025 review, May 2025 Council).

Dr. Byrnes also reported on a CSR initiative to improve the review of NRSA fellowship applications. A CSR Advisory Council working group convened in 2022 and held 14 virtual meetings to develop recommendations. The working group gathered data and community feedback, which yielded concerns that NIH is potentially leaving out highly promising scientists because of a process that too heavily favors elite institutions, well-known sponsors, and an overly narrow emphasis on traditional markers of early academic success. Analysis of more than 6,000 applications supported those concerns.

The working group made two recommendations. First, the working group recommended the changes to fellowship review criteria. Second, they recommended changes to the fellowship application to align it with the proposed criteria. An RFI on the effort was published in March 2023 and is open through June 23, 2023.

Dr. Byrnes summarized several efforts to promote fairness in review, including orientation sessions for incoming study section chairs, bias awareness and mitigation training for reviewers, a review integrity training module, and a direct reporting mechanism for biased or unfair review.

She also described CSR’s strategies for diversifying review panels and shared recent data showing that the percentage of women and underrepresented minorities serving as reviewers, either as study section members or as ad hoc reviewers on special emphasis panels, has increased over time.

Dr. Woychik thanked Dr. Byrnes for the comprehensive presentation and for her strong leadership at CSR.

Dr. Ingram said that in addition to the changes Dr. Byrnes had described, there would need to be marketing and trust-building. She said that at her institution, trainees often do not apply because they feel that they do not compete, and they end up going into industry and government. Dr. Byrnes agreed and pointed out that CSR’s efforts will

need to include outreach. She pointed out that there is currently a working group of the NIH Advisory Council looking at the future of post-docs and their employment.

Dr. Holian said he teaches a grad student fellowship application course, and that the application is fairly burdensome. He asked if CSR had considered ways to reduce that burden. He noted that the bigger institutions are more successful because they boilerplate some of the material. He asked how NIH will evaluate whether the new process will be better than before. Dr. Byrnes replied that they had heard the issue of burden, how it is more burdensome to put together a fellowship application and how that impacts institutions with limited resources. She said that part of the goal is to change the application to make it less burdensome. She noted that the RFI related to the fellowships is still open and asked for input on how to streamline the process. Regarding evaluation, she commented on the RPG changes. She said evaluation can be through a survey-based evaluation and through feedback from program staff. She said that if the process is working well, it would be expected that summary statements will be more focused on the science. Distribution of applications that score as high impact should include a broader range of investigators, institutions, and institution types. There should be a multi-pronged evaluation. There are plans for evaluation, with CSR having a Division of Planning, Analysis, and Information Management to lead the effort.

Dr. Miller said that he often hears from more junior faculty that the grant review process is random, with no system. He felt that faculty in general do not understand what goes into creating a study section. He recommended that CSR publish some papers in the academic literature so that people can see that it has been a systematic, methodical process, trying to address issues. Dr. Byrnes agreed, and acknowledged that with so many people involved, there would inevitably be some noise in the system.

Dr. Hertz-Picciotto said that Dr. Byrnes's presentation illustrated the enormity of CSR and its mission. She mentioned difficulties with epidemiology applications, with few study sections where the area can get a fair hearing. Dr. Byrnes replied that CSR has a branch devoted to epidemiology, with a number of study sections; descriptions can be found on CSR's website.

Dr. Greenamyre asked Dr. Byrnes to add to her discussion about working to educate reviewers who write inappropriate or biased comments. He said in his experience, the problem is inappropriate comments made during the review process itself. He asked Dr. Byrnes if there are ways to counteract that. She said that CSR has invested a lot in training SROs on how to intervene when something is said. Also, it is part of the effort to understand bias in the whole process. She said that many of the reports of inappropriate comments during review meetings come from CSR staff. In those cases, CSR will review the meeting documentation.

Dr. Vasquez said that she agreed with Dr. Greenamyre's comments. She noted that her experience with students applying for fellowships is that they will often receive comments from reviewers that are written harshly. She mentioned examples of that type of experience. She asked if there would be a way to train the SROs and reviewers to be more delicate in their language. Dr. Byrnes said that the need for clear comments without harshness was pointed out by the working group that developed the recommendations for changes to fellowship review. She said that training and screening critiques in advance will help.

Dr. Penning felt that education of the reviewers would be very important, especially for changes in R01s. He said it would be difficult to eliminate certain aspects of bias going forward. He asked if CSR was looking at the administrative burden on investigators, particularly when perhaps 90% of grants applied for will not be funded. They are asked to provide information that only applies if and when the grant is funded. Dr. Byrnes said that she completely agrees and asked Dr. Penning to submit his point through the RFI.

Dr. Balshaw brought the open session to a close and adjourned the day's proceedings at 3:04 pm.

CLOSED SESSION

This portion of the meeting was closed to the public in accordance with the determination that it concerned matters exempt from mandatory disclosures under Sections Section 552b(c)(4) and 552b(c)(6), Title 5, U.S. Code and Section 10(d) of the Federal Advisory Committee Act, as amended.

REVIEW OF APPLICATIONS

The session included a discussion of procedures and policies regarding voting and confidentiality of application materials, committee discussions and recommendations. Members absented themselves from the meeting during the discussion of, and voting on, applications from their own institutions or other applications in which there was a potential conflict of interest, real or apparent. Members were asked to sign a statement to this effect. The Council considered and recommended 480 applications requesting \$470,222,911 in total costs. For the record, it is noted that secondary applications were also considered en bloc.

OPEN SESSION

The meeting was open to the public from 10:00 am – 3:38 pm June 7, 2023. Dr. Trevor Archer presided as Chair from 10:00 until 12:45 and Dr. Rick Woychik presided from 12:45-3:38.

VII. NIEHS Racial and Ethnic Equity Plan (REEP)

NIEHS Deputy Director Dr. Trevor Archer briefed the Council on the institute's REEP, which is a product of the NIH UNITE initiative, specifically the UNITE I committee, which Dr. Archer co-chairs. The committee recommended that all ICs develop Racial and Ethnic Equity Plans (REEPs), similar to the mandate for sexual harassment plans in 2018.

Over the course of several months, the NIEHS REEP implementation team met to develop a historical baseline and conduct an analysis of NIEHS to prevent any racial inequities within the organization's policies and staffing model. The team consisted of 14 federal employees and contractors in 2022. The Workforce Cultural Equity Survey collected data from 341 NIEHS employees in 2021, and provided a baseline for a number of focus areas for the REEP.

THE REEP process has yielded specific goals and resulting actions. Dr. Archer elaborated on each of the action plans by listing several highlights and successes associated with them.

- Goal 1: Apply the Racial and Ethnic Equity Lens (REEL) Framework to NIEHS's workforce, structures, and systems.
 - Action Plan
 - Establish a shared IC Leadership commitment to the Action Plan.
 - Create a central message on racial and ethnic equity that is inclusive.
 - Identify and implement key processes, policies, practices, and programs that significantly impact racial and ethnic equity.
- Goal 2: Identify opportunities to advance racial and ethnic equity in the NIEHS workplace.
 - Action Plan
 - Conduct thorough review of NIEHS PMAP scores to identify any racial or ethnic disparities.
 - Develop a plan to educate the NIEHS workforce.
 - Develop and implement strategies to address any disparities.
- Goal 3: Enhance the diversity of the NIEHS workforce.
 - Action Plan
 - Establish a shared IC Leadership commitment to the Action Plan.
 - Create a central message on racial and ethnic equity that is inclusive.
 - Identify and implement key processes, policies, practices, and programs that significantly impact racial and ethnic equity.
 - Create a method to track real-time progress and to promote transparency to build trust.

Dr. Archer related several challenges faced by the REEP program:

- Securing staff time for the REEP
- Securing staff time for relevant trainings
- Gaining access to workforce demographic data
- For the first version of the REEP, establishing benchmarks for some metrics
- Complexities that arose due to this being a new, unique process for all
- Managing the compressed timeline for the initial submission
- Establishing the Office and hiring the Chief Diversity Officer

He emphasized the importance of an approved and funded staffing plan for the Office of the Chief Diversity Officer, and described the proposed structure for the 4-person office. Recruiting for the Chief Diversity Officer is currently underway.

The REEP will be an annual process, incorporating yearly updates, revisions, submissions to NIH, feedback from NIH, and assessment and evaluation.

Dr. Vasquez said that what she really likes about Dr. Archer's efforts is that they are actually being implemented. She expressed that ultimately change comes from a culture, and that the REEP process will result in that type of culture change. Dr. Archer said he was representing a broad activity by many colleagues. He agreed about the importance of culture change.

Dr. Ingram noted that some of the advice being gained by REEP is from HBCUs, which is great, but there are other groups out there. She asked if there was any intention to speak to groups from Hispanic-serving institutions, tribal or Native American-serving colleges, or Asian-American people. She said it seemed that there was more of a focus on African-American groups than other underrepresented groups. Dr. Archer acknowledged that HBCUs are a focus, but that outreach is not limited but reflects the broader spectrum of MSI and Hispanic-serving institutions across the area. Dr. Ingram suggested that the list illustrating that be shown. She added that people with disabilities should be represented. Dr. Archer noted that the origin and mandate for REEP was racial and ethnic equity, but that DEIA goals are embraced, with the "A" standing for accessibility.

Dr. Hood mentioned lessons learned from the contemporary lexicon of inclusive futures. He said in his experience, training sessions generate quite a bit of pushback. He said that the educational resources need to be comprehensive. He asked whether Dr. Archer was referring only to NIEHS staff when he mentioned "staff." Dr. Archer said he was referring to the NIEHS workforce. He noted that one of the Deputy Chief offices in the proposed Office of the Chief Diversity Officer would be focused on external staff members.

Dr. Penning wondered if the name of the program was correct, and said they may want to have a second version that includes more diverse groups such as those mentioned by Dr. Ingram. He also commented about the importance of metrics of success. Dr. Archer said that the program was a specific requirement of NIH leadership.

Dr. Hertz-Picciotto asked if there was a mechanism for communicating and influencing the other ICs to be doing more. She also asked about the extramural program. Dr. Archer replied that the effort is focused on the NIH workforce. He noted that NIEHS has not been shy about communicating with NIH colleagues, particularly in terms of being involved with initiatives at the NIH level. Dr. Hertz-Picciotto suggested communicating with the other ICs about the dedicated office, with personnel whose job is to monitor and promote equity efforts. Dr. Archer pointed out that the approach has been adopted across NIH.

Dr. Vasquez noted that there had been comments in the chat about the inclusion of other groups such as LGBTQ and women in science leadership, as well as working mothers and fathers. She urged inclusion of everyone who may need additional thought or support in the workforce. Dr. Archer added that the NIEHS DEIA Council has 60 members, 10% of the federal employee staff.

Dr. Balshaw pointed out that NIEHS is flying a Pride Flag.

VIII. Faculty Institutional Recruitment for Sustainable Transformation (FIRST) Programs

Dr. Balshaw introduced presentations from two grantees regarding the FIRST program—Faculty Institutional Recruitment for Sustainable Transformation, an NIH Common Fund-supported program that promotes the idea that having a more diverse and inclusive research team improves research, requiring a sustained investment of resources in both recruitment and development and retention of faculty. Several NIEHS staff are actively engaged with oversight of the FIRST program.

The first grantee presentation was by Dr. Ana Diez Roux, dean of the Dornsife School of Public Health at Drexel University. The Drexel FIRST program has three overall goals:

- Recruit 12 diverse early career scientists
- Create a collaborative structure
- Catalyze sustainable institutional change that supports scientific and inclusive excellence in the conduct of health disparities research

The program includes administrative, faculty development, and evaluation cores to implement program aims. It is jointly led by the Dornsife School of Public Health and the

College of Nursing and Health Professions. Its overall theme is health equity spanning population science to intervention research, with the cross-cutting cluster of aging, chronic disease, and environmental determinants. Twelve FIRST faculty have been recruited and the faculty development program is well underway, as are institutional cultural change initiatives and program evaluation.

The second grantee presentation was by Dr. Mark Reed, one of the leaders of the FIRST program at San Diego State University (SDSU), which is called Faculty Unified towards Excellence in Research and Transformational Engagement (FUERTE). He noted that the FUERTE cohort benefits from SDSU's highly diverse campus and institutional and regional environment, with its well established Center for Inclusive Excellence and DEI priority. SDSU is a Hispanic-Serving Institution and an Asian American and Native American Pacific Islander-Serving Institution.

Dr. Reed listed the FUERTE Project aims:

1. Create, tangibly support, and institutionalize a sustainable university culture of inclusive excellence that will be transformational for health sciences research at SDSU and beyond.
2. Design and implement a new Faculty Cohort model for recruitment and hiring and utilize this model to secure a group of nine interdisciplinary, early-career faculty focused on health disparities with three cluster areas.
3. Deploy a new tailored SDSU FUERTE Faculty Development Plan to support research and professional development, promote community engagement, and accelerate research independence and success in the academy.
4. Evaluate the impact of SDSU FUERTE at the individual, department/school, and university level on faculty success and the DEI climate across SDSU.

The program will recruit and hire a cohort of 11 faculty at SDSU Mesa and SDSU Imperial Valley campuses. The focus will be on three focal areas of research: environmental health, obesity/physical activity/nutrition, and cancer and cancer disparities. Dr. Reed described the detailed Faculty Development Model being implemented for the cohort, and outlined the next steps for the program.

Dr. Savasta-Kennedy referred to the limits being placed by the University of North Carolina Board of Governors on diversity efforts, which adversely affect recruitment. She praised Dr. Reed's program, and noted the difficulty as an institution of incorporating similar diversity goals.

Dr. Vasquez described the National Hispanic Science Network, a non-profit organization dedicated to addressing and reducing health disparities affecting U.S. Latino communities. She asked Dr. Reed if he was familiar with any similar groups for other minorities. Dr. Reed said that he had a list of such identity-focused organizations and

said he would provide it to Dr. Vasquez and the Council. She asked Dr. Reed about his suggestions on how to evaluate requirements for diversity in hiring faculty. He replied that there is a specific rubric tied to the hiring program, with criteria provided to candidates as they prepare their diversity statements. He said he would also provide the rubric to the Council.

Dr. Bourne asked Dr. Reed whether the new hires were all tenure track appointments. Dr. Reed said that all 11 of the early career and 2 mid-career hired faculty members are tenure track. Dr. Bourne about the forward plan to prepare the hired faculty members for tenure since the tenure requirements may be somewhat different within different parts of the university. Dr. Reed explained that when candidates first applied, they were asked to identify departments or schools where their skills and training would best fit. That was where each ended up, he noted. He said that the different requirements would be part of the support the faculty members would receive. Dr. Bourne observed that Dr. Reed had made an important point about changing academia.

Dr. Hood said that in his program, in terms of faculty retention, the focus had been on impact. He asked Dr. Reed for his ideas on that aspect in terms of moving forward with his FIRST cohort. Dr. Reed described an adverse experience recently suffered by a faculty member in the RTP process (not a FIRST faculty member). He said his institution is looking at the process in terms of the qualities it values as scholars and researchers, so that faculty need not be so narrowly focused on numbers of publications and teaching evaluations, but should also look at community engagement.

Dr. Bourne noted that Council had heard from a private and a public university, and that public universities are quite different in that they are subject to political influence. He asked Dr. Reed if he had felt any, and whether it had affected anything he had done in his programs. He said it was a message to NIH that where the universities are may influence the programs. Dr. Diez Roux replied that that was an important point that had come up in conversations she had had among the sites. She noted that programs like FIRST are not always welcome in some states. She said that a very positive aspect of this NIH initiative is that it supported this kind of work, giving it visibility and credibility. Dr. Bourne said that successes in programs such as hers would help those in other areas be able to do more.

Dr. Ingram commented on retention and asks of underrepresented faculty. She pointed out that new faculty can say no to a dean or provost when asked to serve on committees. She felt that service load should be made part of the tenure process. Dr. Diez Roux said it was a great point, and identifies some tensions that need to be navigated. She said her group talks often with the FIRST faculty about such issues, and works to provide clear guidance. She noted that her group are required to have acquired R01s within three years, a tall order. Dr. Reed agreed and said his group had

had the same discussions with department chairs and deans about service load. He said they help their FIRST faculty to put together their RTP packages and evaluations, and counsel them on how to highlight service to better resonate. Dr. Diez Roux noted that FIRST faculty are special in that they have 75% protected research time.

Dr. Archer asked how the FIRST programs have been received among other faculty. Dr. Reed said that initially he was concerned about the reception by other faculty given some of the advantages built into the program. He said that in general he had not heard a lot of jealousy or anger. He felt that many of the faculty working with the cohort are embracing the investment. Dr. Diez Roux noted that initially her group had had many assistant professors who wanted to be part of the program, and that they were providing the faculty development activities to other professors as well as the FIRST cohort.

IX. NASEM Report on Use of Race, Ethnicity, and Ancestry as Population Descriptors in Genetics and Genomics Research

Dr. Archer introduced Dr. Sarah Tishkoff from the University of Pennsylvania, who briefed the Council on the NASEM report, *Using Population Descriptors in Genetics and Genomics Research: A New Framework for an Evolving Field*, which was issued in March, 2023.

The NASEM committee's task was to review and assess existing methodologies, benefits, and challenges in the use of race and ethnicity and other population descriptors in genomics research. The committee's work included:

- Assessing use of race, ethnicity, and generic ancestry in the basic science of genetics and genomics, health risk as a function of our genomes, and health disparities
- Developing approaches to advance the appropriate use of population descriptors and proposing best practices
- Discussing obstacles to implementation and adoption of best practices for population descriptors
- Proposing potential implementation strategies to help enhance the adoption of best practices by the research community
- Out of scope: use of race and ethnicity in clinical care and biomedical research generally, racism in science and genomics, providing policy recommendations to NIH and government agencies

Dr. Tishkoff mentioned the committee's diverse membership and sponsors, and provided an overview of report's content and structure. She defined "population descriptor," and discussed problems with the current use of population descriptors, the need for the report, and what makes this particular report unique. The report's purpose

was to foster ethically and empirically sound practices for supporting trustworthy research, led by guiding principles: respect, beneficence, equity & justice, validity & reproducibility, and transparency & replicability.

The committee developed 13 recommendations that fall into three categories. Recommendations 1-5 involved Requisites. Recommendations 6-8 involved Guidance for Researchers. Recommendations 9-13 involved Implementation & Accountability. Dr. Tishkoff provided details for each set of recommendations.

She concluded with these parting thoughts:

- “Scientists must get the descent-associated concepts right—that is, have a clear understanding of what these descriptors represent and a rigorous rationale for using them—before selecting the appropriate group categories and labels to work with.” (Report Chapter 1)
- The practice of genetics today requires knowledge and expertise in many fields besides genetics and genomics—thus this report is for all researchers who use genetics and genomics data.
- It will take a concerted effort by all relevant parties to achieve the desired goal of properly using and reporting population descriptors reliably and consistently.

Dr. Miller said that several of his colleagues involved in genomics and exposomics were “kind of bent out of shape” when the report came out, because they were trying to identify disparities among different populations based on race and ethnicity from a structural standpoint. He felt that distilling the report’s recommendations down to a simpler form would be important. He said he senses there will be much confusion for a while, and while it is the right thing to do, it will take much education. Dr. Tishkoff replied that there is a balance. The report was designed to be broad enough to apply to many different types of studies. She said she did not want to give the impression that race should never be included, particularly in instances such as studying structural racism. The problem comes when people lump genetic and environmental together, and often people assume something is genetic when it is actually environmental.

Dr. Balshaw related a comment from Sharon Beard in the chat box, stressing the importance of occupation as an important element of environment in the definition of health disparities. Dr. Tishkoff agreed that the more detailed information is, the better.

Dr. Geller said that EPA is trying to do things like map locations where there is a high prevalence or potential for lead exposure, and unfortunately race is still one of the best predictors. It is known to be a proxy or surrogate for living in substandard housing or post-industrial areas, and unpacking what it is a proxy for is part of the task. He asked Dr. Tishkoff if she foresees a time when reclassifying with different population

descriptors will allow description of broad areas of vulnerability. She replied that she would definitely foresee that development.

Dr. Woychik asked Dr. Tishkoff about her recommendations regarding dissemination and standardized enforcement for NIEHS and NIH in general. She recommended that people read the last section of the report, which goes into some detail on that. She said perhaps it will become another requirement to write a justification in grant applications about why population descriptors are being used.

Dr. Geller pointed out that another place to insert it would be in reviews of journal articles. Dr. Tishkoff agreed, and noted that some journals are starting to do so. More consistent use of descriptors will also aid in harmonization, she added.

Dr. Archer said it will be important to sever the implicit connection in society and culture that links race and ancestry to genetics. He noted that it would be particularly important to do so in environmental health and environmental medicine. Dr. Tishkoff added that it will be important in electronic health records, which need to be standardized.

X. NIEHS Council Working Group on Anti-racism, Diversity, Inclusion, and Equity

Dr. Vasquez chaired the working group (WG). She noted that the WG was founded two years ago, and has now submitted its final report to Dr. Woychik. The group's charge was to be:

- Advisory to the NAEHSC on matters related to racism, diversity, equity, and inclusion, primarily as they apply uniquely to research in the area of environmental health science.

She went over the WG membership, which included current or former members of Council, members from academia, industry, and government, and members from NIEHS. The group divided itself into subgroups: workforce, funding, trainees, and community engagement. Each subgroup presented recommendations as part of the WG's final report.

Dr. Vasquez participated in the Funding subgroup, and since its chair, George Daston, was unable to attend the meeting, she presented the subgroup's recommendations.

Recommendation 1: Consider the choice of research topic.

Recommendation 2: Address unconscious bias in the grant review process.

Recommendation 3: Address bias in scoring of research environment.

Recommendation 4: Improve on the inadequate accommodations internal and external service duties that may disproportionately impact women and/or other underrepresented groups.

Former Council member Dr. José Cordero chaired the Workforce subgroup, and presented its recommendations.

Recommendation 1: Develop and maintain a timely dashboard that provides a situational snapshot of the extramural and intramural workforce.

Recommendation 2: Examine success factors and exemplars of early-phase investigators moving through the academic and research ladder.

Recommendation 3: Ensure equitable distribution of underrepresented groups as DEI representatives.

Recommendation 4: Develop a focus on diversity associated with neurodiversity, physical disabilities, and other types of diversity.

Dr. Fred Tyson chaired the Trainees subgroup, and presented its recommendations.

Recommendation 1: More effective marketing of EHS science at earlier academic stages, something to capture the attention of URM undergraduates.

Recommendation 2: Assess and enhance activities geared towards supporting URM trainees.

Recommendation 3: Address application processes to make more user friendly for trainees with cognitive differences.

Recommendation 4: Provide and secure data on lack of Asian scientists participating in and supported by Diversity Supplements.

Recommendation 5: Anonymizing reviews.

Dr. Yvonne Maddox chaired the Community Engagement subgroup, and presented its recommendations.

Recommendation 1: Engage with, and be responsive to, the NIH community about ways to integrate DEIA principles into NIEHS's mission and culture, establishing clear lines of communication with community members/stakeholders.

Recommendation 2: Strengthen activities to better understand the needs of the internal workforce, the workforce at NIH-supported institutions and all whose lives are touched by the research that NIEHS/NIH conducts and supports.

Recommendation 3: Establish bi-directional communications with community members on NIH policies and practices that impact DEIA.

Recommendation 4: Ensure that NIEHS is responsive to community concerns and where feasible consider modifying policies and procedures.

Recommendation 5: Ensure accountability and foster confidence.

The WG also included an Addendum, which Dr. Maddox read:

- The committee is familiar with the NIH UNITE initiative and the recently released NIH-Wide Strategic Plan for Diversity, Equity, Inclusion, and Accessibility (DEIA). While by design we largely derived our Strategic Priorities independent of these initiatives, the Committee was also interested in identifying overlapping areas between our working group and the NIH, which may suggest high priority objectives/recommendations. In fact, the Community Engagement group made an effort to align their goals with the NIH DEIA.

Dr. Hood described the profound influence Dr. Maddox had on his career. He mentioned the Fellow to Faculty program at Ohio State, and suggested it would be worth considering by the WG.

Dr. Woychik joined Dr. Balshaw in thanking the WG for its considerable work. He asked Dr. Maddox about the Public Interest Partners group she had mentioned. He asked if she was aware of the NIEHS Partnerships in Environmental Public Health (PEPH) program, and whether the Public Interest Partners was different. Dr. Maddox acknowledged that she had been referring to PEPH, and said that her subgroup had a previous Council member who felt that PEPH needed to be re-energized. Dr. Woychik said he was pleased to hear the group's thoughts, and that it was an interesting idea to get PEPH more actively engaged. Dr. Balshaw weighed in briefly on both the Friends of NIEHS and the PEPH program. He said that both groups are still active and meeting regularly. He noted that that recommendation was already one that is quite important to NIEHS. Dr. Maddox said that NIEHS is quite unique in the PEPH program, and that it should be encouraged across NIH. Dr. Woychik noted that PEPH and NIEHS's very active community outreach have been a best practice across the NIH.

Dr. Holian echoed Dr. Tyson's concern that the K-12 initiative had been dropped at NIEHS. He said the pipeline is important, particularly at NIGMS, and that NIEHS should be doing something similar, and should begin at the middle school level. Girls at that age level particularly often lose interest in science, he noted.

Dr. Ingram agreed that the community pleads for K-12 activity. She asked if the Friends of NIEHS is viewed as an advisory group, and wondered if NIEHS would consider a true community advisory board, or CAB. Dr. Balshaw said that Friends of NIEHS is not considered to be an advisory group. He agreed that idea of formalizing a CAB would be worth exploring.

Dr. Penning agreed that the pipeline should start as early as possible to attract people to EHS. He cited an example at his institution, but noted that it is difficult to attract minority students to the program because many of them go elsewhere as they can earn more summer stipend money in the private sector. He said the STEER (Short Term Educational Experiences for Research) program only provides support for a portion of

the summer, which represents a disincentive. He mentioned to Dr. Maddox that his group has worked with communities to encourage them to write grants. He said that a grantsmanship boot camp was missing from the subgroup's recommendations. Dr. Maddox agreed that that sort of training would be important, and pointed out that NIH has grant mechanisms that would accommodate that kind of program.

Dr. Savasta-Kennedy asked Dr. Maddox for an example of successful community engagement. Dr. Maddox described her experience at NICHD, engaging the community related to infant mortality and morbidity, specifically a successful campaign that focused on putting infants on their backs for their first year of life to reduce the risk of sudden infant death syndrome. The campaign involved several community leaders. Dr. Tyson added a North Carolina success story related to hog farm waste, noting that it was a community group that started the effort.

Dr. Hertz-Picciotto thanked the WG for providing a roadmap for next steps for NIEHS. She discussed the difficulty of early stage investigators (ESIs) in getting their first grants. She endorsed support of mentoring of ESIs, and described the important role of mentors.

Dr. Miller said he supported the idea of a Community Advisory Board to the Council.

XI. Council Discussion – One Cohesive DEIA Approach for the Institute

Dr. Balshaw initiated the Council's discussion session on DEIA efforts. He projected the slide from his presentation illustrating the dual DEIA goals of having a more diverse and inclusive workforce and producing stronger environmental health sciences research. He asked Council members to consider, "How do we integrate all of these different activities together? How do we come up with a unified approach so that we are not either duplicating efforts or working at cross purposes, that we're keeping our eyes on the ultimate goal of improving both our culture and the outcome of our work?"

Dr. Ingram described a cancer health disparities study partnership she is involved with, where resources are shared, and recommended that NIEHS pursue partnerships like that with MSIs.

Dr. Geller commented on the balance of solicited and unsolicited grants. He felt that there may be some room to press harder on solicited grants to reach some of the DEIA goals. Referencing recent executive orders, he noted that they actually call for inclusion of diverse groups in research, particularly in biomedical research. He said that paying attention to the broadening definitions of diversity could include groups of people being studied. Requiring aspects of community engagement in grants is a way to be directive, he added.

Dr. Penning said that DEIA should be more than just the workforce. There is also a need to ensure diversity in research participants, and where the research is being conducted. He felt that the diagram depicted by Dr. Balshaw lacked elements.

Dr. Holian said there would be an increased need for and dependence upon mentors for some of the DEIA-related programs. He expressed that if there is to be increased demands on mentors, there should be some kind of reward system for them put in place. Otherwise, they will be overused and burned out. Dr. Balshaw said burnout is an issue NIEHS has discussed internally.

In light of the community advisory board idea, Dr. Miller felt that every Council meeting should include a report on DEIA efforts. He said he would like to hear about the progress being made by the institute in those areas. Dr. Balshaw called attention to the Evaluation and Analysis hexagon in the diagram and noted that some efforts would be more effective than others. So how can quantitative metrics be tied to DEIA efforts in order to understand what is being successful?

Dr. Hertz-Picciotto pointed out that Council had heard about several rubrics that are out there. She said that one of the most important aspects of environmental health is that the environment is part of the reason for health disparities that are central to public health.

Dr. Hood expressed that EPA seems to be a bit ahead on interfacing with communities and the co-planning that is necessary when engaged with them. They have instituted a requirement in most of their STAR grants to have a low-income, disenfranchised communities benefits cost analysis to guide policy. He said it makes a huge difference in impact. He added that perhaps NIEHS does not need a community advisory board, but could just have a community member as part of Council. Dr. Balshaw said that NIEHS does do a lot, in P30 centers and P42 centers, in PEPH, and in the Research to Action program, all of which contribute to embedding community engagement in the research being done as an institute. Over the past several decades, it has been a priority for NIEHS, he noted.

Dr. Ingram said that in order to perform community engagement, one must have a lot of meetings and listening sessions. Her group has a center grant from NIMHD, which allowed partnership with a small tribe in a rural area in Arizona. She said there are not that many centers around the country and wondered if there might be a mechanism to provide that partnership-building. She said that for most communities, Zoom does not work—one must physically go to the location. She added that expanding the considerations is moving toward a more indigenous way of thinking, and that NIEHS appears to be moving in that direction.

Regarding the potential budget tightening, Dr. Miller pointed out that some of the DEIA programs can be relatively inexpensive. He said that initiatives that are cost-neutral or small investment should be done right away, not using an excuse that the budget is tightening. He said many of the programs need to be integrated more into the entire NIEHS culture, and should be pressed forward, not letting budget challenges be an impediment.

Dr. Woychik said that Dr. Miller had raised a good and very important point. There will be challenges next year, “but we still have over a billion dollars,” he noted, and added that the aspects being discussed in the meeting must continue to be high priority items along with other things. Dr. Miller said that many of the things being discussed can be done with the existing budget.

Dr. Vasquez agreed that many things can be done that do not require a great deal of money. She noted the importance of bringing young people in over the summer. She said it would not take a lot of money to pay them a stipend competitive with other opportunities. Also, there are potential interactions on a regular basis to educate people about DEIA issues, to help achieve the desired cultural change.

Dr. Mike Humble, NIEHS program administrator for both the fellowship program and the R25 summer research program. He wanted to bring it to Council’s attention that there is acknowledgement that the undergraduates and high school students need to be given a competitive salary. There was formerly a limit on the R25 program, which has been removed.

XII. Adjournment

Dr. Woychik thanked everyone who had been involved in the meeting for a very engaging Council, “the best yet.” He noted that it was so different when everyone was physically in the room together. He especially thanked Dr. Vasquez and the members of the Council working group for “a spectacular report.” Dr. Archer added his thanks to the Council, and hoped the meeting had pressed upon all the primacy and importance of DEIA and the attempt to embed it in the NIEHS culture.

Dr. Archer adjourned the meeting at 3:38 pm, June 7, 2023.

CERTIFICATION:

/s/

Richard Woychik, PhD
Chairperson
National Advisory Environmental
Health Sciences Council

/s/

David Balshaw, PhD
Executive Secretary
National Advisory Environmental
Health Sciences Council

Attachment:
Council Roster