Forging New Health Equity Pathways for Data:

Data Application in Academic and Community Decision Making

NIH U.S. National Library of Medicine

July 28, 2022

NATIONAL INSTITUTES OF HEALTH
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ENVIRONMENTAL HEALTH INFORMATION PARTNERSHIP

31st Annual Meeting
Virtual
July 28, 2022

Forging New Health Equity Pathways for Data

Data Application in Academic and Community Decision Making

PREPARED FOR
THE OFFICE OF ENGAGEMENT AND TRAINING (OET)
NATIONAL LIBRARY OF MEDICINE

PREPARED BY
HEALTH, ENERGY, AND ENVIRONMENT
OAK RIDGE ASSOCIATED UNIVERSITIES

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NATIONAL LIBRARY OF MEDICINE
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Forging New Health Equity Pathways for Data: Data Application in Academic and Community Decision Making
Virtual Meeting
July 28, 2022
10:00 a.m. – 4:00 p.m. ET
Patricia Matthews-Juarez, PhD, Presiding

AGENDA

10:00 a.m. – 11:00 a.m.	**Coffee and Conversations [*Optional Opportunity*]** EnHIP members networking opportunity
11:00 a.m. – 11:10 a.m.	**Welcome and Meeting Opening** Patricia Matthews-Juarez, PhD EnHIP Chair, Meharry Medical College Rueben C. Warren, DDS, MPH, DrPH, MDiv EnHIP Senior Scientific Advisor, Tuskegee University Amanda J. Wilson, MSLS Chief, Engagement and Training, National Library of Medicine
11:10 a.m. – 11:15 a.m.	**Introduction of Keynote Speaker** Patricia Matthews-Juarez, PhD
11:15 a.m. – 11:35 a.m.	**Keynote Q&A** Marcella Nunez-Smith, MD, MHS Director, Equity Research and Innovation Center (ERIC) Yale School of Medicine Facilitated by Daniel R. Sarpong, PhD, Yale School of Medicine
11:35 a.m. – 12:45 p.m.	**Introduction of New and Current EnHIP Members** EnHIP members Facilitated by Patricia Matthews-Juarez, PhD
12:45 p.m. – 1:15 p.m.	**NLM Update** Patricia Flatley Brennan, RN, PhD Director, National Library of Medicine **Discussion and Q&A** Facilitated by Rueben C. Warren, DDS, MPH, DrPH, MDiv

1:15 p.m. – 1:30 p.m.	**Break**
1:30 p.m. – 2:00 p.m.	**NIH Data Management and Sharing Policy** Lisa Federer, PhD, MLIS Data Science and Open Science Librarian National Library of Medicine **Discussion and Q&A** Facilitated by Aramandla Ramesh, PhD Meharry Medical College
2:00 p.m. – 2:30 p.m.	**Journal Selection for MEDLINE and PubMed Central** Kristina Elliott, MLS Publisher Liaison, National Library of Medicine **Discussion and Q&A** Facilitated by Katherine James, PhD, MS, MSPH University of Colorado-Anschutz Medical Campus
2:30 p.m. – 3:00 p.m.	**Research, and Racial and Ethnic Health Disparities in MeSH** Dan-Sung Cho, PhD Senior MeSH Analyst, National Library of Medicine **Discussion and Q&A** Facilitated by Paul Tchounwou, ScD, MSPH, MSc Jackson State University
3:00 p.m. – 3:15 p.m.	**Break**
3:15 p.m. – 4:00 p.m.	**EnHIP 2022 Activities** EnHIP members
4:00 p.m. – 4:10 p.m.	**Recognition of Keith C. Norris, MD, PhD** Professor of Medicine, UCLA Division of General Internal Medicine & Health Services Research Co-Director, Community Engagement and Research Program, UCLA Clinical and Translational Sciences Institute Recognition by Ms. Dolores E. Caffey-Fleming, MS, MPH Charles R. Drew University of Medicine & Science
4:10 p.m. – 4:15 p.m.	**Closing Remarks** Patricia Matthews-Juarez, PhD Rueben C. Warren, DDS, MPH, DrPH, MDiv Amanda J. Wilson, MSLS

PROCEEDINGS OF THE ENVIRONMENTAL HEALTH INFORMATION PARTNERSHIP (EnHIP) MEETING
July 28, 2022

The Environmental Health Information Partnership (EnHIP) convened its virtual annual meeting on July 28, 2022, at 11:00 a.m. ET. The annual EnHIP meeting adjourned at 4:00 p.m. A networking opportunity, *Coffee and Conversations*, preceded the meeting commencement at 10:00 a.m.

The theme of the meeting was "***Forging New Health Equity Pathways for Data Application in Academic and Community Decision Making***." EnHIP Chair, Dr. Patricia Matthews-Juarez, Professor, Department of Family and Community Medicine and Senior Vice President, Office of Strategic Initiatives and Innovation, Meharry Medical College, presided.

Representatives from Participating Institutions

Dr. Patricia Matthews-Juarez*
Meharry Medical College

Dr. Rueben C. Warren
Tuskegee University
Scientific Advisor

Dr. Stephanie Bauer
University of Alaska

Ms. Dolores Caffey-Fleming
Charles R. Drew University of Medicine & Science

Dr. Robert Copeland
Howard University

Dr. João Ferreira-Pinto
University of Texas at El Paso

Dr. Jannett Lewis-Clark
Tuskegee University

Dr. Katherine James
University of Colorado-Anschutz Medical Campus

Dr. Arlene Montgomery
Hampton University

Dr. Milton Morris
Benedict College

Ms. Maletta Payne
Southern University and A&M College

Dr. Aramandla Ramesh
Meharry Medical College

Dr. Kristi Rapp
Xavier University of Louisiana

Dr. Cheryl Taylor
Southern University and A&M College

Dr. Paul Tchounwou
Jackson State University

Dr. Doris Withers
Medgar Evers College, CUNY

Speakers

Dr. Patricia Flatley Brennan
Director, National Library of Medicine

Dr. Dan-Sung Cho
National Library of Medicine

Ms. Kristina Elliott
National Library of Medicine

Dr. Lisa Federer
National Library of Medicine

Dr. Keith C. Norris
Professor of Medicine, UCLA

Dr. Marcella Nunez-Smith
Yale School of Medicine

National Library of Medicine (NLM)
Office of Engagement and Training (OET) Staff

Ms. Anne Altemus

Dr. Alla Keselman

Ms. Louise To

Ms. Amanda J. Wilson, Chief

BLH Technologies, Inc. Staff

Ms. Brittney Davis

Ms. Tammi Greene

Oak Ridge Associated Universities (ORAU) Staff

Ms. Kelli Bursey

Ms. LaFrancis Gibson

Ms. Regina Renfro

I. Coffee and Conversations

The EnHIP Annual meeting kicked off with a virtual *Coffee and Conversations* networking event that included a variety of music to offer a casual atmosphere. This was an opportunity for members to connect with colleagues, and 18 attendees took part in the event. A variety of topics were covered, which included major institution updates, profession updates, COVID-19 community activities, COVID-19 vaccine discussions, and NLM resources for use on institutions' campuses (e.g., Lit COVID).

II. Welcome and Meeting Opening

The Environmental Health Information Partnership (EnHIP) convened its 31st Annual Meeting on July 28, 2022, at 11:00 a.m. ET. The annual meeting was held virtually due to the ongoing COVID-19 pandemic.

Chair: The meeting was called to order by Dr. Patricia Matthews-Juarez, the EnHIP Chair. Her opening remarks included appreciation for members who joined the networking session for a virtual coffee hour and to Ms. Louise To, NLM, for providing the music for the welcoming networking session.

This year's meeting was intentionally planned to focus on data—how data drive our collective thinking and efforts and impact person-centered care. Data also move us to consider how we think about the structure of public health information, electronic medical health records, and our own personal health information records. Consideration should also be given to how data are used, stored, curated, managed, and researched, from the lab to the community. The pandemic has opened our worldview around creating and embracing data as a common language, telemedicine, and ingenious electronic applications.

Senior Scientific Advisor: Dr. Rueben Warren, EnHIP Senior Scientific Advisor was introduced by Dr. Matthews-Juarez to offer his opening remarks. Dr. Warren welcomed the EnHIP members and noted that using a virtual platform to bring EnHIP members together for this annual meeting showed EnHIP's sustainability in the face of significant hurdles. Though circumstances and attitudes may change, the EnHIP mission does not. He asked representatives to not reflect on where we have been, but on where we are and where we are going as a partnership. He acknowledged and applauded the leadership of Dr. Matthews-Juarez.

Program Lead: Dr. Warren introduced Ms. Amanda Wilson, EnHIP Program Lead. The Office of Engagement and Training (OET) strives to be the connector linking NLM/NIH biomedical health information to all of its stakeholders. OET determined that the focus and emphasis would be placed on reaching and engaging populations experiencing health disparities and underserved communities, as well as the professionals who serve them. OET has developed and maintained vibrant partnerships and connections with communities across the country, and even internationally; EnHIP is a clear example of the impact, value, power, and potential of focusing on those partnerships. OET is thrilled to be the mechanism that continues to support EnHIP, its growth, and enrichment throughout the future. Ms. Wilson also thanked the EnHIP representatives who offered to facilitate the speakers' sessions, and the representatives who gave feedback needed to plan and shape the new style of the meeting. OET welcomes EnHIP representatives to give their assessment of what NLM can do to be effective and supportive of member schools' goals and work.

III. Keynote Speaker

Presenter:
Marcella Nunez-Smith, MD, MHS
Director, Equity Research and Innovation Center (ERIC)
Yale School of Medicine
Facilitator: Daniel R. Sarpong, PhD, Yale School of Medicine

Highlights: Dr. Matthews-Juarez introduced Dr. Nunez-Smith and noted that she would engage the EnHIP members in a conversation. Dr. Nunez-Smith would answer questions about her work as the Chair of the Biden/Harris COVID-19 Health Equity Task Force and would share her thoughts about health equity from her current role at Yale School of Medicine. Dr. Daniel Sarpong, a past member of EnHIP representing Xavier University, School of Pharmacy, who is now the Executive Director, Office of Health Equity Research, facilitated the conversation.

Question: We know you served on President Biden's COVID-19 Health Equity Task Force; can you tell us a little more about the purpose and the key areas addressed under recommendations to the President?

Answer: I take a lot of pride in the way the task force was designed; it didn't have the usual suspects and that was purposeful. The team was comprised of those who had lived experience

and worked directly with the communities that were most affected by the pandemic, as well as key leaders across many different departments and agencies in the administration who know what the levers are and how to pull them. Also, being in the same space and workgroup brought richness to the work. The federal staff was integral as well—we had Dr. Martha Okafor serving as executive director and leading the phenomenal federal team. We took the urgency of the President's charge very seriously. The executive order for the task force was a top priority of the President and the Vice President, and we were all witnessing the devastation in our communities and knew it had to be remedied now and prepare for the future. That was our dual charge: what do we need to do in this minute and how do we move into the future? And we all know who is hit the hardest when a national disaster or crisis comes. Thousands of hours went into that task force with meetings, stakeholder listening sessions, monthly briefings, and expert involvement. Our report was delivered to the President in October that included recommendations and a framework for implementation and accountability. That report is currently online at the Office of Minority Health for anyone to access. We want to make sure we are centering and anchoring our communities. We wanted to make sure that we were starting from a place of honoring community expertise, but also having resources to back that up, making sure that expertise we're gaining gets put into policy.

We also talked a lot about data, the limitations of our data, the violence of our data architecture that makes so many people invisible, and we knew we needed a data ecosystem that would drive accountability. We talked a lot about frameworks and shared consensus around what success looks like and what are the benchmarks. We talked about workforce: health care workforce, public health workforce, and community-based workforce. We also knew we needed an infrastructure that is sustainable and durable to meet these goals over time.

Question: To touch on what you said about community experts and what they need, can you give us any wisdom on how to encourage or engage communities' active participation in these matters?

Answer: We have all been on this walk for a long time, and for me, it's a privilege and an honor to be asked to serve in this role at this time. My knowledge is not unique, we are all standing on the shoulders of incredible scholars who have created this evidence base. There is innovation to be had, but for a long-time people have been standing up and saying what we need to do.

Everyone wants to talk about trust, and I do get defensive when people say that marginalized communities aren't trusting because what have we done to prove ourselves trustworthy lately? I think it's smart for people to be skeptical, and it's up to us to reframe that narrative. We need the people who are living this every day to give us the hard facts, we don't need an ego session. The work isn't listening, the work is moving forward with what we hear. Be prepared to be a partner and be prepared to build a new table, and let the people hold you accountable, and be honest when there is nothing you can do to address a situation; answer with integrity and lead with responsiveness.

Question: What was your path to this position?

Answer: I grew up in St. Thomas Virgin Islands and as a child I did not know what I did not have. It wasn't until later that I understood what it meant to be in these communities that we label as underserved, and how that affected my family and how many people died prematurely. My own father had his first major stroke in his early 40s, which left him paralyzed, and I carried that; I was always interested … in the biology and science of humans. And I knew I wanted to be a clinician, but I wasn't interested in "staying in my own lane"; I wanted to make my contributions by understanding healthcare, and yield to those who know more. I've always considered myself in service to health policymakers, and I was happy to pick up the phone and say "yes" to the federal administration.

Comment: Dr. Cheryl Taylor relayed her experience with a short example regarding funding for COVID testing. Dr. Taylor said that due to gas prices, her team did not have funds to travel to rural areas to complete testing, so they used the college's commencement event to set up sites for test distribution. In an effort to avoid social pressure, they left the test kits on the table instead of individually handing them out. At the end of the event, all test kits had been taken.

Dr. Matthews-Juarez thanked Dr. Sarpong for being the bridge between EnHIP and Dr. Nunez-Smith, and she thanked Dr. Nunez-Smith for accepting the invitation to speak. She also highlighted three points made during the keynote. First, that community is the place where experts exist and tell you what they need. Second, as policymakers, we must think about innovation in broader terms, and listen and take actions that lead to implementation. And finally,

if you have a partner, take the walk with them and don't leave them on the sideline. Always strive for what you know and trust.

Post-Keynote Reflections: After the session, Dr. Matthews-Juarez asked the EnHIP representatives to give feedback on the session.

Feedback:

- Dr. Warren appreciated that the format of the session was a "conversation" rather than a lecture. He also noted that it was a reminder that we need to focus on what has been done in the past and use that to move forward.
- Dr. Milton Morris and Dr. Kristi Rapp both appreciated that Dr. Nunez-Smith has achieved a lot of success in her roles but never forgot her beginnings. Her background adds to her compassion and understanding of the health equity work that she has decided to do.
- Dr. Robert Copeland stated that it was refreshing to see someone at that high level have such humility, and that she makes such a heavy impact because she has been affected by the limitations of health in underserved populations. He added that she realizes she stands on the shoulders of others' work and research and, therefore, recognizes the impact of service.
- Dr. João Ferreira-Pinto said Dr. Nunez-Smith is right and what she said aligns with what his university tries to do in their Texas border town. They focus on listening to the people because, if you don't go into the communities, you make a lot of mistakes. He added that the state of Texas is currently dealing with vaccine hesitancy and the only way to find out why people are undecided is to go out and talk to them.
- Dr. Cheryl Taylor said that Dr. Nunez-Smith demonstrated that we should recognize our assets within the health community, and that we shouldn't get stuck in one role. We need to nominate an EnHIP member who can serve on a CMS policy-making panel that can drive how data are set up. EnHIP should be at the table.
- Dr. Paul Tchounwou appreciated that Dr. Nunez-Smith lauded community engagement to solve issues as communities are our partners, not only a resource.

- Dr. Stephanie Bauer and Dr. Katherine James both appreciated Dr. Nunez-Smith's observations, especially from the frontlines. They noted her problem-solving initiatives as well as ability to identify and call out systematic difficulties regarding the "violence" in data architecture.
- Dr. Bauer would have liked to hear more about data architecture and how some of the data that we are looking to make policy decisions needs to be examined more carefully but is glad that Dr. Nunez-Smith is engaging in that conversation.
- Dr. Matthews-Juarez agreed, and asked representatives to email Dr. Nunez-Smith to gather more insight regarding data architecture. For example: Medicare/Medicaid data that researchers are interested in are expensive to obtain.

IV. Introduction of New and Current EnHIP Members

Presenter
EnHIP Members
Facilitator: Patricia Matthews-Juarez, PhD, Meharry Medical College

Dr. Matthews-Juarez asked the EnHIP representatives to give a short update of their programs and any changes that have occurred since the last meeting.

2012–2022 EnHIP Outreach and Engagement Award and Institutional Updates:

Dr. Cheryl Taylor, Southern University and A&M College: Dr. Taylor introduced Ms. Maletta Payne, Librarian, to discuss the 2021 EnHIP Outreach and Engagement Award received by the University. The award supported the EnHIP project surveys, improving the NLM website for community users, and development of modules using electronic applications to push community engagement. Ms. Payne said the process and the feedback from the community were invaluable. Dr. Taylor announced that Dr. Dennis Shields, former Chancellor of the University of Wisconsin, is the new president of Southern University and A&M College.

Dr. João Ferreira-Pinto, University of Texas at El Paso: Data collection for the food insecurity project is underway for the 2022 EnHIP Outreach and Engagement Award.

Dr. Milton Morris, Benedict College: The 2021 EnHIP outreach and engagement award trained students on how to involve and impact their community. As a result of this training, the students

recorded COVID-19 precaution and safety presentations for public housing recipients. Benedict College is also collaborating with the University of South Carolina on heat mapping.

Dr. Stephanie Bauer, University of Alaska: The University serves Alaska-Native students and other diverse student populations. Community engagement is an ironic and tragic process to some extent in our current environment, especially politically, as we attempt to do outreach about COVID-19. But, educating others about health equity and the steps needed to raise awareness of the data and ensuring that data are informative is an important process.

Dr. Katherine James, University of Colorado-Anschutz Medical Campus: As a Hispanic-Serving Institution (HSI) that is new to the EnHIP program, I am thankful to be here, to share ideas, and to learn from others. The Department of Environmental & Occupational Health is currently focusing on climate justice in rural communities, specifically populations that are most susceptible to drought, wildfires, and extreme air quality, as well as the loss of water resources and the decline in drinking water quality that has affected Colorado.

Dr. Aramandla Ramesh, Meharry Medical College: We have new leadership: Dr. Jeannette South-Paul has joined Meharry as Senior Vice President and Chief Academic Officer; Dr. Merry Lindsey is the new Dean of the School of Graduate Studies and Research; and Dr. Fortune Mhlanga is the new Dean of the School of Applied Computational Sciences.

Meharry has joined the NIH-funded AIM-AHEAD Consortium to advance health equity and research diversity and will be the Southeastern hub for the program. The initiative aims to enhance the participation and representation of researchers and communities currently underrepresented in the development of Artificial Intelligence and Machine Learning (AI/ML) models. It works to improve the capabilities of emerging technology beginning with the closure of gaps in the AI/ML field and then extend to other diverse data sets. Dr. Paul Juarez, Professor and Director of Health Disparities Research Center of Excellence, will be the lead. Meharry is also partnering with Microsoft's AI for Health program, to enhance capabilities in cloud computing to aid in the health care industry.

The Institute for Health Disparities, Equity, and Exposome is now established at Meharry and led by Dr. Paul Juarez. There will be six centers dealing with health disparities, including the

National Center on Medical Education, Development, and Research which will be led by Dr. Pat Matthews-Juarez.

Meharry Medical College received a $20 million gift from author and philanthropist, Mackenzie Scott. These funds provide a significant opportunity for Meharry to meaningfully address health disparities, advance health equity, and expand academic programs.

Dr. Doris Withers, Medgar Evers College, CUNY: Dr. Patricia Ramsey has been appointed as the new president; she is the first woman and first scientist to hold this position. Dr. Ramsey is making great strides in restructuring the School of Science, Health and Technology. A meeting has been scheduled to discuss those changes as well as who will be the next EnHIP representative. Dr. Withers has also been designated as professor emeritus, which is a great honor.

Dr. Jannett Lewis-Clark, Tuskegee University: After two and a half years, students have completed a project with IBM pertaining to diagnoses and diseases. They are now in the process of analyzing the data collected from the project, and she will send the link to Ms. Wilson to share with the group.

Dr. Kristi Rapp, Xavier University of Louisiana: Dr. Rapp replaced Dr. Sarpong as the EnHIP representative. She currently serves as the associate dean of administration of Xavier University College of Pharmacy. The Xavier University mission is to prepare students to impact medically underserved communities and eliminate healthcare disparities. A number of faculty have received grant funding to research and address COVID-19 vaccine hesitancy, and our Center for Minority Health and Health Disparities Research and Education continues to engage the community in a variety of topics, and we continue to have our annual health disparities conference led by Dr. Kathleen Kennedy.

Dr. Robert Copeland, Howard University: As an associate professor and the chair of the Department of Pharmacology in the College of Medicine at Howard University, as well as recently becoming an adjunct professor of the MPH program teaching environmental sciences, one particular interest in public health, is the use of GIS as a tool for understanding public health around the area. Though NLM and NIH resources are still being taught to medical students, it has shifted more towards graduate students and MPH students. The university received a grant

for MPH students in environmental sciences to study the distribution of asthma rates across D.C. Students use a geographic information system (GIS) to visualize where the highest levels are concentrated and determine why rates are high in particular parts of the city. They also look at the amount of particulate matter in the air and correlate that with asthma rates. These are issues in which students are interested. One student completed a study to evaluate gaps in the use of GIS technology in public health education, including at a consortium of African-American public health programs. Another student is looking at a GIS study around COVID-19 by using a "hungry heat map" to determine how the district wards have changed in allocations between control years (2017–2018) and pandemic years (2019–2021).

Dr. Paul Tchounwou, Jackson State University: Dr. Tchounwou serves as the presidential distinguished professor and the executive director of the NIH-funded Research Centers in Minority Institutions (RCMI) Program's Center for Environmental Health that includes health disparity research. The Center has community engagement as a core competency to establish long-term relationships with community-based organizations in order to address health disparity issues and concerns in minority and underserved communities in the areas of Central Mississippi. It also promotes engagement between communities and biomedical research to improve community health. Two administrative supplements through the notice of special awards were received to both bring in faculty members from the College of Liberal Arts, Department of Clinical Psychology to develop and implement a project related to drug abuse and neuroscience in underrepresented communities in Central Mississippi, as well as establish a biomedical neuroscience training program to develop data science cues.

Dr. Arlene Montgomery, Hampton University: Dr. Montgomery announced that, after 44 years, Dr. William Harvey has retired as president of Hampton University. He is succeeded by U.S. Army-retired Lt. General Darrell K. Williams, who is an undergraduate alumnus of Hampton University. The Hampton University COVID-19 Clinic and Mobile Unit services the university and surrounding communities with testing and vaccination, and last week they opened the booster clinic. The School of Nursing has a partnership with Sentara Health Care System for a community outreach project. The project will use the COVID-19 van to perform chronic disease screening services to assess vision, cholesterol, diabetes, blood pressure, and risk of falls. The COVID-19 testing and vaccination services will remain part of the effort. Sentara Health has

also provided funds for school scholarships; as straight funds from foundations are rare, this is welcomed. The gerontology center was established two years ago, and that area is doing a lot for older populations in terms of health outreach, specifically at health centers, community centers, and other areas older people congregate. It has established numerous partnerships. She noted that she accepted the interim dean position in the Office of the dean. She requested nominations for applicants for deanship. Recommendations should be sent to Hampton University's Office of the Dean.

Ms. Dolores Caffey-Fleming, Charles R. Drew University of Medicine and Science: Ms. Caffey-Fleming is an assistant professor in the College of Science and Health. She indicated that several programs with high school and college students have instructed on resources that are available through the National Library of Medicine. Three schools within Charles R. Drew University are undergoing significant changes: The College of Medicine hopes to have a four-year medical school opening in 2023, the School of Nursing has a new dean, and the College of Science and Health has an interim dean.

V. NLM Update

Presenter:
Patricia Flatley Brennan, RN, PhD
Director, National Library of Medicine
Facilitator: Rueben C. Warren, DDS, MPH, DrPH, MDiv, EnHIP Senior Scientific Advisor

Highlights: Dr. Brennan announced that the buildings on the NIH and NLM campuses are being renovated to better serve current operations, and specifically mentioned the expansion of both the Intramural Research Program (IRP) and ClinicalTrials.gov. She introduced the leadership team, who not only run their individual operations but also meet bi-weekly to consider matters that pertain to the entire NLM. They have built a strong working relationship.

Dr. Brennan announced that NLM continues to be guided by the strategic plan which has a theme of accelerating discovery and data-powered health. The three pillars of the plan are accelerating discovery and advancing health through data-driven research; reaching more people in more ways through enhanced dissemination and engagement; and building a workforce for data-driven research and health. NLM is making incredible accomplishments in what it had envisioned in 2017 to be the needs of the future, and also be able to respond to things that it had

never before anticipated. NLM is expanding the accessibility of its data resources by using more cloud instances to make its molecular data available. It is partnering with publishers to make literature for the pandemic and public health emergencies free to the public by taking down the paywalls and making information open. Dr. Brennan referenced a video (the link can be found at https://www.youtube.com/watch?v=mq-zPCQR2qY) spotlighting technology outreach to reduce health disparities.

NLM is envisioning the Library Operations of 2036. Library Operations refers to the acquisition and management of the NLM collections, including resources, such as electronic journal subscriptions and promoting health data standards. The long-range planning strategy has five goals: create a modernized structure, unify and transform collections, support and promote the use of health data standards across the U.S., provide customer support experience, and know and equitably engage all users.

NLM has updated the MEDLINE searching system; it now has fully automated indexing for the full set of MEDLINE journals. This means that within a few days of receiving a citation from a publisher, it is fully indexed (tagged with appropriate words) and made available to the public. This has eliminated the backlog of indexing, but it still requires that the NLM preserves its human expertise to make sure that specialized articles get the attention they need.

NLM has partnered across NIH with other groups like *All of Us* program and the Community Engagement Alliance (CEAL) Against COVID-19 Disparities initiative. NLM has continued to promote access to literature on molecular data, and the NLM Board of Regents oversees the NLM collection policy and has been updated to address data in addition to the literature.

The Lister Hill National Center for Biomedical Communication provided the first public database of parasitic images that can be used for both machine learning and teaching.

The Sequence Read Archive (SRA) is NIH's largest biological resource that is now available on the Amazon Web Services (AWS) Open Data platform. This has supported over 60 million user interactions to over 18 million sequence records. This represents the future of bringing data to the public and allowing them to explore and run computations. These data have been particularly important for understanding the SARS-CoV-2 mutation and the variance analysis results.

NLM is committed to diversity, equity, and inclusiveness and has undertaken a number of activities in this area. One of these activities is opening a summer internship for diversity data science interns. NLM has brought five young people on campus to work on learning data science skills and to get a feel for being a researcher; this is a specific strategy targeting historically black colleges and universities (HBCUs) and minority-serving institutions (MSIs).

In regard to NLM's extramural program, NLM awarded institutional training grants for research and training in biomedical informatics and data science. NLM has two new partners, the Medical University of South Carolina and Johns Hopkins University. Also, the University of California, Los Angeles, which was an original partner but had since left, renewed their participation. Across the country, you can see where NLM's predoctoral and postdoctoral training programs exist. Some of these are in institutions that have strong connections to library sciences or strong outreach to tribal colleges or minority groups. Specialized support and extra funding have been provided to engage outreach to improve the pipeline of diversity scholars in biomedical informatics and data science. One specific way NLM has done this is through the R25 program, which is a funding opportunity that supports short-term research experience in biomedical informatics and data science with the goal of enhancing diversity.

For NLM's intramural program, new investigators have been brought in: Dr. Michael Chiang will have a small lab looking at phenotyping on the basis of retinal images, which fits well with the data science expansion. Dr. Jeremy Weiss, an MD/PhD investigator focuses on computational health informatics. He will be specifically looking at how to extract knowledge and reasoning from electronic health records and medical claims databases. His research is focused on ensuring fairness and mitigation of discrimination in machine learning algorithms that are used.

NLM is searching for a permanent director for NCBI who will also hold the title of NLM associate director for scientific data resources; an announcement is expected in the next three to four weeks. NLM plans to unify its scientific programs under one umbrella, focusing on how advanced computation expands knowledge of biology and clinical care. As such, NLM is also looking for its first scientific director; this will be separate from the scientific directors of Lister Hill Center and the National Center for Biotechnology Information. In fiscal year 2023, NLM plans to fill the following leadership positions: deputy director for operations and innovations,

extramural program director, and director for the Lister Hill Center for Biotechnology Information.

For budget updates, in fiscal year 2022 NLM had a total of $479,439,000 as the NIH budget increased. The president's budget will take another reduction in fiscal year 2023, however the House and Senate markup are showing the NLM budget roughly in the area of $495 million.

The Advanced Research Project Agency for Health (ARPA-H) is a vision of President Biden implemented through and with support of NIH. It will be a unit within NIH with a goal to support transformative, high-risk/high-reward research. Over the next few weeks announcements will be made regarding its location.

NLM is having a virtual Lindberg-King lecture and symposium on September 1, 2022. *Science, Society, and the Legacy of Donald A. B. Lindberg, MD* will be a daylong virtual event beginning at 9:00 a.m. ET.

Ms. Wilson will transfer from OET and EnHIP lead as she has been appointed as the permanent deputy associate director for library operations. Alla Keselman will be acting director of OET and will serve as EnHIP lead.

Question: When you mentioned the three pillars of the strategic plan, do they work together or are they independent?

Answer: They do transcend and transect. Through the network and the support of our regional libraries, we are offering data science training to library scientists around the country, and to lay people to teach them what data are and what it means to share data. There is also a new program set up within NLM that ensures all NLM staff is trained in data science.

Question: Is there space for the role of a public librarian?

Answer: We've learned three things about the importance of public librarians in advancing data science for society. One of them is to work on disinformation and misinformation to build artificial intelligence models that are trustable. That requires educating the public. Secondly, public librarians are often called on by people, businesses, and communities to better understand the federal government, access to data, and what they can make use of within their community.

The librarians are the experts on the public side, and NLM brings the health connection to do that. The third area is that public libraries become a site where we can connect people to the future.

Question: Currently, access to data that are sent to Westat and other research data banks are housed behind paywalls that make pulling datasets and other research expensive. Will there be an opportunity in the future where large datasets (e.g., Medicare, Medicaid that are collected by scientists will be offered to academic centers and research at a reasonable or no price? That price is a barrier to getting information and health data back into the community in order to impact health equity and to eliminate health disparities.

Answer: We are working at the federal level to open up data sharing. There is an NIH initiative called AIM-AHEAD (https://aim-ahead.net/) which seeks to bring the power of artificial intelligence to areas that could help us better address health disparities. It is building capacity for data access and data management locally. For example, it takes a year to understand the Medicare data sets, so AIM-AHEAD wants to build a frontend to that so not everyone has to spend a year understanding that data. While there are many issues of privacy and business interest about releasing Medicare data, the government wants all data that are paid for by the government to be freely available to the people.

VI. NIH Data Management and Sharing Policy

Presenter:
Lisa Federer, PhD, MLIS
Data Science and Open Science Librarian
National Library of Medicine
Facilitator: Aramandla Ramesh, PhD, Meharry Medical College

Highlights: The NIH Data Management and Sharing (DMS) policy goes into effect January 2023. The policy covers research that is funded either in whole or in part by NIH that generates any type of scientific data, and that includes any and all kinds of funding (grants, contracts, outside institutions, intramural research, etc.). The first requirement of the policy is that the awardee must submit a data management and sharing plan (DMSP) which outlines how scientific data will be used during the life of the project and how it will be shared afterwards, and it has to identify any limitations or restrictions on sharing. The second requirement is compliance with the

awardee's plan as approved by the NIH Institutes, Centers, and Offices (ICO). The DMSP will become part of the terms and conditions of the grant or other awards, so compliance of the plan is expected; however, mechanisms are in place to update the plan as needed. Six elements of the DMSP include:

- Description of the data that the awardee expects to collect, plus metadata and documentation
- Related tools (software, code, etc.) that will be needed to access or work with the data
- Standards that the awardee intends to use for the data/metadata that they will collect
- Data preservation, access, and when the data will be shared and for how long
- Considerations for access, distribution, reuse, limitations, and restrictions
- Oversight of data management and sharing, including who is responsible

More information on these elements can be found at https://grants.nih.gov/grants/guide/notice-files/NOT-OD-21-014.html.

The scope of the data that are expected to be shared falls into three areas: (1) data should be adequate to validate and replicate the study findings; (2) data resulting from the study but not necessarily supported in a publication; and (3) data without statistically significant findings that do not result in publication. This policy only applies to digital data and digital research object. Anything that doesn't constitute final research data does not fall under this policy.

The aim of the policy is to make data as open as possible, but also as closed as necessary. There are acceptable limitations on sharing, but the limitations will need to be addressed in the management and sharing plan. Some examples are

- Continuing data collection that began with existing consent but does not cover data sharing
- If consent cannot be obtained from participants
- When the privacy or safety of the participants could be compromised or they would be at risk for identification if their data were shared
- Federal, state, local, or tribal laws or policies that prohibit disclosure, like HIPAA
- Datasets that cannot be digitized with reasonable efforts

The DMSP plan will need to be submitted with applications for funding in the Budget Justification section. After submission, peer reviewers can comment on, but not score, the budget, and NIH program staff will assess the plans. Plans can be updated if needed after the award is in place. In terms of compliance, the plan will be incorporated into Terms and Conditions to ensure that awardees complete the plan as submitted and will be monitored at regular reporting intervals. Compliance may factor into future funding decisions, both for the individual but for the institution as well. The funding needs to be used within the period of performance as funds cannot be used to prolong any aspect of the plan past that. For example, if you plan to share data in a repository for 10 years, you cannot use funding to pay for that use as it will go past the end date.

The DMSP is part of a broader policy landscape which includes many policies that are already in place with regard to sharing at NIH, and those policies may also apply to certain awards. NIH ICOs may also provide specific guidance that will apply to some awards. It's important to research what other policies are in place that may affect your award.

Question: Do you have further information on creating the plans?

Answer: There are resources available to help start writing a DMSP, and the National Academies of Sciences, Engineering, and Medicine have developed a framework for forecasting long-term costs to help estimate funding needs. NIH encourages subject-specific, open access data sharing repositories, for example, PubMed Central, Zenodo, Figshare, Dryad, or cloud partners in the STRIDES program. One way to locate a subject-specific repository is the Trans-NIH Biomedical Informatics Coordinating Committee (BMIC). They are not necessarily NIH-endorsed but found to be appropriate. More information on the sharing policy can be found at http://sharing.nih.gov.

Question: Some of the other funding agencies also have health-related repositories. How does NIH maintain the link to the Trans-NIH repositories?

Answer: We take recommendations from the public, and the list is not limited to NIH-supported or NIH-affiliated repositories because it's a very complex research data ecosystem. I don't think we'll ever have a truly comprehensive list, but we do maintain a list that will be most diverse and useful.

Question: Does NLM have repositories in other countries?

Answer: I'd be happy to follow up on that, and if you have specific repositories, we can check them against the list. We'd be grateful to receive feedback on repositories.

Question: How do you nominate individuals that may participate with you on one of these groups so that there is cross-interaction for what is happening around academic science centers that are developing large datasets and want to use the repositories?

Answer: The group I spoke about is internal to NIH and we have a primary representative from each of the NIH institutes and centers that are nominated by their scientific director.

Question: I'm collaborating with other researchers at another university on heat mapping in various communities to gather information on the adverse impacts of global warming or increased heat. In terms of areas of research, it appears that increased heat is a significant area that can encompass a range of adverse impacts. Is there a high range of data that can be generated related to climate change and other related areas?

Answer: There are a lot of data in that range that wouldn't be included in the repositories that we maintain because it isn't primarily focused on health data. But, other agencies will have data on each aspect of the climate change umbrella.

VII. Journal Selection for MEDLINE and PubMed Central

Presenter:
Kristina Elliott, MLS
Publisher Liaison, National Library of Medicine
Facilitator: Katherine James, PhD, MS, MSPH, University of Colorado-Anschutz Medical Campus

Highlights: PubMed is one of NLM's most high-profile resources, and one of the most visited resources from the federal government. To reframe what people generally think of PubMed, while it is a way to search for articles in any biomedical topic of interest, it is actually searching three major databases: MEDLINE, PubMed Central (PMC), and Bookshelf. Bookshelf is a database of books and reports, whereas MEDLINE and PMC contain biomedical journals. The main difference between MEDLINE and PMC is access to full-text articles. MEDLINE journals only make citations and abstracts readable, while PMC provides the full text of participating

journals. Also, in MEDLINE, all articles include medical subject headings (MeSH) that NLM has added to the content for precise searching.

MEDLINE has over 29 million citations available, and 5,200 journals. It's a diverse database that includes over 40 languages. PMC launched in 2000, the content comes through in three ways:

- Participating journals send full text of the entire journal
- Some journals send PMC author manuscripts, with research funding requiring authors to make their articles available
- Digitization projects to make historical information available.

The process for a journal to participate includes an application and review process, but MEDLINE and PMC have slightly different eligibility requirements, such as a minimum article requirement and time publishing. The scientific review process for MEDLINE and PMC both focus mainly on scientific rigor and policy enforcements, but also differ slightly with MEDLINE requiring journal significance, editorial board credentials and expertise, and website usability. Both databases receive a great many applications a year, and MEDLINE has a 12% acceptance rate, while PMC has a 30% acceptance rate. PMC and MEDLINE are important to users, though they have different missions and different requirements.

Anyone interested in having their journal apply for inclusion can go through a simple application process followed by a rigorous review process. If there are any questions regarding the application process, please email PMC (pmcapplication@ncbi.nlm.nih.gov) or MEDLINE (NLMMEDLINEapplication@mail.nlm.nih.gov).

Question: There are many journals started by reputable publishing houses, but there has been an increase in new journals. How long does it take for any articles published in those new journals to appear in PubMed? While there are criteria and evaluation used for selecting journals, does the journal's impact factor make a difference in selection? And are open access journals automatically picked up by PubMed?

Answer: NLM does not use impact factor when making journal determinations. The scientific rigor of the articles examined is what is most important. In order for a journal to participate in

PubMed, the journal has to apply, regardless of being open access. Journals have to choose which database in which they want to participate by choosing either the MEDLINE or PMC application process—they would not be added automatically.

Question: With regard to the differences in the review process between MEDLINE and PMC for journal submissions, do applicants usually submit their request to both of these databases with the expectation that they'll be published in one of them?

Answer: It varies, but you can apply to both at the same time. Most make a strategic decision to apply to PMC first because the acceptance rate is higher, but most of the time the eligibility requirements (such as if the journal provides access to full-text) take away the factor to choose.

Question: According to the graph in your slides, PubMed is growing exponentially—what are the reasons for that? Is it just access to full-text articles?

Answer: Yes, most of the growth of PubMed is due to open access publishing and full-text sharing of PMC. NIH and other organizations' funded research have led to the growth in PubMed as well.

Question: Many times, people will use a regular search engine like Google to find articles, especially open access; how does NLM navigate that in regard to your own search engine?

Answer: The main way people land on PubMed, and honestly every website run by NLM, is through search engines like Google. We lean into this and respond by going through redesigns that make the website more user-friendly for people who are not necessarily researchers and try to put the information into more context.

Comment: Individual investigators who have researched for NIH, regardless of journal status, can publish a manuscript using the NIH Manuscript ID system (NIHMS–https://www.nihms.nih.gov) and after a review it can be indexed in PMC.

VIII. Research, and Racial and Ethnic Health Disparities in MeSH

Presenter:
Dan-Sung Cho, PhD
Senior MeSH Analyst, National Library of Medicine
Facilitator: Paul Tchounwou, ScD, MSPH, MSc, Jackson State University

Highlights: Medical subject headings (MeSH) is a comprehensive, controllable medical thesaurus produced by NLM. Medical vocabulary has a long history with NLM, back to 1960 when it first published an official list of subject headings. It incorporated two very important innovations. One was to have a single source for indexing and cataloging journals and books, and the second was to use this combination of headings and sub-headings to limit the number of returns in a list. In 2001, MeSH changed from term-centric to concept-centric so that it can actually aggregate related concepts together for a single record.

MeSH is synonymous with descriptors, but in reality, it is more in depth. There are the main descriptors that point to what the journal is about, and then there are also

- Topical descriptors, like COVID-19
- Publication descriptors, like clinical trials or case studies
- Geographic descriptors that include regional terms
- Check tag descriptors for gender

In addition to descriptors, there are supplementary concept records (SCR) as well as qualifiers (subheadings). It's important to keep these separately because they are refreshed and updated under different cycles. Descriptors and qualifiers are refreshed once a year in November and SCRs are updated on a daily basis.

There are over 300,000 SCR index concepts that typically cover chemicals, protocols, rare diseases, or organisms. SCRs are also used to bring specialty terminology into MeSH for specific research groups. Think of SCRs as junior descriptors because the MeSH team didn't have time to fully form the concepts into descriptors but wanted to take advantage of the aspect that they are easier to make and update. SCRs maintain many MeSH fields that PubMed searchers require, and also link to descriptors. Qualifiers, or subheadings, are indexed in conjunction with descriptors to group citations of a particular subject together. For example, instead of searching for only COVID-19, you can search for history of COVID-19 or transmission of COVID-19.

MeSH needs to represent all the domains in PubMed; to do this, MeSH works on special projects to harmonize data and represent underserved domains. While working on special projects, staff can work with other scientists to identify vocabulary and terminology that should be added to

MeSH. A specific example is the work MeSH did with the Office of Behavioral and Social Sciences Research (OBSSR) to identify and develop concepts and terminology around social determinants of health (SDoH) that MeSH didn't have. The first step was to identify existing MeSH coverages for SDoH terms, which the team found lacking. Staff then extracted relevant concepts from multiple reliable sources and graphed them to determine which MeSH branches each one would belong to. Concepts were prioritized using two metrics: (1) PubMed publication counts – selection of candidates with more than 250 publication counts at the concept level, and exclusion synonyms with no publication count; and (2) association between each concept candidate and the keywords "social determinants of health" and "social processes" to select those candidates with more than nine publication co-occurrence counts. The process filtered 888 concepts down to identify 50 that were entered into MeSH in 2021, and 50 more in 2022. In 2022, 46 terms in 24 new descriptors, and 34 terms in 21 existing descriptors were entered; in all we've added 80 new terms related to SDoH in 45 descriptors. Since the project ended, MeSH indexed 2,806 articles using the new SDoH descriptors, and 143 articles are co-indexed with SDoH in PubMed. Dr. Cho proceeded to share how many times the newly added descriptors to SDoH are being used to index MEDLINE articles. They vary depending on the terms but overall they are doing well and showing impact.

Question: Were educational levels considered as a concept when adding terms to SDoH?

Answer: Educational levels were one of the terms found during the project. Though it was in the top 25th percentile, it was not one of the top 50 that were ultimately entered this round.

IX. EnHIP 2022 Activities

Ms. Wilson recognized the achievements of the EnHIP members that responded to the ListServ request sent out earlier in the month.

- Dr. Milton Morris, Benedict College, was the recipient of the 2020 Joe Beck Educational Contribution Award, which is given annually to a National Environmental Health Association (NEHA) member for an educational contribution designed for the advancement of environmental health professionals. Though the award was presented in 2020, the presentation was delayed due to COVID-19.

- Dr. Cheryl Taylor, Southern University and A&M College announced that the school was designated as a RO2 Carnegie Research University, which will allow for more opportunities, activities, and funding. Additional funding received from NLM permitted the school librarian, Maletta Payne, to develop modules for DailyMed, which ended up having high usage for people in the community. Data are available that provide information on populations and interests, as over 500 community-based participants were reached in this initiative. Funding was also given from the Louisiana Department of Health that allowed the university to transition modules from NLM to another grant activity that is community-based, and the librarians have been added to the staff for technology and content work.
- Dr. João Ferreira-Pinto, University of Texas at El Paso, announced that Dr. Jason Mallonee was awarded the 2022 EnHIP Outreach & Engagement Award for the food storage security project conducted pre- and post-COVID-19 pandemic. The state of Texas granted $5,000,000 to study COVID-19 vaccine hesitancy. A $5,000,000 NIH grant was awarded to build an imaging and behavioral neuroscience facility to address the mechanisms that contribute to health disparities among Hispanic people. Jorge Munoz, Assistant Professor of Physics, was named a 2022 Cottrell Scholar by the Research Corporation for Science Advancement. The Carnegie Research University RO1 designation was renewed from 2019, with a $600,000 grant from the National Institute of Diabetes and Digestive Kidney Diseases to study the impact of electrical stimulation and muscle stimulation on the metabolism of Mexican-American adults who are at risk for developing type 2 diabetes. Dr. Ferreira-Pinto added that the University of Texas at El Paso was also ranked first for social mobility.

Other Business

Ms. Wilson announced that there is a planned activity for the fall to review the 2021 awards, give a status update for 2022 activities, and to explore accomplishments, impacts, and networking.

There will also be an announcement of opportunities for EnHIP regarding the distinction between predominantly black institutions (PBIs) and HBCUs. Louise To, NLM, has been

working on engagement with the member institutions for an oral history project, and she will work with representatives to include documentation of the program's impact over the years.

Finally, the social network analysis project (SNAP) report will be available to EnHIP members. SNAP was developed as an effort to facilitate better partnerships and to build a "new table" for NLM and EnHIP. Fourteen EnHIP representatives participated in interviews on how the EnHIP partnership is going. Ms. Wilson is thankful for the opportunity to learn more about partnerships.

A summary of the report will be sent out to all member institutions via ListServ. Key benefits heard during the interviews were that EnHIP members felt NLM viewed them as partners, and that the access to NLM resources and other institutions added value. Challenges faced were the virtual meetings, limited capacity for engagement with NLM, and organizational changes (SIS and other programs combining to form OET) that could have been made clearer. To combat these challenges, OET is looking to sunset certain resources and align product offerings to better focus on what NLM does well. Also addressed is how to better ensure transparency and provide information regarding what's happening at NLM in a more direct and timely manner. EnHIP members also wanted more shared decision making, and hopefully the members see that NLM engaged with members by conducting check-ins and information requests via ListServ as the meeting program was built.

Other challenges included the end of community-focused NLM resources, and lack of appropriate resources. In answer to this, NLM is looking at more training opportunities and ways to connect with more product owners, and to expand partnerships with librarians in institutes and communities. EnHIP will also continue to increase communication between members and the executive board. There will also be steps taken to develop outreach awards for the upcoming year.

Dr. Warren said that EnHIP still faces a difficult time during the pandemic, but the members have done extremely well staying connected and moving forward. He posed the question of how we should come out of the pandemic, and what we should do when it's appropriate to get back together in-person. Also, some of our members at various institutions are leaving and we need to chronicle their contributions to the whole, as well as fully embrace the new members and their

transition. The sustainability of EnHIP is phenomenal and needs to be documented well. We have sustained leadership due to support from NLM.

Dr. Patricia Matthews-Juarez asked for feedback on the engagement of members with the executive committee to work toward better outcomes. In addition to the SNAP report, Dr. Matthews-Juarez noted there are other avenues of sharing information, such as journal publications, that EnHIP members can write together in order to circulate information from each institution. In light of Ms. Wilson and OET developing a communication plan, Dr. Matthews-Juarez recommends that journal publications and other types of collaborations, be considered in the plan.

In terms of funding, NLM additional funds should go towards new awards for EnHIP as the EnHIP awards get bigger and new schools are highlighted. Dr. Matthews-Juarez also recommends that we highlight the work and accomplishments of each of the schools by posting on the NLM or EnHIP website or Dr. Brennan's blog. EnHIP should also spotlight member representatives in a blog post, from their perspective, about working with their institution and EnHIP. Funding should also be made available to offer small-scale courses for young people and scholars to participate in data science within NLM. EnHIP should begin to develop a new paradigm and job description for librarians so they are embedded in the academic and community engagement team. This approach underscored and promoted the trans-disciplinary team of EnHIP from a partnership shift. We also need to market EnHIP because it is such a powerful group. She asked the group for feedback and comments.

Comments:

Ms. Dolores Caffey-Fleming said the many of the EnHIP members have tried to keep the importance of research and data collection front and center of their work. She indicated that Charles R. Drew now has two cohorts of high school students and continues to train them on NLM resources and programs. The young people are doing research papers and projects to present using these resources. We need to get into high school and get students used to using information that is valid rather than quick Google searches to make sure they get the correct information.

Dr. Jannette Lewis-Clark circled back to the PubMed presentation to stress its importance on how we look at data and the issues pertaining to minority populations that come along with it.

Dr. Matthews-Juarez reiterated the importance of an oral history of our experience with EnHIP, specifically on the intersectionality of environmental health disparities and nursing education, which has brought us to the concept of health equity. She recommends that Ms. Wilson set aside funding for a journal supplement that all member schools can collaborate on and publish their research. Funding should also be used to identify mentors and coaches to work with students from HBCUs, HSIs and Tribal Colleges (TCs).

It was noted that Dr. Warren is the editor of The Journal of Healthcare, Science and the Humanities at Tuskegee and has experience with journal supplements. He offered the opportunity to do a special issue on EnHIP that would be on PubMed, and coordinate with Ms. Wilson regarding the process of that.

X. Recognition of Keith C. Norris, MD, PhD

This year, Ms. Dolores E. Caffey-Fleming of Charles R. Drew University of Medicine & Science nominated Dr. Keith C. Norris of UCLA Division of General Internal Medicine & Health Services Research for his leadership and youth outreach. Ms. Caffey-Fleming introduced Dr. Norris as a great man who has done so much for not only NLM, but for so many researchers and future researchers. Dr. Norris ventured into electronic health data before it was in demand as a way to convey messages for healthcare. He has been a community partner in research and directs NIH Research Training and Grants and the NIH Diversity Program Consortium planning and evaluation at UCLA. He has been continuously funded by NIH and has done phenomenal research in chronic diseases, diversity, and equity for decades. He has also worked extensively with high school students in conjunction with NLM for the distance learning program.

Dr. Norris thanked NLM/EnHIP for the recognition. He noted that it is great to be part of the EnHIP programs supported by NLM. He appreciated being able to reach out to students and offer a vision of a life that they might not otherwise have. Doing so takes a concerted effort from many individuals from many institutions and having that support from NLM is crucial to building these pathways for students.

Ms. Wilson mentioned that the theme for the day has been forging a path and not forgetting where we come from, the role of data in communities, and being authentic and trustworthy as we're taking part in more community engagements. Dr. Norris' work is critical for the future, and we appreciate the groundwork that he has laid and for being a model for our researchers. His work embodies all three components of the NLM strategic plan: data ecosystem, reaching more people in more ways, and building the workforce for the future. Ms. Wilson said that Dr. Norris embodies these components and we thank you.

Dr. Matthews-Juarez added that ending with the recognition is fitting because of the themes discussed throughout the day. Dr. Norris was one of the first scientists who started a repository looking at the issues among African Americans and others. His leadership and ability to talk about the issues, as well as his being the leader of the coordinating center at UCLA, continues to be the foundation of his phenomenal work. We are always blessed by scholars like Dr. Norris because he lays the groundwork for not only young scientists, but also those of us who are seasoned in the ways in which we work. But he always opens up the pathway for new ways to succeed. This acknowledgement is so well deserved.

Dr. Warren said that he was so proud to be a part of recognizing Dr. Norris, for all that he has done and all that he is going to do.

EnHIP members should consider spotlighting individuals, such as Dr. Norris, in recognition of scholars and leaders that have created change for environmental health.

XI. Closing Remarks

Dr. Matthews-Juarez: This has been a fantastic day. Planning together ensures that we are on the same health equity pathway for application of data. We thank each of you for coming.

Dr. Warren: This has been an example of real-world leadership, and I want to thank Dr. Patricia Matthew-Juarez for her leadership.

Ms. Wilson: Thank you Dr. Patricia Matthews-Juarez and Dr. Warren for your leadership. Thank you everyone for the engagement provided today. The executive committee will send out an evaluation that will also have instructions for the honorarium. We will also send out the slides, the report from Dr. Taylor regarding racism in nursing, and the analysis from the SNAP

interviews. We look forward to the continued work with EnHIP members and will start planning with the executive committee to see what is happening next.

A round of thanks to Dr. Nunez-Smith, Dr. Patricia Brennan, Dr. Keith Norris, all of the presenters, the EnHIP members, and the many staff who made this 31st Annual EnHIP meeting possible.

This meeting is adjourned.

XII. Evaluations

METHODOLOGY

On August 3, 2022, EnHIP member institutions that attended the EnHIP meeting received an e-mail with a web link to participate in an evaluation. The meeting evaluation consisted of six questions, including multiple-choice and open-ended questions. The survey also included two additional questions to assist with enhancing the collaboration between EnHIP member institutions and NLM in the future, as well as planning for additional engagement opportunities throughout the year. One reminder e-mail was sent to members on August 10th. The survey closed on August 26th with a total of 13 EnHIP members responding (87%).

DATA ANALYSIS

Respondents' close-ended responses were summarized using frequency distributions, and open-ended responses were reviewed and sorted into like categories and themes. Respondents' comments are designated by ➢ (a two-tone arrow symbol) and italics with quotations.

RESULTS

Presentations

EnHIP members were asked to rate the value of the information presented during the 2022 EnHIP annual webinar. Members reported the most valuable presentations during the meeting were the NLM update (87%), NIH Data Management and Sharing Policy (75%), and Dr. Marcella Nunez-Smith (73%).

Based on previous feedback from members, NLM implemented a networking session, "Coffee and Conversations," prior to the meeting to facilitate connection and engagement among EnHIP colleagues. A little over one-third (36%) of the respondents joined the networking session and agreed that it was a great opportunity to share information and updates from member institutions. Also, this format provided members a space for informal discussion, allowing for engagement with other members in a more relaxed environment.

When asked about their key takeaways from the entire meeting, the majority of EnHIP members expressed appreciation for increasing their knowledge on NIH Data Management and Sharing Policy and understanding of how using tools, such as MeSH, can identify data to show health

disparities and inequalities. They also liked learning about criteria for journal selection. Members appreciated the NLM update, stating that it is important for EnHIP members to be aware of what is occurring at NLM. In addition, they like gaining understanding of the role NLM plays in data science and informatics research and education. A comment from a new member stated they now have a better understanding of the value of EnHIP. Members also praised the keynote speaker, Dr. Nunez-Smith, for the work she has done in the areas of health equity and racial and ethnic health disparities.

- *The NIH Data management Policy and Racial/Ethnic Disparities in MeSH search terms enhanced the participants' knowledge.*
- *The key takeaways from the EnHIP annual meeting included the keynote speaker Dr. Nunez-Smith. I found her very engaging and passionate as she connected raising awareness and eradicating health disparities in the African-American community.*
- *I thoroughly enjoyed most of the sessions, especially the "realness" and relatability to the first speaker.*
- *I was glad to get the report of the update on NLM; I think it is important for the EnHIP group to stay in the loop at NLM. The NLM programs are important for EnHIP as we bring forth reputable healthcare information to our minority communities.*
- *The sessions described how inequities can be fought through very concrete steps, such as educating through MeSH search terms or even changing the high price of Medicaid data, especially for rural areas, for researchers. I also took away lessons in how NLM and a data emphasis can fight misinformation.*
- *As a new member, I came away with a better understanding of the value of EnHIP and successes.*
- *Data Sharing at NIH was also a key takeaway for me.*

EnHIP members provided additional suggestions on how future meetings could be more engaging. Almost all comments included breakout sessions and polls. In addition, a few members suggested going back to face-to-face meetings either at NIH or another EnHIP member's institution.

Logistics

Logistically, EnHIP members provided excellent or very good ratings (at least 86%) for various components of the 2022 EnHIP meeting (Table 1). Webinar technology and length of webinar

received the highest ratings. Half of the EnHIP members (50%) indicated the engagement during the webinar was very good.

Logistics	Very Good Rating	Excellent Rating
Engagement during webinar (e.g., discussion, polls)	50%	43%
Length of webinar	36%	50%
Webinar technology (e.g., audio/visual, platform)	36%	64%

TABLE 1. ENHIP WEBINAR LOGISTICS

EnHIP and NLM Collaboration

As part of the evaluation, EnHIP members were asked about enhancing the collaboration between EnHIP member institutions and NLM. Currently, 93% of members indicated that their institutions work and/or collaborate with libraries. Most (86%) work with academic libraries, while 64% work with health science libraries, local public libraries (29%), and regional medical libraries (29%). Collaborating with libraries varied from sharing information to educating students, faculty, and staff from institutions/universities.

- *Collaboration is primarily based on the sharing of library resources, such as books and journal articles.*
- *We work with our libraries in database searches and requisitioning literature through interlibrary loan, etc.*
- *The Louis Stokes Health Science Library is an integral part of the teaching and research at Howard. There are seminars held often to make us aware of the research in other health science departments or schools on campus. This is designed to foster more collaborations.*
- *The College of Pharmacy closely collaborates with the university library. We have a Library and Drug Information Committee that is responsible for the provision of library information for students and faculty, and drug information services for faculty, students, health care providers, and the public. The Committee recommends measures to improve library services and for the improvement of info services for research and training.*

Members were asked if they would consider participating in future opportunities if NLM sought input on products/services or provided subject matter expertise in presentations/conversations on specific topics. More than 70% of members noted they would likely participate.

Conclusions

Overall, EnHIP members agreed this year's EnHIP annual meeting was well planned and provided valuable information on new strategies for accessing data and resources. All appreciated that the meeting provided EnHIP members an opportunity to discuss topics that address health disparities that affect their communities. Members valued learning more about the critical role NLM plays in data science and medical informatics research and education. In addition to the session of "Coffee and Conversations," members suggested including polls or breakout rooms to increase the engagement. Almost all EnHIP members work with libraries to share resources and educate students, faculty, and staff. Moving forward, this could be an area of focus for NLM to increase collaboration among EnHIP members and libraries.

XIII. Directory of Guest Speakers

ENVIRONMENTAL HEALTH INFORMATION PARTNERSHIPS
DIRECTORY OF GUEST SPEAKERS

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XIV. Speaker Biographies

ENVIRONMENTAL HEALTH INFORMATION PARTNERSHIPS
SPEAKERS BIOGRAPHIES

Patricia Flatley Brennan, RN, PhD, is the director of the National Library of Medicine (NLM), one of the 27 institutes and centers of the National Institutes of Health (NIH). NLM, the center for biomedical and health data science research, is the world's largest biomedical library and the producer of digital information services used by scientists, health professionals, and members of the public worldwide. Since assuming the directorship in August 2016, Dr. Brennan has positioned the Library to be the hub of data science at NIH and a national and international leader in the field. She spearheaded the development of a new strategic plan that envisions NLM as a platform for biomedical discovery and data-powered health. Leveraging NLM's heavily used data and information resources, intramural research, and extramural research and training programs, Brennan aims for NLM to accelerate data-driven discovery in health, engage with new users in new ways, and develop the workforce for a data-driven future.

Her professional accomplishments reflect her background, which unites engineering, information technology, and clinical care to improve the public health and ensure the best possible experience in patient care. Dr. Brennan came to NIH from the University of Wisconsin-Madison, where she was the Lillian L. Moehlman Bascom Professor at the School of Nursing and College of Engineering. She also led the Living Environments Laboratory at the Wisconsin Institutes for Discovery, which develops new ways for effective visualization of high-dimensional data.
She received an MS in nursing from the University of Pennsylvania and a PhD in industrial engineering from the University of Wisconsin-Madison. Following seven years of clinical practice in critical care nursing and psychiatric nursing, Dr. Brennan held several academic positions at Marquette University, Milwaukee; Case Western Reserve University, Cleveland; and the University of Wisconsin-Madison.

A past president of the American Medical Informatics Association, Dr. Brennan was elected to the Institute of Medicine of the National Academy of Sciences (now the National Academy of

Medicine) in 2001. She is a fellow of the American Academy of Nursing, the American College of Medical Informatics, and the New York Academy of Medicine.
In 2020, Dr. Brennan was inducted into the American Institute for Medical and Biological Engineering (AIMBE). The AIMBE College of Fellows is among the highest professional distinctions accorded to a medical and biological engineer.

Dan-Sung Cho, PhD, is a senior MeSH analyst and MeSH content lead. He is the project coordinator and point of contact for MeSH on demand. Dan has a PhD in genetics from the lab of Charles Livings at North Carolina State University. He was a postdoc on mechanisms of RNA editing at the Wistar Institute. Dr. Cho was a research faculty member at Penn Medicine, where he worked on the single-cell microarray projects related to human mental disorders. He has a special interest in projects that help MeSH users with systematic reviews and topical domains that are underrepresented in MeSH, such as social determinants of health.

Kristina Elliott, MLS, supports the PubMed literature databases PubMed Central and MEDLINE as a Publisher Liaison with NLM's Technical Services Division. Prior to this position, Kristina worked for ClinicalTrials.gov on communications, outreach, and policy efforts. She is a former National Library of Medicine Associate Fellow and led research projects on clinical trial registration and data sharing. She holds a Master of Library Science from the University of Maryland.

Lisa Federer, PhD, MLIS, is the Data Science and Open Science Librarian at the National Library of Medicine, focusing on developing efforts to support workforce development and enhance capacity in the biomedical research and library communities for data science and open science. Prior to joining NLM, Lisa spent five years as the Research Data Informationist at the National Institutes of Health Library, where she developed and ran the Library's Data Services Program. She holds a PhD in information studies from the University of Maryland and an MLIS from the University of California-Los Angeles, as well as graduate certificates in data science and data visualization.

Keith Norris, PhD, MD, is an internationally recognized clinician scientist and health policy leader who has been instrumental in shaping national health policy and clinical practice guidelines for chronic kidney disease (CKD). He presently serves as a member of the Forum of ESRD Networks, Medical Advisory Board. He also co-directs the Center for Kidney Disease Research, Education and Hope (CURE-CKD). He has made major contributions to diversity, equity, and inclusion while addressing disparities in contemporary society. For nearly 30 years he has worked to enhance community-academic partnerships and promote community partnered research. He was the Principal Investigator for the multi-site NIH-NIDDK-funded African American Study of Kidney Disease and Hypertension (AASK) and the AASK Cohort Study, the largest comparative drug intervention trial focusing on renal outcomes conducted in African Americans. Dr. Norris was the founding principal investigator for the first national translational research network dedicated to reducing health disparities, the NIH-Research Centers in Minority Institutions Translational Research Network. He has extensive experience in patient recruitment and retention, and community-partnered research within the South Los Angeles community. He directs several NIH research and training grants including the NIH Diversity Program Consortium Coordination and Evaluation Center at UCLA, the centerpiece of the largest NIH initiative to enhance diversity in the biomedical workforce.

Marcella Nunez-Smith, MD, MHS, is Yale University's C. N. H. Long Professor of Internal Medicine, Public Health, and Management; Inaugural Associate Dean for Health Equity Research; Founding Director of the Equity Research and Innovation Center (ERIC); Director of the Center for Research Engagement (CRE); Associate Cancer Center Director for Community Outreach and Engagement at Yale Cancer Center; Chief Health Equity Officer at Smilow Cancer Hospital; Deputy Director for Health Equity Research and Workforce Development at the Yale Center for Clinical Investigation; Core Faculty in the National Clinician Scholars Program; Research Faculty in the Global Health Leadership Initiative; Director of the Pozen-Commonwealth Fund Fellowship in Health Equity Leadership; and Co-Director of the Doris Duke Clinical Research Fellowship. Most recently, as the COVID-19 pandemic has shed national attention on the health and healthcare disparities of marginalized populations, she was called upon to serve on the Governor's ReOpen CT Advisory Group and to chair its Community Committee. She served as an advisor to the Biden-Harris campaign, and subsequently named co-

chair of the Biden-Harris Transition COVID-19 Advisory Board and will serve as chair of the COVID-19 Health Equity Task Force in the administration. She also received NIH funding to leverage the Eastern Caribbean Health Outcomes Research Network (ECHORN) to improve the COVID-19 testing cascade in Puerto Rico and the US Virgin Islands.

XV. EnHIP Member Institutions

PARTICIPATING HISTORICALLY BLACK COLLEGES AND UNIVERSITIES, HISPANIC-SERVING INSTITUTIONS, ALAKSA NATIVE-SPEAKING INSTITUTIONS, AND TRIBAL COLLEGES

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XVI. EnHIP Executive Committee

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