

**Maryellen Giger, AAPM Liaison to AIMBE meeting March 23-25, 2024 in Washington DC with Robert Jeraj and Jan Seuntjens**

AIMBE, the American Institute for Medical and Biological Engineering, held its annual meeting this past March 23-25, 2024. The theme this year was “AI and Biomedical Technologies: Policy and Ethics of Innovation”.



From left to right: Maryellen Giger (AIMBE Fellow 2000), with new 2024 Fellows: Savannah Partridge, Robert Jeraj, Jan Seuntjens, and Kullervo Hynynen.

The American Institute for Medical and Biological Engineering (AIMBE) is a non-profit organization representing the most accomplished individuals in the fields of medical and biological engineering. Such fields often overlap those of AAPM members. The mission of AIMBE includes providing education to the public and advancing public policy on medical and biological engineering for the benefit of society, promoting intersociety and multi-disciplinary cooperation within the medical and biological engineering community, and recognizing achievements to the field of medical and biological engineering.

As a member of AIMBE, AAPM belongs to the AIMBE Council of Societies. AAPM benefits from AIMBE’s mechanism to coordinate and enhance interaction among scientific organizations in medical and biological engineering. AIMBE fosters intersociety dialogue and provides a cohesive public representation, especially through Capitol Hill visits. Other AIMBE society members include the American Society of Biomechanics, the American Society for Laser Medicine and Surgery, the American Society of Mechanical Engineers, the Biomedical Engineering Society, the Engineering in Medicine and Biology Society of IEEE, the International Society for Advancement of Cytometry, the Orthopedic Research Society, the Society for Biomaterials, and the TERMIS World Congress.

One of the main points of this year’s meeting was introducing the new AIMBE Strategic Plan, which will focus on three areas: (i) elevating the value of AIMBE membership, (ii) extending AIMBE’s advocacy impact, and (iii) providing local support to AIMBE Fellows. More information is available at [aimbe.org/strategic-plan](http://aimbe.org/strategic-plan).

The event started with an evening reception at the Library of Congress at which Bruce Tromberg, Director of NIBIB, was invited to address the attendees. He noted the role of AIMBE, as well as that of the Academy for Radiology and Biomedical Imaging Research, in obtaining the

support of Congress and others in the establishment of the NIBIB. Dr. Tromberg suggested that perhaps the two could work together in the future on some shared goals.

The AIMBE program included the Earl Bakken Lecture, entitled “Dynamic Imaging and Interfacing with the Brain by Means of ML/AI” given by Bin He from Carnegie Mellon University. He studies AI to understand the brain, so that ultimately AI can be used to help us use our brain to control our environment, such as the systems being implemented for epilepsy patients.

Other talks included “Digital Medicine: From Idea to Clinic, and Implementation to Policy” presented by Dean Ho from National University of Singapore, “Developing Ethics and Equity Tools to Advance Health Equity and Researcher Diversity in AI and Machine Learning” presented by Rachele Hendricks-Sturup from the Duke-Margolis Center for Health Policy; “AI in Cell Manufacturing: Ethical Challenges and Opportunities” presented by Aaron Levine from Georgia Tech; “AI, Equity, and Ethics in Health Care” presented by Gabriella Waters from the Cognitive & Neurodiversity AI Lab; and “Accessible, Affordable, and Equitable AI for Precision Medicine” presented by Anant Madabhushi from Georgia Tech/Emory University. Many interesting points were noted in these talks, and associated panel discussion, including recognizing that for AI-based models, all biases cannot be removed from a model, however, the key is to focus on harmful biases that should be removed if possible. And that often with some diseases, such as in prostate cancer where one in seven men will get prostate cancer, but only one in forty will actually die from it, image-based risk scores related to the pathology and subtypes can be beneficial in determining treatment, and potentially avoiding unnecessary treatment options. Repeatedly, it was noted that data were important, especially in assessing differences in AI across groups, i.e., creating population-based models. One noted that while there are data from great clinical trials, they are locked away.

Also, at the AIMBE meeting, a Keynote Policy Address was given by Jennifer Roberts, Director of the Resilient Systems Office at the Advanced Research Projects Agency for Health (ARPA-H). ARPA-H supports the development of high-impact research to drive biomedical and health breakthroughs to deliver transformative, sustainable, and equitable health solutions for everyone. ARPA-H’s mission focuses on leveraging research advances for real world impact. Dr. Roberts noted various ARPA-H programs as well as the four initial mission focus areas of (i) Health Science Futures, (ii) Scalable Solutions, (iii) Proactive Health, and (iv) Resilient Systems. [Side note: MIDRC’s ARPA-H funding is under the Resilient Systems Office]. Roberts also discussed the ARPANET-H Network on bridging disparate pieces of the health ecosystem and powering communities via ARPA-H, noting the Stakeholder and Operations Hub, the Customer Experience Hub, and the Investor Catalyst Hub. Also discussed was the ARPA-H AI Vision to leverage AI to drive safe and effective innovation across the health ecosystem including patients and providers. ARPA-H aims to maximize the benefits and minimize the harms of AI to improve the health ecosystem. She talked about the first Customer Experience Hub & Spoke Initiative on Advancing Clinical Trial Readiness (ACTR) and about DIGIHEALS on Digital healthcare Security. Thus, AAPM (e.g., via Science Council and other member initiatives) should actively follow the ARPA-H website and announcements for potential funding opportunities.

A panel discussion on the Diversity, Equity, and Inclusion focused on fostering inclusive department practices in the era of challenging federal and state laws. Panel members noted their efforts and the benefits of diverse members.

At this year's Council of Societies Meeting, a discussion was held, with active AAPM participation, on how could AIMBE better serve its societies' members, and how the societies could interact and learn from each other better. Suggestions included having AIMBE discuss with the government relations personnel from the different societies, creating a chart linking the societies with each other based on their main areas, and increasing communication from AIMBE to the members of the various societies. Currently information from AIMBE flows to AAPM members; however, there are ample opportunities to strengthen government relationship efforts between the two societies, particularly focusing on the areas of common interest to the members.

AAPM members as AIMBE Fellows continue to grow. The new 2024 Fellows included AAPM members Jan Seuntjens and Robert Jeraj. All new fellows learned about AIMBE through their new fellow orientation. See their induction via the following photos.

