

My name is Carol Wysham, and I am an endocrinologist at Rockwood/MultiCare Health Systems in Spokane, Washington, and Clinical Professor of Medicine at the University of Washington. As President of the Endocrine Society, thank you for the opportunity to discuss the ARPA-H proposal.

Endocrinology is an all-encompassing discipline that has impact on and influences the health of all of our organ systems and in the development of many of the chronic diseases that afflict our citizens. The Endocrine Society is the world's oldest, largest, and most active organization of scientists and healthcare professionals dedicated to research on hormones and the clinical treatment of patients with endocrine-related diseases. Our field of medicine and research crosses boundaries and addresses priorities important to the NIH. As a clinician, and with relevance to the Institutes here today, I work with our members and the patients we serve on the frontlines of the complex diabetes public health crisis. I also conduct clinical research with the goal of preventing and managing cardiovascular complications in individuals with diabetes. However, Endocrine Society members also study the critical role of hormonal systems in reproductive biology and human development amongst many other medical disciplines.

We enthusiastically welcome new “use-driven” approaches to drive transformational innovation that improves health, and we appreciate your early engagement with us as ARPA-H takes shape.

Diabetes is an excellent example of a disease that is ripe for prioritization by ARPA-H. NIDDK-funded research have allowed the delivery of new products and solutions that allow real-time measurement of glucose and other parameters that are revolutionizing the treatment of diabetes. However, fully implementing these and related technologies into patient care will require funding outside of the scope of typical NIH Grants.

We can envision projects funded by ARPA-H that bring together scientists, engineers, the FDA, and industry to develop more accurate wearable devices that include additional measures. ARPA-H could also engage computer scientists to improve the mathematical equations driving the performance, patient outcomes and the electronic security of the increasingly complex ecosystem of disease management devices.

The benefits of such technologies would not be exclusive to diabetes but could also be applied to other conditions such as frailty, infertility, lung and cardiovascular diseases where wearable technology can help us understand how lifestyle factors and hormonal signals could be linked to improve outcomes in high risk patients. They could also be used to create platforms to study biology in new and powerful ways; improved understanding of biological transitions driven by hormones, such as puberty and menopause, would enhance our knowledge of the fundamental mechanisms that drive complex changes in our life cycle. Crucially, these types of projects complement and build on work supported by NIH, and should not compete with investigator-initiated research that will remain necessary for the discovery of new opportunities and improve our overall understanding of human biology.

While we are excited about this new initiative, we expect that the solutions advanced by ARPA-H will be technologically advanced, and perhaps unlike security solutions funded by DARPA, ARPA-H will need to ensure that healthcare solutions are equitably delivered across communities and demographics. Selection of projects must reflect scientific and community needs, and the project managers and partners will need to include diverse voices across the depth and breadth of projects supported by ARPA-H. Projects should also include populations typically underrepresented in clinical research, including pediatric, pregnant and lactating patients, and importantly, underrepresented minority populations, to maximize the benefit to society.

Thank you for involving us in this important session and I look forward to hearing from the other stakeholders and participating in the discussion.

Additional Talking Points for use as appropriate during the discussion:

- **On Administrative Burden:** Academic institutions should be engaged so that they can not only help reduce administrative burdens for researchers involved in entirely new grant structures, but also so

that contributions to these projects are recognized in tenure and promotion decisions.

- **On Healthcare Delivery:** Healthcare delivery also represents an underresourced area that ARPA-H could focus on. Could ARPA-H help develop cross functional research teams that provides immediate downstream impact through research on healthcare delivery systems?
- **On Other Partners:** Some solutions will not only require engagement with industry, but also potentially large technology companies. How these partnerships work from an open science and information-sharing perspective will need to be carefully thought through at a very early stage.