



IDSAs

Infectious Diseases Society of America

2017-2018 BOARD OF DIRECTORS

President

Paul G. Auwaerter, MD, MBA, FIDSA
JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE
BALTIMORE, MD

President-Elect

Cynthia L. Sears, MD, FIDSA
JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE
BALTIMORE, MD

Vice President

Thomas M. File, Jr., MD, MSc, FIDSA
SUMMA HEALTH
AKRON, OH

Secretary

Larry K. Pickering, MD, FIDSA
EMORY UNIVERSITY SCHOOL OF MEDICINE
ATLANTA, GA

Treasurer

Helen W. Boucher, MD, FIDSA
TUFTS MEDICAL CENTER
BOSTON, MA

Immediate Past President

William G. Powderly, MD, FIDSA
WASHINGTON UNIVERSITY SCHOOL OF MEDICINE
ST. LOUIS, MO

Angela M. Caliendo, MD, PhD, FIDSA
BROWN UNIVERSITY/RHODE ISLAND HOSPITAL
PROVIDENCE, RI

Henry F. Chambers, MD, FIDSA
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO
SAN FRANCISCO, CA

Victoria J. Fraser, MD, FIDSA
WASHINGTON UNIVERSITY SCHOOL OF MEDICINE
ST. LOUIS, MO

Daniel P. McQuillen, MD, FIDSA
LAHEY HOSPITAL & MEDICAL CENTER
BURLINGTON, MA

Thomas A. Moore, MD, FIDSA
IDC OF KANSAS
WICHITA, KS

Ighowherha Ofotokun, MD, MSc, FIDSA
EMORY UNIVERSITY SCHOOL OF MEDICINE
ATLANTA, GA

Trish M. Perl, MD, MSc, FIDSA
UT SOUTHWESTERN MEDICAL CENTER
DALLAS, TX

Susan J. Rehm, MD, FIDSA
CLEVELAND CLINIC
CLEVELAND, OH

Tina Q. Tan, MD, FIDSA
NORTHWESTERN UNIVERSITY FEINBERG SCHOOL
OF MEDICINE
CHICAGO, IL

Chief Executive Officer

Christopher D. Busky, CAE

IDSAs Headquarters

1300 Wilson Boulevard
Suite 300
Arlington, VA 22209
TEL: (703) 299-0200
FAX: (703) 299-0204
EMAIL ADDRESS:
info@idsociety.org
WEBSITE:
www.idsociety.org

March 19, 2018

Anthony Fauci, MD
National Institutes of Health
Director, National Institute for Allergy
and Infectious Diseases
Building 31, National Institutes of Health
31 Center Drive, Room 7A03
Bethesda, MD 20892-2520

Dear Dr. Fauci,

The NIH All of Us Research Program is a historic effort to gather data from over a million participants to accelerate research and improve health. Lessons from the All of Us (AoU) Program will transform the practice of medicine from a one-size-fits-all paradigm to a more individualized approach. Currently readying for its national launch, AoU Program research will help link the impacts of environmental exposure, diet, and genetics to our understanding of health and disease, which will subsequently impact recommendations for treatment and care.

On March 21-23, NIH is holding a stakeholder-driven [All of Us Research Priorities Workshop](#) to identify key requirements for advancing precision medicine research at NIH. The program is seeking public input on potential research questions or use cases. Other funders (including other NIH Institutes and Centers) may consider use cases that are not incorporated into the All of Us protocol for additional funding opportunities. As these historic efforts get underway, the Infectious Diseases Society of America (IDSAs) urges the National Institute for Allergy and Infectious Diseases (NIAID) to promote infectious diseases (ID) research considerations as a critical component of the AoU Research Program, and also consider ways to link current and future Institute efforts with program data.

Precision medicine and ID research

Since the advent of the All of Us Research Program, IDSAs has been ramping up our ID precision medicine efforts and working to establish infectious diseases as an AoU research priority. In 2016, the Society formed a working group that [surveyed](#) the landscape of infections and precision medicine to consider research recommendations at the intersection of both fields.

IDSAs has also been invited to participate in the upcoming *All of Us* Research Priorities Workshop. IDSAs's submitted use cases to the public portal may be found [here](#), [here](#), and [here](#). Attendees will review submitted use cases, identify gaps, create new use cases, and identify data types common across multiple use

cases. Factors that will determine whether a use case becomes part of the protocol include impact, scope, scalability, budget, and value to participants. NIH will make all use cases available on the All of Us website as a searchable reference and as a principal database for informing the program's plans.

ID precision medicine research questions consider different factors than other fields, such as oncology, that are typically associated with personalized care. Infectious diseases treatment often occurs in a time-pressured setting (e.g., initiating empiric therapy for pneumonia or sepsis). Infectious diseases often intersect with other specialties. Additionally, the field stands to benefit from the increased study of the microbiome – [a current NIAID priority](#) that can be realized through AoU – as well as continued human genome research. These considerations should be integrated into AoU research priorities at the program's outset.

It is critical that IDSA, NIAID, and other stakeholders work together to emphasize the importance of ID precision medicine research as NIH prioritizes efforts in this area. AoU data can be harnessed to improve ID patient care, diagnostics, vaccines, pharmacogenomics, and drug development. Suggested research topics at the intersection of ID and precision medicine include:

- Using precision medicine to predict patients at risk for post-infectious complications of vector-borne illnesses;
- Identifying the metabolic features of patients who develop mild vs. severe manifestations of influenza;
- Improving precision management of acute infections and sepsis (as a major burden to healthcare systems);
- Using AoU data to track and test individual responses to population-level emerging infection interventions;
- The “other” genome: microbiota and the pathogenesis of infectious diseases;
- Using precision medicine to determine optimal antiretroviral therapy in aging people living with HIV;
- Exploring precision vaccinology to determine who may benefit from particular vaccines, doses, and/or formulations;
- Discovering microbial causes of illnesses previously not considered to be infectious diseases.

As the AoU Research Program matures, the integration of electronic medical record (EMR)-generated and big data platforms will aid in the advancement of precision medicine. The NIAID Genomics Centers for Infectious Diseases (GCID) can leverage these advances to improve innovative applications of genomic ID technologies and more efficiently sequence microbial isolates, host microbiomes, and invertebrate vectors of infectious diseases. Likewise, the Clinical Genomics Program builds upon large-scale gene sequencing analysis to better understand, diagnose, and treat immune system disorders, and the program's combined focus on genetics and immunology and multi-disciplinary approach align with the AoU research philosophy. NIAID should harness AoU program data to help researchers study the etiology of antimicrobial resistance, autoimmune disorders, host responses, and host-pathogen interactions.

IDSA will continue to emphasize the importance of infectious diseases precision medicine research as AoU shifts its focus from data collection to research considerations. We applaud NIAID's work in this area to date and recommend that the Institute join IDSA in championing critical ID research questions as NIH prioritizes its efforts in this area. We look forward to continued dialogue as this important issue evolves and appreciate your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul G. Auwaerter". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Paul G. Auwaerter, MD, MBA, FIDSA
President, IDSA