

Introductory Editorial for *ACS Infectious Diseases*

A century ago, infectious diseases were the leading cause of mortality throughout the world. Improvements in public health and the introduction of antimicrobial agents beginning with penicillin revolutionized human medicine, resulting in a massive decline in infectious disease mortality in industrialized nations. The development of antimicrobial agents to treat viral, protozoal, and bacterial infections marks one of the great triumphs of medicine, allowing physicians to typically cure previously untreatable diseases. However, the tremendous gains realized from the past century to combat infectious disease are now quickly eroding due to the rise of multidrug resistance, emerging and re-emerging diseases including many neglected tropical diseases, and the reduced pipeline of new medicines. It is fair to say that the next century in the war against pathogens will require a renewed commitment to the development of innovative strategies that unite biology, chemistry, and medicine. As part of its mission to improve lives through chemistry, the American Chemical Society (ACS) is launching *ACS Infectious Diseases* to promote advances in infectious disease research that highlight the role of chemistry and to simultaneously address the surge in infectious disease-related research. As a chemist working on tuberculosis, I am honored to serve as the inaugural Editor-in-Chief for this journal, which marks a new direction for the Society.

ACS Infectious Diseases will publish papers featuring the application of chemistry and molecular approaches to study microorganisms. A strong emphasis will be placed on basic science that advances the field and lays the foundation for clinical sciences. Topics include, but are not limited to, the characterization and validation of drug targets, the description of the molecular basis of drug resistance and pathogenesis, the discovery of new antimicrobial agents, the modulation of host–pathogen interactions with small molecules, viral and bacterial biochemistry and molecular biology, and small molecule vaccine adjuvants for infectious disease. Our understanding of the microbiome is only just beginning, but this is an incredibly exciting area, and we also welcome research that reports on the use of chemical tools and approaches.

To help potential authors assess the suitability of their manuscripts, we have tried to articulate more precisely the journal scope with respect to antimicrobial agents and resistance, two topics for which I have already received dozens of inquiries. The emphasis on new antimicrobials discovered from either target-led or phenotypic-driven approaches will be placed on mechanistic confirmation of activity rather than extensive structure–activity studies. In other words, studies that simply report on the biological activity of antimicrobials lacking support for potential mechanism and without any other innovations will typically not be considered for publication. In regard to resistance, papers that describe fundamental research, which advances our understanding of resistance rather than clinical reports of resistant isolates.

There are already many outstanding journals covering infectious diseases, so why publish in *ACS Infectious Diseases*? As an ACS journal, we stress the role of chemistry, which is

typically relegated to a secondary role in infectious disease disciplinary journals. *ACS Infectious Diseases* will serve as a forum for chemists, biochemists, bacteriologists, immunologists, molecular and structural biologists, parasitologists, pharmacologists, and virologists to disseminate their research. For chemists, this will be a welcome addition to the limited journals available in the infectious diseases field in which to publish their work, whereas for other researchers this will be an opportunity to reach a new audience. For authors considering publishing in *ACS Infectious Diseases* we can ensure a rapid review process and expect to publish papers online within 4–6 weeks of submission. We will feature letters, full articles, perspectives, and reviews. Additionally, we will publish invited Viewpoints papers on special topics that are relevant to our community.

Our editorial team includes Dr. Peter Tonge at Stony Brook University, a mechanistic enzymologist focused on antibacterial discovery and director of the Infectious Disease Research Institute. I am also delighted to welcome Dr. Gerry Wright at McMaster University in Canada, who is a leading authority on antimicrobial discovery and resistance and director of the Michael G. DeGroote Institute for Infectious Disease Research. Dr. Pei-Yong Shi is the executive director and senior unit head for infectious disease biology at the Novartis Institute for Tropical Diseases in Singapore, and he brings a wealth of experience in virology and neglected tropical diseases. Dr. Elizabeth Winzeler rounds out our editorial team. She is the director of Translational Research at University of California San Diego, and her research focuses on neglected tropical protozoal diseases at the interface of chemistry and genetics. Collectively, we have broad expertise in infectious diseases through our diverse backgrounds and methodological approaches. We are further bolstered by an international editorial advisory board comprising leaders in the field from all disciplines in infectious disease.

Infectious disease research will only continue to grow in significance due to the inevitable rise of drug resistance and emergence of infectious diseases. In this century, I expect we will see radical new approaches to treating infectious diseases such as host-targeted therapeutics that enhance our immune response, molecular strategies that alter our microbiome, innovative strategies to prevent resistance, and use of targeted small molecule antimicrobials that selectively kill a single pathogen without disturbing our commensal microbiota.

I hope that *ACS Infectious Diseases* will provide a forum for researchers to communicate their results in this highly interdisciplinary field, and I welcome your input to help refine and improve this new journal.



Courtney Aldrich, Editor-in-Chief

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■ AUTHOR INFORMATION**Notes**

Views expressed in this editorial are those of the author and not necessarily the views of the ACS.