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October 26, 2017

RE Nicole Poole, MD, MPH

Dear Reviewers:

I write this letter to provide my strongest possible support for Dr. Nicole Poole's proposed research and her application for the Translational Research Scholars Program. I will serve as the primary mentor for her research. Dr. Poole is highly deserving of this award, and I am confident in her success as an investigator in pediatric antimicrobial stewardship research.

I first had the pleasure of meeting Dr. Poole in July 2014 when she began her Infectious Diseases Fellowship at the University of Washington. Prior to arriving at the University of Washington, Dr. Poole completed her Bachelor of Science in Biology with a Concentration in Neurobiology at the University of Texas at Austin. There she received a full scholarship, was in the Dean's Scholars Honors Program for all four years, and graduated Phi Beta Kappa. Dr. Poole first participated in scholarly work as an undergraduate research assistant in a neuropsychology lab studying the early development of infant face perception. She then earned her medical degree at the University of Texas Medical School at Houston. In medical school, she worked as a graduate research assistant working to develop a method of rapid detection of toxin-producing Clostridium difficile. After medical school, Dr. Poole earned a Master of Public Health at the University of Texas School of Public Health with a concentration in Health Services Organization. She then completed her Pediatric Residency at the University of Chicago Medical Center. In residency, Dr. Poole was involved in pediatric advocacy and quality improvement research. She was a co-investigator of a quality improvement project at the University of Chicago in a retrospective study evaluating patient outcomes in febrile sickle cell patients managed with empiric outpatient antibiotics. She was also a project co-founder of an early literacy campaign for at-risk children in Chicago pediatric clinics, which was awarded the Grand Prize for the American Academy of Pediatrics Read, Lead, and Succeed Advocacy Campaign. Dr. Poole's past academic and scholarly work has reflected her longstanding interest in pediatric, infectious disease, and quality improvement research.

Since Dr. Poole arrived at the University of Washington for her fellowship in Pediatric Infectious Diseases, I have been her mentor and have been extremely impressed by her drive, strong work ethic, creativity, and skills in conducting research early in her career. She is deeply committed to addressing antimicrobial stewardship issues in underserved pediatric populations, particularly in community and rural settings, areas that have not been systematically addressed to date. Her ability to form research questions of critical importance within this framework and to then design rigorous studies to evaluate these questions is impressive.

Dr. Poole has carried out two research projects during her fellowship to date. The first project focused on studying the impact of a clinical UTI pathway on antibiotic prescribing. The study found that implementation of the pathway resulted in a dramatic and statistically significant increase in use of narrow-spectrum empiric antibiotics and a decrease in broad-spectrum empiric therapy. The project resulted in abstract presentations at the Pediatric Academic Society Conference, Advancing Quality Improvement Science for Children's Healthcare Research Conference, and Pediatric Antimicrobial Stewardship Conference and a publication in the journal *Pediatric Emergency Care*. The second project focused on identifying pediatric antimicrobial stewardship targets in the community. This is where her true passion lies. This study was selected as a distinguished abstract at ID Week, and has resulted in a second manuscript which is drafted and undergoing CDC review prior to submission.

To further enhance her training in antimicrobial stewardship, Dr. Poole has attended training workshops in antimicrobial stewardship program development, quality improvement research, and antimicrobial stewardship

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research. Dr. Poole's experiences and accomplishments during fellowship have laid the foundation for her success, and I am highly invested in Dr. Poole's success and am committed to providing the support necessary to help ensure her transition to independence as an investigator.

As a national expert on pediatric infectious disease epidemiology, including multidrug resistant organisms (one target of antimicrobial stewardship efforts), I have extensive experience related to the design and conduct of clinical infectious diseases research. I also have ample experience in mentoring junior faculty and can provide Dr. Poole with the guidance she will need to accomplish the aims of her proposed research and advance as an independent investigator. My guidance will focus on the overarching conduct of her project, adherence to the proposed timeline, addressing barriers, and writing manuscripts and grants. Dr. Poole and I have worked carefully to assemble a team of co-mentors and consultants who are appropriately diverse in terms of content and methodological expertise and who are strongly committed to fostering her achievement of the research plans and career goals she outlines in this proposal. I believe these mentors and advisors are the right individuals to guide her through this next important stage of her career development. With her mentors and advisors, Dr. Poole has designed a comprehensive training and research career development program. This program includes carrying out the proposed research, taking courses in areas that require strengthening for the proposed project and for future research, attendance at local research seminars and national meetings, and meetings with mentors and her scholarly oversight committee.

With input from her mentors and scholarly oversight committee, Dr. Poole has also designed a plan to ensure a successful transition to independence. She successfully competed for an internal mentored career development award from the Center for Clinical and Translational Research (CCTR) at Seattle Children's Research Institute. This award provides 50% protected time for research. Dr. Poole is currently conducting a retrospective epidemiologic study characterizing antibiotic prescribing in outpatient family medicine clinics using research funds from the CCTR career development award this academic year. This work will be complete by January 2018 and will serve as preliminary data for the studies in this proposal. The Translational Research Scholars Program will provide critical funds for recruitment and incentives for participants in Aim 1 of this study.

I am confident in Dr. Poole's potential to conduct highly significant, innovative, research in antibiotic utilization. The work that she outlines in this proposal has a high likelihood of becoming an important part of the empirical literature in the critical field of improving antibiotic prescribing. Research demonstrating over-use of antibiotics, increasing multidrug resistant organisms, and a dwindling pipeline of effective antimicrobial agents is clear in its message; however, the path to effectively addressing these issues is not, especially in pediatric outpatient settings. The work Dr. Poole proposes begins to address this gap and will lay the foundation for future multi-center trials to test interventions aimed at improving antibiotic prescribing.

In summary, Dr. Poole is an outstanding candidate for the Translational Research Scholars Program at this stage of her career. I am fully prepared to support her as her primary mentor and enable her transition to independence. She has my strongest support.

Sincerely,

Danielle Zerr, MD
Professor and Chief, Pediatric Infectious Diseases, University of Washington
Seattle Children's Hospital