

Eran Bendavid • 43 Pearce Mitchell Pl. • Stanford, CA 94305

Home (650) 325-7550 • Cell (650) 224-6633 • Fax (650) 723-1919

I am unlikely to be a typical participant of the Advanced Study Institute's conference in Cape Town. I am not a mathematician, and my formal trainings are in fields that are full of uncertainty. What, then, do I have to contribute to or learn from a mathematical conference? A multidisciplinary approach.

I am a physician, trained in internal medicine and infectious diseases. I am concurrently a fellow in the Center for Health Policy at Stanford University, where I am completing a Master's degree in Health Services Research. My research and practice interests are in improving health care in the developing world. More specifically, in improving policies and management strategies of infectious diseases such as HIV, TB, and other parasitic diseases in resource-poor regions. I have worked in Cape Town in a TB hospital and have collaborated with several people in the Desmond Tutu HIV Centre at the University of Cape Town.

Currently, I am developing a model of HIV disease progression and treatment that will be used to evaluate policies and management strategies. My challenge is to translate the complexity of the disease I see in my individual patients into operable projects that can be modeled. I am working primarily with Monte Carlo Markov simulations, and have good facility with the mathematics and statistics required for these simulations. However, I am interested in improving some existing skills and acquiring new skills (or at least familiarity) with methods of infectious disease modeling, including dynamic transmission models, epidemic models, and advanced Markov techniques.

Although my interests are in improving care in the developing world, my training and mentorship are at Stanford. I am a member of both the Division of Infectious Diseases and Geographic Medicine (med.stanford.edu/id) as well as the Center for Health Policy (healthpolicy.stanford.edu), and I have mentors in both divisions. In infectious diseases, I work with David Katzenstein, MD, an accomplished virologist who has been involved with HIV since the early 80s, both in the US as well as in southern Africa (primarily Zimbabwe); and at the health policy center, I work with Doug Owens, MD MS, an expert in decision analysis, cost effectiveness analysis, and disease modeling, whose work has made significant impact on HIV care in the United States.

What, then, do I have to contribute to or learn from the Mathematical Modeling of Infectious Diseases in Africa workshop? I hope to be able to contribute a unique perspective as a practicing physician, acutely aware of the nuance of the treatment of patients with infectious diseases. This includes awareness not only of disease behavior, but also human behavior – non-adherence, the impact of stigma, patient-doctor interactions, and so on. What I have to learn are important skills and some familiarity with methods that are perfectly aligned with my line of research and interests. I anticipate taking the lessons learned at AIMS and applying them directly into work that I hope will one day improve the lives of many in poor countries.