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To Whom It May Concern:

I am very pleased to be able to write this letter of my commitment to work with Mr. Christopher Langhammer on his research in modeling infectious diseases once he returns from the US-Africa Advanced Studies Institute on Mathematical Modeling of Infectious Diseases in Africa. I am very excited by this opportunity: I look forward to working with Chris and I look forward to expanding my own work into a new application area.

As you know, Chris is an MD/PhD student at UMDNJ and Rutgers. Chris spent two months in Zambia. Chris' work based on his time in Zambia was to modify the standard SIR model to capture incomplete mixing in populations, population dependent transmission characteristics, and seasonal variation in the transmission coefficient. This ODE model evolved to include a network model to reflect the influence of intercity commerce. Initially, he used this network model to fit historical data about the spread of measles in England; It turned out that the network model of commerce improved the accuracy of the epidemiological model.

This experience, working on understanding how interventions affect the health care system, showed him the importance of underlying model assumptions and data collection methods to improve performance and more effectively identify how to translate model outputs into interventions. I believe this set of experiences have prepared him very well for the institute and for continuing research in this area.

Chris has a strong interest in these network models and this meshes with my own work in network models of siRNA – short nucleotide sequences used for gene silencing and regulation. Although the application isn't exactly the same, I believe that my experience in network models and my general research experience in mathematical modeling of biomedical phenomena will help Chris continue the work he starts during the workshop.

As is my standard practice, I will meet with Chris weekly to discuss results and monitor progress. I anticipate that we will use this opportunity to engage undergraduates in research, perhaps BME honors students or senior design students; It has also been my practice over the past few years to mentor several DIMACS REU students each year and I can foresee offering an opportunity for a student in the REU program. Since Chris has other research to complete, I anticipate that we can engage an undergraduate student to assist in data collection and analysis.

As I said in my recommendation letter, this young man is very, very good. I am sure we will produce some significant results. Chris' training will uniquely position him for this workshop and for conducting research in this area. I can recommend and endorse his application without reservation.

I would strongly encourage you to invite Chris Langhammer to participate in the workshop. He is a bright, disciplined and mature student with very clear goals. I believe that he has tremendous potential and will develop into an outstanding scientist. I am sure he will impress the organizing committee as he has impressed me.

Thank you in advance for your support. I look forward to working with Chris and I look forward to expanding my own research experience. Please do not hesitate to contact me should you need further information.

A handwritten signature in black ink that reads "Stanley Dunn". The signature is written in a cursive, flowing style.

Stanley M. Dunn, Ph.D.
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