



**Bethany Moore, Ph.D.**  
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Dear Pat,

I am writing in support of your proposal, "Code Clubs: Repeated practice opportunities to develop reproducible data analysis skills", which you are submitting to the "Training Modules to Enhance the Rigor, Reproducibility and Responsible Conduct of Biomedical Data Science Research (R25)" program at NIGMS. **You continue to have the full support of the Department of Microbiology & Immunology and the School of Medicine in this endeavor including assistance in the provision of adequate staff, facilities, and educational resources to contribute to your planned research education program.** Since you joined the department in 2009, you have successfully leveraged extramural support to continuously fund your research program, train exceptional graduate students and postdocs, and continue your excellent research career.

You have also made a significant impact on the teaching mission within the department by developing popular courses in *Symbiosis* and *Microbial Informatics*. I was excited to hear that you have been using *Microbial Informatics* as a seedbed to develop the ideas you are proposing in this proposal. The enrollment of your courses steadily grow and frequently attract the attention of senior graduate students and postdocs who take the class not because they need it for graduation, but because they need it for their research. This is a high compliment that busy researchers stop to take your class because they find it useful and well taught. In fact, one of my pulmonary clinical fellows took your course when he was just learning to analyze microbiome data and he is now a K99/R00 funded researcher on the tenure-track here at Michigan. Within these courses you do a great job of attracting a diverse array of students from various departments and strong representation of women. This was highlighted by you opening your recent offering of *Microbial Informatics* to bench scientists working from home because of the COVID-19 pandemic. I was impressed that you had more than 100 people participating across the 3 full day workshop. I am confident that you will continue to leverage these types of experiences as you prepare, evaluate, and disseminate the proposed materials to biomedical researchers at other institutions.

My research group is increasingly using high throughput tools to study the role of the immune system in lung fibrosis and stem cell transplant. The challenges you describe in your proposal of helping bench scientists to develop data analysis skills that are robust and reproducible is significant. As your project goes forward, we would be happy to share questions and example datasets with you that you could use to motivate your teaching modules. For instance, we have microbiome datasets from the lung and gut in two different disease models in human and mice, several RNAseq datasets and a large plasma proteomics dataset with longitudinal collections over 12 months. I would be pleased to help provide relevant research questions for the students to practice using these datasets.

I am excited about this proposal and wish you the best of success in this new project!

Sincerely,

A handwritten signature in black ink that reads 'Bethany Moore'.

Interim Chair, Department of Microbiology and Immunology  
Galen B. Toews, MD Professor of Internal Medicine