

September 23, 2005

Yves Brun  
Systems Biology/Microbiology Faculty Search  
Department of Biology  
Indiana University  
Jordan Hall 142, 1001 E 3<sup>rd</sup> Street  
Bloomington, IN 47405-7005

Dear Dr. Brun,

I am responding to your advertisement for the Assistant Professor position in the Department of Biology at Indiana University. I am currently a postdoctoral fellow in the laboratory of John Collier in the Department of Microbiology and Molecular Genetics at Harvard Medical School. I received my Ph.D. in Biological Chemistry from the University of Michigan in the laboratory of Jack Dixon in June of 2002, and my B.S. in Biochemistry from Boston College in May of 1996. I feel as a toxin biochemist I will fit well among the diverse array of faculty associated with the Department of Biology at Indiana University.

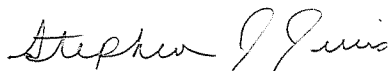
My current research focuses on understanding host-pathogen interactions and the manipulation of host cell processes by bacteria using translocated effector proteins. As a graduate student, I have studied the alteration of host signaling pathways by bacterial effector protein. As a postdoctoral fellow, I have expanded my understanding of how this alteration occurs by studying the translocation of effector proteins across membranes. My future research plans are aimed at understanding the biochemical details of toxin translocation across membranes. My ultimate aim is to develop a research program aimed at studying host-pathogen interactions and the evolution of bacteria to manipulate their host in order to provide a niche for survival.

Beyond my academic research, I have been fortunate to gain teaching experience. My teaching responsibilities have included both classroom and laboratory settings as a teaching assistant, as well as one-on-one mentoring as a tutor. In addition to this formal teaching experience, I have mentored graduate students during my postdoctoral fellowship and aided in their development as future scientists. I have witnessed mentoring within both small and large university settings during my development as a scientist. I have a profound desire to extract the best from the culmination of these experiences to become a successful mentor myself by providing teaching and mentoring of the young and bright scientific minds of tomorrow.

I have enclosed my *Curriculum Vitae*, a statement of my teaching interests/philosophy, and a description of my research plans. I have arranged for four letters of recommendation to be sent to you on my behalf.

Please contact me if you require any additional information. Thank you for your consideration, and I look forward to your reply.

Sincerely,



Stephen J. Juris, Ph.D.  
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## **Statement of Teaching Philosophy**

As I reflect back on my development as a scientist and the first time I realized that this was the career path I wanted to take, I came to the realization that my drive was first initiated by the guidance of my high school chemistry teacher, Mr. Thomas. At this point in my scientific “career”, he saw something in me that I was unable to view. His constant support, guidance, and sometimes goading when I was a bit reluctant, not only gave me a taste of what science could be like as a career, but also what teaching science could be like. His faith in my abilities and constant encouragement inspired me to be the best that I could be. It is difficult to put in words the effect that faith from a mentor in a future scientist can have on the development of that future scientist. It is above all this faith by a mentor that I strive to be able to pass along to scientists of tomorrow.

I have had several opportunities to gain teaching experience during my development as a scientist. At the University of Michigan, I was a teaching assistant for one semester of Introductory Biochemistry, a course designed for advanced undergraduates and beginning graduate students. This assistantship included participation in lectures, office hours for individuals for question/answer sessions, and weekly review sessions for students. I was also a teaching assistant for one semester of Introductory Biochemistry Laboratory. This advanced biochemistry laboratory was restricted to a class size of 8-10 students to ensure individualized attention during laboratory hours. During this course I was able to plan and supervise experiments for the laboratory as well as presenting pre-laboratory lectures on the theory of the experimental design.

I also had two other opportunities to mentor students while at the University of Michigan. My first experience involved tutoring nursing students in an introductory biochemistry course. Many students attended my weekly question/answer sessions to get extra assistance in understanding the lecture material and to prepare for tests. This experience honed my ability not only to answer questions thoroughly, but also challenged me to find ways to explain the material so that everyone could understand it. My other tutoring experience was a series of individualized sessions with a dental student preparing for the biochemistry section of the Dental Board exams. This experience helped me realize the power of individualized attention during the teaching process.

As a postdoctoral fellow at Harvard Medical School, I have had the opportunity to mentor three graduate students. This mentoring included aid in designing, executing, and troubleshooting of experiments for dissertation projects. Also, being a biological scientist in a biophysical laboratory gave me the opportunity to teach biological assays to other postdoctoral fellows. I found that the experience of mentoring students during my postdoctoral tenure was a valuable extension of my previous mentoring experiences in that it has further increased my desire to guide graduate and undergraduate students within my own laboratory.

The experience I have gained in teaching has truly been both a learning and a humbling experience. Through my experiences I have found useful methods of teaching that not only help in presenting the information students need to understand to further their knowledge in the field, but also make learning the material enjoyable. I have learned that promoting participation in an interactive classroom environment is a great way to teach the students in a way where they may not even realize they are learning! The humility I have learned in my teaching experience is the fact that even as the teacher, I did not know everything. Although I had a better understanding of the subject matter than the students, I sometimes had to look up the details during a question/answer session to be sure I conveyed the right information. This realization helped me to understand that even as a teacher, I was always learning.

I have gained valuable experience during my roles as a teaching assistant, tutor and mentor. These experiences, along with the mentoring I received as an undergraduate, graduate and postdoctoral fellow, have aided in the formulation of my teaching philosophy. I hope to promote a teaching environment that maintains the enthusiasm and confidence levels that students have when they first enter science. I hope to provide them with a solid understanding of the fundamentals of science and encourage them to look past the boundaries of what we know to explore undiscovered avenues. I have a profound enthusiasm for science, and look forward to teaching both traditional courses such as biochemistry, microbiology, and cell biology, as well as developing or aiding in other courses necessary to succeed in science today, such as courses that sharpen skills in critical review of primary literature and grant writing, as well as demonstrate the vast utility of internet resources in scientific research. I feel these courses have aided me in my development as a scientist and are valuable sources of knowledge to all developing scientists. I feel the mentor/student relationship is of utmost importance in the development of young scientists and I hope to foster an environment that maintains excitement, curiosity, and learning.