

HARVARD MEDICAL SCHOOL  
DEPARTMENT OF BIOLOGICAL CHEMISTRY  
AND MOLECULAR PHARMACOLOGY

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October 11, 2005

To the Review Committee:

I am writing with my very strong support for Dr. Miriam Bucheli, who is applying for a faculty position in your department. Dr. Bucheli came to my laboratory as a postdoctoral fellow in April 2003 after doing a short postdoctoral period in the lab of my colleague Fred Winston. Before that, she did her doctoral thesis work with Kevin Sweder at UMDNJ/Rutgers. At all these stages of her research career, Dr. Bucheli has used the yeast *Saccharomyces cerevisiae* as a model system for fundamental processes that occur in all eukaryotic cells. She now has amassed a great deal of expertise in the yeast system, ranging from classical genetic analysis to cutting edge molecular and biochemical techniques. She shows great independence in choosing the overall direction of her research as well as planning individual experiments. For someone at her career stage, she is unusually savvy about grants and funding opportunities; she has always been able to secure her own support. More recently, she has gained significant experience in teaching undergraduates by running a section of one of the basic biology classes taught at Harvard College. I have no doubt that she has developed the skills that will make her an excellent independent researcher, teacher, and faculty member.

Currently, Dr. Bucheli is working to identify and characterize some new players in termination of gene expression, and these would certainly form the basis for a successful lab research program when she leaves my lab. Although I have provided some advice and suggestions, she is the intellectual driving force on the project. Please note that when Dr. Bucheli leaves to start her own lab, she will have my full support to take this project with her. She began the project as a genetic screen in Fred Winston's lab, and then moved to my lab when she wanted to move it into the molecular and biochemical realm. Miriam has impressed me with her drive and ability to absorb new techniques from both within and outside of the lab. Her first paper describes the discovery that the RNA binding protein Npl3, previously implicated in mRNA export out of the nucleus, can also modulate the use of polyadenylation sites. This paper was published in the well-respected EMBO Journal. Based on these findings, she has proposed that Npl3 competes for binding with polyadenylation factors for access to the polyA sequences on the RNA. She is currently carrying out further biochemical and genetic experiments to test this model. She has set up successful collaborations with Claire Moore's lab at Tufts (which has expertise in the biochemistry of polyadenylation) and is carrying out some microarray work with Ollie Rando at the Bauer Center for Genomics in Cambridge. I have been impressed with her ability to network with the right people to move her project along effectively. Dr. Bucheli's current work should result in a second paper sometime next year. The concept of using RNA binding proteins to modulate alternative splice site use has been well established, but Miriam's work is the first to show a similar mechanism may work for polyadenylation sites.

Although Dr. Bucheli is free to devote 100% of her time to her research program, she has chosen to use some of her time to gain valuable teaching experience and to be active in several groups dedicated to improving the Harvard community for postdoctoral fellows, women scientists, and minorities. I believe these activities are very valuable to her professional development and she has my full support. As a faculty member, I predict she will be a significant contributor to the community, both in and out of the lab.

In closing, let me reiterate my strongest support for Dr. Miriam Bucheli. She is a young researcher with outstanding potential. She has been a valued and productive member of my lab and I look forward to helping her continue to develop. Throughout her career, she has continually demonstrated her ability to carry out interesting research. Not only is she an outstanding role model for underrepresented minority students, she also serves as an inspiration to all women scientists in my department. She has been able to succeed in academic research while raising a daughter (now a teenager). So many of our talented women scientists drop out of the pipeline because they fear they will not be able to remain productive while having a family. Dr. Bucheli proves that it can be done. Because of all her qualities, I think she is an excellent candidate for the position in your organization and I hope you'll give her your serious consideration.

Sincerely,

A handwritten signature in cursive script, appearing to read "S. Buratowski".

Stephen Buratowski  
Professor



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Office of the Associate Dean

October 18, 2005

Dr. Yves Brun  
Systems Biology/Microbiology Faculty Search  
Department of Biology  
Indiana University  
Jordan Hall 142, 1001 E 3rd St.  
Bloomington, IN 47405-7005

**Applicant Name:** Miriam E. Bucheli

Dear Dr. Brun:

It is a pleasure for me to recommend Miriam E. Bucheli for a faculty position at your institution. Dr. Bucheli completed her Ph.D. studies in the laboratory of Dr. Kevin S. Sweder at Rutgers University. The Ph.D. programs in the Molecular Biosciences at Rutgers University and UMDNJ are all joint between the two universities, and Miriam was enrolled at UMDNJ-Graduate School of Biomedical Sciences, although her mentor is a faculty member at Rutgers. I have known Miriam since she applied for admission to our graduate school, and I can recommend her without reservation.

Miriam transferred to this university after completing a year of graduate work in Biological Anthropology at Indiana University, bringing her NSF fellowship with her. She made this transfer to study in a program with more of a molecular focus, since her original interest in anthropology was in the molecular approaches to this discipline. When she arrived, she did quite well in all of her courses, and initially began research in the laboratory of Yacov Ron, Ph.D., a Professor in my department who studies communication between B and T cells and the molecular basis of autoimmune diseases. However, this excellent lab did not really match her interests, and she moved to do her thesis research with Dr. Sweder, where she studied the molecular biology and genetics of transcription-coupled repair in yeast. This is a very complex system, and as a member of her proposal examination committee, I was impressed with Miriam's ability to rapidly master the basics of this system and to produce publication quality data. She published three papers in excellent journals (two as first author, one winning the Anthony Lu Best paper Award from the Genetics Society of America in 2001) based on her thesis research. Her background in mammalian systems, as well as yeast, is a real strength, since she is well-equipped to think about the implications of yeast work to higher organisms, which as a yeast molecular geneticist I think is important. Note that Miriam was supported by highly competitive individual fellowships from the NSF and NIH throughout her studies here.

Personally, Miriam is a delight to work with. She speaks well and gets along well with advisors and co-workers. She has presented numerous talks and poster sessions on her work. I have also valued her "civic" service to our school, where she was one of the founders and initial co-

president of the Molecular Biosciences Minority Graduate Student Association. In this capacity, she played a major role in organizing the first Minority Research Symposium that the Association sponsored here, that was heavily attended by minority undergraduates from schools throughout the tri-state area. Miriam has informally served as a peer mentor to many more junior students, and all appreciate her calm demeanor and sound judgment. At Harvard she has continued to serve as a teacher, tutor and mentor, acquiring the skills needed to transition into a faculty position. She has also published a guide for proposal writing for students, indicating her educational leadership, and is currently a Teaching Fellow at Harvard.

Miriam accepted a postdoctoral position at Harvard Medical School after her training here, and her career has continued to develop to the point where she is ready to make the transition to become an independent investigator. As a postdoctoral fellow in the laboratory of Dr. Stephen Buratowski at Harvard, she has been studying the mechanism of transcription termination. This is a central step in gene expression and its regulation in eukaryotic cells, but one that has not been as thoroughly studied as many other regulatory processes. Miriam has developed some new approaches to this complex problem, and has published a first author paper on this work. I have no doubt that her research will provide new insights into transcription termination and its regulation. Furthermore, Miriam is aware of the potential applications of this work to human health and disease, and with her background in mammalian and human biology, should be well-prepared to pursue these in the future.

Miriam's potential as a developing scientist has been recognized by award of postdoctoral fellowships from the United Negro College Fund/Pfizer, the American Cancer Society and the National Institutes of Health (declined). I am confident that she is ready to make the transition to become an independent scientist and an outstanding teacher and mentor.

In summary, I have no reservations in recommending Dr. Miriam E. Bucheli for this position. Please contact me if I can be of further assistance.

Sincerely,



Michael J. Leibowitz, M.D., Ph.D.

Associate Dean

Professor, Molecular Genetics, Microbiology & Immunology

MJL/pd