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September 27, 2005

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

Dear Colleagues:

I am pleased to write this letter of recommendation on behalf of **Dr. Laurence Brewer** who is applying for a faculty position at your institution. I have known Dr. Brewer since approximately 1999, when we started collaborating on a project to visualize proteins moving on single molecules of DNA. Dr. Brewer is a very responsible, smart, hard-working physicist who has a keen interest in the application of physics to important problems in biology. I am please to give him my full recommendation.

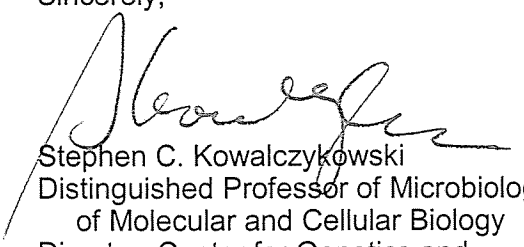
As I mentioned above, I had the good fortune to meet Dr. Brewer through two other mutual collaborators who were involved in the single-molecule visualization project mentioned above. At that time, we were struggling with a practical way to initiate the enzymatic reactions that we were attempting to visualize at the single-molecule level. Dr. Brewer had previously designed an ingenious, but simple, microchannel flow that he helped adapt to our use. Not only did he and his flow cell solve our problem, but we now can do enzymatic experiments at the single-molecule level that we previously would not even have dreamed of doing! Currently, we continue to collaborate with Dr. Brewer on a second generation fluorescence microscope for single-molecule visualization that comprises two optical laser traps; position and force feedback control via a photo-quadrant detector and control system; multi-chromophore excitation and detection optical; and total internal reflectance. Dr. Brewer's input into the optics and control systems has been invaluable. His talents in this arena are outstanding.

In addition to being a great physicist, Dr. Brewer has a strong interest in biology: specifically, regarding the mechanics of chromosome condensation. This is a long-standing and important problem in biology, and Dr. Brewer's 1999 paper published in *Science* is simple and beautiful example of how sophisticated single-molecule physical methods can be used to illuminate the mechanism of DNA condensation in sperm cells. He has now extended this interest to the packaging of mitochondrial DNA, another interesting problem in the biology of chromosomes. He has receiving funding from the NIH on this subject, which is particularly noteworthy, and he and his collaborators have published several good papers on compaction of DNA by a protein which is a component of the mitochondrial nucleoid. I expect additional interesting work to emerge from his laboratory.

Larry has a solid publication record overall, and his funding from the NIH is a significance step in his scientific independence. He is a serious individual who has a strong background in physics. From my perspective, the most impressive aspect of Larry Brewer is his ability to rigorously handle the optics and physics of the instrumentation that he is developing yet, at the same time, keep an eye on the biology. He can communicate his ideas quite effectively, and he has the ability to think well.

In sum, Dr. Laurence Brewer is an excellent individual. I have every reason to believe that he will continue to be successful and, therefore, I also believe that he warrants your strongest consideration.

Sincerely,



Stephen C. Kowalczykowski
Distinguished Professor of Microbiology and
of Molecular and Cellular Biology
Director, Center for Genetics and
Development

Biosciences Directorate
Lawrence Livermore National Laboratory

September 26, 2005

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

Dear Dr. Brun and Search Committee Members,

It is a great pleasure to provide this letter of recommendation in strongest support for Dr. Laurence Brewer's application for a position in the Department of Biology, Indiana University. I have known Dr. Brewer since 1999. We share a common interest in studies of protein/DNA interactions, but with using different experimental methods (mine is using NMR and other types of spectroscopy, while his is using single molecule methods). Although we have not published any papers together yet, we have had numerous and frequent discussions about the science involved, and thus I feel can comment on both his character and his work.

Larry has made notable contributions to the field of protein-DNA interactions, especially in the development and application of innovative single-molecule methods. For the past ten years, he has worked closely with Dr. Rod Balhorn at LLNL on understanding the mechanisms of DNA condensation into toroids when protamine, the basic nuclear protein that packages DNA in sperm cells, binds to DNA. Using his skills as an engineer, he designed and built a microscope, two channel flow cell, and optical trapping system for manipulating single DNA and protein molecules. In addition, he took it upon himself to learn more about the Biology, Biochemistry and Biophysics aspects of the work by taking a series of courses at UC Berkeley. His extensive knowledge in the basics and his hands-on expertise in method development would be of great advantage to any institution that he joins. The fact that Larry's work is published in top journals, such as Science and Nature, demonstrates that he is well respected in the scientific community. He asks important questions and then sets out on answering them.

Larry is a pleasure to have discussions with. He is passionate and knowledgeable about the science. His numerous collaborations at LLNL and UC Davis clearly demonstrate his ability to work with others and his amiable personality. Although I am not familiar with Larry's teaching capabilities, I think he will make an excellent teacher because of his enthusiasm and experience.

I strongly recommend Dr. Brewer to you, without any reservations. If you have any questions, please do not hesitate to call me at 925-423-1647.

Sincerely yours,

Monique Cosman

Monique Cosman, Ph.D.
Senior Biomedical Scientist,
Head, Biomolecular NMR Group

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