

Microbiology,
Molecular Biology
Biochemistry



Department of Microbiology,
Molecular Biology and
Biochemistry
P.O. Box 443052
Moscow, Idaho 83844-3052
Phone: 208-885-7966
Fax: 208-885-6518
E-mail: mmbb@uidaho.edu

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

Dear Dr. Brun,

I am very pleased to write a letter of recommendation for Dr. John Kirby, who is applying for the faculty position in your department. I have known Dr. Kirby for more than 10 years. I first met him when he was a graduate student in George Ordal's lab at the University of Illinois working on *Bacillus subtilis*. He was looking for postdoctoral positions at the time with the goal of switching from working on *Bacillus* to a very different organism. He interviewed with Phil Youderian, who was working on *Myxococcus xanthus*. Dr. Youderian's lab was adjacent to mine and I participated in the Kirby interview process. We discussed motility, myxophage, and development at length. I was impressed with John's ability to think quickly and creatively and with his command of the literature. Dr. Kirby ended up going to Berkeley to pursue his postdoctoral work in another myxococcus lab, that of David Zusman. In the Zusman lab, John committed to identifying and understanding the functions of the numerous clusters of genes encoding proteins related to chemotaxis proteins in enteric bacteria. He successfully showed that a subset of these genes had a profound affect on fruiting body development when mutated yet, surprisingly, had no affect on gliding motility. This work, published in PNAS, was the first demonstration of a role for chemotaxis components in a myriad of cellular processes. Indeed, Kirby's own work and that of Hera Vlamakis, a graduate student who worked with Dr. Kirby in the Zusman lab, have established independent functions for several of the sets of *che*-like clusters in *M. xanthus*. He has shown successfully that, although there is a fundamental similarity for input to the Che-like components (called Frz, Dif and Che in *M. xanthus*), the outputs are distinct. Dr. Kirby's findings were particularly exciting in light of the complex development system of *M. xanthus*. Dr. Kirby showed that the Che3 system regulates transcription of genes that govern the transition between growth and development of *M. xanthus*.

Dr. Kirby moved to the Georgia Institute of Technology in 2002 as an assistant professor. He quickly established his lab and developed several undergraduate and graduate courses. I see John every year at meetings and usually have the opportunity to talk with him about his ongoing work and new interests. After his move to Atlanta, he quickly involved other faculty members in the area to share his fascination with the myxobacteria. He and Frank Löffler have made significant progress in understanding the physiology of *Anaeromyxobacter* and showing the evolutionary relationship between this genus and *Myxococcus*. Dr. Kirby also worked closely with Dr. Igor Zhulin to

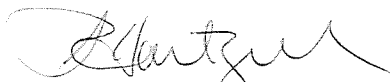
elaborate chemosensory pathways that occur in *Myxococcus* and *Bacillus*. In each case, these collaborative efforts show Dr. Kirby's ability to explore new territory and forge new projects.

While John has begun a project in his lab that deals with chemosensory systems in *Bacillus subtilis*, he and his students still invest most of their efforts to probe the functions of *che* systems in *Myxococcus xanthus*. Last year Dr. Kirby was awarded a grant from the NIH to support the research that involves the *che3* system specifically. Because one of the goals of this work is to identify the downstream targets of the Che3 signaling system, the results of these studies are likely to have a significant impact on our knowledge of the initiation of development in *M. xanthus*.

Dr. Kirby has demonstrated that he is a well-rounded scientist and an esteemed colleague. At this early stage in his career, he has been a partner in organizing broad scientific meetings and in cooperating with specific activities designed to advance research in the myxobacterial community. Dr. Kirby gives a terrific seminar - he presents his data succinctly and he provides the right amount of background information to draw his audience into the story. While I have not seen Dr. Kirby's teaching activities, if he communicates with students the way that he communicates with his scientific audience, then I trust that he is a very good teacher. In support of this idea, John has been invited to teach for two training institutes, Cold Spring Harbor and MBL at Wood's Hole, that historically invite only the premier scientists.

Finally, it is important to emphasize that John is a most amiable person. He is reserved without being withdrawn. He is a polite, thoughtful, well-balanced individual. I know some of the students that worked with John when he was at Berkeley and they spoke highly of him. He mentored them from experiment design through publication. He was a solid force in their career and an exemplary role model. Based on his strong academic background, his abilities to work well with others, and his intellect, I strongly recommend that you consider Dr. John Kirby for a faculty position in your department.

Sincerely,



Patricia Hartzell
Department Head