

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

Department of Animal Biology
College of Liberal Arts and Sciences
515 Morrill Hall
505 South Goodwin Avenue
Urbana, IL 61801-3799



October 14, 2005

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

Dear Dr. Brun,

I am forwarding this letter on behalf of Dr. Barry Williams who is applying for the tenure track faculty position in microbiology in your department. Barry Williams was a former Ph.D. student in the Department of Ecology, Ethology and Evolution at the University of Illinois under the direction of Dr. Jeff Brawn and I. Barry joined my lab in January of 1996 after having worked three years as a technician in the lab of Dr. Colin Hughes at the University of North Dakota, Grand Forks while an undergraduate. Barry came with an extraordinary background in molecular biology with skills in the extraction and quantification of DNA, the construction of genetic libraries, DNA-DNA hybridization, probe construction, DNA sequencing, and PCR. Barry also had considerable experience in the application and analysis of molecular genetic data including microsatellites, RAPD's, AFLP's, RFLP's for both nuclear and mitochondrial DNA and the mapping of quantitative trait loci. During the course of his Ph.D. Barry gained expertise in the analysis of phylogenetic data and acquired more sophisticated approaches to analyzing population genetic data (e.g., nested clade). As a student Barry served as a "touchstone" for graduate students and faculty alike that needed help in molecular technique and analysis. He is truly knowledgeable and skilled in molecular biology and always willing to help others - he's a real team player. Barry was also our most knowledgeable student in the field of evolutionary biology - particularly molecular evolution. All of the graduate students looked to Barry in seminar formats for answers to questions that tended to stump all the rest. In fact, Barry was so good at teaching others that I found it hard to get others to talk when Barry was in the room - they would rather hear what Barry had to say. Although Barry is an extremely confident individual his demeanor is always easy going and caring.

Barry is also an excellent teacher, having received two Excellence in Teaching awards at the University of Illinois and was often an invited lecturer in courses with an evolutionary or conservation genetic slant. Barry also won the best student presentation at our annual graduate symposium (competing with more than 30 others).

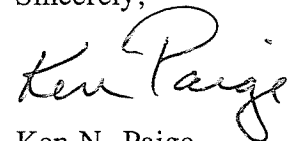
For his dissertation Barry worked in the field of conservation genetics, specifically the effects of fragmentation and isolation on genetic variation in the Regal Fritillary, *Speyeria*

idalia. The Regal Fritillary can be divided into three regions; two isolated populations in the east (one in Pennsylvania, one in Virginia), several small fragmented populations in the mid-west (in Illinois, Indiana, Wisconsin, eastern Missouri, and eastern Iowa), and large unfragmented populations throughout the western portion of its range (from North Dakota to Colorado and Kansas). The U.S Fish and Wildlife Service was particularly interested in the status of the eastern Pennsylvania population, i.e., whether it could be classified as a separate subspecies based on morphological and genetic data. Through funds provided by the U.S. Fish and Wildlife Service, Barry obtained results from sequences of two mitochondrial genes, COI and COII and an intervening tRNA, that indicated the eastern populations are genetically divergent from the mid-west and western populations, warranting a separate subspecific designation. Because eastern and western populations were once a continuum of populations, Barry collected morphological data from museum specimens from the now extinct intervening populations and showed that they formed a morphological cline. Barry also completed a genetic data set from museum specimens from these intervening populations suggesting that there is also clinal genetic variation. Thus, the loss of habitat and populations of the Regal butterfly has led to a case of "anthrovincariance" wherein human-induced loss of habitat has led to an increase in species diversity due to isolation and loss of clinal variation, resulting in discrete entities at the ends of the spectrum of diversity. These results have big implications for the field of Conservation Biology and will likely generate a lot of discussion within and beyond the biological community. His papers are resulting in often cited and important papers. Overall, Barry was truly a star among our graduate students.

As a postdoc in the lab of Dr. Sean Carroll at the University of Wisconsin, Madison, Barry has now moved to more sophisticated techniques used in molecular biology and a new suite of questions. One of his most important contributions to date is a paper published in *Nature* wherein Barry showed that one would need a multitude of genes (at least 20) to resolve incongruencies in molecular phylogenies. This paper captured a great deal of attention and interest among the scientific community. Barry's more recent work has focused on the model organism Baker's Yeast (*Saccharomyces cerevisiae*), wherein Barry has been addressing questions concerning the genetic basis of phenotypic expression, protein evolution and its relation to fitness, the degree of epistasis in the genome and the evolution of duplicate genes.

Overall, Barry is an outstanding scientist and expect nothing shy of him becoming a leader in the field of evolutionary biology. Barry is definitely the best of the best! I would strongly encourage you to take a close look at him, you won't be disappointed. Thank you for your consideration.

Sincerely,



Ken N. Paige
Professor and Head