



November 14, 2005

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Dear Colleagues,

**Peter Houston** has applied for a position as Assistant Professor in your department and has asked that I write in support of his application. I am delighted to do. Peter is an inventive and fearless experimentalist. He single handedly opened a new direction in our research effort and has made seminal contributions to the field. Above and beyond that, he's a truly delightful guy. I can recommend his application with unbridled enthusiasm.

Peter has worked in my lab for several years on an intriguing problem in developmental biology, namely, how distant regions of the genome interact in a selective and timely fashion. While this problem touches on issues such as the developmental progression of globin gene expression and the mechanism of immunoglobulin class switching, Peter has addressed the issue through an analysis of mating type switching in the yeast *Saccharomyces*. In particular, he has been investigating how the cell can select on the basis of cell type one of two possible donor loci located at opposite ends of the chromosome for transposition to an expressor locus. Peter's recent approach has been to look at individual cells in which the potentially interacting loci are marked with GFP tags and then follow them over time after initiating the selection process. In order to accomplish this task, Peter had to invent his own experimental tools. In particular, he had to construct his own temperature controlled flow cell for our deconvolution microscope and work out the methodology for both controlling the conditions of the cells and interrogating cells repeatedly over several hours. Finally, he's had to develop new software to analyze the reams of data generated by each experiment. The outcome of this work has been the first visualization in living cells of synopsis during recombination and a clear redefinition of the nature of the interaction of the donor and recipient loci during this process. More importantly, his work has laid the experimental groundwork for teasing apart not only the donor preference problem but also general issues of the mechanism of double strand break-induced recombination. This is ready for prime time and will be sent out for publication in the next week.

In a second set of experiments Peter has spearheaded a genomics study of the donor preference. Through a complicated set of highly parallel crosses Peter has constructed a set strains in which each of the 4500 viable yeast deletions has been crossed into a background allowing a facile quantitative assay for donor preference. In a pilot experiment, Peter has already identified a number of novel mutants that affect the process, and we expect this study to yield a

wealth of important new insights into the problem. These current experiments follow on Peter's previously published genetic studies, which have already had a significant impact on the field, as well as his earlier training in biochemistry during his graduate work. In total, Peter's results to date demonstrate his mastery of molecular biology, cell biology and biochemistry as well as his ability to bring to bear on any biological problem whatever experimental technique is required to answer the question at hand. Very few of the current or former members of my lab have had the breadth of experimental skills or the fearlessness (even eagerness) to explore new experimental paradigms.

In addition to his experimental strengths, Peter is an exceptionally delightful individual. He has a real "down-home" style that puts anyone at ease but which belies an intense curiosity and a sharp intellect. Despite his laid back style, Peter can always be relied on to ask penetrating questions in our multilab group meetings, during our departmental seminars or at international meetings – one of the few postdocs to do so at any of these venues. He's not intimidated by any setting and readily attracts colleagues and friends. Needless to say, he is an ideal lab citizen who carries more than his share of responsibilities and completes them with skill and grace. Accordingly, he's known, respected and well-liked by members of the group, the department and the larger yeast community. He'll certainly be a central and respected player in the field and a welcome addition to any department.

In short, I have no hesitation in offer Peter my unqualified recommendation. You would certainly enjoy meeting him and he has a great story to tell you about his work and his plans for the future. Don't miss the opportunity to hear it.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Broach', written in a cursive style.

James R. Broach

Associate Chair, Department of Molecular Biology

Associate Director, Lewis Sigler Institute for Integrative Biology