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Work

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Citizenship: United States of America

Education

1999-present Princeton University, Postdoctoral Researcher in Molecular Biology, Advisor: James Broach.
Project: "Donor Preference in Yeast Mating Type Interconversion"

1992-1999 The University of Texas at Austin, Ph.D. in Organic Chemistry, Advisor: Thomas Kodadek
Dissertation Title: "Biochemical Characterization of Genetic Recombination Proteins"

1986-1991 Auburn University, B. S. in Biochemistry, Advisor: Peter Livant
Project: "Selective Bromination and Chlorination of Resorcinol"

1982-1986 Strake Jesuit College Preparatory High School, Houston, Texas

Research and Teaching Experience

Princeton University, Department of Molecular Biology

Research Assistant (1999-present), Advisor, James Broach

Assistant Instructor (2001), Molecular Biology Core Laboratory

Instructor (2002), Tutorial "Combinatorial Methods in Molecular Biology and Drug Discovery"

The University of Texas Health Science Center in San Antonio, Institute of Biotechnology

Research Assistant (1999), Advisor, Patrick Sung, Project: "Characterization of Rad54 protein"

University of Texas at Austin, Department of Chemistry

Teaching Assistant (1992-1994), Sophomore Organic Chemistry Lab

Teaching Assistant (1995), Advanced Organic Chemistry Lab, James Whitesell

Teaching Assistant (1996), Advanced Biochemical Techniques, Gisela Mosig

Auburn University, Department of Chemistry

Assistant to the Organic Chemistry lab manager (1989-1991)

Publications

Abstracts

Houston, P, Broach, J (2005) " Physical and Genetic Analysis of Mating Type Switching Preference (Talk)" Yeast Cell Biology Meeting, August 16-21, Cold Spring Harbor Laboratory, New York.

Houston, P, Broach, J (2005) " Physical Analysis of the Dynamics of Recombination Intermediates in Live Cells (Poster)" FASEB Summer Research Conference on Genetic Recombination & Genome Rearrangements, July 23 - 28, Snowmass, Colorado.

Houston, P, Broach, J. (2004) "What Controls Mating Type Switching in Yeast? (Poster)" Yeast Genetics and Molecular Biology Meeting, University of Washington, Seattle, July 27 - August 1, *Honorable Mention*.

Houston, P, Broach, J (2003) "The Statistical Mechanics of Homologous Recombination (Poster)" Yeast Cell Biology Meeting, August 2-17, Cold Spring Harbor Laboratory, New York.

Houston, P, Broach, J (2002) "Analysis of Mating Type Switch Donor Preference in Yeast with *arg4* Heteroalleles and LacI-GFP Mediated Tagging (Poster)" FASEB Summer Research Conference on Yeast Chromosome Structure, Replication and Segregation, June 28 - July 3, Snowmass, Colorado.

Research Papers

Houston P., and Broach J. (2005) "The dynamics of homologous pairing during mating type interconversion in budding yeast," in preparation.

Houston P., Simon P., and Broach J. (2004) "Yeast recombination enhancer biases recombination during inter-chromosomal mating type switching but not in inter-chromosomal homologous recombination," *Genetics* 166: 1187-1197.

Simon P., Houston P., and Broach J. (2002) "Directional bias during mating type switching in *Saccharomyces* is independent of chromosomal architecture," *EMBO Journal* 21: 2282-2291.

Jiang, H., Xie, Y., Houston, P., Stemke, H. K., Mortensen, U. H., Rothstein, R., Kodadek, T. (1996) "Direct association between the yeast Rad51 and Rad54 recombination proteins," *Journal of Biological Chemistry*, 271: 33181-6.

Houston, P., Kodadek, T. (1994) "Spectrophotometric assay for enzyme-mediated unwinding of double-stranded DNA," *Proceedings of the National Academy of Sciences of the United States of America*, 91: 5471-4.

Activities and Interests

- Campus representative for Science AAAS Next Wave at Princeton University
- Chair of postdoctoral committee to invite seminar speakers
- Philadelphia and Princeton area yeast group: Rose, Zakian, Broach, and Botstein Labs
- Bicycling, canoeing, beer making, snow skiing, guitar, piano, carpentry, and mechanics

Expertise

- Live cell microscopy and image processing
- High throughput mating with haploid marker selection in yeast using viable deletion set
- Genetic techniques including tetrad dissection, gap repair, PCR based mutagenesis, Southern blot, fluctuation test, and complex strain construction
- General molecular biology techniques including molecular cloning, protein expression in yeast and bacteria
- Computer skills, which include: basic C++, java, and HTML
- Biophysical analysis of proteins and nucleic acids with UV/VIS, circular dichroism, and fluorescence spectroscopy

References

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Mark Rose, Professor
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