JENNIFER APODACA

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RESEARCH INTEREST

My research interests focus on understanding evolutionary dynamics in microbial populations, and their effect on genomic, phenotypic, and emergent properties as well as genetic network interactions.

EDUCATION

2005-Present University of Wisconsin-Madison Madison, WI
PhD candidate, Comparative Biomedical Sciences

Advisers: Nicole T. Perna and Jeremy D. Glasner

- Research Topic:

1995-2000 New York University New York, NY
B.A., Biology, College of Letters and Science

RESEARCH EXPERIENCE

2001-2005 Dept, of Biochemistry, UW-Madison Madison, WI
Associate Research Specialist
Principal Investigator: William S. Reznikoff

- Created a reduced genome of *Escherichia coli* K-12 MG1655 using a modified Tn*5* transposon designed for chromosomal deletion. Conducted experimental research and analysis of minimal *E. coli* K-12 genome. Conducted analysis of the IS50 transposase family.

2000–2001 Promega , Research and Development Madison, WI
Research Assistant, Contract (QTI Inc.)
Principal Investigator: John Shultz

- Assisted in the development and completion of the READIT™ SNP genotyping system. Performed quality control assays and other analysis for product release.

1999-2000 Biotechnology Center, UW-Madison Madison, WI
Associate Research Specialist
Principal Investigator David C. Schwartz

- Participated in the completion of a physical restriction map of the *E. coli* 0157:H7 genome. Assisted with laboratory management and maintained and repaired laboratory equipment including: microscopes, video cameras (SIT, CCD) and pulsed field gel electrophoresis systems.

1998-1999 Dept. of Chemistry, NYU New York, NY
Junior Research Scientist

- Participated in the completion of a physical restriction map of the *Plasmodium falciparum* genome using optical mapping techniques developed by David C. Schwartz and colleagues.

PUBLICATIONS

- Reznikoff, W. S., S.R. Bordenstein, and J. Apodaca, 2004. Comparative sequence analysis of IS50/Tn5 transposase. J. *Bacteriol. 186:8240-7*

- Goryshin, I.Y., T. A. Naumann, J. Apodaca, and W. S. Reznikoff. 2003. Chromosomal deletion formation system based on Tn5 double transposition: use for making minimal genomes and essential gene analysis. *Genome Res. 13:644-53*

- Lim, A., E.T. Dimalanta, K.D. Potamousis, G. Yen, J. Apodaca, C. Tao, J Lin, R. Qi, J. Skiadas, A. Ramanathan, N.T. Perna, G. Plunkett, V. Burland, B. Mau, J. Hackett, F.R. Blattner, T.S. Anantharaman, B. Mishra, D.C. Schwartz. 2001. Shotgun optical maps of the whole Escherichia coli O157:H7 genome. Genome Res. 11:1584-93

- Perna, NT, G. Plunkett, V. Burland, B. Mau, J.D. Glasner, D.J. and Rose, G.F. Mayhew, P.S. Evans, J. Gregor, H.A. Kirkpatrick, G. Posfai, J. Hackett, S. Klink, A. Boutin, Y. Shao, L. Miller, E.J. Grotbeck, N.W. Davis, A. Lim, E.T. Dimalanta, K.D. and Potamousis, J. Apodaca, T.S. Anantharaman, J. Lin, G. Yen, D.C. Schwartz, R.A. Welch, and F.R. Blattner. 2001. Genome sequence of enterohaemorrhagic Escherichia coli O157:H7. *Nature 409:529-33*

- Lai, Z., J. Jing, C. Aston, V. Clarke, J. Apodaca, E.T. Dimalanta, D.J. Carucci, M.J. Gardner, B. Mishra, T.S. Anantharaman, S. Paxia, S.L. Hoffman, J. C. Venter, E.J. Huff, and D.C. Schwartz. *1999*. A shotgun optical map of the entire Plasmodium falicparum genome. *Nature Genetics 23:302-13*

AWARDS AND FELLOWSHIPS

2005-Present

- Genomic Sciences Training Program-Predoctoral Trainee

Student Travel Award, American Society for Microbiology 2nd ASM Conference on Integrating Metabolism and Genomics (IMAGE2), Montreal, Quebec, Canada, April 30 – May 3, 2007.

ORAL PRESENTATIONS

- Comparative genomics of Oxygen Regulation in E*nterobacteria.* Jennifer Apodaca, Jeremy D. Glasner, Amy Charkowski, Patricia J. Kiley, Nicole T. Perna. American Society for Microbiology North Central Branch 66th Annual Meeting, Brookings, South Dakota. October 20-21, 2006.

- Comparative genomics of Oxygen Regulation in E*nterobacteria.* Jennifer Apodaca, Jeremy D. Glasner, Amy Charkowski, Patricia J. Kiley, Nicole T. Perna International Erwinia Workshop, Scottish Crop Research Institute, Dundee, Scotland. July 8-10th, 2006

- Comparative genomics of Oxygen Regulation in E*nterobacteria.* Jennifer Apodaca, Jeremy D. Glasner, Amy Charkowski, Patricia J. Kiley, Nicole T. Perna 11th International Conference on Plant Pathogenic Bacteria. Edinburgh, Scotland. July 10th -14th, 2006.

- Comparative genomics of Oxygen Regulation in *Escherichia coli*. Jennifer Apodaca, Jeremy D. Glasner, Amy Charkowski, Patricia J. Kiley, Nicole T. Perna. Genomic Sciences Program Seminar Series, Madison, Wisconsin, April 27, 2006.

POSTER PRESENTATIONS

- Evolution of the transcriptional response to oxygen limitation in enterobacteria. Jennifer Apodaca, Jeremy D. Glasner, Amy Charkowski, Patricia J. Kiley, Nicole T. Perna. American Society for Microbiology 2nd ASM Conference on Integrating Metabolism and Genomics (IMAGE2), Montreal, Quebec, Canada, April 30 – May 3, 2007. Student Travel Award
- Comparative genomics of Oxygen Regulation in E*nterobacteria*. Jennifer Apodaca, Jeremy D. Glasner, Amy Charkowski, Patricia J. Kiley, Nicole T. Perna 11 th International Conference on Plant Pathogenic Bacteria. Edinburgh, Scotland. July 10th -14th, 2006.
- Comparative genomics of Oxygen Regulation in *Escherichia coli* and phytopathogenic *Erwinia* Jennifer Apodaca, Jeremy D. Glasner, Amy Charkowski, Nicole T. Perna. The Biology of Genomes, Cold Spring Harbor, New York, May 10-14, 2006

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