

LAURA E. BARTLEY

Assistant Professor, University of Oklahoma
Department of Botany and Microbiology
Department of Chemistry and Biochemistry (by courtesy)
Department of Chemical Biological and Materials Engineering (by courtesy)
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Education and Training

Postdoctoral Training. UC Davis. October 2005 to July 2010.

Functional genomics of enzymes involved in rice cell wall synthesis and transcription factors involved in innate immunity. Advisor: Dr. Pamela Ronald.

American Association for the Advancement of Science (AAAS) Risk Policy Fellow, Policy and Coordination Division, Biotechnology Regulatory Services, Animal Plant Health Inspection Services, U.S. Department of Agriculture. 2002 – 2004.

Ph.D. Biochemistry. Stanford University. January 2002.

Dissertation: “Insights into RNA Tertiary Folding: Examination of Structure Formation between the P1 Helix and the Pre-folded *Tetrahymena* Group I Ribozyme.” Advisor: Dr. Daniel Herschlag.

B.A. with Distinction. Biology. Swarthmore College, Swarthmore, PA. May 1995.

Honors and Awards

Joint Bioenergy Institute Research Awardee. 3/2010

University of California Office of the President Postdoctoral Fellow. 7/2007 – 7/2009.

National Institutes of Health Kirschstein National Research Service Award Postdoctoral Fellow. Declined. 2007.

Co-PI, UC Discovery Grant. Construction of a computational and experimental pipeline for high-fidelity prediction of defense response proteins for use in switchgrass. 2007-2010.

Laboratory Management Institute Trainee. UC Davis. 2006 – 2007.

USDA/NSF Travel Awardee. 4th Int’l Rice Functional Genomics Conference. 10/2006.

NIH Biotechnology Trainee. Stanford University. 2000 – 2001.

NIH Cell and Molecular Biology Trainee. Stanford University. 1996 – 1998.

Sigma Xi. Swarthmore College. 1995.

Teaching and Mentoring Experience

Guest Lecturer. *Genes and Society* (UCD-SAS 020). UC Davis. Fall 2008.

Graduate Student Mentor. UC Davis. Fall 2006, Fall 2008, Fall 2007 – present.

Undergraduate Mentor. UCD Program in Plant Genomics Education. Summer 2007, 2008.

High School Student Mentor. Davis Senior High Biotechnology Program. Spring 2007.

Tutor. Volunteer tutor for a high school student. 1999 – 2003.

Undergraduate Research Mentor. Stanford University. Summer 2000.

Tutor. Volunteer algebra and biology tutor for a community college student. 1997 – 1998.

Teaching Assistant. Molecular Biology. Stanford University. Spring 1997.

Teaching Assistant. Advanced Biochemistry. Stanford University. Winter 1996.

Peer Reviewed Publications

Seo, Y.S., Chern, M.S., **Bartley, L.E.**, Richter, T.E, Han, M., Jung, K.H., Lee, I., Walia, H., Xu, X. Cao, P., Bai, W., Ramanan, R., Amonpant, F., Arul, L., Canlas, P.E., Ruan, D.L., Hwang, S., Jeon, J.-S. and Ronald, P.C. (Under Review) “The Rice Stress Interactome.” *Nature Genetics*.

Peng, Y., **Bartley, L.E.**, Canlas, P., and Ronald, P.C. (2010) “OsWRKY IIa transcription factors modulate rice innate immunity.” *Rice*.

Manual Annotator, The International Brachypodium Initiative (2010) “Genome sequence analysis of the model grass *Brachypodium distachyon*: insights into grass genome evolution.” *Nature* **463**:763-768.

Bartley, L.E. and Ronald, P.C. (2009) “Plant and Microbial Research Seeks Biofuel Production from Lignocellulose.” *California Agriculture J.* **63**:178-184.

Ding, X., Richter, T.E., Chen, M. , Fujii, H., Seo, Y. S., Xie, M., Zheng, X., Kanrar, S., Stevenson, R.S., Dardick, C., Li, Y., Jiang, H., Zhang, Y., Yu, F., **Bartley, L.E.**, Chern, M., Bart R., Chen, X., Zhu, L., Farmerie, W.G., Gribskov, M., Zhu, J.-K., Fromm, M.E., Ronald, P.C. and Song, W.-Y. (2008) “A Rice Kinase-Protein Interaction Map” *Plant Physiol.* DOI:10.1104/pp.108.128298.

Jung, K.-H., **Bartley, L.E.**, Cao, P., Ronald, P.C. (2008) “Analysis of Alternatively Spliced Rice Transcripts using Microarray Data.” *Rice*. doi:10.1007/s12284-008-9020-9.

Cao, P., **Bartley, L.E.**, Jung, K.-H., Ronald, P.C. (2008) “Construction of a Rice Glycosyltransferase Phylogenomic Database and Identification of Rice-Diverged Glycosyltransferases.” *Molecular Plant* **1**: 858-877.

Jung, K.-H., Dardick, C., **Bartley, L.E.**, Cao, P., Phetsom, J., Canlas, P., Seo, Y.-S., Shultz, M., Ouyang, S., Yuan, Q., Frank, B. C., Ly, E., Zheng, L., Jia, Y., Hsia, A.-P., An, K., Chou, H.H., Rocke, D., Lee, G.C., Schnable, P.S., An, G., Buell, C.R., Ronald, P.C. (2008) “The Rice NSF45K Oligonucleotide Array: Validation and Use to Evaluate Redundancy of Gene Function” *PLOS ONE* **6**: e3337

- Peng, Y., **Bartley, L.E.**, Chen, X., Dardick, C., Ruan, R., Canlas, P.E. and Ronald, P.C. (2008) "OsWRKY62 is a Negative Regulator of Basal and Xa21-Mediated Defense against *Xanthomonas oryzae* pv. *oryzae* in Rice." *Molecular Plant* **1**:446-458.
- Lee, S.-W, Han, S.-W., **Bartley, L.E.** and Ronald, P.C. (2006) "The unique characteristics of *Xanthomonas oryzae* pv. *oryzae* AvrXa21 and Implications for Plant Innate Immunity." *Proc. Natl. Acad. Sciences USA*. **103**: 18395-18400.
- Bart, R., Chern, M.S., Park, C.J., **Bartley, L.E.** and Ronald, P. (2006) "A Novel System for Gene Silencing using siRNAs in Rice Leaf-derived Protoplasts." *Plant Methods*. **2**: 13.
- Bartley, L.E.**, Zhuang, X., Das, R., Chu, S., Herschlag, D. (2003) "Exploration of the Transition State for Tertiary Structure Formation between an RNA Helix and a Large Structured RNA." *J. Mol. Biol.* **328**:1011-1026
- Zhuang, X.*, **Bartley, L.E.***, Babcock, H., Russell, R., Ha, T., Herschlag, D., Chu, S. (2000) "A Single Molecule Study of Catalysis and Folding of an RNA Enzyme." *Science* **288**: 2048-2051.
***equal contributors**
- Narlikar, G. J., **Bartley, L.E.**, Herschlag, D. (1999) "Use of Duplex Rigidity for the Stability and Specificity in RNA Tertiary Structure." *Biochemistry* **39**:6183-6189.
- Narlikar, G. J., **Bartley, L.E.**, Khosla, M., Herschlag, D. (1999) "Characterization of a Local Folding Event of the *Tetrahymena* Group I Ribozyme: Effects of Oligonucleotide Substrate Length, pH and Temperature on the Two Substrate Binding Steps." *Biochemistry* **38**: 14192-14204.

Other Publications

- Lee, D. and **Bartley, L.E.** (2006) "The Intersection of Science and Policy in Risk Analysis of Genetically Engineered Plants" sidebar in Acquah, G. *Principles of Plant Genetics and Breeding*. Blackwell Publishing.
- Bartley, L.E.** and Turner, J.T. (2004) "Assessment of Measures to Limit Gene Flow from Genetically Engineered Crops" in *Proceedings from a Conference on Biotechnology in Centers of Origin*. Sponsored by the Asian Pacific Economic Cooperation.
- Bartley, L.E.** (2000) "A Biochemical Jigsaw Puzzle: Uncovering the Details of Folding of an RNA Molecule" Integrating Research into the Teaching Environment. Stanford, CA.

Professional Memberships and Service

Science Advisor. *Science through Art* project. Designed Evolution column and worked with artist and 5th graders to create and explain the column. Spring 2008.

American Association for the Advancement of Science. 2000 – present.

American Society of Plant Biologists. 2006 – present.

American Chemical Society. 2000-2003, 2009.

Peer Reviewer. *Plant Cell and Environment*. 2007.

Postdoctoral Observer. UC Davis Graduate Council. 2007 – 2008.

Volunteer Lecturer. Partnership for Plant Genomics Education. UC Davis. 2006 – present.

Peer Reviewer. USDA Extramural Grant Review Panel. Spring 2004.

Graduate Student Representative. Stanford University Environmental Health and Safety Committee. 1999 – 2000.

Mentor. Stanford Medical Youth Science Program for low-income and ethnically disadvantaged high school students. Summer 1997.

Other Research and Training Experience

Contractor. SPS Resources. Developed data sets and methodologies to support compliance with USDA field trial specification. 2005.

Trainee. Agroecology. Institute for International Agriculture. Michigan State University. Summer 2003.

Intern. Maxygen, Redwood City, CA. Agriculture. Enabling Technologies. RNA expression and stability *in planta*. Summer 2002.

Postdoctoral Fellow. Laboratory of Dr. Daniel Herschlag. Stanford University. Single molecule fluorescence to monitor RNA folding. Spring 2002.

Graduate Research Associate. Laboratory of Dr. Daniel Herschlag. Stanford University. Kinetic and thermodynamic analyses of ribozyme catalysis and folding using single molecule and bulk assays. 1996 – 2001.

Research Associate. Laboratory of Dr. Daniel Herschlag, Stanford University. Structure-function analysis and *in vitro* evolution of alpha/beta barrel proteins. 1995 – 1996.

Undergraduate Research Assistant. Laboratory of Dr. Mark Jacobs, Swarthmore College. Mechanism of auxin transport in vascular plants. 1994 – 1995.

High school Research Assistant. Laboratory of Dr. Gloria Hoffman. USDA Carl Hayden Bee Research Center, Tucson, AZ. Foraging habits of honeybees in sunflower fields. 1990 – 1991.