

Emily A. Wiley

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Education

1996 Ph.D., University of Washington; Molecular Genetics, Dept. of Pathology
Thesis advisor: Dr. Virginia A. Zakian

1989 B.S. Biology (*magna cum laude*); Western Washington University, Bellingham, WA

Academic Positions

2008-pres. **Associate Professor**; Claremont McKenna, Pitzer, Scripps Colleges, Claremont, CA:
Histone modifying activities in heterochromatin, development, nuclear degradation

2002-2008 **Assistant Professor**; Claremont McKenna, Pitzer, Scripps Colleges, Claremont, CA:
Roles of histone deacetylases in chromatin structure and gene regulation.

1999-2001 **Visiting Assistant Professor**; Mount Holyoke College, South Hadley, MA:
Characterization of histone deacetylase activity in *Tetrahymena thermophila*.

1996-1999 **Postdoctoral Research Associate**; University of Rochester, Rochester, NY and Fred
Hutchinson Cancer Research Center, Seattle, WA: Role of histone acetylation patterns for
transcriptional competency of chromatin in *Tetrahymena thermophila*.

1996 **Visiting Scientist**; Fred Hutchinson Cancer Research Center: Investigated the role of the
yeast membrane protein Slh1p in yeast telomere structure.

1991-1996 **Graduate Research Student**; Fred Hutchinson Cancer Research Center, Seattle, WA and
Princeton University, Princeton, NJ: Identification and characterization of yeast telomere
structural components.

1989-1990 **Laboratory Technician**; Division of Infectious Disease, Children's Hospital,
Seattle, WA: Cloning of penicillin binding proteins from *Haemophilus influenza*.

1988-1989 **Independent Research Student**; Western Washington University: Factors affecting the
signal transduction pathway for light production in *V. harveyi*.

Honors/Awards

2010 Johnson Faculty Achievement Award for Teaching, Scripps College

2009 American Publishers PROSE Award for book (co-editor): "Current Protocols Essential
Laboratory Techniques" Wiley and Sons, Inc., New Jersey

2009 NSF Award: "Conference on Ciliate Molecular Biology"

2006 NSF CAREER Award: "Investigating Chromatin Assembly Pathways Through Histone
Deacetylases".

2003 Mellon Faculty Enhancement Award

1998 Fellowship Award, New College Teachers Workshop, Society for Values in Higher Education

1997 NIH Postdoctoral Fellowship Award: 3 years of research and salary support

1989 Graduated *magna cum laude*, B.S., Biology, Western Washington University

Research Funding

2012-2015 NSF Award (\$76,814)
2006-present NSF CAREER Award (\$654,000 for 5 years)
2009 NSF Award for conference support (\$10,475)
2005, 2008 Pitzer Faculty Research Grant: \$2,000, each award
2004 Suzanne and David Johnson Foundation: \$10,000 to support summer student research
Keck Research Grant: \$15,000 over three years
Reed Institute funding for development of Ciliate Genomics Consortium: \$7,500

Professional Memberships

2002-present American Society for Microbiology
2002-2006 AAAS
2002 American Society for Cell Biology
2000-present Sigma Xi
2000 Society for Values in Higher Education

Publications

A. Peer Reviewed * indicates undergraduate student authors

- 1) Slade, K.M., *Freggiaro, S., *Cottrell, K.A., Smith, J.J., and **Wiley, E.A.** (2011) Sirtuin-mediated nuclear differentiation and programmed degradation in *Tetrahymena*. **BMC Cell Biology** 12(1):40-54.
- 2) Coyne, R.S., Thiagarajan, M., Jones, K.M., Wortman, J.R., Tallon, L.J., Haas, B.J., Cassidy-Hanley, D.M., **Wiley, E.A.**, *et al.* (2008) Refined annotation and assembly of the *Tetrahymena thermophila* genome sequence through EST analysis, comparative genomic hybridization, and targeted gap closure. **BMC Genomics** 9: 562-579.
- 3) Smith, J., *Torigoe, S., *Maxson, J., *Fish, L., and **Wiley, E.A.** (2008) A class II HDAC deacetylates newly-synthesized histones in *Tetrahymena*. **Eukaryotic Cell** 7(3): 471-482.
- 4) *Parker, K., *Maxson, J., *Mooney, A., and **Wiley, E.A.** (2007) Class I histone deacetylase Thd1p promotes global chromatin condensation in *Tetrahymena thermophila*. **Eukaryotic Cell** 6: 1913-1924.
- 5) **Wiley, E.A.**, *Myers, T., *Parker, K., *Braun, T., Yao, M.-C. (2005) The class I histone deacetylase Thd1p affects nuclear integrity in *Tetrahymena thermophila*. **Eukaryotic Cell** 4: 981-990.
- 6) **Wiley, E.A.**, Ohba, R., Yao, M.-C., Allis, C.D. (2000) Developmentally regulated Rpd3p homolog specific to the transcriptionally active macronucleus of vegetative *Tetrahymena thermophila*. **Mol. Cell. Biol.** 20(22):8319-8328.
- 7) Huang, H., Smothers, J.F., **Wiley, E.A.**, Allis, C.D. (1999) A nonessential HP1-like protein affects starvation-induced assembly of condensed chromatin and gene expression in macronuclei of *Tetrahymena thermophila*. **Mol. Cell. Biol.** 19(5):3624-3634.
- 8) Huang, H., **Wiley, E.A.**, Lending, C.R., Allis, C.D. (1998) An HP1-like protein is missing from transcriptionally silent micronuclei of *Tetrahymena*. **Proc. Natl. Acad. Sci. USA** 95: 13624-13629.

- 9) **Wiley, E.A.** and Zakian, V.A. (1995) Extra telomeres, but not internal tracts of telomeric DNA, reduce transcriptional repression at *Saccharomyces* telomeres. **Genetics** 139:67-79.
- 10) Mendelman, P.M., Chaffin D.O., Kilov, L.R., Kalaitzoglou, G., Serfass, D.A., Onay, O., **Wiley, E.A.**, Overturf, G.D., Rubin, L.G. (1990) Cefuroxime treatment failure of nontypable *Haemophilus influenzae* meningitis associated with alteration of penicillin-binding proteins. **Journal of Infectious Disease** 162:1118.
- 11) Mendelman, P.M., **Wiley E.A.**, Stull, T.L., Clausen, C., Chaffin, D.O., Onay, O. (1990) Problems with current recommendations for susceptibility testing of *Haemophilus influenzae*. **Antimicrobial Agents and Chemotherapy** 34(8):1480 – 1484.
- 12) Mendelman, P.M., Henritzy, L.L., Chaffin, D.O., Lent, K., Smith, A.L., Stull, T.L., **Wiley, E.A.** (1989) In vitro activities and targets of three cephem antibiotics against *Haemophilus influenzae*. **Antimicrobial Agents and Chemotherapy** 33(11):1878 – 1882.

B. Books and book chapters

- 1) Gallagher, S.R. and **Wiley, E.A.**, Editors. (2012) Current Protocols: Essential Laboratory Techniques. Wiley and Sons, Inc., New Jersey, 2nd Edition.
- 2) Smith, J.J., **Wiley, E.A.**, and Cassidy-Hanley, D. (2012) "Tetrahymena in the Classroom" in **Methods in Cell Biology** 109:411-30.
- 3) Gallagher, S.R. and **Wiley, E.A.**, Editors. (2009) Current Protocols: Essential Laboratory Techniques. Wiley and Sons, Inc., New Jersey. **Expanded online version**
- 4) Gallagher, S.R. and **Wiley, E.A.**, Editors. (2008) Current Protocols: Essential Laboratory Techniques. Wiley and Sons, Inc., New Jersey.
- 5) **Wiley, E.A.** and Chakravarti, D. (2008) "Measurement of pH" in Current Protocols: Essential Laboratory Techniques, Wiley and Sons, Inc., New Jersey.
- 6) **Wiley, E.A.**, Mizzen, C., Allis, C.D. (2000) Isolation and characterization of *in vivo* modified histones and an activity gel assay for identification of histone acetyltransferases. **Methods in Cell Biology: Tetrahymena thermophila**. Academic Press, San Diego, CA., Vol. 62:379 - 394.

C. Published Abstracts

- 1) **Wiley, E.A.** and Chalker, D. (2010) The Ciliate Genomics Consortium: Involving undergraduates in a community research effort. **JMBE** 11:71
- 2) *Freggiaro, S., Smith, J.S., **Wiley, E.A.** (2009) Histone deacetylases in *Tetrahymena* heterochromatin formation. **Biochemistry and Cell Biology** 87:513
- 3) *Torigoe, S. and **Wiley, E.A.** (2007) Characterization of a histone deacetylase in *Tetrahymena thermophila*. **Biochemistry and Cell Biology** 85:521

4) *Parker, K., *Blum, E., *Greaves, T., and **Wiley, E.A.** (2004) The *Tetrahymena* histone deacetylase Thd1p affects nucleolar integrity and global chromatin condensation. Biochemistry and Cell Biology 82:522

Selected Research Presentations and Invited Lectures

- 2012 NSF: Enhancing Biological Science Research Opportunities at Primarily Undergraduate Institutions conference; *invited speaker*: "Leveraging genomes and databases for undergraduate investigations"; *poster*: The Ciliate Genomic Consortium: Involving undergraduates in a community research effort"
- 2011 FASEB Ciliate Molecular Biology conference, *talk title*: "Sirtuins promote programmed nuclear degradation in *Tetrahymena*"; *talk title*: "Immediate dissemination of student research results for community genome annotation"
- 2010 Midwest Protozoology Conference, *talk title*: "Sirtuins and programmed nuclear death" American Society for Microbiology Conference for Undergraduate Educators, *poster title*: "The Ciliate Genomics Consortium: Involving undergraduates in a community research effort"
- Asilomar Chromatin and Chromosomes Conference; *talk title*: "HDACs and nuclear death"
- 2009 Reed College, *talk title*: "Dynamic Genome Packaging: Big revelations from a quirky little cell" FASEB Summer Research Conference: "The HDAC Thd2 promotes post-replication chromatin processing"
- AAAS Vision and Change Conference: Transforming Undergraduate Biology Education "The Ciliate Genomics Consortium: Integrating research into the classroom"
- 2008 Asilomar Chromatin and Chromosomes Conference; *talk title*: "Histone deacetylases in *Tetrahymena* heterochromatin formation"
- 2007 FASEB Summer Research Conference on Histone Deacetylases; *talk title*: "A class II HDAC deacetylates newly synthesized histones in *Tetrahymena thermophila*"
- 2007 FASEB Summer Research Conference on Ciliate Molecular Biology; *talk title*: "Integrating research into the undergraduate classroom"
- poster 1: "The class I HDAC promotes global chromatin condensation"
- poster 2: "The micronuclear proteome of *Tetrahymena thermophila*"
- poster 3: "Making gene knockout constructs in the undergraduate classroom"
- 2006 International Conference on Chromatin and Chromosomes; *talk title*: "The class I histone deacetylase Thd1p promotes global chromatin condensation"
- Scripps College Noon Academy; *talk title*: "Why are your toes, toes and not a nose?"
- 2005 Pomona College, Biology Seminar Series; *talk title*: "Deciphering codes for genome dynamics"
- New Ideas on Using Simple Eukaryotes in Teaching and Research (workshop); *talk title*: Involving undergraduates in functional annotation of the *Tetrahymena* genome
- FASEB Summer Research Conference on Ciliate Molecular Biology; title: "Multiple HDACs, multiple chromatin jobs".
- 2004 Claremont Colleges, Joint Science Department; *talk title*: "Deciphering the chromatin histone code"
- 2003 West Coast Chromatin Conference; *talk title*: "A Rpd3p homolog directs chromatin condensation"
- FASEB Summer Research Conference on Ciliate Molecular Biology; Title: "A histone deacetylase important for chromatin condensation and nucleolar integrity".

- 2001 Keynote Speaker: New York Science Fair, Manhattanville, NY; Title: "Deciphering the chromatin histone code"
FASEB Summer Research Conference on Ciliate Molecular Biology; Title: "A histone deacetylase specific to the macronucleus in *Tetrahymena thermophila*."

Conference/Workshop Leadership

- 2011 Organizer, Undergraduate Research Symposium, FASEB Ciliate Molecular Biology Conference
2011 Co-organizer, FASEB Ciliate Molecular Biology workshop: Ciliates in the Classroom
2010 Session Chair, Asilomar Chromatin and Chromosomes Conference
2009 Co-organizer: FASEB, Ciliate Molecular Biology Conference; Vermont Academy
2009 Organizer, Undergraduate Research Symposium, FASEB Ciliate Molecular Biology Conference
2009 Session Chair, Asilomar Chromatin and Chromosomes Conference
2008 Workshop host and lead instructor: "Tetrahymena Genomics in the Classroom"; Claremont Colleges, June 23-25, 2008
2007 Co-organizer, FASEB Ciliate Molecular Biology workshop: Ciliates in the Classroom
2002-present Chair, USPC National Youth Congress Committee: organize the annual Youth Congress leadership conference

Synergistic Community Activities

- 2006-present: Coordinator/Chair, Ciliate Genomics Consortium for Undergraduate Research
2008, 2009, 2011 Grant Review Panelist for National Science Foundation; Epigenetics and Gene Regulation (Molecular and Cellular Biosystems cluster)
2011 Ad hoc tenure and promotion reviewer for Wellesley College and Lake Forest College
2008-2011 Ad hoc grant reviewer for National Science Foundation
2009 Organizer of the inaugural FASEB Ciliate Molecular Biology Undergraduate Research Mini-Symposium
2002-present; Manuscript reviewer: Nucleic Acids Research, Protist, Biochemistry & Cell Biology, Journal of Biological Chemistry

Teaching Experience

Assistant/Associate Professor (2002 - present); Claremont-McKenna, Pitzer, and Scripps Colleges, Joint Science Department

Courses: Molecular Biology with laboratory
Biochemistry
Introductory Biology (cell/molecular/genetics/physiology)
Introductory Biology laboratory
Molecular Seminar: Research methods
Genetic Engineering and Biotechnology (for non-majors)
Drugs and Molecular Medicine
Accelerated, Integrated Science Sequence (AISS)

Visiting Assistant Professor (2000-2002); Mount Holyoke College, Program in Biochemistry

Courses: Biochemistry with lab; Molecular Biology with lab

Research Mentor

Undergraduate Research (1999-present): Mentored senior thesis research during the academic year (total 52 students), and summer independent research projects funded by HHMI, Keck, and Eaton grants, and NSF CAREER award (total 23 students); independent research with 1st – 3rd year students (15 total).

Student conference participation: On average, 1 student each year giving a research talk at an international meeting, 2 each year giving posters at these conferences.

Developed a research course for sophomores involving students in original research **(2006-2008)**.

Taught a research course, title: "Molecular Biology Methods", **(1997, 1998)**:
Designed/mentored research projects for University of Rochester students.
Mentored research of two undergraduate students