

CURRICULUM VITAE

SARAH E. HALL, Ph.D.

Department of Biology
107 College Place
Room 110
Syracuse University
Syracuse, NY 13244

Office: (315) 443-2964
Lab: (315) 443-2972
Fax: (315) 443-2012
shall@syr.edu
<http://wormlab.syr.edu>

EDUCATION

- 1998 B.S., *Magna cum laude*, Biochemistry and Genetics, Texas A&M University, College Station, TX
- 2004 Ph.D., Committee on Genetics, University of Chicago, Chicago, IL
Thesis: Genomic and molecular evolution of centromere satellites in Brassicaceae species

ACADEMIC APPOINTMENTS

- 2013 – Present *Faculty member*
Interdisciplinary Neuroscience Studies Program, Syracuse University, Syracuse, NY
- 2013 – Present *Faculty member*
Forensic and National Security Sciences Institute, Syracuse University, Syracuse, NY
- 2012 – Present *Assistant Professor*
Department of Biology, Syracuse University, Syracuse, NY
- 2006 – 2012 *Postdoctoral Fellow*
National Center for Behavioral Genomics, Department of Biology, Brandeis University, Waltham, MA
Advisor: Piali Sengupta, Ph.D.
- 2005 – 2006 *Postdoctoral Fellow*
Howard Hughes Medical Institute, Department of Molecular Genetics and Cellular Biology, University of Chicago, Chicago, IL
Advisor: Daphne Preuss, Ph.D.
- 1999 – 2004 *Graduate Assistant*
Committee on Genetics, University of Chicago, Chicago, IL
Advisor: Daphne Preuss, Ph.D.
- 1996 – 1999 *Undergraduate Researcher*
Department of Forest Science, Texas A&M University, College Station, TX
Advisor: Claire Williams, Ph.D.

HONORS AND AWARDS

| | |
|--------------|--|
| 2013 -- 2014 | American Cancer Society Institutional Research Grant New Investigator Award |
| 2009 | Outstanding Poster Presentation, Gordon Conference on Epigenetics, Holderness, NH. |
| 2008 -- 2009 | NIH Ruth L. Kirschstein National Research Service Award, NIGMS 5-F32-GM83593 |
| 2006 – 2008 | NIH Neuroscience Post-doctoral training grant, Brandeis University, 2T32NS007292-21 |
| 2004 | Award for Best Committee on Genetics Thesis, University of Chicago |
| 1999 – 2003 | NIH Genetics Regulation Training Grant, University of Chicago, 2T32GM007197-32 |
| 1998 | Award for Best Undergraduate Research Poster, Texas Genetics Society Meeting, Austin, TX |
| 1998 | Foundation Honors, Texas A&M University |
| 1998 | University Honors, Texas A&M University |
| 1995 – 1998 | Lechner Honors Scholarship, Texas A&M University |

PROFESSIONAL SOCIETIES

- American Society for Cell Biology
- Genetics Society of America

EDITORIAL RESPONSIBILITIES

| | |
|----------------|---|
| 2014 – present | <i>ad hoc</i> reviewer, <i>Journal of Visualized Experiments</i> , <i>PLoS Genetics</i> , <i>Personalized Epigenetics</i> |
| 2013 – present | <i>ad hoc</i> reviewer, <i>Cell</i> |
| 2013 – present | <i>ad hoc</i> reviewer, <i>BMC Genomics</i> |

SCIENTIFIC PRESENTATIONS

Invited Seminars

2014

Sep. 15 “Epigenetic mechanisms regulating environmental programming of gene expression in *C. elegans*”, Department of Biology, University of Rochester, Rochester, NY.

2013

April 4 “Epigenetic mechanisms regulating phenotypic plasticity in *C. elegans*”

Department of Biology, Ithaca College, Ithaca, NY.

2012

Feb. 1 “Phenotypic diversity is generated by cellular memory mechanisms in *C. elegans*”, Department of Biology, Syracuse University, Syracuse, NY

March 22 “Phenotypic diversity is generated by cellular memory mechanisms in *C. elegans*”, Department of Biology, Auburn University, Auburn, AL

Oral Presentations at Conferences

§ indicates undergraduate author

2015

June 26 J. Sims, M.C. Ow, M. Nishiguchi[§], P. Sengupta, **S.E. Hall**
“Developmental History Regulates Olfactory Behavior via RNAi Pathways”, *C. elegans* International Worm Meeting, Los Angeles, CA

2014

May 3 J. Sims and **S.E. Hall**
“RNAi pathways regulate olfactory behavior due to developmental history”, Central New York *C. elegans* Meeting, Syracuse, NY.

July 7-10

J. Sims and **S.E. Hall**
“Developmental History Regulates Olfactory Behavior via RNAi Pathways”, *C. elegans* Neuronal Development, Synaptic Plasticity, and Behavior Meeting, Madison, WI, July 2014.
* Designated as a Featured Talk of the conference

2011

Oct. 30 to Nov. 1 **S.E. Hall**, G-w. Chirn, N.C. Lau, P. Sengupta
“A cellular memory of developmental experience regulates small RNA populations.” Cell Symposia: Epigenetics and the inheritance of acquired states, Boston, MA.

June 22-26

S.E. Hall, G-w. Chirn, N.C. Lau, P. Sengupta
“A memory of developmental experience regulates small RNA populations.” 18th International *C. elegans* Meeting, Los Angeles, CA.

2010

March 31 **S.E. Hall** and P. Sengupta
“Early experience affects adult phenotypes in *C. elegans*”, Boston Area Worm Meeting, Cambridge, MA.

2009

June 24-28 **S.E. Hall**, M.H. Beverly, C. Russ, C. Nusbaum, P. Sengupta
“Environmental programming of gene expression in *C. elegans*.” 17th International *C. elegans* Meeting, Los Angeles, CA.

2008

July 24-25

S.E. Hall, M.H. Beverly, C. Russ, C. Nusbaum, P. Sengupta
“Epigenetic mechanisms may underlie the formation of cellular memory of developmental history in *C. elegans*.” Genomics and Systems Biology *C. elegans* Topic Meeting, Cambridge, MA

2005

April

S.E. Hall, S. Luo, A.E. Hall, D. Preuss
“Genomic and molecular evolution of centromere satellites in the *Brassicaceae*.” Chicago Area Chromatin Meeting, Chicago, IL

Poster Presentations at Conferences

§ indicates undergraduate author

2015

June 24-28

M.C. Ow and **S.E. Hall**
“The Argonaute protein CSR-1 mediates genome-wide chromatin remodeling and gene expression changes resulting from distinct early life history events”, *C. elegans* International Worm Meeting, Los Angeles, CA

April 25

M.C. Ow, D.G. Allis, and **S.E. Hall**
“The Argonaute protein CSR-1 mediates genome-wide chromatin remodeling and gene expression changes resulting from distinct early life history events”, Central New York *C. elegans* Meeting, Syracuse, NY

J.R. Sims, M.C. Ow, M. Nishiguchi[§], M. O'Donnell, P. Sengupta, and **S.E. Hall**
“Environmental conditions alter RNAi pathways regulating olfactory behavior and developmental history in *C. elegans*”, Central New York *C. elegans* Meeting, Syracuse, NY

A.D. Hager[§] and **S.E. Hall**
“RNAi pathways regulate chemosensation in *C. elegans*”, Central New York *C. elegans* Meeting, Syracuse, NY

P. Bharadwaj and **S.E. Hall**
“Endogenous RNAi pathways regulate dauer formation in *C. elegans*”, Central New York *C. elegans* Meeting, Syracuse, NY

2014

May 3

M.C. Ow and **S.E. Hall**
“The Argonaute protein CSR-1 mediates chromatin remodeling resulting from distinct early life history events”, Central New York *C. elegans* Meeting, Syracuse, NY.

P. Bharadwaj and **S.E. Hall**

“Endogenous RNAi pathways regulate dauer formation in *C. elegans*”, Central New York *C. elegans* Meeting, Syracuse, NY.

D. Jackson[§] and **S.E. Hall**

“Endogenous RNAi pathways regulate brood size in postdauer adults”, Central New York *C. elegans* Meeting, Syracuse, NY.

A.D. Hager[§] and **S.E. Hall**

“Epigenetic regulation of chemosensation in *C. elegans*”, Central New York *C. elegans* Meeting, Syracuse, NY.

2009

Aug. 9-14

S.E. Hall, M.H. Beverly, C. Russ, C. Nusbaum, P. Sengupta
“A cellular memory of developmental history generates phenotypic diversity in *C. elegans*”, Gordon Conference on Epigenetics, Holderness, NH.

2007

June 27 to July 1

S.E. Hall and P. Sengupta
“A cellular ‘memory’ of developmental history in *C. elegans*”, 16th International *C. elegans* Meeting, Los Angeles, CA.

2004

Jan. 21-26

S.E. Hall and D. Preuss
“Centromere satellite diversity in Brassicaceae species”, Keystone Symposium on Emerging Mechanisms of Epigenetic Regulation, Tahoe City, CA.

2002

Dec. 14-18

S.E. Hall and D. Preuss
“Centromere satellites from *Arabidopsis* populations”, American Society for Cell Biology, San Francisco, CA.

S.E. Hall and D. Preuss

“Consensus and variation among 180 bp repeats in *Arabidopsis* centromeres”, Institute for Biophysical Dynamics Retreat, Chicago, IL.

2001

June 23-27

S.E. Hall and D. Preuss
“Consensus and variation among 180 bp repeats in *Arabidopsis* centromeres”, *Arabidopsis* Meeting, Madison, WI.

2000

Dec. 7-10

S.E. Hall and D. Preuss
“Variation among 180 bp repeats in *Arabidopsis* centromeres”, *Arabidopsis* Genome Conference, Cold Spring Harbor, NY.

1998

S.E. Hall[§] and C.G. Williams
“Mutational detection in *Pinus taeda*”, Texas Genetics Society, Austin,
TX.

PEER-REVIEWED PUBLICATIONS

[§] indicates undergraduate author

- 1) C.G. Elsik, V.T. Minihan, **S.E. Hall**[§], A.M. Scarpa, C.G. Williams (2000) Low-copy microsatellite markers for *Pinus taeda* L. *Genome* 43: 550-555. PMID: 10902720
- 2) **S.E. Hall**[§], W.S. Dvorak, J.S. Johnston, H.J. Price, C.G. Williams (2000) Flow cytometric analysis of DNA content for tropical temperate New World pines. *Annals of Botany* 86: 1081-1086.
- 3) C.G. Williams, Y. Zhou, **S.E. Hall**[§] (2001) A chromosomal region promoting outcrossing in a conifer. *Genetics* 159:1283-1289. PMID: 11729169
- 4) **S.E. Hall**, G.C. Kettler[§], D. Preuss (2003) Centromere satellites from *Arabidopsis* populations: maintenance of conserved and variable domains. *Genome Research* 13: 105-205. PMID: 12566397
- 5) S. Luo, A.E. Hall, **S.E. Hall**, D. Preuss (2004) Whole genome fractionation rapidly purifies DNA from centromeric regions. *Nature Methods* 1: 67-71. PMID:15782155
- 6) **S.E. Hall**, S. Luo, A.E. Hall, D. Preuss (2005) Differential rates of local and global homogenization in centromere satellites from *Arabidopsis* relatives. *Genetics* 170:1913-27. PMID: 15937135
- 7) **S.E. Hall**^{*}, M. Beverly^{*}, C. Russ, C. Nusbaum, P. Sengupta. (2010) A cellular memory of developmental history generates phenotypic diversity in *C. elegans*. *Current Biology* 20(2):149-55. * equal authorship; doi: 10.1016/j.cub.2009.11.035
- 8) **S.E. Hall**^{*}, G.-w. Chirn, N.C. Lau^{*}, P. Sengupta (2013) RNAi pathways contribute to developmental history-dependent phenotypic plasticity in *C. elegans*. *RNA* 19(3):306-19. * corresponding authors; doi: 10.1261/rna.036418.112
- 9) M.C. Ow, N.C. Lau, **S.E. Hall** (2014) Small RNA library cloning procedure for deep sequencing of specific endogenous siRNA classes in *Caenorhabditis elegans*. *Methods in Molecular Biology* 1173: 59-70. doi: 10.1007/978-1-4939-0931-5_6
- 10) M.C. Ow, **S.E. Hall** (2015) A method for obtaining large populations of synchronized *Caenorhabditis elegans* dauer larvae. *Methods in Molecular Biology* 1327: 209-19. doi: 10.1007/978-1-4939-2842-2_15
- 11) J.R. Sims^{*}, M.C. Ow^{*}, M. Nishiguchi[§], K. Kim, P. Sengupta, **S.E. Hall**. Developmental programming modulates olfactory behavior in *C. elegans* via endogenous RNAi pathways. (*submitted*) * equal authorship

Invited Review

A.E. Hall, K.C. Keith, **S.E. Hall**, G.C. Copenhaver, D. Preuss (2004) The rapidly evolving field of plant centromeres. *Current Opinion in Plant Biology* 7: 108-114. PMID: 15003208

OTHER PROFESSIONAL ACTIVITIES

- | | |
|-------------|--|
| 2013 | <i>ad hoc</i> reviewer, National Science Foundation, Molecular and Cellular Biosciences |
| 2011 – 2012 | President, Brandeis University Postdoctoral Association, Brandeis University, Waltham MA |

2007 – 2011 Organizing committee, Brandeis University Postdoctoral Association,
Brandeis University, Waltham MA

2001 – 2002 RCN Grant Participant, Deep Gene Research Coordination Network,
University of Chicago, Chicago IL

2001 – 2002 Committee on Genetics graduate student representative, University of
Chicago, Chicago IL

2001 American Society for Cell Biology representative, Capitol Hill Day,
Washington, D.C

TEACHING RESPONSIBILITIES

BIO 400/600 Epigenetic Regulation of Gene Expression
BIO 435 Genetics Laboratory
BIO 460 Undergraduate Research in Biology
BIO 503 Developmental Biology
BIO 705 Graduate Student Seminars
BCM 460 Undergraduate Research in Biochemistry