

Jeffrey S. Thompson

Assistant Professor of Biology
Talbot Hall of Biological Science
Denison University
Granville, Ohio 43023
740-587-5581
thompsonjs@denison.edu

EDUCATION:

The University of California, Los Angeles, California
Ph.D. in Molecular Biology: December 1994

Kalamazoo College, Kalamazoo, Michigan
B.A. in Biology: June 1988, *cum laude*

TEACHING POSITIONS:

Denison University, Granville, Ohio
Assistant Professor of Biology, 2003-present
Courses Taught: Introduction to the Science of Biology, Cell and Molecular
Biology, Genetics, Genomics, Immunology

Georgian Court College, Lakewood, New Jersey
Assistant Professor of Biology, 1998-2003
Undergraduate Courses Taught: Immunology, Introductory Biology,
Introduction to Genetics, Molecular Genetics
Graduate Courses Taught: Adv. Immunology, Adv. Molecular Genetics

Anne Arundel Community College, Arnold, Maryland
Adjunct Biology Faculty, 1997-1998
Courses Taught: Introductory Biology

Kalamazoo College, Kalamazoo, Michigan
Teaching Assistant, 1987-1988
Courses Taught: Cell Biology, General Zoology

RESEARCH POSITIONS:

The Johns Hopkins University School of Medicine, Baltimore, Maryland
Post-Doctoral Research Fellow, 1994-1998
Research Advisor: Dr. Andrew Feinberg
Project: Regulation of genomic imprinting in humans

The University of California, Los Angeles, California

Graduate Student Researcher/Staff Research Associate, 1989-1994

Advisor: Dr. Michael Grunstein

Doctoral Dissertation: The role of the histone N termini in heterochromatin-like repression in *Saccharomyces cerevisiae*

The Upjohn Company, Kalamazoo, Michigan

Laboratory Technician, 1988

Advisor: Dr. Russ Lehrman

Project: Bovine somatotropin receptor binding *in vivo*

National Institutes of Health, Bethesda, Maryland

Laboratory Technician/Senior Research Student, 1987

Advisor: Dr. Bruce Chassy

Kalamazoo College Senior Thesis Project: Characterizing a novel β -galactosidase gene from *Lactobacillus casei*

PUBLICATIONS:

*undergraduate student co-author; †graduate student co-author; ‡equal contributing authors

Evans ML*, Bostelman LJ*, Albrecht AM*, Keller AM*, Strande NT*, and **JS Thompson**. 2008. UV sensitive mutations in histone H3 in *Saccharomyces cerevisiae* that alter specific K79 methylation states genetically act through distinct DNA repair pathways. *Current Genetics* 53:259-274.

Bostelman LJ*, Keller AM*, Albrecht AM*, Arat A*, and **JS Thompson**. 2007. Methylation of histone H3 lysine-79 by Dot1p plays multiple roles in the response to UV damage in *Saccharomyces cerevisiae*. *DNA Repair* 6:383-395.

Smith PH† and **JS Thompson**. 2003. Has polyploidy shaped the evolution of the eukaryotic genome? A re-examination of Ohno's genome duplication hypothesis. *Bios* 74:110-117.

Thompson JS, Snow ML†, Giles S*, McPherson LE*, and M Grunstein. 2003. Identification of a functional domain within the essential core of histone H3 that is required for telomeric and *HM* silencing in *Saccharomyces cerevisiae*. *Genetics* 163:447-452.

Cost GJ, **Thompson JS**, Reichard B-A, Lee J-Y, and AP Feinberg. 1997. Lack of imprinting of three human cyclin-dependent kinase inhibitor genes. *Cancer Res.* 57:926-929.

Thompson JS, Reese KJ, DeBaun MR, Perlman EJ, and AP Feinberg. 1996. Reduced expression of the cyclin-dependent kinase inhibitor gene p57^{KIP2} in Wilms Tumor. *Cancer Res.* 56:5723-5727.

Matsuoka S‡, **Thompson JS‡**, Edwards MC, Barletta JM, Grundy P, Kalikin LM, Harper JW, Elledge SJ, and AP Feinberg. 1996. Imprinting of the gene encoding a human cyclin-dependent kinase inhibitor, p57^{KIP2}, on chromosome 11p15. *Proc. Natl. Acad. Sci. USA* 93:3026-3030.

Feinberg AP, Kalikin LM, Johnson LA, and **JS Thompson**. 1994. Loss of imprinting in human cancer. *Cold Spring Harbor Symp. Quant. Biol.* 59:357-364.

Thompson JS, Ling X, and M Grunstein. 1994. Histone H3 N terminus is required for telomeric and silent mating locus repression in yeast. *Nature* 369:245-247.

Thompson JS, Johnson LM, and M Grunstein. 1994. Specific repression of the yeast silent mating locus *HMR* by an adjacent telomere. *Mol. Cell. Biol.* 14:446-455.

Thompson JS, Hecht A, and M Grunstein. 1993. Histones and the regulation of heterochromatin in yeast. *Cold Spring Harbor Symp. Quant. Biol.* 58, 247-256.

PRESENTATIONS:

‡presenting author; *undergraduate student co-author; †graduate student co-author

Strande NT*, Evans ML*, Lee AE*, Albrecht AM*, Keller AM*, and **JS Thompson**‡. Histone H3 K79 methylation states, regulated by histone H4 acetylation, play distinct roles in response to DNA damage caused by UV radiation in *Saccharomyces cerevisiae* (poster). FASEB Summer Research Conference on Yeast Chromosome Structure, Replication and Segregation, 2008.

Evans ML*, Albrecht AM*, Bostelman LJ*, Keller AM*, and **JS Thompson**‡. Histone H3 K79 methylation and histone H4 acetylation play multiple overlapping roles in the response to UV damage in *Saccharomyces cerevisiae* (poster). FASEB Summer Research Conference on Chromatin & Transcription, 2007.

Albrecht AM*, Evans ML*, Bostelman LJ*, Keller AM*, and **JS Thompson**‡. Histone H3 plays multiple methylation-dependent and independent roles in the response to UV damage in *Saccharomyces cerevisiae* (platform presentation). The 9th Annual Midwest DNA Repair Symposium, 2007.

Evans ML^{‡*} and **JS Thompson**. Acetylation states of lysine residues in the histone H4 N-terminus have a combinatorial effect on UV-induced DNA damage repair in *Saccharomyces cerevisiae* (poster). The 9th Annual Midwest DNA Repair Symposium, 2007.

Thompson JS‡, Bostelman LJ*, Keller AM*, and A Arat*. Histone H3 plays diverse roles in post-replication repair and nucleotide excision repair of UV-damaged DNA (poster). Yeast Genetics and Molecular Biology Meeting, 2006.

Bostelman LJ* and **JS Thompson**‡. The histone H3 silencing domain participates in Rad6/Rad18-dependent post-replication repair of UV-induced DNA damage (platform presentation). The 7th Annual Midwest DNA Repair Symposium, 2005.

Bostelman LJ^{‡*} and **JS Thompson**. A domain in histone H3 of *Saccharomyces cerevisiae* plays dual roles in gene silencing and repair of UV-damaged DNA via the Rad6-Rad18 repair pathway (poster). The 9th Annual Council on Undergraduate Research “Posters on the Hill” Event, 2005.

- Thompson JS[‡]**. Analysis of the role of glutamate-73 in histone H3 in the function of a nucleosomal surface silencing domain in yeast (poster). The 69th Cold Spring Harbor Symposium on Quantitative Biology: Epigenetics, 2004.
- Wood M^{††} and **JS Thompson**. Highly conserved histone H3 from *Schizosaccharomyces pombe* cannot functionally replace endogenous histone H3 in *Saccharomyces cerevisiae* (platform presentation). New Jersey Academy of Science Annual Meeting, 2003.
- Thompson JS[‡]**, McGough A*, and M Grunstein. The role of histone H3 in heterochromatin-mediated transcriptional silencing in *Saccharomyces cerevisiae* (poster). Yeast Genetics and Molecular Biology Meeting, 2000.
- Thompson JS[‡]**, McGough A*, and M Grunstein. Single amino acid substitutions in the core domain of histone H3 cause derepression of telomeric silencing in *Saccharomyces cerevisiae* (platform presentation). New Jersey Academy of Science Annual Meeting, 2000.
- Smith A^{‡*} and **JS Thompson**. A method for the identification of eukaryotic genomic boundary elements in yeast (platform presentation). New Jersey Academy of Science Annual Meeting, 2000. *Awarded Best Undergraduate Presentation, New Jersey Academy of Science Annual Meeting, 2000.*
- Palanker L^{††} and **JS Thompson**. Hormonal control of GCDFP expression in fibrocystic breast cells and implications for pathogenesis of mammary cancer (platform presentation). New Jersey Academy of Science Annual Meeting, 2000. *Awarded Best Graduate Presentation, New Jersey Academy of Science Annual Meeting, 2000.*
- Thompson JS[‡]** and AP Feinberg. A repeat element at the centromeric boundary of the human 11p15 imprinting domain possesses a telomere-like silencing function (platform presentation). New Jersey Academy of Science Annual Meeting, 1999.
- Smith A^{‡*}, Alexander PJ*, and **JS Thompson**. Identification and characterization of genomic boundary elements utilizing a chromatin structure assay (platform presentation). New Jersey Academy of Science Annual Meeting, 1999.
- Thompson JS[‡]**, Reese K, Matsuoka S, Elledge SJ, and AP Feinberg. Imprinting of human p57^{KIP2} on chromosome 11p15 and its role in Wilms' Tumor and Beckwith-Wiedemann Syndrome (poster). Keystone Symposia on Molecular and Cellular Biology: Transcriptional Mechanisms, 1996.
- Thompson JS[‡]** and M Grunstein. The involvement of histones in telomeric repression (platform presentation). FASEB Summer Research Conference on Chromatin and Transcription, 1993.
- Thompson JS[‡]** and M Grunstein. Regulation of yeast silent mating locus *HMR* by a proximal telomere (platform presentation). Arrowhead Genetics Conference, 1992.

Thompson JS[‡], Johnson L, and M Grunstein. Differences between yeast silent mating loci *HML* and *HMR* affect the extent of derepression in histone H4 mutant strains (poster). Yeast Genetics and Molecular Biology Meeting, 1991.

RESEARCH ADVISING:

Undergraduate Research Students & Projects:

Denison University:

- Megan Ansbro: Analysis of the structural significance of histone H3 glutamate-73 by X ray crystallography (in the laboratory of Dr. Karolin Luger at Colorado State University). Summer 2008.
- Jon Mecoli: X ray crystallographic analysis of the histone H3 E73D mutation (in the laboratory of Dr. Karolin Luger at Colorado State University), Summer 2007; Modulation of histone H3 K79 methylation and histone H4 acetylation in UV mediated DNA damage repair in *Saccharomyces cerevisiae*, Summer 2008.
- Alyssa Rossodivita: Evaluating the role of histone H3 lysine-79 methylation in recombination repair in *Saccharomyces cerevisiae*. Summer 2008.
- Ariel Lee: Examination of the role of histone H3 lysine-79 methylation in nucleotide excision repair in *Saccharomyces cerevisiae*. Summer 2007-Spring 2008 (high honors).
- Natasha Strande: Evaluating the relationship between histone H4 N terminal acetylation and H3 lysine-79 methylation in response to UV damage in *Saccharomyces cerevisiae*. Summer 2007-Spring 2008 (senior research project).
- Ashley Albrecht: Epistasis analysis between UV sensitive histone H3 mutations and members of the post-replication repair pathway. Summer 2006-Spring 2007 (high honors).
- Margery Evans: Assessing the effect of the histone H3 E73D mutation on post-translational modifications in the histone H4 N terminus. Summer 2006-Spring 2007 (high honors).
- Andrew Keller: Examining the role of histone H3 in nucleotide excision repair and error-free versus error-prone repair of UV damaged DNA. Summer 2005-Spring 2006 (high honors).
- Karen Siklosi: Point mutations in the human CFTR promoter reveal potential transcriptional regulatory elements that may contribute to clinical phenotypes observed in Cystic Fibrosis (research done at Case Western Reserve University). Summer 2005-Fall 2005 (high honors).

- Arzu Arat: Epistatic analysis of Rad52 and Rad6 DNA repair pathways and UV-sensitive histone H3 mutations in *Saccharomyces cerevisiae*. Summer 2005.
- Lindsey Bostelman: A structural domain in histone H3 of *Saccharomyces cerevisiae* plays dual roles in gene silencing and repair of UV-damaged DNA via the Rad18-dependent postreplication repair pathway. Summer 2004-Spring 2005 (high honors).
- Katherine McHugh: The Histone H3 Telomeric Silencing Domain Cooperatively Functions with Transcriptional Silencing Protein Sir3 to Play a Distinct Role in the Repair of DNA Damage Caused by Methyl Methane Sulfonate. Summer 2004-Spring 2005 (honors).
- Leigh Stone: Post-Translational Modifications of Histones H3 and H4 are Important in UV-Mediated DNA Damage Repair in *Saccharomyces cerevisiae*. Summer 2004-Spring 2005 (honors).

Georgian Court College:

- Marci Maloney: Histone H3 silencing mutations cause increased sensitivity to shortwave UV radiation. Spring 2003.
- Susan Karl: Restoration of yeast telomeric silencing in histone H3 mutant strains by *sir3* suppressor mutations. Fall 2002-Spring 2003.
- Leslie McPherson: Evaluation of the effects of mutations in histone H3 on temperature- and UV-sensitivity, and basal transcription in *Saccharomyces cerevisiae*. Spring 2001-Spring 2002.
- Elena Pappas: Analysis of the *Drosophila* scs boundary element as a heterochromatin barrier in *Saccharomyces cerevisiae*. Summer 2001.
- Summer Giles: Analysis of yeast histone H3 silencing mutations on basal transcription at the *GAL1* promoter. Spring 2001.
- Amy Smith: Development of a yeast system for the analysis of genomic boundary elements. Spring 1999-Spring 2000.
- Audrey McGough: Analysis of temperature-sensitive histone H3 mutations in yeast. Fall 1999.
- Pamela Alexander: Subcloning of the mouse H19 boundary element. Spring 1999.

Masters Thesis Projects (Georgian Court College):

- Karen Snyder: The role of IBRE-1 from the human 11p15 imprinting locus as a genomic boundary element. Spring 2001-Spring 2003.

- Matthew Wood: Functional analysis of the evolutionary conservation of histone H3. Spring 2001-Fall 2002.
- Marilyn Snow: Histone H3 core protein and its involvement in silencing at the telomeres and silent mating loci in *Saccharomyces cerevisiae*. Fall 2000-Spring 2002.
- Maureen Burke: Analysis of the human IBRE-1 repeat sequence as a potential fragile site and transcriptional silencer on chromosome 11p15. Spring 2000-Spring 2002.
- Pamela Smith. Has whole genome duplication shaped the genome? (thesis review paper). Fall 2001.
- Laura Palanker: Hormonally regulated expression in fibrocystic breast cells: implications for cancer. Spring 1999-Summer 2001.
- Christine Burke: Analysis of immunosuppressive drugs in a murine model system (research done at Bristol-Myers Squibb). Spring 1999-Fall 2000.

AWARDS AND ACHIEVEMENTS:

Denison University:

Denison University Research Foundation Grant, 2006

Georgian Court College:

Faculty Award for the Innovative Use of Technology in the Classroom, 2001
Faculty Summer Research Grant, 2001

The Johns Hopkins University:

NRSA Postdoctoral Fellowship (5T32GM07185-20), The Johns Hopkins University School of Medicine Oncology Center, 1997-1998

The University of California, Los Angeles:

NRSA Cell and Molecular Biology Training Grant Award
(5T32GM07273-18), 1992-1994
UCLA Chancellor's Fellowship, 1991-1992

Kalamazoo College:

Elected to Phi Beta Kappa, 1988
Senior Biology Fellow, 1988
Diebold Biology Scholar, 1987
Heyl Science Scholarship, 1984-1988
Dean's List, 1984-1988
Academic High Honors, 1984-1985

PROFESSIONAL SERVICE ACTIVITIES:

Denison University:

Anderson Scholarship Selection Committee, since 2007
Board of Academic Integrity, since 2007
Campus Affairs Council, since 2007
Phi Beta Kappa:
 President of Theta of Ohio Chapter, since 2007
 Chapter member, since 2003
Sigma Xi Chapter member, since 2007
Faculty Representative to the Board of Trustees, Enrollment Committee, 2005-2007

Georgian Court College:

Academic Excellence Night Organizer, 2003
Planning and Resource Allocation Council, 2002-2003
Research Standards Committee, 2002-2003
Faculty Development Collaborative in Technology, 2002-2003
Academic Excellence Night Co-Organizer, 2002
Academic Computing and Technology Committee, 2001-2003
Library Committee, 1999-2001
Biology Graduate Admissions Subcommittee, 1998-2003

Research-Related:

Journal reviewer for *Genetics* and *Photochemistry and Photobiology*
Reviewer for the National Research Foundation (South Africa)

PROFESSIONAL MEMBERSHIPS:

Sigma Xi, since 2007
Genetics Society of America, since 2000
Beta Beta Beta Biology Honor Society, since 1998
Phi Beta Kappa, since 1988