

**Curriculum Vitae**  
**Katherine L. Friedman**

**A. Contact Information**

Date: March 2022  
Name: Katherine L. Friedman  
Contact Information: Vanderbilt University  
Stevenson Center, Rm. 2-417  
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**B. Degrees Earned**

**Ph.D. Genetics**

1990-1996 University of Washington Seattle, WA  
Dissertation: "Determinants of Late Origin Activation in Yeast"  
Advisors: Drs. Walton Fangman and Bonita Brewer

**B.A. Biology, *summa cum laude***

1986-1990 Carleton College Northfield, MN  
Honors Thesis: "Centric Fission of Chromosome Three in Maize Resulting in a System  
for the Study of Telosome Behavior"  
Advisor: Dr. Rick Staub

**C. Employment History**

**Vice-Chair, Biological Sciences**

June 2019-present Vanderbilt University Nashville, TN

**Director of Graduate Studies, Biological Sciences**

2010-2014 Vanderbilt University Nashville, TN  
May 2017-May 2019

**Associate Professor of Biological Sciences**

2009-present Vanderbilt University Nashville, TN

**Assistant Professor of Biological Sciences**

2001-present Vanderbilt University Nashville, TN  
Member, Vanderbilt-Ingram Cancer Center since 2007

**Research Associate**

1997-2001 University of Colorado Boulder, CO  
Advisor: Dr. Thomas Cech

**Postdoctoral fellow**

1996 University of Washington Seattle, WA  
Advisors: Drs. Walton Fangman and Bonita Brewer

## D. Honors

### Academic

- Finalist – Burroughs-Wellcome Career Development Award (2001)
  - One of ~30 finalists
- Howard Hughes Medical Institute Predoctoral Fellowship (1990-1995)
- National Science Foundation Predoctoral Fellowship (1990; declined)
- Howard Hughes Support for Undergraduate Research (1988-1989)
- Phi Beta Kappa and Sigma Xi member (1990)
- Distinction in Senior Biology Honors project (1990)
- First place, Minnesota Academy of Sciences Undergraduate Research Competition (1989)
  - State-wide competition based on an oral presentation of original research
- Noyes Prize for Outstanding Scholarship (1989)
  - Recognizes two scholars from the junior class, based on grade point average and/or nominations from faculty
- Mortar Board Freshman Prize (1987)
  - Awarded for outstanding scholarship during the freshman year
- William Carleton Scholar (1986)
  - Recognizes incoming students of exceptional promise

### Teaching

- COVID-19 Innovative Teaching Award (2021)
  - For “developing innovative approaches to teaching science.”
- Madison Sarratt Prize for Excellence in Undergraduate Teaching (2019)
  - Final selection made by the Chancellor on the basis of nominations made by undergraduates of all schools and colleges
- Award for Excellence in Mentorship (2010, 2013, 2015, 2017, 2018)
  - Awarded by the Department of Biological Sciences
- Jeffrey Nordhaus Award for Excellence in Undergraduate Teaching in the College of Arts and Science (2006)
- Graduate Teacher of the Year (2003)
  - Elected by the Interdisciplinary Graduate Program class of 2002-2003

## E. Research

### Articles in refereed journals

### § denotes undergraduate

1. T.P. Clements, K.L. Friedman, H.J. Johnson, C.J. Meier, J. Watkins, A.J. Brockman, C.J. Brame (2022) (2022) "It made me feel like a bigger part of the STEM community": Incorporation of Learning Assistants enhances students' sense of belonging in a large introductory biology course" CBE –Life Sciences Education, in press.
2. R.E. Hoerr, K. Ngo, K.L. Friedman (2021) When the ends justify the means: regulation of telomere addition at double-strand breaks in yeast. *Front Cell Dev Biol* 9:655377. PMC8012806

3. R.T. DeAngelis, J. Taylor, K.L. Friedman (2020) Parental status and biological functioning: findings from the Nashville stress and health study. *Popul Res Policy Rev.* 39(2): 365-373. PMC7954218
4. K. Ngo, E.A. Epum, K.L. Friedman. Emerging non-canonical roles for the Rad51-Rad52 interaction in response to double-strand breaks in yeast (2020) *Curr Genet.* 66(5):917-926. PMC7492393.
5. E.A. Epum, M.J. Mohan, N.P. Ruppe,<sup>§</sup> K.L. Friedman (2020). Interaction of yeast Rad51 and Rad52 relieves Rad52-mediated inhibition of *de novo* telomere addition. *PLoS Genet.* 16(2):e1008608. PMC7018233.
6. E. O'Brien, L.E. Salay, E.A. Epum, K.L. Friedman, W.J. Chazin, J.K. Barton (2018) Yeast require redox switching in DNA primase. *PNAS* 115(52):13186-13191. PMC6310810.
7. M.J. McFarland, J. Taylor, C.A.S. McFarland, K.L. Friedman (2018) Perceived unfair treatment by police, race, and telomere length: A Nashville community-based sample of black and white men. *Journal of health and social behavior.* 59(4):585-600. PMID 30417689.
8. M.D. Schaller, G. McDowell, A. Porter, D. Shippen, K.L. Friedman, M.S. Gentry, T.R. Serio, W.I. Sundquist (2017) What's in a name? *eLife* 6. PMC5655148
9. T.D. Hill, C.G. Ellison, A.M. Burdette, J. Taylor, K.L. Friedman (2016) Dimensions of religious involvement and leukocyte telomere length. *Soc Sci Med* 163, 168-175. PMID27174242
10. U.C. Obodo\*, E.A. Epum\*, M.H. Platts, J. Seloff,<sup>§</sup> N.A. Dahlson,<sup>§</sup> S.M. Velkovsky,<sup>§</sup> S.R. Paul,<sup>§</sup> and K.L. Friedman (2016) Endogenous hotspots of *de novo* telomere addition in the yeast genome contain proximal enhancers that bind Cdc13. *Mol. Cell. Biol.* **36**, 1750-1763. PMC4907100. \*These authors contributed equally. J. Seloff was a high school student working in the laboratory.
11. M.D. Ning, D. Feldkamp, D. Cortez, W.J. Chazin, K.L. Friedman, E. Fanning (2015) Simian virus Large T antigen interacts with the N-terminal domain of the 70 kD subunit of Replication Protein A in the same mode as multiple DNA damage response factors. *PLoS One* **10**: e0116093. PMC4337903.
12. G.A. Sowd, D. Mody, J. Eggold,<sup>§</sup> D. Cortez, K.L. Friedman, E. Fanning (2014) SV40 utilizes ATM kinase activity to prevent non-homologous end joining of broken viral DNA replication products. *PLoS Pathog.*10 :e1004536. PMC4256475.
13. C. Hawkins and K.L. Friedman (2014) Normal Telomere Length Maintenance in Yeast Requires Nuclear Import of the Ever Shorter Telomeres 1 (Est1) Protein via the Importin Alpha Pathway. *Eukaryotic Cell* **13**: 1036-1050. PMC4135794.
14. K. Paeschke, M.L. Bochman, P.D. Garcia, P. Cejka, K.L. Friedman, S.C. Kowalczykowski, and V.A. Zakian (2013) Pif1 family helicases suppress genome instability at G-quadruplex motifs. *Nature* **497**. 458-462. PMC3680789.
15. J.L. Ferguson, W.C.H. Chao, E. Lee and K.L. Friedman (2013) The Anaphase Promoting Complex contributes to the degradation of the *S. cerevisiae* telomerase recruitment subunit Est1p. *PLoS ONE* **8**(1): e55055. PMC3555863
16. R.C.B. Bairley, G. Guillaume<sup>§</sup>, L.R. Vega, and K.L. Friedman (2011) A mutation in the catalytic subunit of yeast telomerase alters primer/template alignment while promoting processivity and protein/DNA binding. *J. Cell Sci.*, **124**. 4241-52. PMID: 22193961

17. J.M. Talley, D.C. DeZwaan, L.D. Maness<sup>§</sup>, B.C. Freeman, and K.L. Friedman (2011) Stimulation of yeast telomerase activity by the Ever Shorter Telomeres 3 (Est3) subunit is dependent on direct interaction with the catalytic protein Est2. *J. Biol. Chem.* **286**. 26431-26439. PMC3143607
18. K.L. Friedman (2011) Telomerase reverse transcriptase and Wnt signaling. *Mol. Cell. Biol.* **31**. 2366-2368. PMC3133428
19. J.L. Osterhage and K.L. Friedman (2009) Chromosome end maintenance by telomerase. *J Biol Chem.* **284**. 16061-16065. PMC2713563
20. H. Ji, C.J. Adkins<sup>§</sup>, B.R. Cartwright<sup>§</sup>, K.L. Friedman (2008) Yeast Est2p mediates telomere length homeostasis by influencing the association of Rap1p with telomeric chromatin. *Mol. Cell. Biol.* **28**. 2380-2390.
21. R.J. Okagaki, M.S. Jacobs, A.O. Stec, R.G. Kynast, E. Buescher, H.W. Rines, M.I. Vales, O. Riera-Lizarazu, M. Schneerman, G. Doyle, K.L. Friedman, R.W. Staub, D.F. Weber, T.L. Kamps, I.F. Amarillo, C.D. Chase, H.W. Bass, R.L. Phillips (2008) Maize centromere mapping: a comparison of physical and genetic strategies. *J Hered.* **99**. 85-93.
22. J.L. Osterhage, J.M. Talley, K.L. Friedman (2006) Proteasome-dependent degradation of Est1p regulates the cell cycle restricted assembly of telomerase in *Saccharomyces cerevisiae*. *Nat. Struct. Mol. Biol.* **13**. 720-728.
23. H. Ji, M.H. Platts, L.M. Dharamsi<sup>§</sup>, K.L. Friedman (2005) Regulation of telomere length by an N-terminal region of the yeast telomerase reverse transcriptase. *Mol. Cell. Biol.* **25**. 9103-9114.
24. K.L. Friedman<sup>§</sup>, J.J. Heit<sup>§</sup>, D. Long, T.R. Cech (2003) N-terminal domain of yeast telomerase reverse transcriptase: recruitment of Est3p to the telomerase complex. *Mol. Biol. Cell* **14**. 1-13. <sup>§</sup>Corresponding author
25. K.L. Friedman and T.R. Cech (1999) Essential functions of N-terminal domains in the yeast telomerase catalytic subunit revealed by selection for viable mutants. *Genes Dev.* **13**. 2863-2874.
26. A. Donaldson, M.K. Raghuraman, K.L. Friedman, F. Cross, B.J. Brewer, W.L. Fangman (1998) *CLB5*-dependent activation of late replication origins in *S. cerevisiae*. *Mol. Cell* **2**. 173-182.
27. K.L. Friedman, B.J. Brewer, W.L. Fangman (1997) Replication profile of *Saccharomyces cerevisiae* chromosome VI. *Genes to Cells* **2**. 667-678.
28. K.L. Friedman\*, J.D. Diller\*, B.M. Ferguson, S.V.M. Nyland<sup>§</sup>, B.J. Brewer, W.L. Fangman (1996) Multiple determinants controlling activation of yeast replication origins late in S phase. *Genes Dev.* **10**. 1595-1607. \*Co-first authors

### Book Chapters

1. K.L. Friedman and B.J. Brewer (1995) Analysis of replication intermediates by two dimensional agarose gel electrophoresis. *Methods in Enzymology*, San Diego, Academic Press. 613-637.

### Conference Proceedings

1. K.L. Friedman\*, M.K. Raghuraman\*, W.L. Fangman, and B. J. Brewer (1995) Analysis of the Temporal Program of Replication Initiation in Yeast Chromosomes. *J. Cell Sci. Suppl.* **19**. 51-58. \* Co-first authors.

2. B.J. Brewer, J.D. Diller, K.L. Friedman, K.M. Kolor, M.K. Raghuraman, and W.L. Fangman (1993) The Topography of Chromosome Replication in Yeast. *Cold Spring Harbor Symp. Quant. Biol.* **58**. 425-434.

### In preparation

1. R.E. Hoerr, A. Eng, B.J. Brewer, M.J. Dunham, K.L. Friedman (2022) Linear fragments stabilized through *de novo* telomere addition in yeast confer growth advantage in sulfate-limiting conditions. *Frontiers in Genetics*, collection on Chromosome and Genome Biology of Fungi. Abstract accepted. Submission anticipated 4-22.
2. K. Ngo, S. Plotkin,\* T. Gittens,\* E.A. Hatmaker, A. Rokas, M.L. Benton, K.L. Friedman (2022). Genome-wide distribution of sequences prone to *de novo* telomere addition in *Saccharomyces cerevisiae*. Submission anticipated June 2022.

### Research/training grants

#### Pending support:

1 R35 GM148257-01 Friedman (PI) 01/01/2023 – 12/31/2027

National Institutes of Health

Total direct costs requested: \$1,250,000

Title: When telomeric proteins bind non-telomeric sites: impacts on DNA repair and genome stability

This proposal addresses how recruitment of telomere binding proteins to internal chromosome sites stimulates error-prone DNA repair and examines the consequences of this recruitment for genome maintenance and cell survival.

#### Current support:

R01GM123292-01 Friedman (PI) 08/01/17-07/31/22 (NCE)

National Institutes of Health

Total direct costs: \$833,920

Title: Hotspots of *de novo* telomere addition as mediators of genomic instability in yeast

Goals of this project are to identify and characterize *cis*- and *trans*-acting factors that stimulate *de novo* telomere addition in yeast.

U0050829 McMahon (co-PI), Friedman (co-PI) 06/01/20-05/31/25

National Institutes of Health

\$484,728 direct costs per year

Title: T34 MARC training grant at Vanderbilt University

This training grant provides enhanced access to research careers for undergraduate students from under-represented and low-income groups.

Role: co-PI

T32 GM137793 Patton, Friedman and Graham (Multi-PIs) 7/1/21-6/30/26

National Institutes of Health

\$628,200 direct costs/year

Cellular, Molecular, and Biochemical Sciences Training Program

This training grant provides unique educational and training experience for a diverse group of graduate students engaging in biomedical research at Vanderbilt University.

Inclusive Excellence 3 award to Vanderbilt University     Friedman Program Director  
Howard Hughes Medical Institute  
\$30,000 direct costs initial award (2021-2022)  
Additional award over 6 years anticipated (2022-2028)

**Past support:**

Vanderbilt Discovery     Friedman (PI)     07/01/17-06/30/19  
Title: Mistakes Happen: Measuring the Fidelity of DNA Break Repair  
Role: PI

R01GM080393     Friedman (PI)     05/01/08-04/30/14 (NCE)  
National Institutes of Health  
Title: Cell Cycle Regulation of Yeast Telomerase Assembly and Function  
The goals of this project are to determine mechanisms that contribute to the cell cycle regulated assembly of the telomerase complex in yeast and to investigate the importance of this regulation for telomere maintenance.  
Role: PI

R01AG034067     Turner (PI)     01/01/10-08/31/14  
National Institutes of Health  
Title: Health Disparities and the Stress Hypothesis  
The goal of this project is to examine the link between health disparities between racial and economic groups and the levels of stress encountered by these groups. My role is to examine telomere length and telomerase activity in study participants as a potential measure of biological aging.  
Role: co-PI

R01GM052948-18 Friedman (PI)     04/01/2013-03/31/15 (NCE)  
National Institutes of Health  
Title: Control of Simian Virus 40 and Cellular DNA Replication  
The original PI of this grant, Dr. Ellen Fanning, passed away in September 2013. Dr. Cortez and I worked with the members of Dr. Fanning's lab to complete their publications and move into new positions. Renewal of this grant will not be pursued.  
Role: co-PI (with Dr. David Cortez)

Vanderbilt Discovery     Friedman (PI)     05/06/13-06/30/15  
Title: Genomic Analysis of Rap1p-stimulated Telomere Addition in Yeast  
Role: PI

MCB-0721595     Friedman (PI)     10/01/07-09/30/11  
National Science Foundation  
Title: Telomerase fidelity in yeast: consequences for telomere length homeostasis  
This study investigates the mechanisms through which the catalytic subunit of yeast telomerase contributes to the regulation of normal telomere length and sequence.  
Role: PI

Vanderbilt Discovery     Friedman and Eichman (PI)     5/1/07-6/30/09  
Title: Structure/Function Analysis of the Est3 Protein of Yeast Telomerase  
Role: co-PI

RSG-08-124-01-CCG      Kaplan (PI)      7/1/08-6/30/12  
American Cancer Society  
Title: Kinase Regulation of the Eukaryotic Replication Fork Helicase  
Role: Collaborator

IRG-58-009-44      7/1/02-6/30/03  
American Cancer Society Institutional Research Grant  
Title: The role of Est3p in the telomerase complex of *Saccharomyces cerevisiae*  
Role: PI

RSG-04-048-01-GMC      Friedman (PI)      1/1/04-06/30/08  
American Cancer Society Research Scholar Grant  
Title: Assembly and regulation of yeast telomerase  
Role: PI

Vanderbilt Discovery      Friedman (PI)      5/1/04-4/30/06  
Title: Characterization of a Negative-regulatory Domain in the Catalytic Subunit of  
*Schizosaccharomyces pombe* Telomerase"  
Role: PI

#### **Invited presentations**

##### **Invited research seminars:**

Nucleic acid secondary structures: G4s and beyond virtual seminar series, organized by Drs. Katrin Paeschke (Bonn, Germany) and Sara Richter (Padova, Italy). September 10, 2020.

Title: "Endogenous hotspots of *de novo* telomere addition in yeast"

Princeton University, Princeton, NJ. June 20, 2018.

Title: "Double-strand break repair through telomere addition in yeast."

McMaster University, Hamilton, Ontario, Canada. May 18, 2016.

Title: "One problem, many solutions: double-strand break repair in yeast"

Belmont University, Nashville, TN. September 12, 2016.

Title: "When you get a bad break: mechanisms of DNA double-strand break repair"

University of Kentucky, Lexington, KY. March 10, 2016.

Title: "One problem, many solutions: DNA double-strand break repair in yeast"

Lipscomb University, Nashville, TN. April 17, 2015.

Title: "When you get a bad break: DNA repair pathway choice in yeast"

Carleton College, Northfield, MN. January 20, 2014.

Title: "Telomere addition at DNA breaks: First-aid for chromosomes?"

Lipscomb University, Nashville, TN. February 1, 2013.

Title: "Telomere addition at DNA breaks: First-aid for chromosomes?"

Murray State University, Murray, KY. March 9, 2012.

Title: "Telomere addition at chromosome breaks: a mechanism of damage tolerance?"

NIH Institute of Aging, Baltimore, MD, December 5, 2011.

Title: "Telomere addition at chromosome breaks: a mechanism of damage tolerance?"

Tulane University, New Orleans, LA, November 7, 2011.

Title: "Telomere addition at chromosome breaks: a mechanism of damage tolerance?"

Lipscomb University, Nashville, TN, October 29, 2010.

Title: "The Long and Short of It: Telomere Length Regulation at Normal and Broken Chromosome Ends"

University of Calgary, Calgary, Alberta, Canada. Sept. 16, 2009

Title: "Telomere length regulation in yeast"

Department of Genome Sciences, University of Washington, Seattle, WA, May 19, 2008.

Title: "Finding the right balance: Mechanisms of telomere length in homeostasis in yeast"

Department of Biology, Rhodes College, Memphis, TN, November 12, 2007.

Title: "Telomeres and telomerase"

Lady Davis Research Institute, McGill University, Montreal, Canada, May 29, 2007.

Title: "Regulation of yeast telomerase assembly and function"

Department of Cell and Developmental Biology, Vanderbilt University, Nashville, TN, April 30, 2007.

Title: "Proteasome-dependent degradation of Est1p regulates the cell cycle-restricted assembly of yeast telomerase"

Genetics and Molecular Biology Program, Emory University, Atlanta, GA, April 26, 2007.

Title: "Telomeres: The end of the line"

Department of Biological Sciences, Vanderbilt University, Nashville, TN, Dec. 15, 2005.

Title: "Chromosome end games"

University of Tennessee at Knoxville and Oak Ridge National Laboratory, Oak Ridge, TN, Dec. 8, 2003.

Title: "Telomeres: The end of the line"

Yeast Interest Group, Emory University, Atlanta, GA, Oct. 14, 2003.

Title: "Assembly and regulation of yeast telomerase"

Microbiology and Immunology Department, Vanderbilt University, Nashville, TN. Sept. 25, 2001.

Title: Assembly and regulation of yeast telomerase

#### **Invited teaching seminar:**

Howard Hughes Medical Institute HHMI Professors Meeting, Chevy Chase, MD, Nov. 5-7, 2003. *Dr. Ellen Fanning and I presented the results of the Community of Scholars undergraduate research program (see Section G2 for detail).*

Session co-leader at a Reinvention Center conference entitled "Transforming the Culture: Undergraduate Education and the Multiple Functions of the Research University," Nov. 9-10, 2006 in Washington, DC. *Dr. Fanning and I led a discussion on "Creative models for integrating graduate and undergraduate education in the sciences, math, and engineering," highlighting lessons from the Community of Scholars.*

**Published abstracts.** Presenting author is underlined; (\*) denotes undergraduate student. (\*\*) denotes high school student

#### **International/National**

Sim Plotkin,\* Katrina Ngo, E. Anne Hatmaker, Antonis Rokas, Katherine Friedman. 2021. Genomic sites with a high propensity for *de novo* telomere addition contain

common sequence motifs. Poster presentation. Annual Biomedical Research Conference for Minority Students (virtual). Nov. 10-13. Recipient of presentation award.

Katrina Ngo, Melissa Goldin,\* Tristen Gittens,\* Sim Plotkin,\* Anne Hatmaker, Liraz Stilman,\* Remington Hoerr, Antonis Rokas, Mary Lauren Benton, Katherine Friedman. 2021. A computational approach to identify and characterize hotspots of *de novo* telomere addition in *Saccharomyces cerevisiae*. Poster presentation. Cold Spring Harbor Laboratory meeting on Telomeres and Telomerase (virtual). Dec. 14-17.

Remington E Hoerr, Alex Eng, Bonita J Brewer, Maitreya J Dunham, Katherine L Friedman. (2021) Mutational analysis of a repetitive TG-rich sequence reveals critical sequence requirements to stimulate *de novo* telomere addition in *Saccharomyces cerevisiae*. Poster presentation. Cold Spring Harbor Laboratory meeting on Telomeres and Telomerase (virtual). Dec. 14-17.

Sim Plotkin,\* Katrina Ngo, E. Anne Hatmaker, Antonis Rokas, Katherine Friedman. Genomic sites with a high propensity for *de novo* telomere addition contain common sequence motifs. Annual Biomedical Research Conference for Minority Students (ABRCMS). Online. Nov. 9-13, 2020. Poster presentation.

Esther A. Epum and Katherine L. Friedman. Rad51 modulates the Rad52-RPA interaction to promote capping of double-stranded breaks by *de novo* telomere healing. Meeting on Telomeres and Telomerase. Cold Spring Harbor, NY, April 30-May 4, 2019. Oral presentation.

Katrina H. Ngo and Katherine L. Friedman. Mapping hotspots of *de novo* telomere addition in the yeast genome. Meeting on Telomeres and Telomerase. Cold Spring Harbor, NY, April 30-May 4, 2019. Poster presentation.

Katherine L. Friedman, Esther Epum, and Katrina Ngo. Capping of persistent double-strand breaks by *de novo* telomere addition is stimulated by the recruitment of telomerase to specific chromosomal sites. FASEB meeting on Chromosomes and the Cell Cycle. Steamboat Springs, CO, August 2018. Invited oral presentation.

Esther A. Epum and Katherine L. Friedman. Pathways influencing the efficiency and outcome of DNA repair events at endogenous hotspots of *de novo* telomere addition in yeast. EMBO Meeting on Telomeres and the DNA Damage Response. Lisbon, Portugal, May 2018. Poster presentation.

Katherine L. Friedman, Udochukwu C. Obodo, Kerri-Ann Anderson, and Stephen J. Lee\*. Yeast Rif1 affects the fidelity of non-homologous end joining following CRISPR/Cas9 cleavage. Meeting on Telomeres and Telomerase. Cold Spring Harbor, NY, May 2-May 6, 2017. Oral presentation.

Esther A. Epum and Katherine L. Friedman. Repair at internal hotspots of *de novo* telomere addition is facilitated by pathways that relocalize DNA double-strand breaks to the nuclear periphery. Meeting on Telomeres and Telomerase. Cold Spring Harbor, NY, May 2-May 6, 2017. Poster presentation.

Katherine L. Friedman, Udochukwu C. Obodo, and Stephen J. Lee\*. CRISPR/Cas9 cleavage reveals a role for yeast Rif1 in the regulation of DNA end processing during non-homologous end joining. FASEB Meeting on Yeast Chromosome Structure, Replication, and Segregation, Snowmass, CO, July 31-August 5, 2016. Oral presentation.

Obodo, U.C., Memon, A.,\* Santiago, G.,\* Cox, L.,\* and Friedman, K.L. A role for *Saccharomyces cerevisiae* Rif1p in the regulation of non-homologous end joining and

homology-dependent repair pathways. Meeting on Telomeres and Telomerase, Cold Spring Harbor, NY, April 28-May 2, 2015. Oral presentation.

Onuoha (Epum), E.A., Obodo, U.C., and Friedman, K.L. Identification and characterization of sites of *de novo* telomere addition in *Saccharomyces cerevisiae*. Meeting on Telomeres and Telomerase, Cold Spring Harbor, NY, April 28-May 2, 2015. Poster presentation.

Obodo, U., Onuoha, E., Paul, S.\*, Velkovsky, S.\*, and Friedman, K.L. *Saccharomyces cerevisiae* telomere-binding protein Rap1p stimulates *de novo* telomere addition at an internal telomere-like sequence. Meeting on Yeast Chromosome Structure, Replication and Segregation, Steamboat Springs, CO. July 13-18, 2014. Oral presentation.

Obodo, U., Carboneau, B., and Friedman, K.L. A novel role for *Saccharomyces cerevisiae* Rap1p in *de novo* telomere addition. Meeting on Telomeres and Telomerase, Cold Spring Harbor, NY. April 30-May 4, 2013. Poster presentation.

Murali, S.\* and Friedman, K.L. Role of Rap1 in *de novo* telomere addition to repair chromosomal double-stranded breaks in yeast. Meeting on Telomeres and Telomerase, Cold Spring Harbor, NY. April 30-May 4, 2013. Poster presentation.

Hawkins, C. and Friedman, K.L. Nuclear import of the Est1p component of *S. cerevisiae* telomerase depends upon multiple nuclear localization sequences that are important for telomere maintenance. Meeting on Telomeres and Telomerase, Cold Spring Harbor, NY. April 30-May 4, 2013. Oral presentation.

Bechard, L., Onuoha, E., and Friedman, K.L. Elucidating Est3p's role in *Saccharomyces cerevisiae* telomerase by investigating its interactions with the telomerase essential N-terminal domain of Est2p. Meeting on Telomeres and Telomerase, Cold Spring Harbor, NY. April 30-May 4, 2013. Poster presentation.

Hawkins, C. and Friedman, K.L. The Est1 component of *S. cerevisiae* telomerase contains multiple nuclear localization sequences that contribute to telomere maintenance through the importin alpha pathway. FASEB Meeting on Yeast Chromosome Structure, Replication and Segregation, Steamboat Springs, CO. July, 2012.

Friedman, K.L., Obodo, U., Platts, M.H., Murali, S.\*, Ding, A.\*, Seloff, J.\*\*. Damage-induced association of Rap1p with an internal binding site stimulates *de novo* telomere addition. Meeting on Telomeres and the DNA Damage Response, L'Isle sur la Source, France, October, 2012.

Hawkins, C. and Friedman, K.L. The Est1p component of *S. cerevisiae* telomerase contains multiple nuclear localization sequences that are important for telomere maintenance. Meeting on Telomeres and the DNA Damage Response, L'Isle sur la Source, France, October, 2012. Poster presentation.

Platts, M.H., Velkovsky, S.M.\*, Paul, S.R.\*, Ferrick, E.A., and Friedman, K.L. *De novo* telomere addition at sites of spontaneous chromosome breakage is stimulated by Rap1p. Meeting on Telomeres and Telomerase, Cold Spring Harbor, NY. May 2011. Oral presentation.

Bairley, R.C. and Friedman, K.L. Improved DNA binding by the N-terminal domain of the yeast telomerase catalytic subunit is associated with increased processivity and changes in primer/template alignment *in vivo*. Meeting on Telomeres and Telomerase, Cold Spring Harbor, NY. May 2011. Poster presentation.

Hawkins, C. and Friedman, K.L. The Est1p component of yeast telomerase contains a nuclear localization sequence that contributes to telomere maintenance. Meeting on Telomeres and Telomerase, Cold Spring Harbor, NY. May 2011. Poster presentation.

Ferguson, J.L. and Friedman, K.L. *S. cerevisiae* Est1p is recognized by the anaphase promoting complex for degradation during G1 phase of the cell cycle. AACR Special Conference on The Role of the Telomeres and Telomerase in Cancer Research, Fort Worth, TX. February, 2010. Poster presentation.

Hawkins, C. and Friedman, K.L. Characterizing a putative nuclear localization sequence in the Est1p component of telomerase that contributes to telomere maintenance. AACR Special Conference on The Role of the Telomeres and Telomerase in Cancer Research, Fort Worth, TX. February, 2010. Poster presentation.

Talley, J.M., DeZwaan, D.C., Maness, L.D.\*, Freeman, B.C., Friedman, K.L. The Est3 protein of *Saccharomyces cerevisiae* stimulates telomerase catalytic activity through direct interaction with Est2p. AACR Special Conference on The Role of the Telomeres and Telomerase in Cancer Research, Fort Worth, TX. February, 2010. Invited oral presentation.

Friedman, K.L., Platts, M.H., Velkovsky, S.M.\*, Paul, S.R.\*, and Sanchez, L.\* Telomere addition at spontaneous sites of chromosome breakage is facilitated by Rap1 function. FASEB Conference on Yeast Chromosome Structure, Replication and Segregation, Carefree, AZ. August, 2010. Invited oral presentation.

Bairley, R.C., Guillaume, G.\*, Friedman, K.L. Exploring template utilization by telomerase with *Saccharomyces cerevisiae* yeast. American Society for Cell Biology (ASCB) National Meeting, San Diego, CA. December, 2009. Poster presentation.

Platts, M.H., Bairley, R.C., Friedman, K.L., Regulation of telomere sequence and length by the catalytic subunit of yeast telomerase. Meeting on Telomeres and Telomerase, Cold Spring Harbor Laboratory, NY. April, 2009. Invited oral presentation. Could not attend due to family emergency.

Talley, J.M. and Friedman, K.L. Est3p assembly with the telomerase complex involves a direct interaction with Est2p in *Saccharomyces cerevisiae*. Meeting on Telomeres and Telomerase, Cold Spring Harbor Laboratory, NY. April, 2009. Poster presentation.

Miles, J.L.\*, Adkins, C.L.\*, Platts, M.H., Bairley, R.C., Friedman, K.L. Analysis of telomerase processivity in yeast strains with altered telomere length homeostasis. Meeting on Telomeres and Telomerase, Cold Spring Harbor Laboratory, NY. April, 2009. Poster presentation.

Asmitha K. Sathiyakumar\*, Charlene Hawkins, Jenifer L. Ferguson, and Katherine L. Friedman (2008) Regions of *S. cerevisiae* Est1p that mediate its multiple roles in telomerase assembly. EMBO conference on Telomeres and Genome Stability, Villars, Switzerland. Oral presentation.

Jenifer L. Ferguson and Katherine L. Friedman (2008) Recognition of multiple degron motifs by the Anaphase Promoting Complex mediates *S. cerevisiae* Est1p cell-cycle regulated degradation. EMBO conference on Telomeres and Genome Stability, Villars, Switzerland. Poster presentation.

Hong Ji, Christopher Adkins\*, Bethany R. Cartwright\*, Robin C. Bairley, and Katherine L. Friedman (2007) Yeast Est2p affects telomere length by influencing the association of Rap1p with telomeric chromatin. Meeting on the Role of Telomeres and Telomerase in Cancer Research, San Francisco, CA. Oral presentation.

- Hong Ji, Chris Adkins\*, and Katherine Friedman (2007) A novel role of the catalytic protein subunit of yeast telomerase in enzyme fidelity and telomere length homeostasis. Meeting on Telomeres and Telomerase, Cold Spring Harbor, NY. Poster and Oral presentation.
- Jennifer L. Osterhage, Jennell M. Talley, and Katherine L. Friedman (2006) Proteasome-dependent degradation of Est1p regulates the assembly of telomerase during G1 phase in *Saccharomyces cerevisiae*. Meeting on Telomeres and Genome Stability, Villars, Switzerland. Oral presentation.
- Jennifer L. Osterhage, Jennell M. Talley, and Katherine L. Friedman (2006) Proteasome-dependent degradation of Est1p regulates the cell cycle restricted assembly of telomerase in *Saccharomyces cerevisiae*. FASEB meeting on Yeast Chromosome Structure and Replication. Poster presentation.
- J.L. Osterhage, J.M. Talley, E. Schneble\*, and K.L. Friedman (2005) Cell cycle regulation of telomerase subunit association in *Saccharomyces cerevisiae*. Meeting on Telomeres and Telomerase. Cold Spring Harbor, NY. Oral presentation.
- M.H. Platts, K.F. Pulliam, J. Cialone\*, and K.L. Friedman (2005) Defining Est3p's interaction with the yeast telomerase complex. Meeting on Telomeres and Telomerase. Cold Spring Harbor, NY. Poster presentation.
- H. Ji, L.M. Dharamsi\*, M.H. Platts, and K.L. Friedman (2005) Negative-regulation of telomere length by an N-terminal region of yeast TERT (Est2p). Meeting on Telomeres and Telomerase. Cold Spring Harbor, NY. Poster presentation.
- K.F. Benton (Pulliam), J. Cialone\*, M.H. Platts, and K.L. Friedman (2004) Exploring the Role of Est3p in the Yeast Telomerase Complex. Meeting on the Role of Telomeres and Telomerase in Cancer. San Francisco, CA. Poster presentation.
- J.L. Osterhage, E. Schneble\*, and K.L. Friedman (2004) Cell Cycle-Regulated Association of Telomerase Subunits in Yeast. Meeting on the Role of Telomeres and Telomerase in Cancer. San Francisco, CA. Poster presentation.
- H. Ji, M.H. Platts, and K.L. Friedman (2004) An N-terminal Domain of Yeast TERT Negatively Regulates Telomere Length. Meeting on Telomeres and Genome Stability. Cambridge, UK. Poster presentation.
- K.F. Benton (Pulliam), M.H. Platts, J. Warner\* and K.L. Friedman (2003) Subunit Interactions Within the Yeast Telomerase Complex. Meeting on Eukaryotic DNA Replication. Cold Spring Harbor, NY. Poster presentation.
- K.F. Benton (Pulliam), M.H. Platts, J. Warner\*, and K.L. Friedman. (2003) Subunit Interactions Within the Yeast Telomerase Complex. Meeting on Telomeres and Telomerase. Cold Spring Harbor, NY. Oral presentation.
- K.F. Benton (Pulliam), A. Brown\*, and K.L. Friedman. (2003) Exploring the Interaction of Est2p and Est3p in the *S. cerevisiae* Telomerase Complex. Meeting on Telomeres and Telomerase. Cold Spring Harbor, NY. Poster presentation.
- K.L. Friedman, J.J. Heit\*, and Thomas R. Cech. (2001) A Specific Function for the N-Terminal Domain of Yeast TERT (Est2p): Recruitment of Est3p. Meeting on Telomeres and Telomerase. Cold Spring Harbor, NY. Oral presentation.
- K.L. Friedman, J.J. Heit\*, D.M. Long, and T.R. Cech. (2000) Conservation and Functional Importance of N-terminal Domains of Telomerase Reverse Transcriptase.

FASEB Summer Conference on Yeast Chromosome Structure, Replication and Segregation. Snowmass, CO. Poster presentation.

K.L. Friedman and T.R. Cech. (1998) Unigenic Evolution of the Catalytic Protein Subunit of Yeast Telomerase. FASEB Summer Conference on Yeast Chromosome Structure, Replication and Segregation. Snowmass, CO. Poster presentation.

K.L. Friedman, J.D. Diller, K.M. Kolor, M.K. Raghuraman, B.J. Brewer, and W.L. Fangman. (1996) Determinants of Origin Activation Time in Yeast. FASEB Summer Conference on Yeast Chromosome Structure, Replication and Segregation. Snowmass, CO. Oral presentation.

## Regional

*The Southeast Regional Yeast Meeting (SERYM) is an annual meeting of yeast laboratories from the Southeastern United States (Tennessee, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, Kentucky).*

Melissa Goldin,\* Katrina Ngo, Katherine Friedman. Determining the role of Cdc13 binding in promoting *de novo* telomere addition in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting (virtual). April 17, 2021. Oral presentation.

Remington Hoerr, Katrina Ngo, Natalie Guzman,\* Katherine Friedman. Mutational analysis of a repetitive TG-rich sequence reveals critical sequence requirements to stimulate *de novo* telomere addition in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting (virtual). April 17, 2021. Oral presentation.

Katrina Ngo, Melissa Goldin,\* Annie Hatmaker, Remington Hoerr, Sim Plotkin,\* Liraz Stilman,\* Antonis Rokas, Katherine Friedman. A candidate-based approach to identify and characterize hotspots of *de novo* telomere addition in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting (virtual). April 17, 2021. Oral presentation. Recipient of presentation award.

Simcha Plotkin,\* Katrina Ngo, and Katherine Friedman. Functional Testing of Predicted Sites of *de novo* Telomere Addition. Southeastern Regional Yeast Meeting (virtual). April 17, 2021. Oral presentation. Recipient of presentation award.

Natalie Guzman\*, Katrina Ngo, and Katherine L. Friedman. A hotspot of *de novo* telomere addition in *Saccharomyces cerevisiae* associated with chromosome rearrangements. Southeastern Regional Yeast Meeting (SERYM). Georgia Tech, Atlanta, GA, April 12-14, 2019. Poster presentation.

Katrina Ngo, Sydni Cait Smith, Esther Epum, and Katherine L. Friedman. Utilizing a candidate-based approach to identify hotspots of *de novo* telomere addition in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting (SERYM). Georgia Tech, Atlanta, GA, April 12-14, 2019. Poster presentation.

Nicholas Ruppe\*, Esther Epum, and Katherine L. Friedman. Contribution of break-induced replication to double-strand break repair in the absence of *RAD51*. Southeastern Regional Yeast Meeting (SERYM). Georgia Tech, Atlanta, GA, April 12-14, 2019. Poster presentation.

Clayton Jelsma<sup>§</sup>, Elise Erman\*, and Katherine Friedman. Creating a system to visualize the rate of error-free repair during NHEJ in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting (SERYM). Georgia Tech, Atlanta, GA, April 12-14, 2019. Oral presentation. <sup>§</sup>High school student. Recipient of award for best talk by an undergraduate student.

Katrina Ngo, Esther A. Epum, and Katherine L. Friedman. A candidate-based approach to identify hotspots of *de novo* telomere addition in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting (SERYM). Rhodes College, Memphis, TN, March 9-11, 2018. Poster presentation.

Esther A. Epum and Katherine L. Friedman. Rad51 modulates the effect of Rad52 on *de novo* telomere addition in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting (SERYM). Rhodes College, Memphis, TN, March 9-11, 2018. Oral presentation.

Kerri-Ann Anderson, Udochukwu Obodo, Stephen Lee\*, and Katherine Friedman. The Mechanism of Action of Rif1 Protein during Non-Homologous End Joining in *S. cerevisiae*. Southeastern Regional Yeast Meeting. Rhodes College, Memphis, TN, March 9-11, 2018. Oral presentation.

Esther Epum and Katherine L. Friedman. Mechanisms that promote *de novo* telomere addition involve modulation of Cdc13 function. Southeastern Regional Yeast Meeting (SERYM), Tuscaloosa, AL. March 31-April 2, 2017. Oral presentation.

Katherine L. Friedman, Udochukwu C. Obodo, Kerri-Ann Anderson, and Stephen J. Lee\*. Yeast Rif1 affects the fidelity of non-homologous end joining following CRISPR/Cas9 cleavage. Southeastern Regional Yeast Meeting (SERYM), Tuscaloosa, AL. March 31-April 2, 2017. Oral presentation.

Kerri-Ann Anderson, Udochukwu Obodo, Stephen Lee\*, Ty Bottorff\* and Katherine Friedman. Using CRISPR-Cas9 to study double strand break repair and elucidate Rif1 targets in *S. cerevisiae*. Southeastern Regional Yeast Meeting (SERYM), Tuscaloosa, AL. March 31-April 2, 2017. Poster presentation. Recipient of award for best graduate student poster presentation.

Stephen Lee\*, Udochukwu Obodo, Kerri-Ann Anderson, Katherine Friedman. Evaluating the role of Rif1 in non-homologous end joining using the CRISPR-Cas9 system and high-throughput repair fingerprinting. Southeastern Regional Yeast Meeting (SERYM), Tuscaloosa, AL. March 31-April 2, 2017. Poster presentation.

Anqing Li\*, Esther A. Epum, and Katherine L. Friedman. Rad51 contributes to *de novo* telomere addition in *Saccharomyces cerevisiae* in a manner independent of its DNA loading factor, Rad52. Southeastern Regional Yeast Meeting (SERYM), Tuscaloosa, AL. March 31-April 2, 2017. Poster presentation. Recipient of award for best undergraduate student poster presentation.

Esther A. Epum, Udochukwu C. Obodo and Katherine L. Friedman. *CDC13* enhances *de novo* telomere addition at internal chromosomal sites in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting (SERYM), Tuscaloosa, AL. March 25-27, 2016. Oral presentation. Recipient of award for best presentation by a graduate student.

Ty A. Bottorff\* and Katherine L. Friedman. Modifying gRNA to program an endonuclease in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting (SERYM), Tuscaloosa, AL. March 25-27, 2016. Poster presentation.

Stephen Lee\*, Udochukwu C. Obodo, Katherine L. Friedman. Using CRISPR-Cas9 to determine the role of Rif1 in DNA end-processing during nonhomologous end joining. Southeastern Regional Yeast Meeting (SERYM), Tuscaloosa, AL. March 25-27, 2016. Poster presentation.

Onuoha (Epum), E.A., Obodo, U.C., and Friedman, K.L. Sites of *de novo* telomere addition in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting, Little

Rock, AR, March 15-18, 2015. Oral presentation. Recipient of award for best graduate student oral presentation.

Memon, A.,\* Obodo, U.C., Chu, C.,\* and Friedman, K.L. A role for the telomere-associated protein Rif1p in repair of double-strand breaks through non-homologous end joining (NHEJ). Southeastern Regional Yeast Meeting, Little Rock, AR, March 15-18, 2015. Oral presentation. Recipient of award for best undergraduate student oral presentation.

Santiago, G.,\* Cox, L.,\* and Friedman, K.L. RIF1 affects double-strand break repair pathway choice in the absence of non-homologous end joining. Southeastern Regional Yeast Meeting, Little Rock, AR, March 15-18, 2015. Poster presentation. Recipient of award for best undergraduate student poster presentation.

Bechard, L.H., Onuoha, E.A., and Friedman, K.L. Interaction of the regulatory subunit Est3p with the catalytic subunit of telomerase in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting, Vanderbilt University, Nashville, TN. March 14-16, 2014. Poster presentation.

Dahlson, N.\*, Seloff, J.\*\*\*, Feldman, Z.\* , and Friedman, K.L. Identifying Essential Regions for Hotspot *de novo* Telomere Addition in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting, Vanderbilt University, Nashville, TN. March 14-16, 2014. Poster presentation.

Memon, A.\*, Cox, L.\* , Yang, Y.E.\*\*\*, and Friedman, K.L. A Role for the Telomere-Associated Protein Rif1p in repair of Double-Strand Breaks. Southeastern Regional Yeast Meeting, Vanderbilt University, Nashville, TN. March 14-16, 2014. Poster presentation.

Obodo, U.C., Onuoha, E.A., Paul, S.\* , Velkovsky, S.\* , Platts, M.H. and Friedman, K.L. Stimulation of *de novo* Telomere Addition by *Saccharomyces cerevisiae* Telomere-binding Protein Rap1p. Southeastern Regional Yeast Meeting, Vanderbilt University, Nashville, TN. March 14-16, 2014. Oral presentation. Recipient of award for best graduate student oral presentation.

Onuoha, E.A., Obodo, U.C. and Friedman, K.L. Is Rap1p sufficient for *de novo* telomere addition at the hotspot on chromosome V? Southeastern Regional Yeast Meeting, Vanderbilt University, Nashville, TN. March 14-16, 2014. Poster presentation. Recipient of award for best graduate student poster presentation.

Hawkins, C. and Friedman, K.L. Nuclear localization sequences in the Est1p component of *S. cerevisiae* telomerase are important for telomere maintenance. Southeastern Regional Yeast Meeting, Birmingham, AL. March 8-10, 2013. Oral presentation.

Obodo, U.C., Carboneau, B., and Friedman, K.L. The telomere-binding protein Rap1p stimulates *de novo* telomere addition in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting, Birmingham, AL. March 8-10, 2013. Oral presentation.

Hawkins, C. and Friedman, K.L. Multiple nuclear localization sequences in the primary structure of the Est1p component of *S. cerevisiae* telomerase are important for telomere maintenance. Southeastern Regional Yeast Meeting, Atlanta, GA, February 2012. Oral presentation. Recipient of award for best graduate student oral presentation.

Obodo, U.C. and Friedman, K.L. Requirement for Rap1p in stimulating *de novo* telomere addition in budding yeast. Southeastern Regional Yeast Meeting, Atlanta, GA, February 2012. Oral presentation.

Bechard, L.H., Onuoha, E.A. and Friedman, K.L. Genetic and biochemical analysis of Est3p's interaction with the TEN domain of Est2p in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting, Atlanta, GA, February 2012. Poster presentation.

Ding, A.\*, Turner, K.\*, Obodo, U.C., and Friedman, K.L. Effect of orientation on the stimulation of *de novo* telomere addition by Rap1p in yeast. Southeastern Regional Yeast Meeting, Atlanta, GA, February 2012. Poster presentation.

Eli, I.\*, Obodo, U.C., Paul, S.\*, Velkovsky, V.\*, Platts, M.H., and Friedman, K.L. Analyzing *de novo* telomere addition events after induction of a single chromosome break. Southeastern Regional Yeast Meeting, Atlanta, GA, February 2012. Poster presentation. Recipient of award for best undergraduate poster presentation.

Luo, A.\*, Obodo, U.C., Platts, M.H., and Friedman, K.L. The effect of distance between a telomeric "hotspot" and a chromosomal breakage site on *de novo* telomere addition in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting, Atlanta, GA, February 2012. Poster presentation.

Platts, M.H., Velkovsky, S.M.\*, Paul, S.R.\*, Eli, I.M.\*, Ferrick, E.A., Obodo, U.C., and Friedman, K.L. Stimulation of *de novo* telomere addition at sites of spontaneous chromosome breakage by the telomere-binding protein Rap1p. Southeastern Regional Yeast Meeting, Starkville, MS. March 2011. Oral presentation.

Bechard, L.H., Talley, J.M., Maness, L.D.\*, and Friedman, K.L. Defining a minimal region of Est3p that is necessary to interact with Est2p using a constitutive Est2p-Est3p fusion. Southeastern Regional Yeast Meeting, Starkville, MS. March 2011. Poster presentation.

Maness L.D.\*, Talley, J.M., and Friedman, K.L. Est3p directly associates with the *S. cerevisiae* telomerase catalytic subunit Est2p to stimulate enzyme activity. Southeastern Regional Yeast Meeting, Little Rock, AR. March, 2010. Oral presentation, received award for best talk by an undergraduate student.

Hawkins, C. and Friedman, K.L. Characterizing a putative nuclear localization sequence in the Est1p component of telomerase. Southeastern Regional Yeast Meeting, Little Rock, AR. March, 2010. Poster presentation.

Riddle, A. and Friedman, K.L. A C-terminal region of Est1p stimulates recruitment of Est3p to the yeast telomerase complex. Southeastern Regional Yeast Meeting, Little Rock, AR. March, 2010. Poster presentation.

Hawkins, C., Sathiyakumar, A.\*, and Friedman, K. Characterizing a putative nuclear localization sequence in the Est1p component of telomerase. Southeastern Regional Yeast Meeting, Nashville, TN. March, 2009. Oral presentation.

Talley, J.M. and Friedman, K.L. Assembly of Est3p with the telomerase complex in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting, Nashville, TN. March, 2009. Oral presentation.

Bairley, R.C. and Friedman, K.L. Exploring the affects of over-elongation on *Saccharomyces cerevisiae* telomere addition in vivo. Southeastern Regional Yeast Meeting, Nashville, TN. March, 2009. Poster presentation.

Ferguson, J. and Friedman, K. Assessing the role of the anaphase promoting complex in the cell-cycle regulated degradation of the yeast telomerase component Est1p. Southeastern Regional Yeast Meeting, Nashville, TN. March, 2009. Poster presentation.

Adkins, C.J.\*, Miles, J.M.\*, and Friedman, K.L. Examining *Saccharomyces cerevisiae*

processivity in vitro. Southeastern Regional Yeast Meeting, Nashville, TN. March, 2009. Poster presentation.

Miles, J.L.\*, Adkins, C.J.\*, Bairley, R.C., Platts, M.H., Friedman, K.L. Repeat addition processivity mediated by yeast telomerase catalytic subunit. Southeastern Regional Yeast Meeting, Nashville, TN. March, 2009. Poster presentation.

Kim, E.\* and Friedman, K. Contributions of Est2p, the telomerase catalytic subunit, to naturally occurring differences in telomere length. Southeastern Regional Yeast Meeting, Nashville, TN. March, 2009. Poster presentation.

Jenifer L. Ferguson and Katherine L. Friedman (2008) The APC targets the telomerase regulatory protein Est1p for degradation in G1 phase. Southeastern Regional Yeast Meeting, Gatlinburg, TN. Oral presentation.

Jennell M. Talley and Katherine L. Friedman (2008) Investigating the role of the telomerase subunit Est3p in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting, Gatlinburg, TN. Poster presentation. Chosen for award as outstanding poster presentation by a graduate student.

Robin C. Bairley, Charlene Hawkins, Hong Ji, and Katherine L. Friedman (2008) Generation of sequence heterogeneity in yeast telomeres. Southeastern Regional Yeast Meeting, Gatlinburg, TN. Poster presentation.

Jenifer Ferguson, Jennell Talley, and Katherine Friedman (2007) Cell-cycle regulated degradation of the yeast telomerase protein Est1p involves the anaphase promoting complex. Southeastern Regional Yeast Meeting, Birmingham, AL. Oral presentation.

Hong Ji, Chris Adkins\*, Bethany Cartwright\*, and Katherine Friedman (2007) The N-terminus of telomerase catalytic subunit (Est2p) affects enzyme fidelity and regulates telomere length. Southeastern Regional Yeast Meeting, Birmingham, AL. Oral presentation.

Jennifer Osterhage and Katherine Friedman (2007) Exploring the cell-cycle regulation of telomerase assembly and activity. Southeastern Regional Yeast Meeting, Birmingham, AL. Oral presentation.

Jennell M. Talley, Margaret H. Platts, and Katherine L. Friedman (2007) Using partial proteolysis as a tool to understand Est3p domain structure. Southeastern Regional Yeast Meeting, Birmingham, AL. Oral presentation.

Robin C. Bairley and Katherine L. Friedman (2007) Characterizing the role of acetylation for yeast telomerase subunit Est3p. Southeastern Regional Yeast Meeting, Birmingham, AL. Oral presentation. Earned award for best presentation by a graduate student.

Christopher Adkins\*, Hong Ji, and Katherine Friedman (2007) Contributions by the catalytic protein subunit of telomerase to telomere length homeostasis. Southeastern Regional Yeast Meeting, Birmingham, AL. Poster presentation.

Bethany Cartwright\*, Latif Dharamsi\*, Stan Sonu\*, Hong Ji, and Katherine Friedman (2007) Exploring the genetic interaction between lagging strand replication machinery and telomere length regulation by telomerase. Southeastern Regional Yeast Meeting, Birmingham, AL. Poster presentation.

Jennifer Cialone\*, Margaret Platts, Jennifer Osterhage, and Katherine Friedman (2007) Characterizing the essential regions of Est3p, a subunit of yeast telomerase. Southeastern Regional Yeast Meeting, Birmingham, AL. Poster presentation.

Saira Khan\*, Jenifer Ferguson, and Katherine Friedman (2007) Sumoylation and its relation to the *Saccharomyces cerevisiae* telomerase complex. Southeastern Regional Yeast Meeting, Birmingham, AL. Poster presentation.

Asmitha Sathiyakumar\*, Jennifer Osterhage, and Katherine Friedman (2007) Examining Est1p-mediated recruitment of Est3p to the telomerase complex in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting, Birmingham, AL. Poster presentation.

Robin C. Bairley and Katherine L. Friedman (2006) Characterizing the role of acetylation for yeast telomerase subunit Est3p. Southeastern Regional Yeast Meeting, Hattiesburg, MS. Poster presentation. Earned award for best poster presentation by a graduate student.

Jennifer L. Osterhage, Jennell M. Talley, and Katherine L. Friedman (2006) Proteasome-dependent degradation of Est1p regulates the cell cycle restricted assembly of telomerase in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting, Hattiesburg, MS. Oral presentation.

Hong Ji, L.M. Dharamsi\*, M.H. Platts and K.L. Friedman (2005) Exploring the role of a negative regulatory element in yeast TERT (Est2p). Southeastern Regional Yeast Meeting. Atlanta, GA. Oral presentation.

M.H. Platts, K.F. Pulliam, J. Cialone\*, S. Khan\*, and K.L. Friedman (2005) Interactions between the yeast telomerase catalytic subunit, Est2p, and the regulatory subunit, Est3p. Southeastern Regional Yeast Meeting. Atlanta, GA. Oral presentation.

J.L. Osterhage, E. Schneble\*, and K.L. Friedman (2005) Cell cycle-regulated association of telomerase subunits in yeast. Southeastern Regional Yeast Meeting. Atlanta, GA. Oral presentation.

J.L. Osterhage and K.L. Friedman (2004) Regulation of protein-protein interactions in the yeast telomerase complex. Southeastern Regional Yeast Meeting, Memphis, TN. Oral presentation. Received best oral presentation award.

H. Ji, L.M. Dharamsi\*, M.H. Platts, and K.L. Friedman (2004) Phenotypic and genetic characterization of long telomere mutants. Southeastern Regional Yeast Meeting, Memphis, TN. Oral presentation.

K.F. Benton (Pulliam), M.H. Platts, and K.L. Friedman (2004) Exploring the interaction of Est2p and Est3p in *Saccharomyces cerevisiae*. Southeastern Regional Yeast Meeting, Memphis, TN. Oral presentation.

M.H. Platts, K.F. Benton (Pulliam), J.L. Osterhage, H. Ji, and K.L. Friedman (2004) Subunit interactions in the yeast telomerase complex. Southeastern Regional Yeast Meeting, Memphis, TN. Poster presentation.

*The Association of Southeastern Biologists Annual Meeting is a forum for graduate and undergraduate students to present their research.*

Talley, J. and Friedman, K.L. Understanding the assembly requirements for the *Saccharomyces cerevisiae* telomerase component Est3p. Meeting of the Association of Southeastern Biologists, Birmingham, AL. April, 2009. Oral presentation.

Bairley, R.C. and Friedman, K.L. Establishing a basis of telomere repeat synthesis by mutations disrupting telomere length homeostasis. Meeting of the Association of Southeastern Biologists, Birmingham, AL. April, 2009. Poster presentation.

Jennell M. Talley, Margaret H. Platts, and Katherine L. Friedman (2007) Using partial proteolysis to investigate structural domains within Est3p. Association of Southeastern Biologists Annual Meeting, Columbia, SC. Oral presentation.

Jennell M. Talley, Jennifer L. Osterhage, and Katherine L. Friedman (2006) Regulation of Est1p by degradation in G1 phase of the cell cycle. Association of Southeastern Biologists Annual Meeting. Gatlinburg, TN. Oral presentation.

### **Conference presentations**

#### **Invited session chair:**

FASEB Meeting on Chromosomes and the Cell Cycle. Babson Park, MA, July 2020 (cancelled – rescheduled for 2022).

Meeting on Telomeres and Telomerase, Cold Spring Harbor, NY. May, 2017.

Meeting on Telomeres and Telomerase, Cold Spring Harbor, NY. April, 2009.

American Association for Cancer Research Meeting on “The Role of Telomeres and Telomerase in Cancer.” San Francisco, CA. November, 2004.

Meeting on Telomeres and Telomerase, Cold Spring Harbor, NY. April, 2003.

#### **Oral meeting presentations:**

FASEB Meeting on Chromosomes and the Cell Cycle. Steamboat Springs, CO, August 2018.

Telomeres and Telomerase Meeting. Cold Spring Harbor, NY, May, 2017.

FASEB Meeting on Yeast Chromosome Structure, Replication, and Segregation, Snowmass, CO, August, 2016.

Telomeres and the DNA Damage Response, L'Isle sur la Source, France, October, 2012.

Telomeres and Telomerase Meeting, Cold Spring Harbor, NY, May, 2011.

FASEB Conference on Yeast Chromosome Structure, Replication, and Segregation, Carefree, AZ, August, 2010.

The Role of Telomeres and Telomerase in Cancer Research, AACR Special Conference in Cancer Research, San Antonio, TX, March, 2010.

EMBO conference on Telomeres and Genome Stability, Villars, Switzerland, September, 2008.

The Role of Telomeres and Telomerase in Cancer Research, AACR Special Conference in Cancer Research, San Francisco, CA, Dec. 2007.

Telomeres and Telomerase Meeting, Cold Spring Harbor, NY, May 2007.

Telomeres and Genome Stability, Villars, Switzerland, August 2006.

Telomeres and Telomerase Meeting, Cold Spring Harbor, NY, April 2003.

Telomeres and Telomerase Meeting, Cold Spring Harbor, NY, March 2001.

Rocky Mountain Yeast Meeting, Colorado State University, Fort Collins, CO, October 2000.

FASEB Conference on Yeast Chromosome Structure, Replication and Segregation, Snowmass, CO, June 1996.

**Poster presentations:**

Telomeres and Telomerase Meeting, Cold Spring Harbor, NY, May 2019.

Telomeres and the DNA Damage Response, Lisbon, Portugal. May 2018.

The Role of Telomeres and Telomerase in Cancer, San Francisco, CA, November 2004.

Telomeres and Genome Stability, Cambridge, UK, April 2004.

Eukaryotic DNA Replication Meeting, Cold Spring Harbor, NY, September 2003.

**F. Teaching-Related Activities**

**1. Courses taught**

**Course Instructor**

BSCI 1510, Introduction to Biological Sciences

2017-2021 Vanderbilt University Nashville, TN

Semester: F2017, F2018, F2019, F2020, F2021

BSCI1510 in an introductory level course taken primarily by freshman and sophomores. It serves as the foundational course for the major and as a pre-medical school requirement. I teach the second half of the semester, focused on DNA replication, mechanisms of gene expression, and the cell cycle. Since 2020, the course has been taught in a “flipped” mode with discussion during class time led by undergraduate Learning Assistants.

BSCI4266/5266, Advanced Molecular Genetics (previously BSCI 266)

2004-2017 Vanderbilt University Nashville, TN

Semesters: F2004, S2006, S2008, S2009, F2010, F2011, F2012, F2013, F2014, F2015, F2016, F2017

BSCI4266/5266 is an upper level undergraduate and graduate level course that I conceived and designed (enrollment 8-15). The class is typically divided evenly between undergraduate and graduate students. The course covers principles of classical and molecular genetic analysis including mutation and recombination, mapping, and the application of genetic methodology to the study of complex systems, with special emphasis on modern genomic approaches. Most class periods revolve around discussions of papers from the primary scientific literature. Graduate students are required to lead one of the discussion sessions. Emphasis is on understanding of basic concepts of genetics and their application, rather than a specific research topic.

BSCI 2210, Principles of Genetics (previously BSCI 210)

2002-2022 Vanderbilt University Nashville, TN

Semesters: S2002, S2003, S2004, F2005, F2006, F2008, F2009, S2009, S2010, S2011, S2012, S2013, S2014, S2016, S2017, S2018, S2019, S2021, S2022

This is an intermediate-level undergraduate lecture course (enrollment ~35-90). I teach one half of semester, though I attend all of the lectures to provide continuity. Topics include molecular biology techniques, human genome mapping, regulation of gene expression, genetics of cancer, and the use of model organisms in genetic research. I spearheaded a course-redesign effort during spring semester 2006 that brought together all four instructors

(this course is team taught during both semesters) to reconsider course goals and approaches. This effort led to a revised syllabus and several innovations in course management. More recently, I have “flipped” the classroom, presenting lecture material before class in the form of custom videos. This approach frees time for problem-solving and other forms of active learning in class, including the addition of Learning Assistants in 2021 and 2022.

BSCI385, Advanced Reading in Biological Sciences

2002 Vanderbilt University Nashville, TN

Semesters: F2002

BSCI285 was a graduate level (enrollment = 4) reading and discussion course designed to cover critical topics of yeast genetics and molecular biology. I taught in collaboration with Dr. Todd Graham. The need for this reading course was alleviated by development of BSCI4266.

BSCI320, Graduate Seminar in Molecular Biology

2001-2003 Vanderbilt University Nashville, TN

Semesters: F2001, F2002, F2003

This is a weekly seminar course for graduate students [enrollment ~20]. Students are given feedback on oral presentations of topics from the primary literature.

**Lecturer in team-taught course**

IGP8001, Bioregulation I

2001-2021 Vanderbilt University Nashville, TN

IGP8001 is a graduate level course [enrollment = ~100]. I have participated in a yearly total of 4-9 hours of classroom time in this team-taught course. Topics include yeast genetics, DNA replication, DNA repair, and telomere biology. In 2021, I also led discussions of research articles two times per week for four weeks and was responsible for coordinating the lectures on genetics.

CBIO8338, Special Topics in Cell and Developmental Biology

2002-2022 Vanderbilt University Nashville, TN

This graduate level course [enrollment: 10-15] is organized by faculty of the Cell and Developmental Biology department and introduces students to the research and careers of Nobel Prize winning researchers. I teach one hour.

CANB8340, Introduction to Cancer Biology

2006-2007; 2015-2021 Vanderbilt University Nashville, TN

The graduate level course [enrollment: ~20] is organized by Dr. Fiona Yull of the Cancer Biology department and introduces students to a variety of cancer biology related topics. I teach 1-2 hours.

## 2. Graduate students mentored

### PhD thesis students (years listed do not include first year of coursework)

Kanika (Benton) Pulliam (2002-2005)

- Dr. Pulliam transferred to Emory for personal reasons and defended her Ph.D. thesis in the laboratory of Dr. Anita Corbett (09/08).

Jennifer Osterhage (2003-2007; defended June 14, 2007)

- Assistant Professor of Biology at Hanover College, Hanover, IN (former)
- Senior Lecturer at University of Kentucky, Lexington, KY (former)
- Assistant Professor, University of Kentucky, Lexington, KY (current)

Hong Ji (2003-2007; defended November 15, 2007)

- Postdoctoral fellow in the laboratory of Dr. Andrew Feinberg at Johns Hopkins University
- Assistant Professor, Cincinnati Children's Hospital Medical Center (former)
- Assistant Professor, University of California, Davis (present)

Jennell Talley (2005-2011)

- Assistant Professor, Shorter College (former)
- Associate Professor, Georgia Gwinnett College (current)

Robin Bairley (2005-2011)

- Instructor, Sandhills Community College, Pinehurst, NC

Jenifer Ferguson (2006-2013)

- Workforce Development Specialist, HudsonAlpha Institute for Biotechnology, Huntsville, AL (current)

Charlene Hawkins (2008-2014)

- Postdoctoral fellow, laboratory of Dr. Wonder Drake, Vanderbilt University (former)
- Current position unknown

Udochukwu Obodo (2011-2016)

- Postdoctoral fellow, laboratory of Dr. Timothy O'Connor, City of Hope, Duarte, CA

Esther (Onuoha) Epum (2014-2019)

- Postdoctoral fellow, laboratory of Dr. James Haber, Brandeis University, Waltham, MA.

Kerri-Ann Anderson (2016-2018)

- Transferred to the laboratory of Dr. Nicole Creanza, Vanderbilt University

Katrina Ngo (2018-present)

Remington Hoerr (2020-present)

- Currently supported by CBMS training grant

David Gonzalez (2022-present)

### Master's thesis students

Margaret Platts (2004-2006), Vanderbilt MLI (Master's of Laboratory Investigation) Program. Graduated 12/06.

Abigail Riddle

Esther (Onuoha) Epum. Fisk/Vanderbilt Bridge Program.

### Master's research students (part of the Vanderbilt Master's Program in Biological Sciences)

Sabrina Dobbins (2019-2020)

Moregann Mitchell (2021-2022)

## Thesis Committees

*Former:* Jennifer Dickey (Biochemistry), Erin Baldwin (Biochemistry), Vitaly Klimovich (BSCI), Ke Liu (BSCI), Heather Ball (Biochemistry), Steve Gray (BSCI), Barry Crawford (BSCI), Katie McClendon (BSCI), *Margaret Platts\** (BSCI, Masters of Laboratory Investigation program), Ian Hawkins (BSCI), *Hong Ji* (BSCI), *Jennifer Osterhage* (BSCI), Omari Bandele (Biochemistry), Xiaohua Jiang (BSCI), Weizhen (Maggie) Ying (BSCI, Master's), Nikki Shariat (BSCI), Amanda Solis\* (BSCI), Joe Deweese (Biochemistry), Nayaki Mathusamy (BSCI), Xiaoming Zhao (BSCI), Adam Farley (Biochemistry), Laura Terry (Cell and Developmental Biology), Brian Robertson (BSCI), Diane Kanter (BSCI), *Jennell Talley* (BSCI), *Robin Bairley* (BSCI), *Jenifer Ferguson* (BSCI), *Charlene Hawkins* (BSCI), Fu Huang (Biochemistry), Hao Huang (BSCI), Kavitha Surendhran (BSCI), Halina Onishko (Radiation Oncology, Masters of Laboratory Investigation program), Katie Aldred (Biochemistry), Poojitha Sitaram (CDB), Lisa Funkhouser\* (BSCI), Greg Sowd\* (BSCI), Scott Fites\* (BSCI), Tomas Yan (BSCI), Wenyu Du\* (BSCI), Suraj Adhikari\* (BSCI), Tessy Sebastian (BSCI), John Gibbons (BSCI), Rebecca Adams (CDB), Ryan Baldrige\* (BSCI), Alexia Melo Carrillo (Pathology), Jordan Feigerle (Mol. Phys. and Biophysics), Josh Broussard (BSCI), Nalini Dhingra (BSCI), Starr Winters (CDB), Hannah Hankins\* (BSCI), Kendra Vann (Biochemistry), Leolene Jean\* (BSCI), Aditi Aditi (CDB), Akosua Badu-Nkansah (Biochem), Lisa Poole (Biochemistry), *Udochukwu Obodo* (BSCI), Daniel LePage\* (BSCI), Lorena Infante Lara (Biochem), Marilyn Holt (Biochemistry), Nicole Diggins (BSCI), Rongxin Shi\* (BSCI), Mehmet Takar (BSCI), Begum Erdogan (BSCI), Stephanie Birnbaum (BSCI), Heather McCartney (CDB), Cristina Robinson\* (BSCI), Mary Lynn Dear (BSCI), Danielle Kopke\* (BSCI), *Esther Epum* (BSCI), Carla O'Neale (BSCI), Keyada Frye (CDB), Jordan Best\* (BSCI), Matthew Kent (BSCI), Caitlyn Kirby\* (BSCI), Jessica Abner\* (BSCI), Lauren Salay\* (CPB), Alyssa Rodriguez\* (BSCI), Esha Dalvie (Biochem), Gustavo Garriga (Fisk/Vanderbilt Bridge program), Noah Bradley\* (BSCI), Sari Terraza (Fisk/Vanderbilt Bridge program), Destane Garrett\* (BSCI),

*Current:* Kerri-Ann Anderson (BSCI), Alex Munden\* (BSCI), Alexandria Oviatt (Biochem), Logan Richards\* (BSCI), Shwetha Narasimhan (CDB), Souradip Das\* (BSCI), Tony Rossi (CDB), *Katrina Ngo* (BSCI), Johnny Cordoba (CDB), Alec Brown\* (BSCI), Hannah Nelson (BSCI), Jeffrey Jian (Biochem), Kaitlyn Browning (Biochem), Reyhaneh Tirgar\* (BSCI), Shannon Leahy (BSCI), *Remington Hoerr* (BSCI), Dongsheng Han\* (BSCI), Jordyn Sanner\* (BSCI), Marie-Claire Harrison\* (BSCI), Samika Joshi (Biochem), Sara Conwell (Biochem), Emma Vontalge (Biochem), Brynn Roman\* (BSCI), Josephine Chu (Fisk/Vanderbilt Bridge program), Carlan Romney (Fisk/Vanderbilt Bridge program), Salma AshShareef (Fisk/Vanderbilt Bridge program)

\* Committee Chair

*Students for whom I am the thesis advisor are in italics.*

### 3. Undergraduate research projects supervised

#### **BSCI 3860**

Cynthia Tsai (Spring 2003), Saira Khan (Fall 2004), Elizabeth Dearing (Fall 2005), Stephanie Rucker (Fall 2006), Elliott Kim (Spring 2007), Christina Heithaus (Fall 2007), Benjamin Schultz (Fall 2008), Jessica Miles (Fall 2008), Christine Sailer (Spring 2009), Katherine Turner (Spring 2011), Angela Luo (Spring 2011), Meredith Ross (Spring 2013), Yiran Zhang (Spring 2013), Ahmed Memon (Fall 2013), Lucille Cox (Fall 2013), Zachary Feldman (Spring 2014), Clara Chu (Fall 2014), Heath Moore (Spring 2015), Nicholas Ruppe (Spring 2016), Bhavani Sankaralingham (Spring 2018), Natalie Guzman (Spring 2018), Blake Conwell (Spring 2019), Melissa Goldin (Fall 2019), Liraz Stilman (Fall 2019), Caitlyn Tjong (Spring 2021), Miguel Beristain (Spring 2021), Tristen Gittens (Spring 2021), Mason Engle (Spring 2022)

#### **BSCI 3850 (independent reading)**

Saira Khan (Fall 2004), Elliott Kim (Spring 2007), Benjamin Schultz (Fall 2008), Victoria Lopez (Fall 2008), Jessica Miles (Fall 2008), Christine Sailer (Spring 2009), Ralph Passarella (Spring 2010), Leslie Maness (Spring 2009), Zachary Feldman (Spring 2014), Clara Chu (Spring 2017)

#### **BSCI 3861**

Aaron Brown (Fall 2001), Sabrina Ahmed (Spring 2002), Lisa Prach (Fall 2002), Ben Johnston (Fall 2002), Bernard Lane (Spring 2003), Latif Dharamsi (Spring 2003), Geoff Todd (Fall 2003), Blake Alkire (Spring 2004), Ashleigh Dane (Fall 2004), Stan Sonu (Fall 2004), Jennifer Cialone (Fall 2004), Saira Khan (Spring 2005), Bethany Cartwright (Fall 2005), Asmitha Sathiyakumar (Fall 2005), Charlie Wright (Fall 2005), Christopher Adkins (Fall 2006), Stephanie Rucker (Spring 2007), Elliott Kim (Fall 2007), Daniel Cherry (Fall 2007), Christina Heithaus (Spring 2008), Jessica Yen (Spring 2008), Shira Paul (Spring 2009), Stoycho Velkovsky (Fall 2009), Benjamin Schultz (Fall 2009), Leslie Maness (Fall 2009), Ilham Eli (Fall 2010), Katherine Turner (Fall 2011), Angela Luo (Fall 2011), Ann Ding (Spring 2012), Shyam Murali (Spring 2012), Nicole Dahlson (Spring 2013), Meredith Ross (Fall 2013), Yiran Zhang (Fall 2013), Ahmed Memon (Spring 2013), Lucille Cox (Spring 2013), Zachary Feldman (Fall 2013), Clara Chu (Spring 2015), Gabrielle Santiago (Spring 2015), Ty Bottorff (Spring 2016), Nick Ruppe (Fall 2016), Elise Erman (Fall 2017), Bhavani Sankaralingham (Fall 2018), Natalie Guzman (Fall 2018), Sara Conwell (Spring 2019), Blake Conwell (Fall 2019), Liraz Stillman (Spring 2020), Melissa Goldin (Spring 2020), Tristen Gittens (Fall 2021), Caitlyn Tjong (Fall 2021)

#### **BSCI3961**

Aaron Brown (Spring 2002), Sabrina Ahmed (Fall 2002), Ben Johnston (Spring 2003), Bernard Lane (Fall 2003), Stan Sonu (Spring 2005), Jennifer Cialone (Spring 2005, Spring 2006), Saira Khan (Fall 2005), Asmitha Sathiyakumar (Spring, Fall 2006), Charlie Wright (Spring, Fall 2006), Bethany Cartwright (Fall 2006, Spring 2007), Christopher Adkins (Spring 2007, Spring 2008), Stephanie Rucker (Spring 2008), Elliott Kim (Spring 2008), Daniel Cherry (Fall 2008), Shira Paul (Fall 2009), Stoycho Velkovsky (Spring 2010), Leslie Maness (Spring 2010), Ilham Eli (Spring 2011, Fall 2011), Katherine Turner (Fall 2012, Spring 2013), Ann Ding (Fall 2013), Meredith Ross (Spring 2014), Nicole Dahlson (Fall 2013, Spring 2014), Yiran Zhang (Spring 2014), Ahmed Memon (Fall 2014, Spring 2015), Zachary Feldman (Spring 2015, Fall 2016), Gabrielle Santiago (Fall 2015, Spring 2016), Clara Chu (Fall 2015,

Spring 2016), Anqing Li (Fall 2016-Fall 2017), Nick Ruppe (Fall 2017-Spring 2019, except Spring 2018), Elise Erman (Fall 2018), Natalie Guzman (Fall 2018-Spring 2020), Sara Conwell (Fall 2019, Spring 2020), Liraz Stilman (Fall 2020-Spring 2022), Melissa Goldin (Fall 2020-Spring 2021), Simcha Plotkin (Fall 2020-Spring 2021), Tristen Gittens (Spring 2022), Caitlyn Tjong (Spring 2022)

**BSCI 4999 (Honors Research)**

Jenny Warner (Fall 2002, Spring 2003), Lisa Prach (Spring 2003, Fall 2003), Latif Dharamsi (Fall 2003, Spring 2004), Blake Alkire (Fall 2004, Spring 2005), Geoffrey Todd (Fall 2005, Spring 2006), Stan Sonu (Fall 2005, Spring 2006), Jennifer Cialone (Fall 2006, Spring 2007), Saira Khan (Fall 2006, Spring 2007), Asmitha Sathiyakumar (Fall 2007, Spring 2008), Bethany Cartwright (Fall 2007, Spring 2008), Elliott Kim (Fall 2008, Spring 2009), Christopher Adkins (Fall 2008, Spring 2009), Christine Sailer (Fall 2009, Spring 2010), Shira Paul (Fall 2010, Spring 2011), Jessica Miles (Fall 2010, Spring 2011), Shyam Murali (Fall 2012, Spring 2013), Lucy Cox (Fall 2014, Spring 2015), Simcha Plotkin (Fall 2021, Spring 2022), Melissa Goldin (Fall 2021, Spring 2022)

**Students co-mentored for undergraduate research:**

Abby Pribish, Didi Zhu, Eddie Ross, Elizabeth Smith, Hala Zein-Sabatto, Jordan Comstock, Malia Zhan, Rabia Osman, Angela Luo, Eddie Ross, Emily Gardner, Jennifer Miao, Arrush Choudhary, Joshua Eggold, Rukia Yusuf, Steven Russell, Declan Grabb, Sylvia Jang, Andrew Park, Jingfei Li, Marlene Heberling, Peter Luong, Chloe Wilks, Emily Crispi, Sarah Heimberger, Pavan Myeni, Karen Sun, Alison Zhong, Jennifer Sui, Kelsey Auman, Makenzie Beaman, Madeline Gordon, Sarah Howard, Claire Barton, Dhivyaa Ananda, Eric Zhang, Omar Omar, Zelong Lui, Kiana Guerrzaai, Anna Hunley, Anoop Chandrashekar, Emily Struttman, Nancy Liu, Maggie Klein, Elisabeth Hayes, Kevin Sun, Tara Mack, Shruti Anant, Matthew Shou, Neha Dudipala, Ian Hurford, Keejin Yoon, Andrew Yancy, Hannah Sullivan, Justin Carway, Tiffany Lee, Bennett Schneier, Sophia Hwang, Isabelle Smith, Carissa Li, Jayden Capella, Karen Pu, Olivia Ben-Levy, Sharath Narayan, Jamie Huang, Eddie Qian

**Summer Research** (all students are from Vanderbilt unless otherwise noted)

Supported by Vanderbilt University Summer Research Program (VUSRP)  
Jenny Warner (2002), Geoff Todd (2005), Asmitha Sathiyakumar (2006), Elliott Kim (2008), Shira Paul (2010), Ilham Eli (2011), Ann Ding (2012), Nicole Dahlson (2013), Sara Conwell (2019), Melissa Golden (2021)

Supported by my grant funding

Christopher Adkins (2008; also an Undergraduate Clinical Research Intern at Vanderbilt Medical School), Gina Guillaume (2008 and 2009; Barry University, Miami, FL), Stoycho Velkovsky (2009 and 2010), Shira Paul (2009), Ann Ding (2010), Lauren Sanchez (2010; supported through the RISE program at Barry University, Miami, FL), Serena Hagarty (high school student), Bhavani Sankaralingham (2018), Clayton Jelsma (2019; high school student; also volunteered for summers of 2017 and 2018)

Supported by Beckman Foundation

Jessica Miles (2008, 2009), Shyam Murali (2012, 2013)

Supported by the Summer Science Academy  
Gabrielle Santiago (2014), Ty Bottorff (2016), Carlos Cosme Jr. (Amherst, 2016)

Supported by the NIH MARC program  
Simcha Plotkin (2020), Tristen Gittens (2021)

Supported by HHMI Community of Scholars Research Program:  
Geoff Todd (2003-2004), Jason Smith (2003), Bernard (Josh) Lane (2003), Lisa Miyatake (2003), Emily Clark (2003), Bryan Harris (2003), Latif Dharamsi (2003), Erik Hysinger (2003), Geoff Todd (2004), Erika Schneble (2004), Jennifer Cialone (2004), Vinod Varki (2004), Li Zhou (2004; incoming freshman), Charlie Wright (2005), Bethany Cartwright (2005-2006), Asmitha Sathiyakumar (2005), Bittu Majmudar (2005; incoming freshman), Jennifer Cialone (2005), Stan Sonu (2005), Chris Adkins (2006), Evan Reynolds (2006), Quin Woodward-Pu (2006), Daniel Cherry (2007)

Other:  
Stephen Lee (2016)

#### **High School students:**

- Meghna Ramaiah (junior, Harpeth Hall; Meghna worked in the lab from October 2018-April 2019 as part of a research course at Harpeth Hall).
- Jacob Seloff (2012): Vanderbilt School for Science and Math
- Yae Eun Yang (2014): Vanderbilt School for Science and Math
- Clayton Jelsma (2017-2021): Student at University School of Nashville; worked summers and academic year in lab; also worked as a part-time research technician in the lab while attending classes remotely at Yale University
- Neha Saggi (2019-2021): Student at University School of Nashville

#### **Immersion projects supervised**

Melissa Goldin, Madie Yuen, Bianca Bellavia

## **G. Service**

### **1. To Department:**

#### **a. Committee service**

- Director of Graduate Studies (2010-2014; 2017-2019); responsible for all aspects of the Biological Sciences graduate program, including admissions.
- Graduate Admissions Committee (2010-2014; 2016-2019)
- Undergraduate Curriculum Committee (2006-2010)
- Department Seminar Committee (2002-2005)
- Faculty Search Committee (Fall 2001; Fall 2003)

#### **b. Vice Chair (2019-present)**

- Consult with chair about courses/course assignments
- Ensure that courses are correctly entered in YES
- Shepard any curricular changes through the system
- Ensure that catalog changes are proposed when needed
- Consult with faculty about course/curriculum matters/student interactions
- Monitor enrollment of multi-section courses/labs

- Ensure that evaluations are scheduled correctly
- Complete the undergraduate SACS evaluation (yearly)
- Assist in assignment of undergraduate TAs. Ensure that FERPA training is completed and coordinate request for funding from A&S (if applicable).
- Work with DGS to assign students to TA positions
- Serve as instructor of record for undergraduate research courses during the summer term

## 2. To College:

### a. Community of Scholars (2002-2007)

- Co-director of the "Community of Scholars," an initiative for undergraduate research education funded by the Howard Hughes Medical Institute through a grant to Dr. Ellen Fanning.
- Undergraduate researchers spent the summer in my lab following their freshman year. During this intense summer program, they received an introduction to laboratory research and participated in studies and discussions of the primary literature.
- Older students in the lab received mentorship training.
- This program was continued on a small scale within my laboratory as part of the Broader Impact section of an NSF grant.

### b. Interactions with Center for Teaching

- Ongoing member of Learning Assistant Faculty Learning Community
- Panelist for conversation on "Teaching and Race," April 2021.
- Member of a Learning Community on "Promoting Persistence in STEM," organized by Dr. Cynthia Brame; meeting biweekly during Fall 2020.
- Panelist for Junior Faculty Teaching Fellows dinner, Sept. 20, 2017.
- Panelist for the workshop on Digital Pedagogy -- The Flipped Classroom. Center for Teaching, April 7, 2015.
- Participation in BOLD Fellows program (worked with graduate student Tessy Sebastian to develop a video module for "flipping" the genetics classroom in spring 2014; continued in program with graduate student Mary Keithly for fall 2014 to create additional video modules and evaluate effectiveness of the flipped classroom model).
- Panelist for Conversation on Teaching (How student misconceptions impact learning), February 18, 2009.
- Panelist at Center for Teaching discussion of effective lecturing practices, Oct. 14, 2009.
- Invited participant in Center for Teaching conversation on negotiating student expectations about grades and learning goals (January 26, 2011)
- Hosted a "teaching visit" in my classroom (BSCI210) at the request of the Center for Teaching. The visit included a discussion with participants following class (February 3, 2011).
- "Expert" panelist at orientation for new faculty, sponsored by the Center for Teaching (August 2007)
- Panelist in a discussion about course design sponsored by the Center for Teaching (Feb. 2007)
- Course design workgroup for BSCI210 (Spring 2006)

- Panelist in a discussion with K-12 administrators about collegiate preparation organized through Peabody College (June 2005)
  - Panelist in a discussion of women in science organized by Dean Carolyn Dever (Jan. 2005)
  - Panelist in a discussion about setting up a new laboratory sponsored by the Center for Teaching (Oct. 2004)
  - Panelist in a discussion for new teaching faculty sponsored by the Center for Teaching (Aug. 2004)
- c. Learning Assistant program**
- Member of the Learning Assistant (LA) Leadership Team (with Drs. Thomas Clements, Cynthia Brame, Jessica Watkins, and Heather Johnson).
  - Interviewed students for LA positions during both Spring and Fall 2021; co-supervised 6 LAs for BSCI 2210-02 in Spring 2021, 10 LAs for BSCI 1510-03 in Fall 2021, 6 LAs for BSCI 2210-02 in Spring 2022.
  - Responsibilities include a 1.5-hour weekly preparation session and participation in a bi-weekly faculty learning community.
  - Helped conduct assessment of learning gains and sense of belonging with and without LAs.
  - Have helped to oversee expansion of the LA program to include >50 LAs from 6 different departments/programs.
- d. College Committees**
- **Pedagogy Taskforce** (summer 2020): Convened to provide feedback to the Dean about teaching issues arising due to COVID-19; committee met several times and provided recommendations to Dean Geer.
  - **Committee on Graduate Education** (2019-2020): Met monthly with Dean Wright to discuss matters of concern to the graduate students/programs in A&S; evaluated candidates for graduate teaching awards
  - **Arts and Science *ad hoc* curriculum committee** to finalize a recommendation to the full faculty on immersion (2017)
  - **Committee on Education Programs** (2016-2019; 2021-2022): Met as required to consider and approve changes to degree programs in A&S
  - **Search committee for the Dean of Arts and Science** (2014-15)
  - **Junior Advisory Review Committee** (JARC), Spring 2010
  - **Faculty mentor in the Program for Career Development** (PCD) 2010-present.
  - **Committee on Graduate Education** (2008-2009)
  - **Advisory Committee on the Health Professions**, member (2003-2005)
- e. Additional service**
- Faculty advisor for the Graduate Student Council (2020-present); attend board and general body meetings; advise students and help with activities as needed; facilitate communication with administration if appropriate; approve expenditures
  - Gave presentation on course design as part of the Evidence-based Teaching Workshop for Future Faculty organized by the Center for the Integration of Research, Teaching, and Learning (CIRTL). August 2015, January 2016, August 2016, January 2017, May 2017, August 2017.

- Participated as a senior faculty member in the Tiered Mentoring groups of CIRTl (2016-2019); monthly meetings with a group of graduate students, postdocs, junior, and senior faculty
- Faculty mentor in the Program for Career Development (PCD; 2011-2020).
- Faculty co-advisor of the Vanderbilt International Genetically Engineered Machine Team (2014-2017). Provided oversight, including helping the students procure research space in Stevenson Center 2. Gave feedback on projects and directions of research project.
- Participant on faculty panel for a discussion of "Interviewing and negotiating" for the CIRTl Coffee Hour with postdoctoral fellows (2013).
- Founding faculty advisor of the Association of Biology Students (ABS), a club designed to provide informational and social events for Biology Majors (or future Biology majors). Events include sessions on careers in science, summer and academic year research opportunities, and scientific writing/presentation. (2013-present)
- Interview panelist for Honor's Scholarships (Mar. 2004, 2006, 2008)
- Interview panelist for Marshall and Fulbright scholarship applicants (2006)
- Participated in Vanderbilt Diversity Workshop (2006)
- Interview panelist for Homecoming Court (2004)

### 3. To University:

#### a. Committees

- **Provost's Sexual Misconduct Prevention Committee** (2019-2021): I served on this committee as part of my role with the NASEM Action Collaborative on Preventing Sexual Harassment in Higher Education (see section e below). I served on the "Action Collaborative" subcommittee that facilitates all interactions with the NASEM Action Collaborative.
- **Education Continuity Subcommittee** (2020): Member of a university-wide committee convened to address issues of concern related to COVID-19 and the return to campus; met at least twice per month during the summer and monthly during the fall semester
- **Limited Submission Opportunity committee** (2018-present): Review short proposals when an internal selection process is required; typically 4 reviews per year.
- **Discovery Grant Review panel** (2017-2020): Review, score, and discuss grants for the internal Discovery Grant competition. I have twice served as chair of a subgroup; responsibilities include running the panel discussion and submitting recommendations with justification to Vice Provost for Research Padma Raghavan
- **Faculty Senate** (first term, 2017-2020; second term, 2020-present): Member of the Academic Policies and Services committee (2017-2020; served as chair during the 2018-2019 academic year). Major accomplishment was a clarification of the process for approval of new programs and degrees, including the generation process documents. Member of the Faculty Manual committee (2020-present); bring issues of concern to the Faculty Senate and attend monthly meetings. Serving as chair of the Faculty Manual Committee (2021-2022).
- **Member, Leadership Institute Planning Group** (2017-2019): This group worked with Dean Mark Wallace to develop activities of the Graduate

Leadership Institute; served in a consulting role, helped review applications for graduate student travel and dissertation enhancement grants

- **Member, Leadership Institute Advisory Group (2020):** I was one of a core group of members from the Planning Group asked to continue in an advisory role
  - **Committee on the Evaluation of Teaching and Learning (2012-2013):** Committee convened to make recommendations for teaching evaluations.
  - **Environmental Health and Safety Committee Member (2006 to present):** Committee meets annually to discuss sustainability issues on campus and to consider and vote on Green Fund student competition
- b. Cellular, Biochemical, and Molecular Sciences (CBMS) Training Grant**
- Co-director with Drs. Jim Patton and Todd Graham (starting 2021); I was involved in preparation of the successful application to NIH and am primarily responsible for mentorship training
  - Advisory board member (2005-present)
  - Annual presentation and regular attendance at weekly Journal Club
- c. Interactions with the office of Biomedical Research, Education, and Training (BRET)**
- Interviewer for IGP, CPB, and MSTP graduate programs.
  - Member of the advisory committee for the CPB graduate program; meet at least annually to review the program and provide feedback to the director
  - Research presentation for parents at the Simple Beginning Ceremony welcoming the new biomedical graduate students to Vanderbilt (2014-2019).
  - Panelist for the ASPIRE program; session on “interviewing for faculty positions” (2019 and 2020)
  - Participated in full-day “Fair Play” diversity workshop (June 28, 2019) both to learn and to evaluate the potential use of this workshop more broadly.
  - Participation in “Culturally Aware Mentorship training” (Fall 2017)
  - Provided feedback for students submitting NSF Fellowship proposals (2016-present)
  - Panelist for discussion about Ethics in Science for graduate students and postdoctoral fellows, October 3, 2009.
  - Member, Interdisciplinary Graduate Program Steering Committee (2009-2014; 2017-2019). Monthly meeting at which topics pertinent to the biomedical graduate programs were discussed.
  - Member, MSTP program; participated on a panel of junior faculty during NIH site visit (2008)
  - Presented a one-hour session on teaching during a career development workshop sponsored by the BRET office (March 2007)
  - Research presentation to students being recruited by the Vanderbilt MSTP (Medical Scientist Training Program; 2005 and 2006).

**d. Mentorship training for the Summer Science Academy**

- Designed and facilitated mini-course on mentoring for participants from the Vanderbilt Summer Science Academy (8 hours total over 5 meetings; 2008-2010).
- Annual workshop on mentoring and project design (2011-2021; cancelled in 2020). I present a 1.5 hours workshop for graduate students, postdocs, and faculty who will be mentoring undergraduate students in the summer. Topics include inclusive mentorship, providing constructive feedback, and designing a manageable summer project. In 2018, I started providing two sessions each May with 20-30 participants in each session.
- Responsible Conduct in Research presentation to all participants (summer 2021)

**e. Vanderbilt co-representative (with Dr. Andrea Page-McCaw) to the National Academies of Science Action Collaborative on Preventing Sexual Harassment in Higher Education**

- Attended the inaugural meeting (March 2019) and first two annual meetings (June 2019, June 2020 – held virtually)
- Co-chair of the Working Group on Remediation (2019-2020). I was asked by NASEM to serve as co-chair. I help plan and conduct quarterly meetings of the entire working group (~15 participants) and served on two sub-groups (preventing retaliation and remediating power differentials) that met 4-6 times per year to work toward concrete products.
- Served on the Provost's Sexual Misconduct Prevention Committee to facilitate communication with the Vanderbilt community. This committee met monthly during 2019-2020 academic year to consider the results of surveys of faculty, postdocs, and students regarding their experiences on campus. The committee delivered recommendations to the Provost in August 2020.
- Participated in and helped organize an event at Vanderbilt that coincided with the NASEM Action Collaborative's public Summit (Nov 2019).
- Poster presentation at the 2020 Public Summit highlighting the PSMPC and its work (October 2020 – virtual event)
- Worked closely on Action Collaborative business with Vice Provost Tracey George.

**f. Vanderbilt/Fisk Bridge to the PhD program**

- Member of the Advisory committee from 2015-present.
- Attend monthly committee meetings; provide input and materials based on my experience with graduate education at Vanderbilt
- Attend monthly evening Bridge events designed around a variety of topics and attended by Masters and PhD students in the Bridge program
- Help plan and attend "Mentor-Mixer" events and serve as informal mentor to students in the bridge program
- Participate in admissions decisions, including interviews, for all applicants to the Biology track of the Master's program

**g. MARC (Maximizing Access to Research Careers; NIH T34) Program at Vanderbilt University**

- Co-director with Dr. Doug McMahon; received funding on first submission – this was the first time that this particular training grant mechanism became available to R1 institutions
- Responsible with Dr. McMahon for all aspects of developing and running the program
- Directly mentor two Scholars in my laboratory (Simcha Plotkin and Tristen Gittens).

**h. START (STEM Transition and Retention**

- Co-director (with Dr. Doug McMahon and Dr. Paul Durst) of START (STEM Transition and ReTention) mentoring groups.
- Advisory groups for freshmen and sophomores are intended to encourage retention in STEM and promote engagement in research.
- Scholars are from Arts and Science and Engineering; graduate student mentors are from A&S, Engineering, and Medical School Basic Sciences.
- For 2021-2022, 180 undergraduate students and more than 40 graduate student mentors participated in the program.
- Organized and helped obtain funding for 9-10 summer research positions for rising sophomores – participated in all aspects of interviewing and placing students
- Provide biweekly enrichment events for all MARC and START summer students

**i. Howard Hughes Medical Institute IE3 (Inclusive Excellence 3)**

- Worked with Drs. Doug McMahon and Cynthia Brame to develop and submit a pre-proposal for the competition; objective was to assess the current campus environment and explain Vanderbilt's readiness to create a more inclusive institutional culture.
- Assembled a team of committed faculty at Vanderbilt
- Worked with the Office of Planning and Institutional Effectiveness (PIE) to evaluate outcomes for students from underrepresented groups, including GPA and persistence in STEM majors.
- In October 2020, Vanderbilt was chosen as one of 108 institutions (of 354 applicants) to participate in the IE3 Learning Community to tackle a number of questions addressing structural racism, inclusive excellence, and institutional change
- In February 2021, I was named Program Director (PD). I am primarily responsible for interactions with 13 other PDs that are part of our Learning Community Cluster and for organizing Vanderbilt's project
- We anticipate funding for 2022-2028 to facilitate anti-deficit and inclusive practices in introductory STEM courses

**4. To Profession:**

- a. Manuscript review:** Cell, Molecular and Cellular Biology, Nucleic Acids Research, FEBS letters, PNAS, EMBO Journal, Genetics, Eukaryotic Cell, Nature Structural and Molecular Biology, PLoS Genetics, PLoS ONE, Nature Communications, PeerJ, Plant Cell

**b. Editorial board member:** Journal of Biological Chemistry (2012-present)

**c. Grant review:**

2021-present NIH CSR Advisory Council Working Group on Fellowship Reviews  
2021 NIH Special Emphasis review panel, *ad hoc* reviewer  
2020 NIH Fellowship study panel (F30/31/32), reviewer  
2019 NIH Fellowship study panel (F30/31/32), reviewer  
2018 NIH panel on ESI-MIRA, *ad hoc* reviewer  
2016 NIH special panel for NCSD and CSRS panel members, *ad hoc* reviewer  
2015 NIH NCI P01 Panel II, *ad hoc* reviewer  
2009-2014 National Academies NRC Research Associateship Programs, reviewer  
2009, 2011 NIH MGA Study Section, *ad hoc* reviewer  
2008, '11, '14 National Science Foundation, *ad hoc* reviewer  
2008 American Cancer Society, *ad hoc* reviewer  
Other ad hoc reviews: Israel Science Foundation, Burroughs Wellcome Fund, Binational Science Foundation

**d. Meeting organization:** Southeastern Regional Yeast Meeting [2009; 2014; 2021 and 2022 (both virtual)]. Conference of 100-120 attendees from the Southeastern states; co-organized with Dr. Todd Graham.

**e. Advocacy:** September 2016 to present. Member, Public Affairs Advisory Committee (PAAC) of the American Society of Biochemistry and Molecular Biology (ASBMB). Two annual meetings, one of which is a "Hill Day" in Washington DC that also includes advocacy visits to NIH or NSF. 2021: serving on the PAAC executive committee.

## 5. To Community:

- Frequent guest presentations (~once per year for the past four years) for PEO, a women's philanthropy and education group.
- Twister event for High School Girls at Adventure Science Center (2017)
- Speaker at the Nashville Collegiate ACS Relay for Life, held on the Vanderbilt campus (2007)
- Speaker at Regional ACS Relay for Life Conference, Franklin, TN (2006)
- Research presentation to Boy Scout Career Group at Vanderbilt University (2005)
- Featured speaker at Hendersonville ACS Relay for Life, Hendersonville, TN (2005)
- Featured speaker at Dickson ACS Relay for Life, Dickson, TN (2004)
- Participant in ACS conference call to inform employees of current research developments (2004)
- Featured speaker at Fort Atkinson, WI ACS Relay for Life. This is my hometown. I was asked to give the keynote address during the Relay (2004)
- Speaker at Vanderbilt University American Cancer Society (ACS) Research Reception (2003)
- Featured speaker at ACS Relay Kick-off in Cool Springs, TN (2003)
- Featured speaker at Brentwood ACS Relay for Life, Brentwood, TN (2003)
- Speaker at Vanderbilt University ACS Research Reception (2004)