

# David C. Zappulla

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## EDUCATION

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- 1997–2002 **Ph.D., Molecular and Cellular Biology**  
Stony Brook University  
Stony Brook, New York
- 1991–1995 **B.A., Biology**  
Middlebury College  
Middlebury, Vermont

## PROFESSIONAL RESEARCH EXPERIENCE

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- 2017–present **Independent Research Investigator**  
Department of Molecular Biology and Genetics  
Johns Hopkins University – School of Medicine  
Baltimore, MD  
Research focus: Telomerase, telomeres, and senescence
- 2008–2017 **Assistant Professor**  
Department of Biology  
Johns Hopkins University – Krieger School of Arts & Sciences  
Baltimore, MD  
Research focus: Telomerase, telomeres, and senescence
- 2002–2008 **Postdoctoral Research Associate**  
Laboratory of Dr. Thomas R. Cech  
Howard Hughes Medical Institute (HHMI)  
University of Colorado  
Boulder, CO  
Research focus: Telomerase RNA structure and function
- 1997–2002 **Graduate Student**  
Laboratory of Dr. Rolf Sternglanz  
Program in Molecular and Cellular Biology  
Stony Brook University  
Stony Brook, NY  
Research focus: Transcriptional silencing and DNA replication

1995–1997     **Research Technician**  
 Laboratory of Dr. Ellis J. Neufeld  
 Harvard Medical School – Children’s Hospital  
 Boston, MA  
 Research focus: Genetic basis of mammalian blood and vascular disorders

## PUBLICATIONS

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### Preprints:

25. Hass, E.P. and **Zappulla, D.C.** (2017) Repositioning the Sm-binding site in *S. cerevisiae* telomerase RNA reveals RNP organizational flexibility and Sm-directed 3'-end formation. *bioRxiv* doi: <https://doi.org/10.1101/167361> (Manuscript currently under revision for *RNA* – see below)
24. Hass, E.P. and **Zappulla, D.C.** (2017) A yeast two-hybrid system based on CRISPR-dCas9 for investigating RNA-protein interactions. *bioRxiv* doi: <https://doi.org/10.1101/139600> (An expanded version of this manuscript will be submitted to *eLIFE* – see below)

### Peer-reviewed articles:

23. Chen, H., Xue, J., Churikov, D., Hass, E.P., Lemon, L.D., Luciano, P., Bertuch, A.A., **Zappulla, D.C.**, Geli, V., Wu, J. and Lei, M. (2018) Structural insights into yeast telomerase recruitment to telomeres. *Cell* 172(1-2):331–343.  
 \* Press release by Johns Hopkins Medical School media relations (in preparation).  
 \* Reddit.com “Ask Me Anything” featuring me and this publication scheduled for 1/22/18.
22. Niederer, R.O., Papadopoulos, N. and **Zappulla, D.C.** (2016) Identification of novel noncoding transcripts in telomerase-negative yeast using RNA-seq. *Scientific Reports* 6, 19376; doi: 10.1038/srep19376
21. Mefford, M.A. and **Zappulla, D.C.** (2016) Physical connectivity mapping by circular permutation of human telomerase RNA reveals new regions critical for activity and processivity. *Molecular and Cellular Biology* 36(2):251–261.
20. Hass, E.P. and **Zappulla, D.C.** (2015) The Ku subunit of telomerase binds Sir4 to recruit telomerase to lengthen telomeres in *S. cerevisiae*. *eLIFE* 4:e07750.  
 \*Highlighted on journal cover  
 \*Johns Hopkins press release: <http://hub.jhu.edu/2015/09/14/telomere-proteins-cancer-aging>
19. Lebo, K.J., Niederer, R.O., and **Zappulla, D.C.** (2015) A second essential function of the Est1 arm of yeast telomerase RNA. *RNA* 21:862–876.
18. Niederer, R.O., and **Zappulla, D.C.** (2015) Refined secondary-structure models of the core of yeast and human telomerase RNAs directed by SHAPE. *RNA*. 21:254–261.
17. Mefford, M.A., Rafiq, Q., and **Zappulla, D.C.** (2013) RNA connectivity requirements in the conserved catalytic core of the yeast telomerase RNP. *EMBO Journal* 32(22):2980–2993.
16. Lebo, K.J. and **Zappulla, D.C.** (2012) Stiffened yeast telomerase RNA supports function *in vitro* and *in vivo*. *RNA* 18:1666–1678.  
 \*Article highlighted on journal cover
15. **Zappulla, D.C. (corresponding author)**, Goodrich, K.J., Arthur J.R., Gurski, L.A., Stellwagen, A.E., and Cech, T.R. (2011) Ku can contribute to telomere lengthening in yeast at multiple positions in the telomerase RNP. *RNA* 17(2):298–311.

14. **Zappulla, D.C.**<sup>\*1</sup> (\* corresponding author; <sup>1</sup>first authors), Roberts, J.N.<sup>1</sup>, Goodrich, K.J., Cech, T.R. and Wuttke, D.S. (2009) Inhibition of yeast telomerase action by the telomeric ssDNA-binding protein, Cdc13p. *Nucleic Acids Research*, 37(2):354–67.
13. Box, J.A., Bunch, J.T., **Zappulla, D.C.**, Glynn E.F., and Baumann, P. (2008) A flexible template boundary element in the RNA subunit of fission yeast telomerase. *Journal of Biological Chemistry*. 283(35):24224–33.
12. **Zappulla, D.C.** and Cech, T.R. (2006) RNA as a flexible scaffold for proteins: yeast telomerase and beyond. *Cold Spring Harbor Symposia on Quantitative Biology*, Symposium 71: Regulatory RNAs. 71:217–224.
11. **Zappulla, D.C.**, Maharaj, A.M., Connelly, J.J., Jockusch, R., and Sternglanz, R. (2006) Rtt107/Esc4 binds silent chromatin and DNA repair proteins using different BRCT motifs. *BMC Molecular Biology*, 4:40–52.
10. **Zappulla, D.C.**, Goodrich, K., and Cech, T.R. (2005) A miniature yeast telomerase RNA functions *in vivo* and reconstitutes activity *in vitro*. *Nature Structural and Molecular Biology* 12(12):1072–1077.  
\*Article highlighted on journal cover
9. **Zappulla, D.C.** and Cech, T.R. (2004) Yeast telomerase RNA: a flexible scaffold for protein subunits. *Proceedings of the National Academy of Sciences* 101(27):10024–10029.  
\*Article highlighted on journal cover
8. Andrulis, E.D., **Zappulla, D.C.**, Alexieva-Botcheva, K., Evangelista, C. and Sternglanz, R. (2004) Targeted silencing screens at *HMR* identify novel transcriptional silencing factors. *Genetics* 166:631–635.
7. **Zappulla, D.C.**, Sternglanz, R., and Leatherwood, J. (2002) Control of DNA replication timing by a transcriptional silencer. *Current Biology* 12: 869–875.  
\*Highlighted in *Nature Reviews Mol. Cell Biol.* (2002, 3(7): 472): “A time for silence.”
6. Andrulis, E.D.<sup>1</sup>, **Zappulla, D.C.**<sup>1</sup>, Ansari, A.<sup>1</sup>, Perrod, S., Laiosa, C.V., Gartenberg, M.R., and Sternglanz, R. (<sup>1</sup>co-first author) (2002) Esc1, a nuclear periphery protein required for Sir4-based plasmid anchoring and partitioning. *Molecular and Cellular Biology* 22(23): 8292–8301.
5. Xie, W., Gai, X., Zhu, Y., **Zappulla, D.C.**, Sternglanz, R., and Voytas, D. (2001) Targeting of the yeast Ty5 retrotransposon to silent chromatin is mediated by interactions between integrase and Sir4p. *Molecular and Cellular Biology* 21(19): 6606–6614.
4. Andrulis, E.D., Neiman, A.M., **Zappulla, D.C.**, and Sternglanz, R. (1998) Perinuclear localization of chromatin facilitates transcriptional silencing. *Nature* 394: 592–595.
3. Ong B.C., Zimmerman A.A., **Zappulla D.C.**, Neufeld E.J., Burrows, F.A. (1998) Prevalence of factor V<sub>Leiden</sub> in a population of patients with congenital heart disease. *Canadian Journal of Anesthesia* 45(12): 1176–1180.
2. Tufarelli C., Fujiwara Y., **Zappulla D.C.**, Neufeld, E.J. (1998) Hair defects and pup loss in mice with targeted deletion of the first cut repeat domain of the Cux/CDP homeoprotein gene. *Developmental Biology* 200(1): 69–81.
1. Yandava, C.N., Zappulla, D.C., Korf, B.R., Neufeld, E.J. (1996) ARMS test for diagnosis of factor V<sub>Leiden</sub> mutation, a common cause of inherited thrombotic tendency. *Journal of Clinical Laboratory Analysis* 10(6): 414–417.

Under revision:

- Hass, E.P. and **Zappulla, D.C.** Repositioning the Sm-binding site in *S. cerevisiae* telomerase RNA reveals RNP organizational flexibility and Sm-directed 3'-end formation. (Revising for *RNA*; published preprint listed above)

- McMurdie, K.E., Mefford, M.A., Baumann, P. and **Zappulla, D.C.** *S. pombe* telomerase RNA: secondary structure and flexible scaffold function. (To resubmit to *RNA*)

In preparation:

- Mefford, M.A., Hass, E.P., and **Zappulla, D.C.** The core-enclosing helix of yeast telomerase RNA is essential for binding TERT.
- Niederer, R.O., Wang, Y., Papadopoulos, N. and **Zappulla, D.C.** The senescence and survivorship responses of telomerase-mutant yeast cells identified by RNA-seq.
- Hass, E.P. and **Zappulla, D.C.** (2017) A yeast two-hybrid system based on CRISPR-dCas9 for investigating RNA-protein interactions. (Preprint of earlier version is published – see above)
- Lebo, K.J. and **Zappulla, D.C.** A synthetic yeast telomerase RNA energetically favored to fold into one native structure functions better than wild type *in vitro* while reducing abundance *in vivo*.
- Hass, E.P. and **Zappulla, D.C.** The role of the Ku telomerase subunit in negative-feedback regulation of telomere length. Invited review to *Current Genetics*
- **Zappulla, D.C.** The RNA subunit of telomerase: functional and structural themes and variations. Invited review to *Wiley Interdisciplinary Reviews (WIREs) RNA*
- **Zappulla, D.C.** Yeast telomerase and cell senescence. Invited “*Budding Topics*” review to *Yeast*

Book chapters:

Niederer, R.O., Hass, E.P., and **Zappulla, D.C.** (2017) “Long non-coding RNAs in the yeast *S. cerevisiae*” in *Long non-coding RNA in Biology*. (pp. 119–132). M.R.S. Rao, Editor. Switzerland: Springer Nature. <http://www.springer.com/us/book/9789811052026>

## AWARDS

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**March of Dimes Basil O’Connor Starter Scholar Award** (2012)

**NIH K99/R00 Pathway to Independence Award** (2006)

**Graduate Student Performance Award**, MCB PhD Program, Stony Brook University (2001)

## RESEARCH SUPPORT

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Active:

**NIH R01 — National Institutes of Health**, National Institute of General Medical Sciences (NIGMS)

**Funded.** [Score: 11%]

2/1/17 – 1/31/22

David Zappulla (PI)

R01 GM118757

Telomere maintenance by the RNA-protein enzyme telomerase

Total costs: \$1,672,093

Completed:

**Basil O’Connor Starter Scholar Award**, March of Dimes

2/1/12 – 2/1/14

David Zappulla (PI)

#5-FY12-91

Determining the mechanism of Ku function in yeast telomerase

Total costs: \$150,000

**NIH K99/R00 “Pathway to Independence” Career Award**

4/1/07 – 6/30/12

David Zappulla (PI)

R00 GM080400

Investigating telomerase mechanism by exploring its long noncoding RNA subunit

Total costs: \$918,165

**Planned:**

**NIH R21 (resubmission of scored A0) — National Institutes of Health**, National Institute on Aging (NIA)  
David Zappulla (PI)  
LncRNAs and autophagy required in senescence caused by telomere attrition

**PATENTS**

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2017 **Provisional Patent Application filed to the United States Patent and Trademark Office (USPTO)**  
Invention title: “A yeast two-hybrid RNA-protein interaction system based on catalytically inactivated CRISPR-dCas9.” Currently being marketed to 22 companies by JHU Tech Transfer.

**CONFERENCES**

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2018 **Noncoding RNAs: Form, Function, Physiology**. *Keystone Meeting*. *Keystone Resort, Dillon, CO*

2017 **Telomeres and Telomerase**, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY. (Evan P. Hass, talk)

2017 **RNA Biology 2017**, National Institutes of Health (NIH), National Cancer Institute (NCI), Bethesda, MD (attendee)

2016 **The Allied Genetics Conference (TAGC) — Genetics Society of America**, Orlando, FL. (poster)

2016 **[RNA Society Meeting**, Kyoto, Japan. (Evan P. Hass, poster)]

2016 **RNA Nanobiology**, National Institutes of Health — National Cancer Institute (attendee)

2015 **Telomeres and Telomerase**, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY. (Talk, and 4 members of my lab presented posters.)

2015 **Symposium on Chromosome Biology: Chromatin, ncRNA, Methylation and Disease**, National Institutes of Health — NCI (attendee)

2015 **RNA Biology 2015**, National Institutes of Health (NCI), Bethesda, MD (4 members of my lab presented posters along with me)

2014 **Genetics Society of America — Yeast Genetics Biennial Meeting**. Seattle, WA (Poster)

2013 **Telomeres and Telomerase**, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY (Kevin J. Lebo, talk; Melissa A. Mefford, poster)

2012 **EMBO “Telomeres and the DNA Damage Response,”** L’Isle sur la Sorgue, France) (talk)

2011 **Riboclub Annual Meeting**, University of Sherbrooke, Canada. (Invited Speaker)

2011 **ncRNAs in Aging and Disease**, National Institute on Aging, Bayview Campus, JHU (attendee)

2011 **Telomeres and Telomerase**, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY (Attendee along with three members of my group; two of whom presented posters)

2011 **Telomeres and Telomerase**, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY (Attendee along with three members of my group; two of whom presented posters)

2010 **[National Academy of the Sciences – Arthur M. Sackler meeting**. UC Irvine, CA. (Kevin J. Lebo, poster; travel awards from the National Academy and meeting organizers)]

2010 **[Telomeres and the DNA Damage Response, EMBO meeting**. Marseille, France. (Melissa A. Mefford, poster)]

2010 **RNA Society Meeting**, Seattle, WA (poster)

2009 **Telomeres and Telomerase**, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY (Attendee)

2009 **RNA: Chemistry, Functions and Subcellular Trafficking**, Howard Hughes Medical Institute (HHMI), Janelia Farm Research Campus, Ashburton, VA (attendee)

- 2009 **Symposium on Biological Complexity: Processes of Aging**, Salk Institute of Biological Studies, La Jolla, CA (attendee)
- 2008 **Telomeres and the DNA Damage Response**, EMBO Conference, Villars-sur-Ollon, Switzerland (poster)
- 2007 **Cech Symposium** (In honor of Distinguished Professor Thomas R. Cech), “Yeast telomerase RNA: a flexible scaffold for protein subunits” University of Colorado, Boulder, CO, (invited speaker)
- 2007 **Pace Symposium** (in honor of Distinguished Professor Norman Pace), Molecular, Cellular and Developmental Biology, University of Colorado, Boulder, CO (attendee)
- 2007 **Telomeres and Telomerase**. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY (poster)
- 2006 **Telomeres and Genome Stability**. Villars-sur-Ollon, Switzerland (talk)
- 2005 **Telomeres and Telomerase**. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY (talk)
- 2004 **Telomeres and Genomic Stability**. EMBO Workshop/58<sup>th</sup> Harden Conference Robinson College, Cambridge, U.K. (talk and poster)
- 2003 **Telomeres and Telomerase**. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY (poster)
- 2003 **HHMI meeting: Gene Regulation and Genome Organization**. Howard Hughes Medical Institute Headquarters, Chevy Chase, MD (invited attendee)
- 2002 **Self-Perpetuating Structural States in Biology, Disease and Genetics**. The National Academy of the Sciences, Washington, DC (poster)
- 2001 **Eukaryotic DNA Replication**. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY (poster)
- 2000 **Chromosome Structure and Function**. Keystone Symposium, Durango, CO (poster)
- Local:**
- 2017 **Chromatin & Chromosomes**, Johns Hopkins University (attendee; had to decline talk)
- 2008–2015 **Cellular, Molecular and Developmental Biology Graduate Program Retreat**, Johns Hopkins University, Baltimore, MD (invited speaker — 2008, 2010, 2014)
- 2010–2016 **RNA Club @ JHU**, Biology Department, Johns Hopkins University (my lab presented once or twice each year)
- 2012, 2015 **Johns Hopkins University, Biology Department colloquium** (Talk, and each of my lab members presented a poster)
- 2010 **Yeast Club, Johns Hopkins Medical Institutions** (invited talk)
- 2009 **RNA in Biology Symposium**, Biology Department, Johns Hopkins University (invited talk)
- 2008 **The Biology of Aging**, Department of Embryology, Carnegie Institute for Science, Baltimore, MD. (attendee)
- 2005 **Mostly Molecular Biology (MMB) Seminar Series**, Department of Molecular, Cellular and Developmental Biology, University of Colorado, Boulder, CO (talk)
- 2003, 2005 **RNA Club Seminar Series**, University of Colorado, Boulder, CO (talk)
- 2003, 2005 **Biochemistry Departmental Retreats** (University of Colorado, Boulder), Winter Park, CO (talk)
- 2003, 2005 **Molecular, Cellular and Developmental Biology Departmental Retreats**, University of Colorado at Boulder, Breckenridge, CO (poster)
- 1998–2001 **Institute for Cell and Developmental Biology Retreats** (Stony Brook University), Shelter Island, NY (attendee)
- 1997–2001 **Annual Stony Brook Symposia on Molecular Biology** Department of Biochemistry and Cell Biology and Institute for Cell and Developmental Biology, Stony Brook University, Stony Brook, NY (attendee)

## OTHER RESEARCH AND TRAINING EXPERIENCE

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- 1993 **Ecology Research Assistant and Student, Rocky Mountain Biological Lab (RMBL)**  
Gothic, CO. Coursework: Field Botany (Professor: Dr. Paul Buck)
- 1993 **Student, Sea Education Association (SEA).** Oceanography, nautical science, and maritime studies aboard 127-foot Sailing School Vessel “Westward.” Sailed from Woods Hole, MA, to the West Indies and the British Virgin Islands.

## COURSES/WORKSHOPS

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- 2015 **Practical Genomics: From Biology to Biostatistics Workshop,** Center for Computational Genomics, Johns Hopkins University (4 days): <http://genomics.jhu.edu/workshop.html>
- 2008 **“Genome Databases”** Computer Science Department semester-long graduate course, taught by Prof. Rob Knight

## INVITED SEMINARS

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- 2017 **UConn Health,** Genetics and Genome Sciences
- 2017 **Lehigh University,** Department of Biological Sciences
- 2017 **NIH – National Institute on Aging (NIA),** Laboratory of Genetics and Genomics
- 2017 **University of Oregon,** Department of Chemistry and Biochemistry, Institute of Molecular Biology
- 2017 **Portland State University,** Department of Biology
- 2017 **University of Colorado at Denver – Anschutz Medical Campus,** Department of Biochemistry and Molecular Genetics
- 2016 **University of Maryland, Baltimore.** Invited by UMB RNA community
- 2016 **Middlebury College,** Department of Biology
- 2015 **Bloomberg School of Public Health, Johns Hopkins University.** Invited by graduate students and postdocs of the Department of Biochemistry and Molecular Biology
- 2015 **National Institutes of Health (NIH) RNA Club,** Bethesda, MD (Invited Speaker)
- 2014 **Brandeis University,** Department of Biochemistry
- 2014 **University of Oregon,** Department of Chemistry and Biochemistry, Institute of Molecular Biology
- 2011 **Virginia Commonwealth University Medical School,** Department of Human and Molecular Genetics
- 2011 **Invited research seminar speaker, Johns Hopkins University’s Undergraduate Students Honor Society (Tri-Beta)**
- 2009 **Department of Biochemistry and Cell Biology (40<sup>th</sup> Anniversary Celebration),** Stony Brook University
- 2009 **RNA in Biology Symposium,** Department of Biology, Johns Hopkins University
- 2007 **Johns Hopkins University,** Department of Molecular Biology and Genetics
- 2007 **Stowers Institute for Medical Research**
- 2007 **Cech Symposium,** University of Colorado at Boulder
- 2007 **Johns Hopkins University,** Department of Biology
- 2007 **Ohio State University,** Department of Molecular Genetics
- 2007 **University of Iowa,** Department of Biological Sciences
- 2007 **University of Alabama at Birmingham, School of Medicine,** Department of Biochemistry and Molecular Genetics
- 2007 **Invited speaker, CU Boulder Postdoc Association: “How to obtain a faculty position and transition funding”** Department of Molecular, Cellular and Developmental Biology, University of Colorado, Boulder, CO

## TEACHING

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### Courses:

- 2009–2016 **Molecular Biology** (020.380/020.650), Department of Biology, Johns Hopkins University. *Course Director*, 2012. 9 x 1.8-hr classes.
- 2011–2014 **Critical Thinking in Biology** (020.731), Department of Biology, Johns Hopkins University. *Course director and co-founder*. 13 x 2-hr classes.
- 2008–2016 **Current Research in Biology** (020.601), 1 class/year for CMDDB PhD Program (1 hr).
- 2011–2014 **Responsible Conduct in Research** (020.699), 1 class/year for CMDDB PhD Program (1 hr).

### Completed:

- 2012 **Co-founded and directed journal club to evaluate ENCODE papers**. Attendees included Steven Salzberg, Bob Schleif, Karen Beemon, as well as graduate students and postdocs.
- 2012 **Invited speaker for Prof. P.C. Huang's Biophysics course**, "Introduction to Biomedical Research and Careers I, II, III" (3 hours)
- 2008 **Lectured in "Eukaryotic Molecular Biology" and helped with assessment**, Department of Biology, Johns Hopkins University.

### Training in pedagogical practices:

- 2018 **Science of Learning Symposium: Minding the Gaps Among Levels of Explanation**, Johns Hopkins University
- 2011–2014 **Annual "Excellence in Teaching in the Sciences" Gateway Symposia**, Johns Hopkins University (participated every year)
- 2007 **"Teaching and Learning" Seminar course participant** (Instructor: Prof. Bill Wood), Department of Molecular, Cellular, and Developmental Biology, CU-Boulder, CO
- 2006–2007 **Attended multiple seminars on active learning by Prof. Carl Wieman** (Nobelist and 2004 Teacher of the Year)

### Awards and recognition obtained by my lab members:

- 2014 **Postdoc Melissa A. Mefford selected as Science Teaching Postdoc Fellow**, Krieger School of Arts and Sciences, Johns Hopkins University
- 2013 **Graduate student Kevin J. Lebo selected as Harold M. Weintraub Award nominee** from Johns Hopkins CMDDB Graduate program
- 2013 **Graduate student Kevin J. Lebo received poster award**, CMDDB Program Retreat
- 2010 **Graduate student Kevin J. Lebo received merit-based award from the National Academies of Sciences** financing travel to Arthur M. Sackler meeting on telomerase and retrotransposons. UC Irvine, CA

### Graduate Students trained:

- Evan P. Hass CMDDB PhD Program, 2012–2017 [To postdoc with John Rinn, HHMI-CU Boulder]
- Karen E. McMurdie CMDDB PhD Program, 2011–2016 [Now Scientist II, BD Biosciences]
- Rachel O. Niederer CMDDB PhD Program, 2010–2015 [Now postdoc with Wendy Gilbert, Yale]
- Kevin J. Lebo CMDDB PhD Program, 2009–2014 [Now postdoc with Ron Weiss, MIT]
- Sean Gao Master's Student, MCB; 2011–2012 [Now in medical school]
- Erin Gunter Kirkby CMDDB PhD Program, 2011–2012 [Now Medical Writer/Editor, AUA]

### Postdoc training:

- Dr. Melissa A. Mefford, 2009–2015 [Now faculty at Luther College]
- 2015 **Evaluated postdoc teaching and provided feedback** for Johns Hopkins Medical School postdocs Kate Chiappinelli and Christina Shields teaching epigenetics and disease course at JHU KSAS
- 2009–2012 **Advised postdocs applying for NIH K99/R00 "Pathway to Independence" Awards**. Drs. Hani Zaher (advisor: Rachel Green), Dr. Tammy Morrish (advisor: Carol Greider), Dr. Mary Goll (advisors: Allan Spradling and Marnie Halpern)



- 2008 **Invited speaker to Postdoc Association of Colorado** on how to obtain a faculty job, CU Boulder  
 2007 **Invited speaker MCDB Department Postdocs** on how to obtain a faculty job, CU Boulder

***PhD Thesis Committees for graduate students at Johns Hopkins University and NIH:***

Johanna Withers (2008–2011), Mohan Bolisetti (2008–2012), Sohum Mehta (2009–2012), Natalia Wesolowska (NIH-GPP, 2009–2014), Thomas Owens (2010–2011), Andrew Skora (2010), Lora Picton (2010), Julio Casteneda ([Underrepresented Minority Student] 2010–2014), Leslie Frank (2010), Hyemin Kim (2010–2011), Pavol Genzor (Served as secondary thesis reader; 2011–2015), Elizabeth Sung (2011), Kimberly Baxter Decker (2011), Stephanie Dirla Cole (2011), Bao Lin Quek (2011–2015), Jeff McKnight (2012), James Justice (Served as secondary thesis reader; 2012–2015), Gary Lam (2013–), Matthew Brown (2016–), Anna McGeachy (in Nick Ingolia's lab now at UC Berkeley; 2015–2016), Jonathan Augustin (in Loyal Goff's lab, Johns Hopkins medical school BCMB program, [Underrepresented Minority Student]; 2016–).

***Number of graduate students trained during rotations in my lab: 26***

***Undergraduate researchers trained in my lab [and current appointment]:***

- (Ms.) Alex Rittenhouse (2015–)
- (Ms.) Yenny Yang (2016–2017)
- Timothy Kistner (2014–2015) [PhD student, Human Evolutionary Biology, Harvard University]
- Jeffrey Nelson (2014–2015) {UR Minority student} [Molecular Biology Research Associate at Modern Meadow, Inc.]
- Ben Ford (2013–2015)
- Gabriella Cabello (2014–2015) {UR Minority student}
- Sarah Taylor (2013–2014, 2 semesters for Departmental Honors) [Employed at BDO, LLP]
- Praneeth Satta (2013–2014, 2 semesters) [Medical student, Yale University]
- Caitlyn Cennamo (2012–2014, 4 semesters; Departmental Honors) [Business Analytics Associate, ZS Associates]
- Michael Setteducato (2012–2013, 2 semesters) [Medical student, Moffit Cancer Center]
- Callie Rodgers (2012, 2 semesters) [Technical Research Assistant, Brigham and Women's Hospital, Harvard Medical School]
- Anne Marie Noronha (2010–2013, 4 semesters) {UR Minority student} [Associate Bioinformatics Scientist at GENEWIZ]
- Sean Gao (2009–2012, 5 semesters). NB: Continued in my lab to complete a Master's degree in MCB. [Osteopathic Medical Student, Marian University College of Osteopathic Medicine]
- Tiffany Coupet (2009–2011, 5 semesters) {UR Minority student} [PhD Student, Molecular and Cellular Biology program, Dartmouth College]
- Grace Kronauer (2009–2010, 4 semesters + 1 summer) [Medical student]

***National Science Foundation REU summer undergraduate research program:***

- Katarzyna (Kasia) Krauss (2015) [PhD student in Johns Hopkins' CMDDB Program]
- Jorge Zhingre Sanchez (2014) {UR Minority student} [PhD student, Department of Biomedical Engineering, University of Minnesota]
- Brianna Brantley (2013) {UR Minority student}
- Eduardo Urias (2012) {UR Minority student} [MD-MBA student, Texas Tech University Health Sciences Center]
- Joshua Johnson (2011) [PhD student, Dirk Hockemeyer's lab, University of California at Berkeley]

***Undergraduate researchers trained while a postdoc and as a graduate student:***

While a postdoc in Tom Cech's laboratory at HHMI-CU Boulder:

- Erica Reaves (2003, UMBC Meyerhoff Scholars Program) {UR Minority student} [PhD student, Harvard T.H. Chan School of Public Health, Harvard University]

- Dr. Aliya Frederick, MD-PhD (2004, UMBC Meyerhoff Scholars Program) {UR Minority student} [MD-PhD from Vanderbilt University. Now pediatric neurologist, San Diego, CA.]
- Dr. Maryann Salib, MD (2006, UMBC Meyerhoff Scholars Program) {UR Minority student} [Resident, Osteopathic Medicine, Southampton Hospital, NY.]

While a PhD student in Rolf Sternglanz's laboratory at Stony Brook University:

- Dr. Arindel Maharaj, MD-PhD (1999–2002, Stony Brook University MCB major.) {UR Minority student} [MD-PhD, Harvard University. Now Assistant Professor of Clinical Ophthalmology, Bascom Palmer Eye Institute, University of Miami.]

## SERVICE

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### Peer reviewing for the following journals:

*Genes and Development* (8), *Nucleic Acids Research* (7), *PLoS Genetics* (7), *RNA* (6), *EMBO Journal* (3), *Nature Structural and Molecular Biology* (2), *Genetics* (2), *WIREs RNA* (Wiley Interdisciplinary Reviews) (2), *BMC Genomics* (2), *Oncogenesis* (1), *Journal of Molecular Biology* (1), *Genes Genomes and Genetics (G3)* (1), *Current Bioinformatics* (1), *Scientific Reports* (1), *Proteins* (1), *FEBS Letters* (1), *Rice* (1), *The International Journal of Molecular Sciences* (1), *Journal of Genetic Engineering and Biotechnology* (1), *Oxidative Medicine and Cellular Longevity* (1).

- 2010–2016 **Founder and Director of “RNA Club @ JHU,”** Johns Hopkins University. Monthly evening meetings at Homewood Campus during the school year; 20 participating laboratories from 8 schools/institutes with 116 members
- 2014–present **Advisory Council Member, Johns Hopkins Teaching Academy,** Johns Hopkins University
- 2014–present **Communications Committee Member,** Biology Department, Johns Hopkins University Revamping and maintaining the Biology Department websites; improving communications related to departmental and the university missions.
- 2013–present **Founder and maintainer of JHU CMDB PhD program's Twitter account @HopkinsCMDDB**
- 2013–present **Founder and maintainer of JHU Biology Department's Twitter account @HopkinsBIO**
- 2014–present **Biology consultant, NSF-funded STEM Achievement in Baltimore City Schools (SABES)**
- 2016–present **Member, The Science Advisory Board®,** BioInformatics, LLC
- 2012–present **Liaison to the JHU libraries for the Department of Biology,** Johns Hopkins University
- 2000–present **Alumnus Interviewer for Middlebury College,** Middlebury, VT
- 2011–2014 **Undergraduate Curriculum Committee,** Biology Department, JHU
- 2009–2014 **Website Committee Member,** Biology Department, Johns Hopkins University
- 2008–2012 **Seminar-Speaker Committee,** Johns Hopkins Department of Biology
- 2003–2006 **Director of Telomere Journal Club,** Dept. of Chemistry and Biochemistry, CU-Boulder
- 2000–2002 **Executive Committee Graduate Student Representative,** Molecular and Cellular Biology PhD Program, Stony Brook University, NY

### Ad-hoc service:

- 2016 **NIH Study Section** (ad hoc) — Molecular Genetics A (MGA). SRO: Mike Sveda. Meeting date: 10/13/2016
- 2016 **Invited consultant on telomere biology and human health & aging,** Venable LLP
- 2016 **Invited grant reviewer,** Czech Science Foundation
- 2016 **Science Judge,** Roland Park Elementary/Middle School Science Competition, Baltimore City Public Schools
- 2015 **Invited proposal reviewer,** L'Agence Nationale de la Recherche (ANR), France
- 2015 **Invited grant reviewer,** L'Agence Nationale de la Recherche (ANR), France

- 2015 **Invited grant reviewer**, German-Israeli Foundation for Scientific Research and Development
- 2015 **Biological sciences consultant**, Johns Hopkins University library-renovation planning
- 2014 **Invited grant reviewer for NIH National Institute on Aging (NIA)**. Ad hoc. Invited by NIA Scientific Director.
- 2013 **Invited advisory-group panelist for the journal *Proceedings of the National Academy of Sciences (PNAS)***, National Academy of the Sciences, Washington, D.C.
- 2011 **Reviewed textbook chapters for Oxford University Press**. Textbook: Craig *et al.*, "Molecular Biology: Principles of Genome Function" (First Edition)
- 2010 **Presented the Biology/MCB Majors to prospective undergraduates and their families**, Johns Hopkins University (3 x 1-hour podium presentations)
- 2009 **Tenure-track Faculty Search Committee**, Department of Biology, Johns Hopkins University
- 2008 **Invited grant reviewer**, The Wellcome Trust, United Kingdom
- 2007, 2008 **Presentations for Postdoc Club and Postdoc Association of Colorado**. University of Colorado, Boulder. Topics: Grant-Writing, Obtaining a tenure-track faculty position, Research Ethics
- 2003, '04, '06 **Summer research mentor for UMBC Meyerhoff Minority Undergraduate Scholars**, Cech Laboratory, HHMI / CU-Boulder, CO. (Summer of each year listed)
- 2003, 2004 **Judge**, Boulder Valley School District Science Fairs, Boulder
- 2002 **Judge**, Long Island Science and Engineering Fair (LISEF), New York
- 2000, 2001 **Tutor**, Molecular and Cellular Biology Ph.D. Graduate Program, Alliance for Inclusive Graduate Education and the Professorate, Stony Brook University
- 1998, 1999 **Instructor for Howard Hughes Medical Institute (HHMI) High School Scholars & Bridges to the Baccalaureate Programs**, Stony Brook University
- 1997–1998 **Graduate Teaching Assistant**, Methods in Molecular Biology, Molecular and Cellular Biology Graduate Program, Stony Brook University
- 1994, 1995 **Teaching Assistant**, Biology Department, Middlebury College

## PROFESSIONAL MEMBERSHIPS

Genetics Society of America; RNA Society; American Society for Microbiology; American Association for the Advancement of Science

## WEBSITES

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<http://www.linkedin.com/in/zappulla/>  
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