

JULIE HOLLIEN

School of Biological Sciences
University of Utah
hollien@biology.utah.edu
801-587-7783

Crocker Science Center
1390 President's Circle
Salt Lake City, UT 84112

I. EDUCATION

University of California, San Francisco
Postdoctoral scholar, Molecular and Cellular Pharmacology 2002-2008
mentor: Jonathan Weissman

University of California, Berkeley
PhD, Molecular and Cell Biology, 2001
mentor: Susan Marqusee
Thesis title: Comparisons of the thermodynamics and folding of thermophilic and mesophilic ribonucleases H: implications for the temperature adaptation of proteins

Reed College, Portland, OR
Bachelor of Arts, Biochemistry and Molecular Biology, 1995
Thesis title: The metal binding and activation specificity of D-xylose isomerase

II. PROFESSIONAL EXPERIENCE

Current positions:

Associate Professor, School of Biological Sciences, Univ. of Utah (2017-)
Faculty member, Center for Cell and Genome Sciences, Univ. of Utah (2008-)

Previous positions:

Section Leader, Cell and Molecular Biology, School of Biological Sciences (2017-2020)
Assistant Professor of Biology, Univ. of Utah (2008-2016; family leave in 2011 and 2014)
Postdoctoral Scholar, Jonathan Weissman Lab, UC San Francisco (2002-2008)
Assistant editor, Nature Structural Biology (2001)

III. HONORS and AWARDS

2017 nominated for University-wide teaching award
2007- 2011 NIH K99/R01 Pathways to Independence award
2003-2005 Ruth L. Kirschstein National Research Service Award
2001 Alan J. Bearden Award for outstanding PhD dissertation (UC Berkeley)
1998 Outstanding Graduate Student Instructor, UC Berkeley
1995 Phi Beta Kappa, Reed College
1995 American Association of University Women award, Reed College

IV. PUBLICATIONS

* indicates I am corresponding author (or co- corresponding author for research ref 10)

Original research, before coming to Utah:

1. Hollien J, Marqusee S. Structural distribution of stability in a thermophilic enzyme. Proc Natl Acad Sci U S A. 1999. 96(24):13674-8. PMID: 24123.
2. Hollien J, Marqusee S. A thermodynamic comparison of mesophilic and thermophilic ribonucleases H. Biochemistry. 1999. 38(12):3831-6.
3. Hollien J, Marqusee S. Comparison of the folding processes of T. thermophilus and E. coli ribonucleases H. J Mol Biol. 2002. 316(2):327-40.
4. Hollien J, Weissman JS. Decay of endoplasmic reticulum-localized mRNAs during the unfolded protein response. Science. 2006. 313(5783):104-7.

Original research, with University of Utah affiliation:

- *5. Hollien J, Lin JH, Li H, Stevens N, Walter P, Weissman JS. Regulated Ire1-dependent decay of messenger RNAs in mammalian cells. J Cell Biol. 2009. 186(3):323-31. PMID: 2728407.
6. Passos DO, Doma MK, Shoemaker CJ, Muhlrud D, Green R, Weissman JS, Hollien J, Parker R. Analysis of Dom34 and its function in no-go decay. Mol Biol Cell. 2009. 20(13):3025-32. PMID: 2704154.
- *7. Gaddam D, Stevens N, Hollien J. Comparison of mRNA localization and regulation during endoplasmic reticulum stress in Drosophila cells. Mol Biol Cell. 2013. 24(1):14-20. PMID: 3530775.
- *8. Moore KA, Plant JJ, Gaddam D, Craft J, Hollien J. Regulation of sumo mRNA during endoplasmic reticulum stress. PLoS One. 2013. 8(9):e75723. PMID: 3776770.
9. Chapin A, Hu H, Rynearson SG, Hollien J, Yandell M, Metzstein MM. In vivo determination of direct targets of the nonsense-mediated decay pathway in Drosophila. G3 (Bethesda). 2014. 4(3):485-96. PMID: 3962487.
- *10. Sharma AK, Plant JJ, Rangel AE, Meek KN, Anamisis AJ, Hollien J, Heemstra JM. Fluorescent RNA labeling using self-alkylating ribozymes. ACS Chem Biol. 2014. 9(8):1680-4.
- *11. Lee JE, Oney M, Frizzel K, Phadnis N, and Hollien J. *Drosophila melanogaster* Activating transcription factor 4 Regulates Glycolysis during Endoplasmic Reticulum Stress. G3. 2015. 5(4): 667-75.
- *12. Moore K, Hollien J. Ire1-mediated decay in mammalian cells relies on mRNA sequence, structure, and translational status. Mol Biol Cell. 2015. 26(16):2873-84.
13. Nelson J, Moore KA, Chapin A, Hollien J, Metzstein MM. Degradation of *Gadd45* mRNA by nonsense-mediated decay is essential for viability. eLife 2016. 10.7554/eLife.12876
- *14. Lee JE, Morrison W, Hollien J. Hairy and enhancer of split 1 (HES1) protects cells from endoplasmic reticulum stress-induced apoptosis through repression of *GADD34*. Journal of Biological Chemistry. 2018. Apr 20;293(16):5947-5955. doi 10.1074/jbc.RA118.002124.
- *15. Bae D, Moore K, Mella J, Hayashi S, Hollien J. Degradation of *Blos1* mRNA by IRE1 repositions lysosomes and protects cells from stress. Journal of Cell Biology. 2019. 218(4): 1118-1127. Highlighted in Science Magazine in "Editor's choice" section, Vol 363, 22 March 2019. Highlighted by F1000Prime Highlighted in JCB Special Collection in Lipid and Membrane Biology, July 2019
16. Balakrishnan B, Siddiqi A, Mella J, Lupo A, Li E, Hollien J, Johnson J, Lai K. Salubrial enhances eIF2alpha phosphorylation and improves fertility in a mouse model of Classic Galactosemia. BBA - Molecular Basis of Disease. 2019. 1865(11):165516.
17. LaBella ML, Hujber EJ, Moore KA, Rawson RL, Merrill SA, Allaire PD, Ailion M, Hollien J, Bastiani MJ, Jorgensen EM. CK1g maintains nervous system architecture by inhibiting transcriptional termination of giant Ankyrin. Developmental Cell. 2020. 55(1):88-103.
- *18. Bae D, Jones R, Piscopo KM, Tyagi M, Shepherd JD, Hollien J. Regulation of *Blos1* by IRE1 prevents the accumulation of Huntingtin protein aggregates. Molecular Biology of the Cell. 2022. Nov 1; 33 (13):ar125.

Review articles

- *1. Moore KA, Hollien J. The unfolded protein response in secretory cell function, *Annu Rev Genet* 46 (2012) 165-183.
- *2. Weil D, Hollien J. Cytoplasmic organelles on the road to mRNA decay, *Biochim Biophys Acta- Gene Regulatory Mechanisms* 1829 (2013) 725-731.
- *3. Hollien J. Evolution of the unfolded protein response, *Biochim Biophys Acta- Molecular Cell Research* 1833 (2013) 2458-2463.

Publications while working as assistant editor at *Nature Structural Biology*

- Hollien J. (2001) Frizzled proteins pair up. *Nature Structural Biology* 8 (8): 661.
 Hollien J. (2001) Chipping away at the proteome's mysteries. *Nature Structural Biology* 8 (9)
 Hollien J. (2001) A hormone receptor springs into action. *Nature Structural Biology* 8 (10): 823.
 Hollien J. (2001) A force to be reckoned with. *Nature Structural Biology* 8 (11): 925.
 Hollien J. (2001) Making Moco. *Nature Structural Biology* 8 (12): 1014.
 Hollien J. (2002) A state-of-the-Arp structure. *Nature Structural Biology* 9 (1): 11.

V. RESEARCH TALKS

National/international talks

- | | | |
|--|-------------------------|---|
| 2023 | seminar | Altos Labs |
| 2023 | invited conference talk | FASEB "The endoplasmic reticulum: structure, function, and disease" |
| 2022 | department seminar | Univ of California, Santa Barbara |
| 2020 | invited conference talk | GSR "Protein Processing, trafficking, and secretion" (postponed due to covid19) |
| 2020 | symposium talk | University of Georgia (student-invited) |
| 2019 | department seminar | Univ. of Alabama, Birmingham, Cell, Developmental, and Integrative Biology |
| 2019 | department seminar | Univ. of California, San Francisco, Biochemistry and Biophysics |
| 2019 | invited conference talk | FASEB "From unfolded proteins to disease" |
| 2018 | invited conference talk | Annual meeting for the American Society of Cell Biology |
| 2018 | department seminar | Brigham Young University, chemistry department |
| 2017 | invited conference talk | "Proteostasis", Ericeira, Portugal |
| 2017 | invited conference talk | FASEB "From unfolded proteins in the ER to disease" |
| 2016 | department seminar | Univ. of California, San Diego and Scripps Institute |
| 2015 | invited conference talk | "ER stress", Univ. of Ghent, Belgium |
| 2011-2014 <i>**note I did not travel for a few years while caring for young children**</i> | | |
| 2010 | invited conference talk | EMBO ER meeting |
| 2010 | invited conference talk | FASEB "Post-transcriptional Control of Gene Expression" |
| 2009 | invited conference talk | FASEB "From unfolded proteins in the ER to disease" |
| 2006 | invited conference talk | Protein Society symposium |
| 2006 | invited conference talk | CSHL "Molecular Chaperones and the Heat Shock Response" |
| 2005 | invited conference talk | Annual meeting for the American Society of Cell Biology |
| 2005 | invited conference talk | 28 th Annual meeting of the German Society for Cell Biology |
| 2000 | department seminar | Reed College, Chemistry department |

VI. RESEARCH AWARDS AND GRANTS

Current

2016-2026 (Renewed in 2021) NIH R35 (MIRA) GM119540
“Regulation of lysosome positioning and function by the unfolded protein response”
role: PI. \$215,000 direct costs per year

Previous projects/grants

2016- 2021 NIH R01, General Medical Sciences
“Fluorescent labeling of cellular mRNA using self-alkylating ribozymes”
role: co-investigator \$190,000 direct costs per year for 5 years (Heemstra lab)
(I wrote one of the three aims for this project, but the MIRA precluded me from being a primary PI or having a budget on other NIH-GMS grants)

2011-2012 University of Utah seed grant
“Development of a Self-labeling Ribozyme for Fluorescence Imaging of RNA in Living Cells”
role: co-PI with Jennifer Heemstra, Chemistry \$28,000 for 1 year

2008-2012 NIH R00 GM081255
“mRNA decay mechanisms for ER stress recovery”
role: PI \$165,448 direct costs per year

VII. TEACHING

Main undergraduate courses:

Biol 2020 Cell Biology

3 units, semester-long course

I share the teaching of two concurrent sections of this class with Dr. James Gagnon, starting in Spring 2019 and continuing each spring semester. This is a required class for biology majors and serves many pre-med and other majors. Enrollment is typically ~450 students for the two sections. Students learn about structure/function relationships and information/energy flow within and between cells. We re-designed this class to include extensive active learning and other evidence-based methods of teaching.

Biol 5120 Gene Expression

3 units, semester-long course (45 class meetings/semester)

I developed this as a new class for upper-division cell and molecular undergraduates, and taught for 7 semesters. Typical enrollment was 40 students. Students gained an in-depth understanding of how cells regulate gene expression at many levels and learned how to read and evaluate data in scientific literature. I used many active-learning approaches, such as journal club discussions with peer review, and experimental design workshops.

Main graduate course:

Biol 7962, Advanced Cell Biology

2 units, 0.5 semester (with M Babst)

This is a graduate-level course in cell and molecular biology, where students get up to speed on important concepts and approaches in cell and molecular biology and read papers from the current literature.

Other teaching contributions:

2009, 2015, 2018, 2019 Biol 2870, Frontiers in Biology (1 research presentation per year, for undergraduate students)

2013, 2015-2021 Biol 7961 (formerly Biol 7206) Intro to Research (1 research presentation per year, for first-year graduate students)

2012, 2019	Biol 7962 Seminal Papers in Biology (2 weeks of class meetings, graduate paper-based course)
2013-2016	MBiol 6480 graduate Cell Biology (2 lectures per year for 4 years)
2011	MBiol Journal Club/grant writing course (with co-instructors Markus Babst and Adam Frost) (weekly 2-hour meetings for full semester)
2010, 2011	MBiol6440 graduate Gene Expression (3 lectures per year for 2 years)

VIII. STUDENT RESEARCH and MENTORING

Current lab members

<i>Graduate Student</i>	Katie Piscopo (MCEB March 2019-)
<i>Graduate Student</i>	Catalina Anthony (MCEB March 2020-)
<i>Graduate Student</i>	Emmanuel Ngwoke (MCEB March 2022-)
<i>Undergraduate</i>	Kiyo Obayahi (October 2019-)
<i>Undergraduate</i>	Brooke Larsen (October 2019-)
<i>Undergraduate</i>	Jason Perry (Feb 2022-)
<i>Undergraduate</i>	Anna Christiansen (Oct 2022-)
<i>Undergraduate</i>	Lincoln Hollingshead (Oct 2022-)

Previous lab members

<i>Graduate student</i>	Danny Bae, PhD 2021	next: postdoctoral fellow, Univ. of Utah Biochemistry now: returned to complete medical degree
<i>Graduate student</i>	Zoe Praggastis, MS 2020	next: Biology instructor at Colorado Mesa University
<i>Graduate student</i>	Ji Eun (Jinny) Lee, PhD 2017	next: postdoctoral fellow, Sloan Kettering Cancer Center now: research scientist, Tolero Pharmaceuticals
<i>Graduate student</i>	Kristin Moore, PhD 2015	next: postdoctoral fellow, Univ. of Colorado, Boulder now: teaching faculty, UC Boulder (2020)
<i>Graduate student</i>	William Morrison, MS 2015	next: scientist at Myriad now: senior research associate, Recursion Pharma.
<i>Graduate student</i>	Jonathan Craft	next: scientist at Myriad
<i>Postdoc</i>	Joshua Plant, Feb.-July 2012	next: Director of Research Sciences at Zija International
<i>Undergraduate students (15)</i>		
	Rachel Jones, 2018-2022, Beckman scholar	next: PhD program, UC San Francisco
	Gabriela Rocha, July 2018- Dec 2020	next: medical school, Univ. of Michigan
	Jessica Mella, Jan 2017- August 2019	next: PhD program, UC San Francisco
	Emily Tippets, Jan 2016- July 2019	next: PhD program, Univ. of Utah
	Sam Hayashi, Jan 2016- July 2019	next: PhD program, SUNY Stony Brook
	Maria Reyes, spring 2019	next: transferred to SLCC
	Robert Byron, March 2015- May 2018	next: medical school, Univ. of Utah
	McKenna Oney, Feb 2013-Sept 2014	next: pharmacy school, Univ. of Utah
	Daniel Curtis, fall 2013	
	Alex Ellredge, 2012	
	Dong-Hwi Bae, 2011	next: Chicago Podiatry Medical School
	Brittany Ripley, fall semester 2010	next: pharmacy school at UCSD
	Beux Dmitrich, 2010	next: business school at Utah State
	Sitney Chogas, fall semester 2009	next: Med Lab Sciences program, Univ. of Utah
	Stewart Barlow, 2008-2009	next: biomedical program, Georgetown University

<i>Technician</i>	Deepika Gaddam, 2009-2013	next: lab technician, Utah State University
<i>Technician</i>	Nicole Stevens, 2008-2010	next: scientist at DoTerra, then PhD student

Rotation students (18)

Nikita Singhi (Biol spring 2022)	Suprim Tha (Biol fall 2021)
Alexis Schmidt (Biol spring 2021)	Atoosa Samani (Biol fall 2019)
Kewei Xu (Biol spring 2019)	Shelley Reich (Biol 2017)
Lincoln Gay (Biol fall 2015)	Jinzhi Li (Biol fall 2015)
Indra Lazcano (MBP fall 2015)	Mihret Lemma (Biol fall 2014)
Akshay Moharir (Biol spring 2013)	Ryan Traylor (MBP fall 2012)
Della Fixsen (MBP summer 2012)	Charisse Petersen (MBP fall 2011)
Cole Anderson (MBP spring 2011)	Katie Basham (MBP fall 2009)
Judith Pickens (MBP spring 2009)	David Estes (MBP spring 2009)

Graduate thesis committees

Current (11)

Ian Cooney, Peter Shen lab, biochemistry (prelim exam 2019)
Jenifer Einstein, Shepherd lab, neurobiology & anatomy
Katie Owings, Chow lab, human genetics (prelim exam 2019)
Jasmine Phan, Babst lab, biology (prelim exam 2020)
Madison Schrock, Hughes lab, biology (prelim exam 2020)
Madison Smith, Babst lab, biology (prelim exam 2020)
Daniela Tamayo, Shen lab, biochemistry
Suprim Tha, Babst lab, biology
Mitali Tyagi, Shepherd lab, neurobiology & anatomy
Jenna Weber, Gagnon lab, biology
Tianyao Xiao, A. Hughes lab, biochemistry (prelim exam 2019)

Previous (30)

Synneva Hagan-Lillevik, Lai lab, pediatrics (Nutrition and Integrative Physiology) (PhD 2022)
Nicole Mathewson, Burrows lab, chemistry (PhD 2022)
Christie Wnukowski, Jorgensen lab, biology (PhD 2022)
Nikki Russell, Chow lab, human genetics (PhD 2021)
Siyu Chen, Jorgensen lab, biology (PhD 2021)
Cody Fitzgerald, Keener lab, math-bio program (PhD 2021)
Sonja Hummel, Jorgensen lab, biology (switched to masters program)
Dane Larsen, Caron lab, biology (MS 2020)
Dara Niketic, K. Hughes lab, biology (MS 2020)
Daniel Appadurai, Babst lab, biology (PhD 2019)
Lincoln Gay, Babst lab, biology (MS 2019)
Laura Strube, Adler group, Math Bio program (PhD 2018)
Akshay Moharir, Babst lab, biology (PhD 2018)
Tewoderos Ayele, Heemstra Lab, chemistry (transferred)
Alex Rangel, Heemstra lab, chemistry (PhD 2017)
Malia Deshotel, Sieburth lab, biology (PhD 2017)
Olaolu Osunbayo, Vershinin lab, physics (PhD 2017)
Patrick McEachern, Jorgensen lab, biology (PhD 2016)
Katelyn Froehlich, Babst lab, biology (MS 2015)
Mike Akinjero, Babst lab, biology (MS 2015)
Alex Chapin, Metzstein lab, human genetics (PhD 2014)

Dane Maxfield, Maricq lab, biology (PhD 2013)
Marta Fay, Ullman lab, HCI (PhD 2013)
Gourab Bhattacharje, Goldenberg lab, biology (MA 2013)
Melissa Haliski, Keefe lab, pharm. and toxicology (PhD 2013)
Kyle Logan, Drews lab, biology (prelim exam passed 2012, left program)
Mike Jensen, Mariq lab, biology (PhD 2012)
Betsy Ott, Babst lab, biology (PhD 2011)
Eric Elias, Maricq lab, biology (prelim exam passed 2010, switched labs 2011)
Ching Kuo, Sieburth lab, biology (prelim exam passed 2009; left program)

Other

2015-2017 Reader for undergraduate honors thesis students
2010-2012 Mentor for bioscience summer high school students
2009 Volunteer judge at AMES high school science fair

IX. SERVICE

Biology committees

2021- Equity, Diversity, and Inclusion committee (chair)
2017-2020 Executive committee and section head for Cell and Molecular Biology
2012-2019 BioKids daycare (chair)
2016-2017 Undergraduate Curriculum Reform Task Force
2014-2016 Graduate Admissions
2012-2014 Graduate Program Committee
2012-2014 Advisor for first year graduate students, MCEB
2009 Graduate curriculum planning committee (co-chair)
2009-2014 Undergraduate scholarship
2009-2012 Communications

Biology ad-hoc and search committees

2022 Faculty search in Cell Biology
2020 Faculty searches in Molecular Biology and Plant Molecular Biology (chair)
2019 Search for Director of School (co-chair with Matt Sigman, chemistry)
2018 Faculty search in Molecular Biology/Biochemistry (chair)
2018 Faculty search in Cryo-EM/Biology
2017 Faculty search for advanced Molecular Biologist (chair)
2016 Faculty search in Cryo-EM/Biology and CCGS
2011 Faculty search committee for Microbial biologist
2009 Graduate curriculum planning committee (co-chair)

Interdepartmental programs and University service

2021-present College of Science Equity, Diversity, and Inclusion committee
2019-2022 Beckman Scholars Program mentor
2011-present Steering committee, University-wide Molecular Biology Program
2017 Advisor team for Membrane Trafficking training grant proposal
2015-2017 Advising committee for Molecular Biology Program
2014-2017 Organizer for Cell Center faculty research in progress talks
2012 Faculty search committee for Cell Center
2009-2011 Admissions committee, Molecular Biology Program (2 years)

2009-2010 Faculty search committee for Cell Center/Chemistry
2009-2010 University MLK day committee
ongoing Participant in campus membrane trafficking and RNA interest groups

National service: research article peer review

2008-2017	Cancer cell	Cell	Cell Reports	ELife
	EMBO Journal	FEBS letters	Frontiers in Genetics	Journal of Virology
	Nucleic Acids Res.	PlosONE	PNAS	Nature
	Nature Immunology	RNA	Science	Trends in Cell Biology
2018-	Cell Reports (2)	Dev. Cell	EMBO Reports	ELife (many)
	J. of Biol. Chem.	Molecular Cell	Plos Genetics	Science Advances

National service: other

2019-2022 Board of Reviewing Editors, *ELife*
2019 Master reviewer for textbook “Essential Cell Biology” sixth edition
2019 Reviewer for “Essential Cell Biology” active learning materials
2019 Session chair, summer FASEB conference
2017 Session chair, International conference “Proteostasis”, Portugal
2010 NSF review panel member
2009-2016 NSF ad-hoc reviewer