KATHERINE E. BERRY

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Education

Ph.D. **University of California, Berkeley**, Chemistry, December 2010
Chemical Biology Graduate Program, GPA: 4.00

B.A. **Swarthmore College**, Biochemistry, Minor in Latin, May 2005
Graduated with Highest Honors, Phi Beta Kappa, GPA: 3.98

Professional Experience

Fall 2016 **Clare Boothe Luce Assistant Professor of Biochemistry**, **Mount Holyoke College**
Department of Chemistry and Program in Biochemistry

2011-2016 **NIH NRSA Postdoctoral Fellow, Harvard Medical School**
in the laboratory of Prof. Ann Hochschild
Biochemical and genetic dissection of transcription pausing and non-coding RNA function in *E. coli;* directed a genetic screen for factors that influence riboswitch function *in vivo*; developed a bacterial three-hybrid assay for *in vivo* detection of RNA-protein interactions.

2005-2010 **Graduate Thesis Researcher**, **University of California, Berkeley**
in the laboratory of Prof. Jennifer A. Doudna
Dissertation Title: Molecular mechanisms of mRNA recruitment in eukaryotic and viral translation initiation; conducted quantitative studies of the thermodynamics of protein-ribosome binding; screened for small-molecule inhibitors of the HCV IRES RNA and solved a crystal structure of its central domain.

2004-2005 **Undergraduate Thesis Researcher, Swarthmore College**
in the laboratory of Prof. Robert S. Paley
Senior Thesis Title: Stereoselective synthesis of heteropolycycles: Intramolecular pinacol couplings of enantiopure sulfinyl diene iron(0) complexes.

Summer 2002 **Summer Undergraduate Researcher, Florida State University**
in the laboratory of Dr. Qingxiang Amy Sang
Kinetic inhibition and structural studies of matrixmetalloproteases 7, 12, and 26.

Scholarly Publications (note: * indicates undergraduate mentee)

- Berry KE, Waghray S*, Mortimer SA, Bai Y, Doudna JA. (2011) Crystal structure of the HCV IRES central domain reveals strategy for start-codon positioning. *Structure,* **19,** 1456-66.
- Berry KE, Peng B, Koditek D, Beeman D, Pagratis N, Perry JK, Parrish J, Zhong W, Doudna JA, Shih I-h. (2011) Optimized high-throughput screen for Hepatitis C virus translation inhibitors. *J Biomol Screen,* **16,** 211-20.
- Berry KE, Waghray S*, Doudna JA. (2010) The HCV IRES pseudoknot positions the initiation codon on the 40S ribosomal subunit. *RNA*, **16,** 1559-69.

- Paley RS, Berry KE, Liu JM, Sanan TT. (2009) Diastereoselective intramolecular pinacol couplings of sulfinyl iron(0) diene complexes. *J Org Chem*, **74,** 1611-20.
- Kovaks EW, Hooker JM, Romanini DW, Holder PG, Berry KE, Francis MB. (2007) Dual-surface-modified bacteriophage MS2 as an ideal scaffold for a viral capsid-based drug delivery system. *Bioconj Chem,* **18,** 1140-7.
- Fraser CS, Berry KE, Hershey JW, Doudna JA. (2007) eIF3j is located in the decoding center of the human 40S ribosomal subunit. *Mol Cell*, **26,** 811-9.

General Audience Publications

- Berry KE. (2009) Battle of the bugs: The evolution of bacterial immunity. *Berkeley Science Review*, **16,** 10-11.

Teaching and Mentoring Experience

- Fall 2014 ***Intro. to Cell. and Mol. Biol. Lab, Adjunct Instructor,*** Emmanuel College

Supervised weekly laboratory sections of 19 undergraduates; prepared and delivered weekly 30-minute lectures on concepts related to the laboratory exercise; held weekly office hours; graded quizzes and lab reports

- 2012-2013 ***Undergraduate Research Mentor***, Harvard Medical School

Mentored one undergraduate researcher (listed below) over two summers on independent research projects related to my own research; taught laboratory skills including cloning, sterile technique, bacterial manipulation, design and implementation of a genetic screen.

- James Marvel-Coen (Summer 2012 and Summer 2013), Williams College ’15
  currently applying to graduate programs in Biology

- 2006-2010 ***Undergraduate and Graduate Research Mentor***, UC Berkeley

Mentored three undergraduate researchers (listed below) over both summers and school years and three first-year graduate students over 10-week rotations during which students worked on independent research projects related to my own research; taught laboratory skills including RNA transcription, RNA purification, RNA chemical modification, protein purification, protein-RNA interactions, fluorescence spectroscopy, and x-ray crystallography.

- Shruti Waghray (2009-2010), UC Berkeley ’10
  currently a Ph.D. candidate in Biochemistry at University of Wisconsin, Madison
- Sean Alemi (2007-2008), UC Berkeley ’08
  currently a medical resident at University of California, San Fransisco
- Humsa Venkatesh, (Summer 2006), UC Berkeley ’08
  currently a graduate student and NSF fellow in cancer biology at Stanford University

- Spring 2008 ***Chemical Biology, Graduate Student Instructor***, UC Berkeley

Independently prepared and delivered biweekly 15-minute lectures on special topics connected to lecture material; planned and delivered 2-hour exam-review sessions; held weekly office hours; wrote problem sets and portions of exams; graded exams; maintained class website. Overall Effectiveness from student evaluations: 6.4/7.0.

- 2007, 2005 ***Organic Chemistry I, Graduate Student Instructor***, UC Berkeley

Supervised weekly laboratory sections of 28 undergraduates; held weekly office hours for lab and lecture; independently prepared and delivered 20-minute lectures on concepts related to the laboratory; graded exams, quizzes and lab reports. Fall 2005 overall ranking from student evaluations: 7.0/7.0; Spring 2007 overall effectiveness from student evaluations: 6.6/7.0.

- 2002-2005 ***Chemistry Clinician***, Swarthmore College

Served as a drop-in tutor twice weekly for six semesters for undergraduates taking General Chemistry, Organic Chemistry I and II, and Biochemistry; explained concepts from lecture and assisted with problem sets; worked one-on-one and led small discussions.

- 2002-2004 ***Chemistry Grader***, Swarthmore College

Evaluated and corrected lab reports and problem sets for General Chemistry and Organic Chemistry I, over three semesters.

Outreach, Leadership and Service

- 2007-2011 *Laboratory Safety Officer*, *Doudna Lab*, UC Berkeley

Trained new members in safe laboratory practices and attended quarterly safety meetings.

- 2007-2010 *Member*, *Student Hosted Colloquium Committee*, UC Berkeley

Hosted speakers for this Chemistry Department seminar series; communicated with department about speaker visits; coordinated meetings with graduate students.

- 2007-2009 *Classroom Volunteer, Community Resources for Science*, UC Berkeley

Developed hands-on experiment about microorganisms; visited elementary school classrooms to encourage early interest in science; worked with students as a class and in small groups.

- 2007-2008 *Organizer, Structure Supergroup*, UC Berkeley

Coordinated with speakers and food providers; communicated with the research community.

- 2004-2005 *Captain, Varsity Tennis Team*, Swarthmore College

Informally mentored teammates about balancing demanding academics and athletics.

- Fall 2002 *Campus Adviser*, Swarthmore College

Led first-year orientation activities; planned and directed a workshop on adjusting to college life.

Grants, Honors and Awards

- 2012: NIH Ruth L. Kirschstein National Research Service Award Postdoctoral Fellowship
- 2012: Finalist – Life Sciences Research Foundation Postdoctoral Fellowship
- 2007-2008: NIH Molecular Biophysics Training Grant (UC Berkeley)
- 2006: Honorable Mention – NSF Graduate Research Fellowship
- 2005: Phi Beta Kappa (Swarthmore)
- 2005: American Chemical Society Scholastic Achievement Award (Swarthmore)

  Awarded to the senior whom the Chemistry Department judges to have the best performance in chemistry and overall academic achievement
- 2005: Gonzalez-Vilaplana Prize for Outstanding Achievement in Chemistry (Swarthmore)
- 2005: Susan P. Cobbs Prize Fellowship in Classics (Swarthmore)
- 2004: Sarah Kaighn Cooper Scholarship (Swarthmore)

  Awarded to the junior who is judged by the faculty to have had the best record for scholarship, character, and influence since entering the College
- 2004: Stanley Adamson Prize in Chemistry (Swarthmore)
- 2004: Sigma Xi Scientific Research Society
- 2003: Flack Achievement Award (Swarthmore)

  Given to a sophomore who has demonstrated leadership potential and a good record of achievement in both academic and extracurricular activities
- 2003: ACS Undergraduate Award in Organic Chemistry (Swarthmore)
- 2002: CRC Press Freshman Chemistry Achievement Award (Swarthmore)

Selected Oral and Poster Presentations

- 2016: Gordon Research Conference on Microbial Stress Responses (South Hadley, MA). Oral Presentation. *A bacterial three-hybrid assay detects Hfq-sRNA interactions.*
- 2015: Regulating with RNA in Bacteria and Archaea (Cancun, Mexico). Poster Presentation. *Effect of MgrR overexpression on another small RNA in E. coli*.
- 2013: FASEB SRC on Mechanisms and Regulation of Prokaryotic Transcription (Saxtons River, VT). Poster. *E. coli mgtA leader region encodes an Hfq-Dependent sRNA.*
- 2010: RNA Society Meeting (Seattle, WA). Oral Presentation. *The HCV IRES pseudoknot positions the initiation codon on the 40S ribosomal subunit.*
- 2007: Gordon Research Conference on Nucleic Acids (Newport,RI). Oral Presentation. *Investigating mRNA recruitment by the human ribosome using fluorescence spectroscopy.*