

Amy Cooke

Assistant Professor of Biology, Haverford College 370 Lancaster Avenue Haverford, PA 19041 USA
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EDUCATION

University of Wisconsin-Madison, Madison, WI USA 2005-2011

Ph.D. degree in Cellular & Molecular Biology
Molecular Biosciences Training Grant
Advanced Opportunity Fellowship

University of Oregon-Eugene, Eugene, OR USA 2000-2003

Bachelor of Science degree in Biochemistry
Biochemistry Achievement Award

POSITIONS/RESEARCH EXPERIENCE

Assistant Professor of Biology 2020-present

Haverford College, Haverford, PA USA
Biology Department
Biochemistry and genomic research on post-transcriptional control mechanisms that govern cellular physiological events, and teaching a broad range of Biology classes for both majors and non-majors.

Academic Scientist, Lab of Marvin Wickens, Ph.D. 2018-2020

University of Wisconsin-Madison, Madison, WI USA
Biochemistry Department
Expand techniques to globally identify RNA-protein interactions and RNA dynamics within live cells using engineered proteins. Additionally, direct supervisor of research interns and mentor for graduate students.

Postdoctoral Fellow, Lab of Matthias Hentze, M.D. 2011-2017

European Molecular Biology Laboratory, Heidelberg, Germany
Director's Research affiliated with Genome Biology
Utilized system-wide approaches to define genes directly regulated by the RNA-binding protein, YBX3 and uncovered an unanticipated role for YBX3 regulation of amino acid homeostasis in mammalian cells.

Graduate Student, Lab of Marvin Wickens, Ph.D. 2005-2011

University of Wisconsin-Madison, Madison, WI USA
Biochemistry Department
Molecular Biosciences Training Grant (2005-2007)
Advanced Opportunity Fellowship (2007-2009)
Discovered intrinsic translational repression activity in CAF1 deadenylases, developed methods to regulate cellular mRNAs using designer proteins and characterized how an RNA-binding protein spatially controls mRNAs.

Undergraduate Student, Lab of Alice Barkan, Ph.D.

2000-2003

University of Oregon-Eugene, Eugene, OR USA

Institute of Molecular Biology

Women in Physical Sciences Fellow (2002-2003)

Studied the crosstalk between the chloroplast and nucleus to understand the role of nuclear encoded proteins in splicing chloroplast encoded group II introns.

GRANTS AUTHORED IN SUPPORT OF RESEARCH

2021 PI; Faculty Research Grant; "Investigating protein interactions that have consequences for disease"; **\$5500**

PUBLICATIONS

Cooke A, Schwarzl T, Huppertz I, Mantas P, Alleume AM Huber W, Krijgsveld J, and Hentze MW. (2019) The RNA-binding protein YBX3 controls amino acid levels by regulating SLC mRNA abundance. *Cell Rep.* 27(11), 3097-3106.

<https://twitter.com/CellReports/status/1138868626063335432>

Holzer K, Ori A, **Cooke A**, Roessler S, DiGuilio AL, Drucker E, Andres-Pons A, Eiteneuer E, Breuhahn K, Glavy JS, Schirmacher P, Beck M, Singer S. (2019) Translational control by and repression of Nup155 are integral parts of the p53 pathway in liver cancer. *Nat Commun.* 10, 2147

Zhang Y*, **Cooke A***, Wickens M, Sheets MD. (2013) Bicaudal-C spatially controls translation of vertebrate maternal mRNAs. *RNA* 19, 1575-82.

Friend K, Campbell ZT, **Cooke A**, Kroll-Conner P, Wickens M and Kimble J. (2012) A conserved PUF/Ago/eEF1A ternary complex attenuates translation elongation. *NSMB* 19, 176-83. *Faculty of 1000*: <https://f1000.com/prime/13491994>

Cooke A*, Prigge A*, Opperman L, Wickens M. (2011) Targeted translational regulation using the PUF scaffold. *PNAS* 108, 15870-15875.

Faculty of 1000: <https://f1000.com/prime/13302956>

Cooke A, Prigge A, Wickens M. (2010) Translational repression by deadenylases. *J Biol Chem.* 285, 28506-13.

Watkins KP*, Kroeger TS*, **Cooke A***, Williams-Carrier RE, Friso G, Belcher SE, van Wijk KJ, Barkan A. (2007) A ribonuclease III domain protein functions in group II intron splicing in maize chloroplasts. *Plant Cell* 19, 2606-23.

Ostersetzer O, **Cooke A**, Watkins KP, Barkan A. (2005), Crs1, a chloroplast group II intron splicing factor, promotes intron folding through specific interactions with two intron domains. *Plant Cell* 17, 241255.

* Indicates a co-first author.

HONORS

Molecular Biosciences Training Grant

2005-2007

Advanced Opportunity Fellowship

2007-2009

Honorable mention for NSF Graduate Research Fellowship Program

2005

Biochemistry Achievement Award from the University of Oregon

2003

Women in Physical Sciences Scholarship

2002-2003

TEACHING AND MENTORING

Teaching

Haverford College, Haverford, PA USA

BIOL300: Advanced lab in Biology "Superlab" (Fall 2020)

BIOL201: Introduction to Biology; Molecules, Cells and Organisms (Spring 2021)

BIOL417: Senior Research Tutorial in Molecular Genomics/Biochemistry (2020 – 2021)

BIOL380: Independent Study in Biology at Haverford (1 student; 2020 – 2021)

BIOL495: Crafting an Inclusive Biology Curriculum: Student Research, Mentorship and Communication (Fall 2020)

European Molecular Biology Laboratory, Heidelberg Germany

Graduate student practical instructor for the RNA & DNA Biology Module (2012-2017)

Mentoring

Prospective Senior Thesis Mentees

Max Elliot HC '22

Jeremy Lavietes HC '22

Isabella Johnson HC '22

William Skipper HC '22

William Vostrejs HC '22

Current Summer Student Mentees

Justin Adler HC '22

Silina Awad HC '22

Max Elliot HC '22

Isabella Johnson HC '22

Former Senior Thesis Mentees

Amalia Axinn HC '21 (High Honors in Biology)

Alice Youle HC '21 (Irving Finger Prize in Biology recipient)

Charith Wijeyesekera HC '21 (Irving Finger Prize in Biology recipient)

Zachary Bressman HC '21 (Honors in Biology)

Research Intern

2019-2020

Alexandra J Kershner, B.S.

Project: Expanding RNA-tagging techniques to characterize protein-RNA complexes.

Visiting Doctoral student

summer 2015

Marcelo Perez-Pepe (Leloir Institute Foundation)

Project: Characterizing the role of enzymes in translational control mechanisms.

Undergraduate student

2007-2010

Andrew Prigge

Project: Developing an improved tool to dissect developmental processes.

PROFESSIONAL SERVICES AND AFFILIATIONS

Reviewer for the following peer reviewed journals: *FEBS Letter*, *Bioscience Reports*, *Biomolecules*

Poster Judge at American Indian Science and Engineering Society (AISES) National Conference (2020)

Member of Society for Advancement of Chicanos and Native Americans in Science (SACNAS) University of Wisconsin Chapter (2018-2020)

Member of RNA Society (2007 – present)

SELECTED ORAL PRESENTATIONS

RNA Supergroup Seminar , at the University of Minnesota, Minneapolis, MN; invited speaker <i>"Linking RBP regulation and physiology: a multiomics approach"</i>	2019
European Molecular Biology Lab Day , plenary talk <i>"Novel role of the RNA-binding protein YBX3 in amino acid transport"</i>	2016
20th Annual RNA Society Meeting , workshop talk <i>"Identification of TOP mRNA translational regulators by site-selective UV crosslinking"</i>	2015
Translational Control Meeting , Cold Spring Harbor, NY <i>"CAF1 deadenylases repress translation independent of deadenylation"</i>	2010
National Maize Meeting , Lake Genève, WI <i>"Involvement of an RNAse III Homolog in Group II Intron Metabolism in Chloroplasts"</i>	2005