

# Angela Mitchell

## Curriculum Vitae

### CONTACT INFORMATION

Department of Biology  
Texas A&M University  
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Orcid.org/0000-0003-1062-0716

### EDUCATION

- Ph.D. in Microbiology and Immunology** 2013  
University of North Carolina at Chapel Hill, Chapel Hill, NC 27599  
Thesis Advisor: R. Jude Samulski, Ph.D.
- B.S. in Biotechnology, Summa cum Laude, Honors in the Discipline** 2008  
Elizabethtown College, Elizabethtown, PA 17022  
Thesis Advisor: Jane F. Cavender, Ph. D

### PROFESSIONAL APPOINTMENTS

- Assistant Professor, Texas A&M University** 2019-current  
Department of Biology
- Postdoctoral Research Associate, Princeton University** 2014-2019  
Department of Molecular Biology, Mentor: Thomas J. Silhavy, Ph.D.
- Graduate Research Assistant, University of North Carolina at Chapel Hill** 2008-2013  
Department of Microbiology and Immunology, Mentor: R. Jude Samulski, Ph.D.
- Undergraduate Researcher, Elizabethtown College** 2005-2008  
Department of Biology, Mentor: Jane F. Cavender, Ph. D.

### GRANTS AND FELLOWSHIPS

#### Current:

- NIH R01— R01-AI155915-A1, Role: PI 2021-2026  
“Biogenesis of cyclic and phospholipid-linked enterobacterial common antigen”  
Total award: \$1.83 million

#### Previous:

- NRSA Postdoctoral Fellowship—F32-GM116188, Role: PI 2016-2017  
“Elucidating stationary phase changes to the outer membrane permeability barrier”
- NIGMS MIRA Grant—R35-GM118024 (PI: Thomas Silhavy), Role: Key Personnel 2016-2019  
“Biogenesis and maintenance of the outer membrane of gram-negative bacteria”
- American Society for Virology Student Travel Grant 2013
- The University of North Carolina Graduate School Transportation Grant 2013
- American Society for Virology Student Travel Grant 2011
- Pre-doctoral Training Grant—T32-AI007419, Role: Trainee 2009-2010  
Molecular Biology of Viral Diseases: University of North Carolina at Chapel Hill
- Tri-beta Biological Honor’s Society Research Scholarship Foundation Grant 2008  
Title: “The maintenance of transformation by SV40 T antigen”
- Barry M. Goldwater Scholarship 2007

**Pending:**

- NIH R21—R21-AI159398-A1, Role: PI 2021-2023  
 “Elucidation of a novel pathway linking DNA repair and antibiotic resistance”
- Packard Fellowship for Science and Engineering, Role: PI 2021-2026  
 “Investigations of Carbohydrate Biology: Mechanisms of Antibiotic Resistance”

**PUBLICATIONS**

# Corresponding author; <sup>1</sup> Mitchell Lab Graduate Student; <sup>2</sup> Mitchell Lab Postdoc; \* Equal Contributions

17. Bautista DE<sup>1\*</sup>, Carr JF<sup>1\*</sup>, **Mitchell AM**<sup>#</sup>. Suppressor Mutants: History and Today’s Applications. (*Under review at EcoSal Plus*)
16. Rai AK<sup>2</sup> & **Mitchell AM**<sup>#</sup>. (2020) Enterobacterial common antigen: synthesis and function of an enigmatic molecule. *mBio*. 11(4): e01914-20.
15. Grimm J, Shi H, Wang W, **Mitchell AM**, Wingreen NS, Huang KC, & Silhavy TJ. (2020) The inner membrane protein YhdP modulates the rate of anterograde phospholipid flow in *Escherichia coli*. *Proc Natl Acad Sci U S A*. 117(43): 26907-26914
14. Hart EM\*, **Mitchell AM**\*, Konovalova A, Grabowicz M, Sheng J, Han X, Rodriguez-Rivera FP, Schwaid AG, Malinverni JC, Balibar CJ, Bodea S, Si Q, Wang H, Homsher MF, Painter RE, Ogawa AK, Sutterlin H, Roemer T, Black TA, Rothman DM, Walker SS, & Silhavy TJ. (2019) A small molecule inhibitor of BamA impervious to efflux and the outer membrane permeability barrier. *Proc Natl Acad Sci U S A*. 116(43): 21748-21757.  
**Nature News and Views highlight:** <https://www.nature.com/articles/d41586-019-03730-x>  
**F1000Prime recommendation:** <https://f1000.com/prime/736725510?bd=1>
13. **Mitchell AM** & Silhavy TJ. (2019) Envelope stress responses: balancing damage repair and toxicity. *Nat Rev Microbiol*. 17(7): 417–428.
12. May KL, Lehman KM, **Mitchell AM**, & Grabowicz M. (2019) A Stress Response Monitoring Lipoprotein Trafficking to the Outer Membrane. *mBio*. 10(3): e00618-19.  
**Associated Commentary:** <https://mbio.asm.org/content/10/3/e01302-19>
11. Silhavy TJ & **Mitchell AM**. (2019) Genetic analysis of protein translocation. *Protein J*. 38(3):217-228.
10. **Mitchell AM**, Srikumar T, & Silhavy TJ. (2018) Cyclic enterobacterial common antigen maintains the outer membrane permeability barrier of *Escherichia coli* in a manner controlled by YhdP. *mBio*. 9(4): e01321-18.  
**Associated Commentary:** <https://mbio.asm.org/content/9/5/e02162-18>
9. **Mitchell AM**, Wang W, & Silhavy TJ. (2017) Novel RpoS-dependent mechanisms strengthen the envelope permeability barrier during stationary phase. *J Bacteriol*. 199(2): e00708-16.
8. Konovalova A, **Mitchell AM**, & Silhavy TJ. (2016) A lipoprotein/β-barrel complex monitors lipopolysaccharide integrity transducing information across the outer membrane. *eLife*. 5: e15276.
7. Xiao PJ, **Mitchell AM**, Haung L, Li C, & Samulski RJ. (2016) Disruption of microtubules post virus entry enhances adeno-associated virus vector transduction. *Hum Gene Ther*. 27(4): 309-24.
6. **Mitchell AM**, Moser R, Samulski RJ, & Hirsch ML. (2016) Stimulation of AAV gene editing via DSB repair. In Hirsch ML, Cathomen T, & Porteus MH (Eds.), *Genome Editing: The Next Step in Gene Therapy* (pgs. 125-137). ISBN: 978-1-4939-3507-9.
5. Vance MA, **Mitchell AM**, & Samulski RJ. (2015) AAV biology, infectivity and therapeutic use from bench to clinic. In Hashad ID (Ed.), *Gene Therapy - Principles and Challenges*. ISBN: 978-953-51-4380-2

4. **Mitchell AM**, Hirsch ML, Li C, & Samulski RJ. (2014) Promyelocytic leukemia protein is a cell-intrinsic factor inhibiting parvovirus DNA replication. *J Virol.* 88(2): 925-36.
3. **Mitchell AM** & Samulski RJ. (2013) Mechanistic insights into the enhancement of adeno-associated virus transduction by proteasome inhibitors. *J Virol.* 87(23): 13035-41.
2. **Mitchell AM**, Li C, & Samulski RJ. (2013) Arsenic trioxide stabilizes accumulations of adeno-associated virus virions at the perinuclear region, increasing transduction *in vitro* and *in vivo*. *J Virol.* 87(8): 4571-83.
1. **Mitchell AM\***, Nicolson SC\*, Warischalk JK\*, & Samulski RJ. (2010) AAV's Anatomy: Roadmap for Optimizing Vectors for Translational Success. *Curr Gene Ther.* 10(5): 319-340.

**Manuscripts in preparation:**

Rai AK<sup>2</sup>, Bautista DE<sup>1\*</sup>, Carr JF<sup>1\*</sup>, Wei Wang, **Mitchell AM**<sup>#</sup>. An inhibitory system regulating the production of enterobacterial common antigen.

**PRESENTATIONS AND POSTERS****Invited Talks:**

Texas A&M University, College of Veterinary Medicine and Biomedical Sciences	2021
Texas A&M University, College of Medicine	2020
Texas Protein Folders and Function Meeting ( <i> canceled for public health reasons</i> )	2020
University of Texas Health Science Center at Houston (UTHealth)	2018
Genetic Approaches to Understanding Complex Biological Problems V Meeting	2018

**Conference Presentations:**

World Microbe Forum	2021
Bacterial Locomotion and Signal Transduction XVI Conference	2021
Microbial Stress Response Gordon Research Conference ( <b>Talk</b> )	2018
Microbial Adhesion & Signal Transduction Gordon Research Conference	2017
Microbial Stress Response Gordon Research Seminar and Conference	2016
American Society for Virology Annual Meeting ( <b>Talk</b> )	2013
American Society for Virology Annual Meeting ( <b>Talk</b> )	2012
The 14 <sup>th</sup> Biannual International Parvovirus Workshop ( <b>Talk</b> )	2012
American Society of Gene and Cell Therapy Annual Meeting	2012
American Society for Virology Annual Meeting ( <b>Talk</b> )	2011
Pennsylvania Academy of Science Annual Meeting ( <b>Talk</b> )	2008
Tri-Beta North East District 2 Research Convention ( <b>Talk</b> )	2007
Pennsylvania Academy of Science Annual Meeting	2007

**TEACHING****Texas A&M University, College Station, TX 77843**

Co-instructor for BIOL 606 Microbial Genetics (Spring)	2021
Instructor for BIOL/GENE 406 Bacterial Genetics (Fall)	2020

**Delaware Valley University, Doylestown, PA 18901**

Adjunct Faculty for BY-1116L Biological Sciences I Lab (2 sections)	2016
Adjunct Faculty for BY-1115 Natural Sciences I	2015

**Princeton University, Princeton, NJ 08544**

Preceptor for MOL340 Molecular and Cellular Immunology	2014
Instructor for Summer Undergraduate Research Program Discussion Group	2014

**The University of North Carolina at Chapel Hill, Chapel Hill, NC 27510**

Teaching Assistant for BIOL422 and BIOL421L General Microbiology	2013
New Module Design for North Carolina DNA Day	2012
Summer Teaching and Pedagogy Series Certificate	2011
Teaching Assistant for BIOL422 and BIOL421L General Microbiology	2010
Teaching Assistant for MCRO251L Medical Microbiology Lab	2009

**SCIENCE OUTREACH**

North Carolina DNA Day at Eastern Randolph High School, Ramseur, NC	2013
Science Outreach Lecture at Research Triangle High School, Durham, NC	2013
North Carolina DNA Day at Bertie STEM High School, Bertie, NC	2012
North Carolina DNA Day at South Granville High School of Health and Life Sciences, Creedmoor, NC	2011
Annual to biannual chemistry shows at elementary schools in Elizabethtown, PA	2005-2007

**MENTORING****Texas A&M University, College Station, TX 77843**Postdoctoral Researchers:

Ashutosh Kumar Rai	2020-current
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Graduate Students:

Joseph Carr (Ph.D. student, Microbiology)	2020-current
David Bautista (Ph.D. student, Biology)	2020-current

Undergraduate Researchers:

Iris Yang (Biology, Class of 2023)	2021-current
Kinsey Morris (Biology, Class of 2022)	2020-current
Nicholas Lugo (Biochemistry, Class of 2021)	2020-current

Ph.D. Rotation Students:

Ian Weinstein (Biology)	2019
Kamrul Hasan (Biology)	2019

**Princeton University, Princeton, NJ 08544**

Co-mentored Jessica Sheng in senior thesis research	2018-2019
Mentored Angela Kim in senior thesis research	2016-2017

**The University of North Carolina at Chapel Hill, Chapel Hill, NC 27510**

Research Mentoring Certificate (6 week workshop)	2013
Peer Mentor for first year Biological and Biomedical Sciences Program graduate students	2012
Mentor in the Meredith College Cooperative Mentored Research program	2012
Peer Mentor for first year Biological and Biomedical Sciences Program graduate students	2011

**SERVICE****Texas A&M University, College Station, TX 77843**Graduate Student Committee Member

Jeanette Pina (Ph.D. student, Chemistry; Prelim committee)	2021-current
Zachary Albers (M.S. non-thesis student, Microbiology)—Committee Chair	2021-current
Javier Sanchez (Ph.D. student, Biology)	2021-current
McKinley Williams (Ph.D. student, Microbiology)	2021-current
Ismael Morales (M.S. non-thesis student, Microbiology)—Committee Chair	2020-current

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Srutha Venkatesan (Ph.D. student, Biology)	2020-current
Merilyn Beebe (Ph.D. student, Microbiology)	2020-current
Nopakorn Hansanant (Ph.D. student, Microbiology)	2020-current
Tammy Oh (M.S. non-thesis student, Microbiology)	2020

Departmental Service

Co-chair, Student Postdoc Research Conference Committee	2021
Award Judge, Student Postdoc Research Conference, Department of Biology	2020
Member, Student Postdoc Research Conference Committee	2020
Member, Faculty Search Committee, Department of Biology	2019-2020
Award Judge, Student Postdoc Research Conference, Department of Biology	2019

College, University, and Field Service

Award Judge, World Microbe Forum	2021
Award Judge, American Society for Microbiology Texas Branch Fall Meeting	2020
<i>Ad hoc</i> grant reviewer NSF Division of Molecular and Cellular Biosciences	2020
<i>Ad hoc</i> manuscript reviewer <i>Proceedings of the National Academy of Sciences USA, PLoS Genetics,</i> <i>Communications Biology, Molecules, Frontiers in Microbiology, mSystems,</i> <i>Pharmaceutics</i>	2019-current

**Previous Universities**

Academic Policy Chair, UNC Graduate and Professional Student Federation Cabinet	2012-2013
Member, UNC Chapel Hill Chancellor's Committee on Copyright	2012-2013
Chair of Judging & Speaker Committee for βββ North East District 2 Conference	2006-2007

**CURRENT MEMBERSHIPS**

American Association for the Advancement of Science, American Society for Microbiology, ASM Texas Branch, American Society for Virology