I. PERSONAL

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II. EDUCATION

INSTITUTIONS ATTENDED

PhD, Microbiology, University of Wisconsin-Madison 2001-2007
NIH Pre-doctoral fellowship (Molecular Biosciences Training Grant)

Scientific Teaching Certificate 2004-2005
HHMI Scientific Teaching Fellowship Award

Teaching License – University of Wisconsin - Whitewater 1998-2000
(Chemistry and Biology Education certificate)

Bachelor of Science, University of Wisconsin – Green Bay 1998-2000

THESIS

Control of Plasmid R6K Replication in *Escherichia coli*

AREAS OF EXPERTISE AND INTEREST

Microbiology, Molecular microbiology, bacterial genetics, quantification of gene expression, nutrient uptake in bacteria, molecular cloning, cell cycle regulation, cellular differentiation and morphogenesis, synthetic biology

III. EMPLOYMENT AND TEACHING EXPERIENCE

ACADEMIC POSITIONS

Associate Professor of Biology, St. Olaf College 2019-present
Assistant Professor of Biology, St. Olaf College 2012-2019
Visiting Assistant Professor of Biology, Grinnell College 2010-2012
NSF Postdoctoral Fellow, University of California – Berkeley 2007-2010
Department of Plant and Molecular Biology
Project: Cell cycle control in the bacterium, *Caulobacter crescentus*
NIH Ruth L. Kirschstein National Research Service Award

COURSES TAUGHT AT ST. OLAF COLLEGE:

Lecture and Lab Courses:	**Independent Research:**	**(# students)**
ID 150: Explorations in Science (Co-taught) (1x)	Bio 294: Academic internship	(9)
Bio 124: Biology of Women (2x)	Bio 297: Independent research	(63)
Bio 231: Microbiology (with lab) (12)	Bio 298: Independent study	(6)
Bio 233: Intermediate Genetics (with lab) (8x)	Bio 375: Supplemental research	(9)
Bio 292: The Human Microbiome (1x)	Bio 398: Independent research	(20)
Bio 364: Molecular Biology (with lab) (5x)		
Bio 396: Directed Undergraduate Research (5x)		

Team-taught Seminars
BMOLS 201: Explorations in Biomolecular Science (10x)
BIO 291: Exploring BioMath (4x)

IV. SCHOLARLY/ARTISTIC WORK

Peer Reviewed Publications (undergraduate researchers are underlined):

Accepted for Publication:
Ransom D, Bowers L. 2025. CUREing Biofilms: A student-sourcing strategy to identify novel biofilm inhibitors. CourseSource. .

Published:
"NewRingeisen E, Jordahl J, Bowers L. 2025. Selective benefit of the sucrose TonB-dependent receptor, SucA, in *Caulobacter crescentus*. micropublication Biology. 10.17912/micropub.biology.001457."

"NewRingeisen, E; Jordahl, J; Bowers, L. 2025. Regulation of P_{suc}, a sucrose-inducible promoter in *Caulobacter crescentus*. microPublication Biology. 10.17912/micropub.biology.001458."

Bowers, L. 2024. High-throughput assay for quantifying bacterial biofilm formation. Protocos.io. https://dx.doi.org/10.17504/protocols.io.14egn6o8ql5d/v1

Swift, M., Bowers, L., McDonald, E., Walter, A. 2019. An Explorations Approach to Summer Bridge at a Selective Liberal Arts College: One Path Toward Equalizing Student Success. The Journal of STEM Education Vol 19 No 5.

Modrak, S., Melin, M., and **Bowers L**. 2018. SucA-dependent uptake of sucrose across the outer membrane of *Caulobacter crescentus*. *J Microbiol. 56: 648. Jul 27.*

Ryan, K.R., Taylor, J.A, and **Bowers, L.M.** 2009. The Bam complex subunit BamE (SmpA) is required for membrane integrity, stalk growth and normal levels of outer membrane β-barrel proteins in *Caulobacter crescentus*. Microbiology 156: 742-756

Bowers, L.M., Shapland, E.B, Ryan, K.R., 2008. Who's in charge here? Regulating cell cycle regulators. Curr Opin Microbiol. 11. 547-52.

Bowers, L.M., and Filutowicz, M.S., 2008. Cooperative binding mode of the inhibitors of R6K replication, dimers. J Mol Biol. 337(3). 609-15.

Bowers, L.M., Krüger, R., Filutowicz, M.S., 2007. Mechanisms of origin activation by monomers of the R6K-encoded protein. J Mol Biol. 368. 928-938.

Bowers, L.M., LaPoint, K., Anthony, L.C., Pluciennik, A., and Filutowicz, M.S., 2004. Bacterial expression system with tightly regulated gene expression and plasmid copy number. Gene. 340, 11-18.

McKinnon, J.S., DeMayo, R.F., Granquist, R., and **Weggel (Bowers), L.**, 2000. Female red throat coloration in two populations of threespine stickleback. Behaviour.137, 947-3.

Invited Seminars and Professional Presentations:

Bowers, L.M. University of Minnesota Biofilm Symposium. May 2019. CURE-ing Biofilms: A Course-based Undergraduate Research Experience. Invited speaker.

Bowers, L.M. American Society for Microbiology North Central Branch. September 2018. Scavenging for Sugar: Identification and regulation of the sucrose utilization locus in *Caulobacter crescentus*. Invited speaker.

Bowers, L.M. American Society for Microbiology. June 2018. TonB Dependent Sucrose Transport in *Caulobacter crescentus*, Atlanta GA.

Bowers, L.M. College of St. Benedict and St. John's University. November 2016. TonB Dependent Transport in a microbial scavenger. Invited speaker.

Bowers, L.M., St. Olaf College Biology Seminar Series (March 2016). Scavenger: How a starving bacterium takes up scarce nutrients.

Bowers, L.M. American Society for Microbiology. October 2015. Predicting new substrates for TonB Dependent Receptors in a Microbial Scavenger.

Bowers, L.M Minnesota Graduate Women in Science Seminar. February 2015. “Classroom-based undergraduate research experiences: the power of a pond organism”. Invited speaker.

Mentored Student Presentations

May 2024: Veronica Torres-Bermudez: Isolating Wild *Caulobacter crescentus* from Aquatic Environments, St. Olaf Honor's Day Symposium

November 2023: Kate Zhylinskaya (**Awarded 2nd Place Undergraduate Research Poster**) Bacterial Biosensors - Real Time Environmental Change Detection. American Society of Microbiology NCB.

November 2023: Chloe Traeder: Determining the Function of a Small RNA in the bacterium *Caulobacter crescentus,* American Society of Microbiology NCB.

November 2023: Nancy Nabahire Ngutete: Characterization of a Stalkless Mutant in Caulobacter crescentus. American Society of Microbiology NCB.

May 2023: Akinna Tyler and Jenny Camacho: Growth of *Caulobacter crescentus* with chitosan as the carbon source. St. Olaf Honor's Day Symposium

August 2022: Kathleen Kwon (Emerge Scholar): Scavenging for Sugar: Investigating the Role of cc_0539 in N-acetylglucosamine Uptake in *Caulobacter crescentus*

August 2022 and May 2023: Chloe Traeder: Determining the Function of a Small RNA in the bacterium *Caulobacter crescentus*

May 2022: Chamee Vang. Exploring the role of theTranscription Factor CC_0536 on its neighbor Ton-B Dependent Receptor CC_0539 in the bacterium *Caulobacter crescentus*. St. Olaf Honors Day Symposium.

May 2022: Talulah Mitchem. Investigation of the role of a putative small RNA (R0135) in the suc operon in *Caulobacter crescentus.* Biology Distinction Symposium and St. Olaf Honors Day Symposium.

April 2021: Erin NewRingeisin. MISST

November 2021: Erin NewRingeisin. American Society of Microbiology NCB.

October 2020: Erin NewRingeisin. Midstates Consortium for Math and Science.

May 2019: Avisya Misra, Katie Petersen, Christine Lee, Stein Acker. University of Minnesota Biofilm Symposium and St. Olaf Honor's Day Symposium.

May 2019: Jenna Richter, Daae Ransom, Laura Garcia Pimmentel. St. Olaf Honor's Day Symposium and University of Minnesota Biofilm Symposium. ***Awarded best undergraduate research poster.***

May 2019: Erin NewRingeisin. St. Olaf Honor's Day Symposium.

Sept 2018: Jacy Jordahl. Putative Heavy Metal Transporter Expression in *Caulobacter crescentus.* American Society for Microbiology North Central Branch. ***Awarded 1st place in poster competition!***

August 2018: Jacy Jordahl, Jewel Lee (McNair Scholar), and Thomas Lerdall. Putative Heavy Metal Transporter Expression in *Caulobacter crescentus.* CURI Research Symposium.

May 2018: Tram Bui, Laura Hurtado, Nathan Meshbesher. Honor's Day Symposium. "pSuc is a tunable promoter responsive to sucrose levels in *Caulobacter crescentus*".

May 2018: Christine Lee Fatt, Jenna Richter, Sam Waddell, Dua Vang. Honor's Day Symposium. "*Optimizing the Quantification of Biofilm Production".*

November 2017: Nathan Meshbesher. Midstates Consortium of Math and Science. *Exploring TonB Dependent Sucrose Transport in Caulobacter crescentus.*

May 2017: Sam Modrak. MN Academy of Sciences. "Carb-Loading Bacteria: Investigating Role of Three Putative Carbohydrate Transporters in *Caulobacter crescentus*".

May 2017: Meryl Nath and Nathan Meshbesher. Honor's Day. "Exploring TonB-dependent Sucrose Transport in *Caulobacter crescentus*".

May 2016: Mattie Melin. Honor's Day Symposium. "Ton of Sugar: Exploring TonB-dependent Sucrose Substrate Transport in *Caulobacter crescentus".*

April 2015:Miles Smith and Dylan Leonard. Minn Academy of Science. "The Impact of Essential Heavy Metals on the Expression of Three TonB- Dependent Receptors in *C. crescentus".* ***Awarded best poster in the Cell and Molecular Biology category.***

April 2015: Sievhong Pen. Minnesota Academy of Science. "Construction of a Gene Knockout in *C. crescentus"*

Nov. 2013: Petra Hahn, Jonathon Peterson and Lisa Bowers. Midstates Consortium Science Symposium. "Complementation and Characterization of *C. crescentus* mutant **Δ***cc1664"*.

Aug. 2013: Petra Hahn, Heena Joo, and Lisa Bowers. CURI Summer Symposium. "Complementation and Characterization of *C. crescentus* mutant **Δ***cc1664"*.

April 2013: Margret Bradley, Jonathon Peterson, and Lisa Bowers. Honor's Day Symposium. "The role of a putative transcription regulator in *Caulobacter crescentus*."

Nov. 2011:Alexander Aaring, Nora Peterson, Qimeng Gao, and Lisa Bowers. Massachusettes Institute of Technology. IGEM Competition – oral and poster presentation.

Undergraduate Researchers Mentored: 71 students for at least 1 semester (but often several)

St. Olaf College (2022-2024): Kate Zhylinskaya (CURI 2023 through Spring 2024, Nancy Nabahire Ngutete (CURI 2023 through Spring 2024), Jureenna Tway , Charlie Ferguson, Aneeq Mir, Veronica Torres-Bermudez (EMERGE scholar) 2022-2024, Lauren Bitner, Nanna Gailin, Jenny Camacho, Akinna Tyler: (Spring 2023), Marija Corluka (2022-2023), Chloe Traeder (Summer 2022 – CURI, Fall 2022-Spring 2024), Talulah Mitchem (CURI Fall 2020-Spring 2021, Spring 2021, Fall 2021, Spring 2022) Chamee Vang (McNair Fall 2020, Spring 2021, Spring 2022), Emily Carson (IR Spring 2021, Fall 2021, Spring 2022), Weema Madani (CURI Fall 2020-Spring 2021), Ben Jorgenson (IR Spring 2021), Lahiri Naikwad (IR Spring 2021), Charu Ramesh (IR Spring 2021 and Fall 2021), Helen Vu (IR Spring 2021), Ani Tobin (IR-Spring 2020), Liam McBride (IR-Spring 2020), Kathleen Kwon (EMERGE SCHOLAR - IR-Spring 2020, Fall 2020, Spring 2021, Fall 2021, Spring 2022, Summer 2022 – CURI, Fall 2022 IR), Sofia Guzman (IR-Spring 2020), Laurie Balstad (IR-Spring 2020), Trai Nguyen (IS-Jan 2020), Lauren Goldstein (IS-Fall 2019, Jan 2020, and Spring 2020), Zvipo Chisango (IS-Fall 2019 and Jan 2020 and Spring 2020), Philip Shady (IS-Spring 2019), Rediet Erro (IS-Spring 2019), Erin NewRingeisen (Spring 2019, Fall 2019, Spring 2020, Fall 2020, Spring 2021), Daae Ransom (Spring 2019, Fall 2019, Fall 2020, Spring 2021, January 2022), Katie Petersen

(Spring 2019), Stein Acker (Spring 2019 and Spring 2020), Laura Garcia Pimentel (Spring 2019 and Spring 2020), Karim Khalid (IS-Fall 2018); Avisya Mishra (IR-Fall 2018 and IR-Spring 2019), Jenna Richter (Spring 2018, IR-Fall 2018, Spring 2019, Spring 2020); Christine Lee Fatt (Spring 2018, Fall 2018, and Spring 2019, Spring 2020); Jacy Jordahl (CURI-Summer 2018 and IR-Fall 2018); Thomas Lerdall (CURI-Summer 2018); Jewel Lee (**McNair Scholar**) (Summer 2018); Samantha Waddell (Spring 2018); Dua Vang (Spring 2018); Tram Bui (Spring 2018); Laura Hurtado (Spring 2018); Nathan Meshbesher (Spring 2017 and Spring 2018); Meryl Nath (Spring 2017); Anh Tu Phan Doan (Spring 2017); Samantha Modrak (CURI-Summer 2016, IR-Spring 2017), Zoe Hansen (Spring 2016); David Pelligrini (Fall 2015, IR-Spring 2016); Dalena Ngo (Fall 2015); Mattie Melin (Spring 2016); Bailey Kent (Spring 2016); Lauren Bird (Spring 2016), Martha Sudermann (Spring 2015); Anna Mwamasika (IS-Spring 2015); Miles Smith (CURI-Summer 2014, IR-Spring 2015, CURI-Summer 2015); Dylan Leonard (CURI-Summer 2014, CURI-Summer 2015); Allena Pen (**McNair Scholar**) (Summer 2014, IR-Fall 2014); Serina Robinson (**Beckman Scholar**) (IR-Fall 2013, IR-Spring 2015); Petra Hahn (CURI-Summer 2013, IR-Fall 2013, IS-January 2014, IR-Spring 2014); Jonathon Peterson (IR-Spring 2013, IR-January 2014); Heena Joo (CURI Summer 2013-Fall 2013); Margret Bradley (IR-Spring 2013) Grinnell College (2010-2012): Nora Peterson (iGEM Team Summer 2011); Alexander Aaring (iGEM team Summer 2011, MAP-Spring 2012); Qimeng Gao (iGEM team Summer 2011, MAP-Spring 2012); JoJo Ju (MAP-Spring 2012); Andrea Asimeng (MAP-Spring 2012) (IS=Independent study, IR=Independent Research, MAP=Mentored Advanced Project)

Grants Funded:

2024: St. Olaf Professional Development Grant. Imagining a biomolecular science themed first year experience ($2450).

2020: Magnus the Good Award with student Erin NewRingeisen. SCAVENGERS! How a pond organism scavenges for heavy metal ions (And how we might use it to clean up metal contamination) ($2860)

2019: St. Olaf Professional Development Grant. How a pond organism scavenges for heavy metal ions. ($4000)

2019: FaCE grant (co-author). Advancing Undergraduate Microbiology Education: Resolving Student Misconceptions about Microbiology. $10,199.

2017: Professional Development Grant. How bacterial gene expression changes in response to nutrient deprivation. ($2750)

2014: Scavengers! How starving bacteria take up scarce nutrients. St. Olaf College Teaching Released Grant.

Honors, Fellowships, and Awards

2022-2023:	Cassling Faculty Innovation Award
2009-2011**:**	NIH Ruth L. Kirschstein National Research Service Award (Postdoctoral Fellowship)
2004-2005:	Howard Hughes Medical Institute Teaching Fellowship Teaching Fellows Program
2001-2004:	National Institutes of Health Pre-doctoral Fellowship Molecular Biosciences Training Grant

Professional memberships

2008-present:	American Society for Microbiology

Service to the Profession:

2023-2025:	American Society for Microbiology Future Leaders Mentoring Fellowship
2023:	Student poster judge - American Society of Microbiology Annual Meeting
2016:	Student poster Judge - American Society of Microbiology Annual Meeting
Fall 2013:	Reviewer for the Life Sciences Research Proposal program

V. COLLEGE AND COMMUNITY

Contributions of service and leadership to the biology department:

2020-2024:	Faculty advisor to the St. Olaf Molecular Science (StoMols) club
2012-2021:	Faculty advisor to the Tri-Beta Biology Honors Society and Biology club
2013-2016:	Biology Distinction Coordinator
2013-2015:	Biology Capital Equipment Committee
2014:	Faculty Chaperone for Midstates Consortium for Math and Science Symposium
2014-2015:	Biology Tenure-track search committee-Organismal Biologist

College committees:

2021-2024:	Director for Biomolecular Science
2015-present:	Health Professions Committee
2024:	Nursing Tenure Track Hiring Committee
2021-2022:	Academic space committee
2018-2020:	Faculty Life Committee
2015-2016:	Curriculum Committee, New Proposals Subcommittee
2015:	MSCS Tenure Track Search Committee-Mathematical Biologist
2014:	Student Accessibility Services Specialist Hiring Committee

Other contributions to the college:

Presented for CURI – Women in Science talks – Summer 2023
Presented for CURI – Truly terrible talks- Summer 2022
New Faculty Orientation – Leading discussions and lab in the sciences - Summer 2022
Presented to the Board of Regents Academic Affairs Committee on "Engaging Students in the Classroom and Lab" Fall 2021
Hosted Academic Welcome Session for Biomolecular Science First Year Students (Fall '21, '22)
Hosted Sophomore Open House for Biomolecular Science (Fall 2021)
Cassling Award Committee member (Summer 2020 and 2021)
Hosted Two CILA lunches (2020): 1. Academic Freedom 2. Teaching Large Classes
Speaker for Alumni College (2019)
Speaker for Minnesota Private Colleges Week (2017 and 2018)
Mentor to Fulbright Applicants (2018-present)
Guest Lecturer-Exploring Mathematical Biology (2018, 2021-2024)
Guest Lecturer-Biomolecular Sciences Seminar (2013-2019 and 2021-2023)
Guest Lecturer-Science Conversation (2014)
Interviewer for Buntrock scholars (2017)

Contributions to the wider community:

Spring 2024: Leader for Environmental Education Day at Greenvale Park Elementary (GVP)
Spring 2023: Co-leader for Physics Day and Environmental Education Day at GVP
Spring 2022: Board member for Cannon Valley Youth Orchestra
Spring 2019: Lead Break-out Session for Minnesota Biofilm Symposium
Fall 2018: Lecture for the Northfield Science Café (Conversations on the Wonders of Science) titled: How to build a biological machine from simple genetic parts.
Spring 2016: Developed and implemented a Microscopy lab for science day at GVP
Spring 2016: Developed and implemented a the "Microbial Germ Hunting" science unit for Greenvale Park Elementary
Fall 2015: Reading and Math Coach at Greenvale Park Elementary School.