

Curriculum Vitae

Allyn Schoeffler, Ph.D.

Employment

August 2019 – present: Assistant Professor, Loyola University New Orleans

- Earl and Gertrude Vicknair Distinguished Professorship in Chemistry, Fall 2019 – Spring 2022

August 2015 – May 2019: Assistant Professor, Spring Hill College

- Director of the Biochemistry Program

May 2010 - May 2015: Senior Research Associate, full time, working under Dr. Erin Dueber at Genentech, Department of Early Discovery Biochemistry

- Conducted independent research, presented at national conferences, co-authored peer-reviewed publications
- Engaged in multiple collaborative research efforts
- Established working relationships and productive collaborations with small angle X-ray scattering beamlines (ALS and SSRL)

January 2003 - May 2003: Undergraduate Research Associate, full time, working under Dr. Vince LiCata at Louisiana State University

August 1998 - December 2002: Undergraduate Lab Assistant, part time, working under Dr. Vince LiCata at Louisiana State University

Education

2009: Ph.D. in Molecular and Cell Biology, from the University of California, Berkeley, CA

- Mentored multiple undergraduates, first-year graduate students and high school students
- Engaged in multiple collaborations
- Award-winning teaching assistant

2002: B.S. in biochemistry with minors in chemistry, English and French, from Louisiana State University, Baton Rouge, LA (summa cum laude, with college honors)

- Engaged in extensive undergraduate research
- Mentored incoming students

1998: High School Diploma, Ponchatoula High School, Ponchatoula, LA (valedictorian)

Grants & Funding

at Loyola

principal investigator – external

- 2025: NASA EPSCoR / Louisiana Space Grant Consortium Travel Awards Program
 - **\$1600** to support student conference attendance
- 2024: Louisiana Biomedical Research Network (Full Project), funding by the NIH: Molecular specificity determinants in erythromycin resistance methyltransferases
 - **\$200,000** over two years
 - Salary, teaching releases, equipment, supplies, travel
 - 6 person-months per year
- 2020: Louisiana Board of Regents Research Competitiveness Subprogram Award 081A-20: Molecular determinants of specialization in bacterial topoisomerases from extreme environments.
 - **\$89,424** over three years
 - Start date: June 1, 2020; end date: June 30, 2023
 - Person-months: 1 per year, 2020 – 2023

principal investigator – internal

- 2025: Kent-Mullahy Endowment, Loyola University New Orleans
 - Funds to support the acquisition of biochemical reagents to perform site-directed mutagenesis, supporting student summer research projects.
 - **\$1200**
- 2025: DeKernion Undergraduate Research Grant, Dept. of Biological Sciences, Loyola University New Orleans
 - Travel funds for Biology undergraduates
 - **\$4000**
- 2024: Kent-Mullahy Endowment, Loyola University New Orleans
 - Funds to support student attendance at the National Meeting of the American Chemical Society in New Orleans, LA
 - **\$1143**
- 2023 Kent-Mullahy Endowment, Loyola University New Orleans
 - Funds to support travel and poster presentation at the Annual Meeting of the Gibbs Society of Biological Thermodynamics (Carbondale, IL)
 - **\$1200**

- 2022: Kent-Mullahy Endowment, Loyola University New Orleans
 - Funds to pay an undergraduate researcher during the summer, to work on a project investigating DNA synthesis enzyme in cold-dwelling bacteria.
 - **\$1200**
- 2019: Dean's Travel Fund, Loyola University New Orleans

Travel funds for presentation at a meeting with an undergraduate

 - **\$1200**
 - Unused due to COVID-19 pandemic travel restrictions

collaborator – external

- 2023: Equipment MRI: Track 1: Acquisition of a MALDI-TOF-TOF Mass Spectrometer with TOF/TOF Capabilities
 - Principal investigator: Scott Grayson, Tulane University
 - **\$490,000** for purchase of major instrumentation (MALDI mass spectrometer)
- 2022: RaMP (Research and Mentorship Postbac): The Louisiana Graduate Network in Applied Evolution (LAGNiAppE) to strengthen regional connections and broaden the STEM workforce.
 - \$2,999,753 over five years for the entire multi-institution program; **\$12,000** accessible per year by AJS.
 - Listed as senior personnel
 - Program manager: John Barthell, Louisiana State University
- 2021: Louisiana Board of Regents Departmental Enhancement Subprogram Award 059ENH-21: LCMS instrumentation for enhancing analytical capabilities and training.
 - Principal investigator: Dr. CJ Stephenson
 - **\$198,962** to purchase instrumentation
 - Listed as a co-principal investigator
- 2020: NASA 19-EXO19-0096: Salty and Cold: Protein Function and Structure in the Cryosphere
 - Principal Investigator: Dr. Vince LiCata, Louisiana State University
 - Listed as a co-investigator
 - Provides **\$13,500** in funding for one year to AJS, which supports undergraduate researcher wages, travel and supplies. (Total grant amount: \$124,999 over one year.)
 - Person-months: 0.3 in 2021

prior to Loyola

principal investigator – internal

- 2016: Spring Hill College Faculty Development Grant, Structure and Function of Cold-Tolerant Proteins
 - **\$1000** (supplies)
- 2016: Spring Hill College Department of Chemistry Summer Research Grant, Structure and Function of Cold-Tolerant Proteins
 - **\$2250** (salary)
 - Mentored three undergraduates during a summer-long project

collaborator – external

- 2018: NSF-CHE 1828078, MRI: Acquisition of a Single Crystal X-Ray Diffractometer for Structure Determination and Diffuse Scattering on Small Molecules, Macromolecules, and Materials
 - Principal Investigator: Dr. Elizabeth Papish, University of Alabama, Tuscaloosa
 - Listed as a collaborator, granting me access to the instrument
- 2018: NIH-AREA 1R15AI131159-01A1, Structure and Mechanism of Erythromycin Resistance Methyltransferases
 - Subcontract to Spring Hill College of **\$52,826** over 3 years; **transferred to Loyola in 2019**
 - Principal investigator Dr. Jack Dunkle, University of Alabama, Tuscaloosa
 - Funding provides for travel, salary, and undergraduate research at UA
 - Start date:
 - Person-months: 1 per year

Selected Honors

at Loyola

2025: Alpha Sigma Nu, Honorary Member, Loyola University New Orleans

prior to Loyola

2018: St. John Berchmans Award, Spring Hill College
(for excellence in teaching; one awarded each year college-wide)

2017: Teacher of the Year, Spring Hill College
(one awarded each year college-wide)

2012: Key Researcher Award, Genentech
(for significant contributions toward company research goals)

2007: Outstanding Graduate Student Instructor, Department of Molecular and Cell Biology, UC Berkeley
2003: National Science Foundation Graduate Research Fellowship recipient
2003: Outstanding Undergraduate Thesis in the Natural Sciences Award, Louisiana State University
2003: Outstanding Senior in Biochemistry, Louisiana State University
2002: Outstanding Senior in the Honors College, Louisiana State University
2002: Phi Beta Kappa, Louisiana State University
2001: Goldwater Fellowship
2001: Phi Kappa Phi, Louisiana State University
1999: Honorable Mention in Poetry Division of the Louisiana Association for College Composition
1999: 1st place in Personal Essay Division of the Louisiana Association for College Composition
1998: National Merit Scholar

Professional Training & Development

at Loyola

- 2023: National Science Foundation (NSF) grant development workshop
- Attended an invitation-only, NSF-hosted workshop on grant development
- 2023: Enhancing Science Courses by Integrating Python (ESCIP) workshop
- Attended a workshop for faculty on integrating Python into undergraduate science courses.
- 2020: teaching & Learning in the Diverse Classroom, faculty workshop delivered by CornellX
- Audited online workshop on diversity, equity, and inclusion in college classrooms

prior to Loyola

- 2018: Writing Across the Curriculum (WAC) Faculty Workshop, University of South Alabama
- Certificate based on online course completion
- 2017: Ignatian Seminar, Spring Hill College
- A yearlong seminar on Ignatian identity, led by Fr. Greg Lucey, S.J., Chancellor
 - Participant (in 2016-2017), guest speaker (in 2018)
- 2011: EMBL Practical Course on Solution Scattering from Biological Macromolecules. Oct. 25-Nov. 1, 2010, Hamburg, Germany.
- A professional training course on small-angle X-ray scattering

2007: Elective graduate coursework, MCB290i: Inquiry-Driven Course Design, University of California, Berkeley, CA

- A teaching methods course on curriculum development, taught by Dr. Martin Covington

2007: Elective graduate coursework, IB304: Science Communication (audited), University of California, Berkeley, CA

- A course on best practices and techniques for communicating science to the public, taught by Dr. Mimi R. Koehl

Teaching Experience

at Loyola

Loyola University New Orleans (August 2019 – present)

Instructor of Record

- **General Chemistry I & II Laboratory** (CHEM A107 & A108)
 - I: F19, II: S20, S21, S22, S24
- **Physical Chemistry I Lecture** (CHEM A306)
 - F19, F20, F21, F22, F23, S25
- **Fundamentals of Biochemistry** (CHEM A375)
 - Developed and achieved approval for new course at Loyola New Orleans
 - F20, F21, F22, F23, F24, F25
- **Biochemistry II Lecture** (CHEM A401)
 - S20
- **Biochemistry I Laboratory** (CHEM A402)
 - Conducted a full course redevelopment
 - S20, S21, S22, S23, S24, S25
- **Chemistry Seminar** (CHEM A486)
 - Introductory course for first-year students
 - Conducted a full course redevelopment
 - F21, S22, F22, S23, F23, S24, F24, F25
- **Special Topics in Chemistry: Drug Discovery** (CHEM A490)
 - S21, S23
- **Chemistry Capstone** (CHEM A493)
 - Conducted a full course redevelopment
 - F20, F21, S22, F22, S23, F23, S24, F24, F25

Guest Lectures

- **Introduction to Healthcare Professions** (PHEA-A110)
 - Course Instructor: Brad Rhines
 - Invited to give a guest lecture on careers in basic research and healthcare
 - S23, S24

University of South Alabama

- **DREAM/SMPS program**
 - MCAT preparation course (focus on chemical and biochemical foundations)
 - Taught multiple sessions to a group of select students in the Diversity Recruitment and Enrichment for Admission into Medicine (DREAM) and South Med Prep Scholars (SMPS) programs
 - Su19, Su20, Su21, Su22, Su23

prior to Loyola

Spring Hill College (August 2015 – May 2019)

- **Biophysical Chemistry Lecture & Lab** (CHM 422 & 424)
 - Developed and taught in conjunction with the University of South Alabama
 - S17, S18
- **Biochemistry I & II Lectures & Lab** (CHM 461, 462, & 464)
 - I: F15, F16, F17, F18
 - II: S17, S19
 - L: F15, F16, F17, F18, S19, F19
- **Drug Discovery** (CHM 466)
 - Developed as an upper level elective for science majors
 - Received the first *Integrations* designation of any science course at Spring Hill College, a designation indicating substantial incorporation of interdisciplinary topics in philosophy and ethics.
 - S16, S18
- **Introduction to General Chemistry** (CHM 110)
 - Developed for non-majors and majors with a weak high school chemistry background
 - S16
- **General Chemistry Lab I & II** (CHM 113 & 114)
 - I: F17, F18; II: S16, S19
- **Senior Seminar** (CHM 492)
 - Semester-long, mentored, literature-based student research project
 - Culminates in a 20-page paper and a 30-minute presentation
 - S16, S17, S18, S19
- **Terrorism** (IDS 394)
 - Member of an interdisciplinary teaching team
 - S18
- **Ethics in the Anthropocene** (THL 390)
 - Frequent guest lecturer for Dr. Matthew Bagot, Department of Philosophy
 - Assisted in course design & text selection
 - S18
- **Data Techniques for the Sciences** (MTH 220)
 - Taught in collaboration with Dr. Jonathan Dunbar, Dept. of Mathematics
 - Combines python coding with data science techniques
 - Includes a service-learning component in which undergraduates mentor local high school students through game coding projects
 - S19

The Prison University Project at San Quentin Prison, California

- **Introduction to the Natural Sciences: Biology**, Head Instructor (May 2006 - July 2006)
 - Developed a new introductory biology curriculum with a co-teacher
 - Taught approximately 30 student inmates
- **Remedial Math**, Instructor (April 2005 – April 2006)
 - Tutored a fluctuating class of student inmates in basic math skills

University of California, Berkeley

- **Biochemistry & Molecular Biology** (MCB 110), Teaching assistant (January 2005-May 2006)
- **Biochemistry & Molecular Biology Lab** (MCB 110L), Teaching assistant (August 2004-December 2004)

Mentorship of Undergraduate Student Research Projects (selected)

at Loyola

Undergraduate theses mentored

(**indicates University Honors designation; * indicates Departmental Honors designation)

- **Ana Castillo (co-mentored with Omar El Khatib, Computer Science, 2025), *Classification of Thermophilic, Psychrophilic, and Mesophilic Proteomes Using Machine Learning Alongside Bioinformatics*
- ***Rowan Sawyer (Biological Sciences, 2025), *Investigation of Supercoiling Activity by a Mesophilic Gyrase Variant with a Psychrophilic Modification*
- *Lily Manzi (co-mentored with Anna Duggar, Biochemistry, 2025), *The Use of Chemical Denaturation as a Tool for Understanding Protein Stability and Ligand Binding: Applications to Forensic Chemistry and Protein Engineering*
- *Trinity Martin (Biological Sciences, 2024), *Local Amino Acid Enrichment Patterns in DNA Gyrase and Their Proposed Role in Temperature Specialization in Extremophilic Homologs*
- *Isabela Leano (Biological Sciences, 2024), *An Analysis of Extremophilic Protein Adaptation via Local Enrichments Using DNA Gyrase as a Model System*
- *Baylee Robichaux (Biological Sciences, 2023), *Determinants of Erythromycin Resistance Methyltransferase Specificity Investigated Using Bioinformatics and Random Mutagenesis*
- ***Amber Byrd (Biochemistry, 2022), *An Understanding of Extremophilicity through the Model System Gyrase*
- *Alyce Fields (Biochemistry, 2022), *Molecular Adaptations in Psychrophilic DNA Polymerase I*
- *Yasmeen Kahn (Biological Sciences, 2020), *Structural and Genomic Analysis of KsgA Methyltransferase in Understanding rRNA Binding Specificity*
- *Vy Nguyen (Biological Sciences, 2020), *Bioinformatic Identification of Clinically and Functionally Important Sequence Elements in Erm Proteins*

Departmental Capstone projects mentored

(**indicates University Honors designation; * indicates Departmental Honors designation)

- ***Carlos Villalobos Galindo (Biochemistry, 2025), *Cryomicroscopy for Analyzing Cryopreservation Efficiency with Spherical Polysaccharide Nanoparticles*
- Tori Johnson (Biochemistry, 2025), *Investigating Amino Acids Responsible for Protein Stability in Cold Dwelling Organisms*
- Emma Fahy (Biochemistry, 2025), *Curcumin as a Natural Remedy: Naturally Derived Substance Used in Traditional Medicine Can Have Substantial Therapeutic Benefits*

- Amya Snowden (Biochemistry, 2025), *Role of OspA and OspC in Borrelia burgdorferi Transmission: Characteristics of Host Interactions and Immune Evasion*
- Chioma Nwagbara (Forensic Chemistry, 2025), *Microcrystalline Testing on Kratom (Mitragynine) and Stimulant Drugs Using Gold Chloride*
- Gabriela Telles (Biochemistry, 2025), *The Gut Microbiota: Innovative Approaches to Treating Neurological Disorders*
- Emma Pond (Biochemistry, 2025), *Mechanisms of and Predictive Methods for Drug-Induced Liver Injury*
- Jenna Copes (Biochemistry, 2025), *TET1 Plays a Protective Roles in Alcoholic Liver Disease Progression by Inhibiting the Activation of Necroptosis Pathway in Hepatocytes*
- Stefano Olmeda Rivera (Biochemistry, 2024), *The Mesenchymal Stem Cel and the Artificial Stem Cell System: A Possible Alternative to Stem Cell Treatment*
- Hallie Cao (Biochemistry, 2024), *Chitosan and Its Use Against Antibiotic Resistant Bacteria*
- Hailee Griffin (Biochemistry, 2024), *Antibiotic Resistance in Topoisomerase II Topology*
- Francesca Salerno (Forensic Chemistry, 2024), *How We Can Make Cosmetics Safer: Natural vs. Traditional Beauty Products*
- ***Rachel Berzas (Forensic Chemistry, 2024), *Optimization of the Innogenomics InnoXtract Kit for Forensic Rootless Hair nuDNA Extraction*
- Patricia Matute (Biochemistry, 2023), *Analysis of Wet Textile Processing and the Implementation of Water Effluent Treatment Plants*
- Noel Wolf (Forensic Chemistry, 2023), *The Global Effects of Microplastics*
- *Robert Schuh (Biochemistry, 2023), *Designing a dCas12 CRISPRi Plasmid to Probe for Novel Drug Targets in Pseudomonas aeruginosa*
- Taylor Shabankareh (Chemistry, 2023), *Single-Molecule Magnets and Spintronics*
- Christian Trastoy (Biochemistry, 2023), *Alzheimer's Disease and Some Available Treatment Options*
- Hayden Aubrey (Forensic Chemistry, 2023), *Postmortem Toxicology of Novel Synthetic Opioid U-47700: A Review*
- Apaicha Robinson (Biochemistry, 2023), *The Roles of Sirtuins in Type 2 Diabetes Mellitus*
- *Isabella Andonie (Biochemistry, 2023), *Synthesis of Rhodamine B Derivatives with Chiral Sensing Potentials*
- Gabriela Cuevas (Biochemistry, 2022), *An Analysis of Plastic Production: Comparing Crude-Oil Polyethylene based Plastic with Bacterial Polyhydroxyalkanoates Polyhydroxybutyrate Based Plastics*
- Franco Arenivar (Biochemistry, 2022) *Effects of Environmental Factors on the Antimicrobial Peptide Killing Abilities*
- Ashley Godoy (Biochemistry, 2022), *Targeted Therapies for Stem Cell Use in Heart Regeneration*
- Avery Hill (Chemistry, 2021), *Shedding Light on Photovoltaics and Perovskite Solar Cells*
- Michael Bertrand (Forensic Chemistry, 2021), *Debilitation and Toxicity from Tryptamine Misuse*
- Symone Dowling (Biochemistry, 2021), *Don't Touch My Crown: How Chemical Straightening Damages Black Women's Curl Pattern*
- Fatima Hasbun (Biochemistry, 2021), *Absorption, Distribution, Metabolism, and Excretion of N,N-Dimethyltryptamine*
- Jorri Mosby (Biochemistry, 2021) *The Hippies Were Right: Plant Secondary Metabolites*
- Sam Vasquez (Biochemistry, 2021), *Erythropoietin: A Case Study in the Battle between Doping and Detection in Sport*
- Marietta Wolfe (Forensic Chemistry, 2021) *Explosions: Thermochemistry and Kinetics*
- Maryann Yacoub (Biochemistry, 2021), *Antibiotic Resistance and Antimicrobial Peptides: Assessing the Activity of Cationic AMPs in Different Environments*
- Cynthia Hernandez (Biochemistry, 2020), *CGRP-based Migraine Therapeutics*
- Jared Chan (Biochemistry, 2020), *Quantifying Primary Subtidal Riverine Microenvironments Exposed to Varying Light Regimes*
- Nicholas Milosch (Biochemistry, 2020), *Catalytic Investigation of Au₁₀₂(p-MBA)₄₄ and Au₁₄₄(p-MBA)₆₀ Using Model Reduction*

Service

at Loyola

Service to the Community

- Posters at the Capitol, Loyola “point person” for the Louisiana Undergraduate Research Association (LaURA), (Summer 2025)
 - **Upcoming:** Bringing Loyola undergraduates to present their research at the Louisiana State Capitol, including two students from my lab and four students from my colleagues’ labs.
- Chemistry demonstration brought to Holy Name of Jesus Elementary School, in conjunction with Loyola Student Affiliates of the American Chemical Society (Fall 2019)

Service to the Profession

- Peer Reviewer, *Computational and Structural Biotechnology* (Summer 2025 – present)
- Peer Reviewer, *Current Research in Microbial Sciences* (Spring 2025 – present)
- Editorial Advisory Board *Protein Science* (Fall 2024 – present)
- Panelist: Finding Success at a PUI, 37th Annual Symposium of the Protein Society, Boston, MA (July 13, 2023)
- Panelist: Finding Success at a PUI, 36th Annual Symposium of the Protein Society, San Francisco, CA (2022)
- Gibbs Society of Biological Thermodynamics, Fundraising Committee (2022 - 2023)
- Early Career Researcher Review Board, *Protein Science* (Summer 2022 – Fall 2024)
- Reviewer: Physical Chemistry for the Life Sciences, 2nd ed., by Peter Atkins and Julio de Paula, Oxford University Press.
- Reviewer: Biochemistry, 10th ed., by Jeremy Berg *et. al.*, Macmillan

Service to the University (Loyola University New Orleans)

University Level

- Invited speaker, Alpha Sigma Nu Induction (Spring 2025)
- University Honors Application Review, University Honors Program (Spring 2025)
 - In this role, I reviewed and scored >100 University Honors Program applications
- Interviewer, Ignatian Scholarship (Spring 2025)
 - This process, connected with me role as a member of the University Honors Advisory Board, involved reviewing and scoring approximately 20 scholarship applications and participating in and scoring 16 live video interviews with applicants
- University Honors Program Assessment, University Honors Program (Spring 2024)
 - As part of the program assessment process, I reviewed two semesters of Honors Program Ignatian Colloquium assignments and scored against program student learning outcomes
- Invited speaker, Mission & Identity, Board of Trustees meeting (Fall 2024)

- Search Committee, University Provost (Fall 2024 – Spring 2025)
- Search Committee, Assistant Director of Catholic Studies (Summer 2024)
- Faculty Stakeholder Committee, Presidential Search (2023)
- *Dux Academicus* Award Selection Committee, Loyola University New Orleans (Fall 2021)
- Honors Advisory Board, Loyola University New Orleans (Fall 2020 -)
 - Appointed by the Dean of the College of Arts and Sciences
 - Advise the director of the University Honors Program on matters of curriculum and vision

College Level

- College Election Committee (Fall 2021 – Spring 2024)
 - Chair, Fall 2023 – Spring 2024
- College Curriculum Committee, Loyola University New Orleans (Fall 2019 – Spring 2022)

Departmental Level

- Departmental Recruitment and Retention Committee (Spring 2025 -)
- Search Committee, Department of Chemistry and Biochemistry, Loyola University New Orleans (Fall 2021 – Spring 2022)
 - Chair
 - Led a successful national search for a new tenure-track faculty member
- Departmental Capstone Redevelopment Committee, Department of Chemistry and Biochemistry, Loyola University New Orleans (Fall 2020 – Spring 2025)
 - Chair
 - Led a redesign of the departmental Capstone course sequence
- Departmental DEI Committee, Department of Chemistry and Biochemistry, Loyola University New Orleans (Spring 2021 – Spring 2025)
- Departmental Writing Committee, Department of Chemistry and Biochemistry, Loyola University New Orleans (Fall 2020 -)

Service to Students

- Faculty Advisor, Loyola University New Orleans Women in STEM (WiSTEM) (Spring 2022 -)
- Ongoing: Bioinformatics Workshop for Loyola Undergraduates (2020 -)
 - 24 students mentored so far
- LSU Discover Day “Field Trips”
 - Organized lab and facilities tours (LSU Herbarium, CAMD, career panels) coinciding with LSU Discover Day in Baton Rouge, LA
 - 2023, 2024, 2025

prior to Loyola

Service to the Community

- Invited talk: Dome Head Science at the Gulf Coast Exploreum (3/9/17)
- Invited talks: CRISPR-Cas9 and the Genetic Editing Revolution, at the Thursday Evening Chemistry seminar series for high school students, sponsored by the University of South Alabama Chemistry Department.
 - 3/17/16, 2/9/17
- GEMS (Girls Engaging in Math & Science) demonstration (11/10/18) (DNA extraction from strawberries & building a magnetic DNA model with middle school girls)
- Chemistry demonstrations brought to Mary B. Austin elementary school (2/1/17)
- Chemistry demonstrations brought to Azalea City Montessori elementary school (3/3/17)
- Science Olympiad Protein Folding event (organization & judging with undergraduate student participation) (3/5/16)

Service to the University (Spring Hill College)

University Level

- Educational Technology Committee, Spring Hill College (Summer 2016 – Spring 2019)
 - Participated in the selection and deployment of a new college-wide learning management system
 - Served as chair (2017-2018)
 - Served as Secretary (2018-2019)
- Interdisciplinary Studies Committee, Spring Hill College (Fall 2015 – Spring 2019)
 - Developed a new interdisciplinary studies program integrating the sciences and the humanities
- Academic Standards Committee, Spring Hill College (Fall 2017 – Spring 2019)
 - Initiated a project to study the feasibility of test-optional admissions policies
- Upward Bound Grant Committee, Spring Hill College (Fall 2016)
 - Participated in grant-writing and data analysis
 - Served as secretary
- Mission Priorities Examen Steering Committee, Spring Hill College (Fall 2017 – Spring 2019)
 - Participated in a college-wide reflection on institutional priorities and effectiveness in the context of the college's Jesuit mission.
 - Contributed to the writing and editing of committee documents

Publications

at Loyola

Articles (peer-reviewed)

Schoeffler, A.J. Full Integration of Python into the Physical Chemistry (Thermodynamics and Kinetics) Curriculum. (2025) *Engaging Students in Physical Chemistry*, vol. 2, ACS Books, ****in press****

Hill, E.; *Hill, A.*; *Voisin, E.*; *Byrd, A.*; **Schoeffler, A.J.** Localized amino acid enrichment as a tool for understanding protein extremophilicity. (2025) *Proteins: Structure, Function, Bioinformatics*, **93**:702-715. <https://doi.org/10.1002/prot.26760> (***Loyola undergraduate co-authors***)

Paraan, M.; Nasef, M.; Chou-Zheng, L.; Khweis, Sarah A.; **Schoeffler, A.J.**; Hatoum-Aslan, A.; Stagg, S.M.; Dunkle, J.A. The structure of a Type III-A CRISPR-Cas effector complex reveals conserved and idiosyncratic contacts to target RNA and crRNA among Type III-A systems. (2023) *PLoS One* 1-27.

Schoeffler, A.J.; Helgason, E.; Popovych, N.; Dueber, E.C. Diagnosing and mitigating method-based avidity artifacts that confound polyubiquitin-binding assays. (2021) *Biophysical Reports* **1**: 1-12.

Sharkey, R.E.; Herbert, J.B.; McGaha, D.A.; *Nguyen, V.*; **Schoeffler, A.J.**; Dunkle, J.A. Three critical regions of the erythromycin resistance methyltransferase, ErmE, are required for function supporting a model for the interaction of Erm family enzymes with substrate rRNA. (2021) *RNA* **28**: 210-226. (***Loyola undergraduate co-author***)

Oral Presentations & Invited Seminars

Schoeffler, A.J. Erythromycin Resistance Methyltransferases: Using Bioinformatics and Biochemistry to Understand Antibiotic Resistance at the Molecular Level. *Louisiana State University, Department of Chemistry, Macromolecular Division Seminar Series*, Fall 2025 (September 19, 2025)

Invited Speaker

Schoeffler, A.J. Erythromycin Resistance Methyltransferases: Using Bioinformatics to Understand Antibiotic Resistance at the Molecular Level. *Tulane School of Medicine, Department of Biochemistry and Molecular Biology Seminar Series*, Spring 2025

Invited Speaker

Schoeffler, A.J. Using the SWiCAM analysis tool to uncover differential enrichments in partition multiple sequence alignments. *Wichita State University, Biochemistry Lab CURE* taught by Professor Moriah Beck, Spring 2024

Invited Lecturer

Schoeffler, A.J. Erythromycin resistance Methyltransferases: Using Biochemistry and Bioinformatics to Understand Antibiotic resistance at the Molecular Level, *Loyola University New Orleans Biology Seminar Series*, Spring 2024.

Invited Speaker

Schoeffler, A.J. Substrate Selectivity in RNA Methyltransferases: Using Bioinformatics to Uncover Determinants of Methyltransferase-driven Antibiotic Resistance. *Louisiana State University Biology Seminar Series*, Fall 2023.

Invited Speaker

Schoeffler, A.J. Structure-function studies of bacterial thermophilic, mesophilic and psychrophilic type IIA topoisomerases. *Loyola University New Orleans Biology Seminar Series*, Fall 2019.

Invited Speaker

Schoeffler, A.J. and Dunkle, J.A. Substrate Specificity of Erythromycin Resistance Methyltransferases. *Loyola University New Orleans Chemistry Seminar Series*, Fall 2019

Invited Speaker

Schoeffler, A.J. and Dunkle, J.A. Substrate Specificity of Erythromycin Resistance Methyltransferases. *Southeast Regional Biophysical Consortium*, June 3-4, 2019.

Poster Presentations

Yerger, E.; Otero, J.; Mújica, H.; Lamy, C.; and **Schoeffler, A.J.** Mutagenesis of Erythromycin Resistance Methyltransferase E (ErmE) to Determine Erythromycin Resistance Specificity. *Summer Undergraduate Research Forum*, Louisiana State University, Baton Rouge, LA, August 1, 2025.

(student poster)

Yerger, E.; Otero, J.; Lamy, C.; Mújica, H. and **Schoeffler, A.J.** Mutagenesis of Erythromycin Resistance Methyltransferase E to Uncover Molecular Determinants of Resistance Specificity. *39th Annual Symposium of the Protein Society*, San Francisco, CA, June 2025.

(student poster)

Snowden, A.; Barnum, J.; Sawyer, R. and **Schoeffler, A.J.** Bioinformatic Identification of Specialization Hot Spots in Extremophilic DNA Gyrase Homologs. *39th Annual Symposium of the Protein Society*, San Francisco, CA, June 2025.

(student poster)

Barnum, J.; Snowden, A.; sawyer, R.; Littleton, T.; Leano I.; Martin, T. and **Schoeffler, A.J.** Temperature Dependence of *E. coli* Gyrase Supercoiling Activity. *39th Annual Symposium of the Protein Society*, San Francisco, CA, June 2025.

(student poster)

Johnson, T.; Gilbert, L.; Kye, A.; Ingles, N.; Bergman, N. and **Schoeffler, A.J.** Investigating Amino Acids Responsible for Protein Stability in Cold Dwelling Organisms: DNA Polymerase 1 as a test case. *39th Annual Symposium of the Protein Society*, San Francisco, CA, June 2025.

(student poster)

Manzi, L.; **Schoeffler, A.J.** and Duggar, A. Creating an Open-Source Python Nonlinear Fitting Program to Analyze Complex Protein Denaturation Data. *Posters at the Capitol*, Baton Rouge, LA, June 9, 2025

(student poster)

Yerger, E.; Otero, J.; Lamy, C.; Mújica, H. and **Schoeffler, A.J.** Mutagenesis of Erythromycin Resistance Methyltransferase E to Uncover Molecular Determinants of Resistance Specificity. *Posters at the Capitol*, Baton Rouge, LA, June 9, 2025

(student poster)

Snowden, A. and **Schoeffler, A.J.** Protein Purification of Extremophilic DNA Topoisomerase. *LSU Discover Day*, Baton Rouge, LA, April 2025.

(student poster)

Sawyer, R.; Anguiano Cruz, R. and **Schoeffler, A.J.** Investigation of Supercoiling Activity by a Mesophilic Gyrase Variant with a Psychrophilic Modification. *LSU Discover Day*, Baton Rouge, LA, April 2025.

(student poster)

Johnson, T.; Gilbert, L.; Kye, A.; Ingles, N.; Bergman, N. and **Schoeffler, A.J.** Investigating Amino Acids Responsible for Protein Stability in Cold Dwelling Organisms: DNA Polymerase 1 as a test case. *LSU Discover Day*, Baton Rouge, LA, April 2025.

(student poster)

Yerger, E.; Otero, J.; Lamy, C.; Mújica, H. and **Schoeffler, A.J.** Mutagenesis of Erythromycin Resistance Methyltransferase E to Determine Erythromycin Resistance. *LSU Discover Day*, Baton Rouge, LA, April 2025.

(student poster)

Coldwell, A.; **Schoeffler, A.J.** and Brown, J.M. Convergent evolution of amino acid frequencies in a critical enzyme of extremophilic bacteria. *3rd Joint Congress on Evolutionary Biology*, Montreal, QC, CA, July 26-30, 2024.

(student poster)

Coldwell, A.; **Schoeffler, A.J.** and Brown, J.M. Convergent evolution of amino acid frequencies in a critical enzyme of extremophilic bacteria. *LSU Discover Day*, Baton Rouge, LA, April 2024.

(student poster)

Martin, T. and **Schoeffler, A.J.** Local amino acid enrichment patterns in DNA gyrase and their predicted role in temperature specialization bin extremophilic homologs. *LSU Discover Day*, Baton Rouge, LA, April 2024.

(student poster)

Malatrasi, M, and **Schoeffler, A.J.** Bioinformatic-Guided Mutagenesis of Erythromycin Resistance Methyltransferases to Discover Specificity-Determining Regions. *LSU Discover Day*, Baton Rouge, LA, April 2024

(student poster)

Manzi, L. and **Schoeffler, A.J.** Using Python to Create a Linear Extrapolation Fitting Code to Analyze Experimental Protein Denaturation Data. *LSU Discover Day*, Baton Rouge, LA, April 2024

(student poster)

Schoeffler, A.J. P-Chem + Python: Fully integrating end-user programming skills into the chemical thermodynamics & kinetic curriculum. *National Meeting of the American Chemical Society*, New Orleans, LA, March 2024.

Martin, T. and **Schoeffler, A.J.** Local amino acid enrichment patterns in DNA gyrase and their predicted role in temperature specialization bin extremophilic homologs. *National Meeting of the American Chemical Society*, New Orleans, LA, March 2024.

(student poster)

Malatrasi, M, and **Schoeffler, A.J.** Bioinformatic-Guided Mutagenesis of Erythromycin Resistance Methyltransferases to Discover Specificity-Determining Regions. *National Meeting of the American Chemical Society*, New Orleans, LA, March 2024.

(student poster)

Leano, I. and **Schoeffler, A.J.** An analysis of extremophilic protein adaptation *via* local enrichments using DNA gyrase as a model system. *National Meeting of the American Chemical Society*, New Orleans, LA, March 2024.

(student poster)

Voisin, E.M.; Cortes Morales, L; Fields, A.; **Schoeffler, A.J.** Global vs. Local Specialization: An examination of the divergence in overall vs. clustered amino acid enrichments in extremophilic DNA polymerase I homologs. *37th Annual Meeting of the Gibbs Society for Biological Thermodynamics*, Carbondale, IL, October 2023.

(student poster)

Voisin, E.M.; Cortes Morales, L; Fields, A.; **Schoeffler, A.J.** Global vs. Local Specialization: An examination of the divergence in overall vs. clustered amino acid enrichments in extremophilic DNA polymerase I homologs. *37th Annual Symposium of the Protein Society*, Boston, MA, July 2023.

(student poster)

Voisin, E.M. and **Schoeffler, A.J.** Bioinformatic Analysis of Enzymes in the Synthetic Carbon capture Cycle CETCH. *LSU Discover Day*, Baton Rouge, LA, April 2023.

(student poster)

Cortes Morales, L; Fields, A.; **Schoeffler, A.J.** A Bioinformatic Pipeline for the Detection of Amino Acid Enrichments in Three Dimensions: A Case Study of DNA Polymerase I. *LSU Discover Day*, Baton Rouge, LA, April 2023.
(student poster)

Martin, T. and **Schoeffler, A.J.** Bioinformatic Analysis of Extremophilic Gyrase Homologs. *LSU Discover Day*, Baton Rouge, LA, April 2023.
(student poster)

Cortes Morales, L; Fields, A.; **Schoeffler, A.J.** A Bioinformatic Pipeline for the Detection of Amino Acid Enrichments in Three Dimensions: A Case Study of DNA Polymerase I. *Southwest Regional Meeting of the American Chemical Society*, Baton Rouge, LA, November 2022.
(student poster)

Robichaux, B.; Mintken, J.K.; Khan, Y., Dunkle, J.A.; **Schoeffler, A.J.** Bioinformatic Analyses of Paralogous RNA Methyltransferases Reveal Determinants of Substrate Specificity in ErmE. *Southwest Regional Meeting of the American Chemical Society*, Baton Rouge, LA, November 2022.
(student poster)

Schoeffler, A.J.; Hill, E.; Hill, A. SWiCAM (sliding window comparative alignment metrics): An open-source program for visualizing differential amino acid enrichments across subsets of homologous protein families. *36th Annual Symposium of the Protein Society*, San Francisco, CA, July 2022.

Byrd, A.; **Schoeffler, A.J.** Bioinformatic Analysis of GyrB Genes Reveals Localized Differential Enrichments in Psychrophiles and Thermophiles. *36th Annual Symposium of the Protein Society*, San Francisco, CA, July 2022.
(student poster) **Outstanding Undergraduate Poster Award Winner

Cortes Morales, L.; Fields, A.; **Schoeffler, A.J.** A Bioinformatic Pipeline for the detection of Amino Acid Enrichments in Three Dimensions: A Case Study of DNA Polymerase I. *36th Annual Symposium of the Protein Society*, San Francisco, CA, July 2022.
(student poster) **Outstanding Undergraduate Poster Award Winner

Mintken, J.K.; Dunkle, J.A.; **Schoeffler, A.J.** Bioinformatic Analyses of Paralogous RNA Methyltransferases Reveal Determinants of Substrate Specificity. *36th Annual Symposium of the Protein Society*, San Francisco, CA, July 2022.
(student poster)

Littleton, T. M.; **Schoeffler, A.J.** Extremophilic Specialization in Bacterial Topoisomerases Revealed through Bioinformatic Analyses. *36th Annual Symposium of the Protein Society*, San Francisco, CA, July 2022.
(student poster)

Gonzalez, A.; **Schoeffler, A.J.** and Brown, J.M. Evolution of type IIA topoisomerases in extremophilic bacteria. *Evolution*, Cleveland, OH, June 24-28, 2022.
(student poster)

Gonzalez, A.; **Schoeffler, A.J.** and Brown, J.M. Evolution of type IIA topoisomerases in extremophilic bacteria. *LSU Discover Day*, Baton Rouge, LA, April 2022.
(student poster)

Mintken, J.K.; Khan, Y.; Dunkle, J.A.; **Schoeffler, A.J.** Bioinformatic Analyses of Paralogous RNA Methyltransferases Reveal Determinants of Substrate Specificity. *LSU Discover Day*, Baton Rouge, LA, April 2022.
(student poster)

Schuh, R. Dunkle, J.A.; **Schoeffler, A.J.** Biochemical Analyses of Erythromycin Resistance Methyltransferase (Erm) Mutations Reveal Three Crucial Regions for Function. *LSU Discover Day*, Baton Rouge, LA, April 2022.
(student poster)

prior to Loyola

Articles (peer-reviewed)

Wertz, I.E.; Newton, K.; Seshasayee, D.; Saritha, K.; Lam, C.; Zhang, J.; Popovych, N.; Helgason, E.; **Schoeffler, A.J.**; Jeet, S.; Ramamoorthi, N.; Kategaya, L.; Newman, R.J.; Horikawa, K.; Dugger, D.; Sandoval, W.; Mukund, S.; Zindal, A.; Martin, F.; Quan, C.; Tom, J.; Fairbrother, W.J.; Townsend, M.; Warming, S.; DeVoss, J.; Liu, J.; Dueber, E.C.; Capalzi, P.; Lee, W.P.; Goodnow, C.C.; Balazs, M.; Yu, K.; Koluman, G.; Dixit, V.M. Phosphorylation and Linear Ubiquitin Direct A20 Inhibition of Inflammation. (2016) *Nature* **528**: 370-375.

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Phillips, A.H.; **Schoeffler, A.J.**; Matsui, T.; Weiss, T.M.; Blankenship, J.W.; Zobel, K.; Giannetti, A.M.; Dueber, E.C. Internal motions prime cIAP1 for rapid activation. (2014) *Nature Structural and Molecular Biology* **21**: 1068-1074.

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Vos, S.M.; Lyubimov, A.Y.; Hershey, D.M.; **Schoeffler, A.J.**; Sengupta, S.; Nagaraja, V.; Berger, J.M. Direct control of type IIA topoisomerase activity by a chromosomally encoded regulatory protein. (2014) *Genes & Development* **28**: 1485-1497.

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Oral Presentations & Invited Seminars

Schoeffler, A.J. Structure-function studies of bacterial thermophilic, mesophilic and psychrophilic type IIA topoisomerases. *Mississippi Regional Biophysical Consortium*, Baton Rouge, LA, May 24-25, 2017.

Schoeffler, A.J.; Phillips, A.H.; Matsui, T.; Weiss, T.M.; Blankenship, J.; Zobel, K.; Giannetti, T.; Dueber, E.C.; Fairbrother, W.J. Internal motions prime cIAP1 for rapid activation. *Mississippi Regional Biophysical Consortium*, Starkville, MS, May 23-25, 2016.

Schoeffler, A.J.; Phillips, A.H.; Matsui, T.; Weiss, T.M.; Dueber, E.C.; Fairbrother, W.J. SAXS reveals the activation mechanism of a critical cell death switch. *Stanford Synchrotron Radiation Lightsource Workshop on Small-Angle X-ray Scattering and Diffraction Studies in Structural Biology*, South San Francisco, CA, March 29, 2015.

Invited Speaker

Schoeffler, A.J.; Phillips, A.H.; Matsui, T.; Weiss, T.M.; Dueber, E.C.; Fairbrother, W.J. The dynamics of cIAP1 are precisely tuned for rapid activation. *Keystone Symposium: Frontiers of Structural Biology*, Snowbird, UT, March-April 2014.

Schoeffler, A.J.; Helgason, E.; Wertz, I.; Dueber, E. Bridging Artifacts in Octet Measurements: Detecting Them, Avoiding Them, and Compensating for Them. *ForteBio Workshop: Label-Free Assays for Protein Characterization, Biopharmaceutical Development and Bioprocessing*. Multiple presentations: April 2013 (South San Francisco, CA), June 2013 (South San Francisco, CA), March 2014 (Houston, TX)

Invited Speaker

Schoeffler, A.J. Dueber, E.C.; Lingel, A.; Elliott, J.M.; Fedorova, A.V.; Giannetti, A.M.; Zobel, K.; Maurer, B.; Varfolomeev, E.; Wu, P.; Wallweber, H.J.; Hymowitz, S.G.; Deshayes, K.; Vucic, D.; Fairbrother, W.J. cIAP Ubiquitin Ligase Activation via IAP Antagonist-Induced Dimerization. *25th Anniversary Symposium of the Protein Society*, Boston, MA, July 2011

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Yang, X.; **Schoeffler, A.J.** Ionic Effects on Lipid Binding and Stability of Adipocyte Lipid Binding Protein, *14th Annual Gibbs Conference on Biothermodynamics*, Carbondale, IL, October 2000.

Poster Presentations

Bonsutto, J.; DeSousa, L., Koch, R. and **Schoeffler, A.J.** Structure-function relationships in psychrophilic, mesophilic and thermophilic topoisomerases. *68th Southeastern Regional meeting of the American Chemical Society*, Columbia, SC, October 2016.
(student poster)

Schoeffler, A.J.; Phillips, A.H.; Matsui, T.; Weiss, T.M.; Dueber, E.C.; Fairbrother, W.J. The dynamics of cIAP1 are precisely tuned for rapid activation. *Keystone Symposium: Frontiers of Structural Biology*, Snowbird, UT, March-April 2014.

Schoeffler, A.J.; Helgason, E.; Wertz, I.; Dueber, E.C. Bridging Artifacts in Octet Measurements: Detecting Them, Avoiding Them, and Compensating for Them. *Cold Spring Harbor Laboratory Meeting: The Ubiquitin Family*, Cold Spring Harbor, NY, May 2013.

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Other Publications

Undergraduate Honors Thesis: *Protein Folding Studies of Adipocyte Lipid Binding Protein and Homologous Mesophilic and Thermophilic Type I DNA Polymerases*