


CURRICULUM VITAE

PERSONAL INFORMATION

MATTHEW R. CULBERSON, Ph.D.

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OBJECTIVE

To empower the next generation of STEMist through science education in academia/industry to impact and advance society using my research, writing, teaching, and problem-solving expertise as a trained organic chemist and teacher.

EDUCATION

University of Michigan, Ann Arbor

Ph.D. - Organic Chemistry (09/03/2019 – 12/15/2024)

M.S. - Chemistry (09/03/2019 – 12/19/2021)

Cumulative GPA: 3.520

Degree Conferral and Commencement: December 15, 2024 (Sunday)



University of California, Davis (09/19/2013 – 03/23/2018)

B.S. - Biochemistry and Molecular Biology

Chemistry GPA: 3.594

Cumulative GPA: 3.124

Graduated: March 23, 2018 (Friday)



ACADEMIC TEACHING EXPERIENCES and APPOINTMENTS

Chemistry Lecturer, Spelman College, Department of Chemistry and Biochemistry, Atlanta, GA (Aug. 2025 –

Chem. Adjunct Instructor, Emory University Department of Chemistry, Atlanta, GA (Jan. 2025 – Aug. 2025)

Chem. Adjunct Instructor, Agnes Scott College Department of Chemistry, Decatur, GA (Jan. 2025 – Aug. 2025)

Science Teacher (Temp.), Yeshiva Ohr Yisrael, Atlanta, GA (May 2025 – May 2025)

Chem. Adjunct Prof., Kennesaw State University Dept. of Chem. and Biochem., Kennesaw, GA (Aug. 2024 – May 2025)

Graduate Student Instructor, U of M Department of Chemistry (Jan. – May 2021; Aug. – Dec. 2022; Aug – Dec. 2023)

Private Tutor, Organic Chemistry, (Jan. 2022 – Mar. 2023)

Trainee, Graduate Student Tutor Training, University of Michigan Department of Chemistry (Aug. 2020)

Substitute Teacher, Stockton Unified School District (SUSD), Stockton, CA (Feb. 2019 – May 2019)

Biochemistry Instructor, UC Davis Health Systems Prep Médico Program, Sacramento, CA (June – July 2018)

Trainee, MCAT Organic Chemistry Instructor, The Princeton Review, Inc., Berkeley, CA (Oct. – Nov. 2017)

Tutor, Organic Chemistry, UC Davis Academic Assistance and Tutoring Centers, Davis, CA (July 2016 – June 2018)

Tutor, General Chemistry, UC Davis Student Academic Success Center, Davis, CA (June 2014 – June 2018)

TEACHING PHILOSOPHY STATEMENT

“Education is not the learning of facts, but the training of the mind to think.” – *Albert Einstein*. Through my academic career, I have gained tools both as a learner and teacher. My philosophy of education is centered in the idea that each item one learns in life is a brick to one’s path to elevation, and the mortar to those bricks is the emotional connection made to learning. Having positive emotions before, during, and after learning solidify information and give students the opportunity to develop their thinking skills. I focus on how to maximize the use of the mind rather than memorizing facts.

RESEARCH and RELATED EXPERIENCES

Graduate Student Researcher (09/2019 – 11/2024)

Prof. John P. Wolfe, University of Michigan Department of Chemistry

Study: Palladium Catalyzed Alkene Difunctionalization Synthesis and Methodology for Access to a Variety of Natural Products and Drug Targets.

Group Jobs: Website Editor (2020 – 2023), Chemical Safety Officer (2021 – 2022), TLC Stains Manager (2021 – 2024)

Dissertation Title: Cascade Palladium-Catalyzed Stereoselective Synthesis of Polycyclic Nitrogen Heterocycles via Reactions of Allylanilines (<https://dx.doi.org/10.7302/24940>)

Graduate Student Staff Assistant (01/2024 – 04/2024)

Dr. Cherie Dotson, University of Michigan Rackham Graduate School Director of Access and Inclusion

Study: PACE – Partnerships for Access, Community, and Excellence & RMF – Rackham Merit Fellowship

Role: Assist with the planning and implementation of in-person and virtual RMF programming, support all RMF events, provide administrative assistance to programming staff, and organize year-long programming for talented, motivated students with a variety of goals and personal backgrounds from different educational, cultural, linguistic, and geographic backgrounds.

Gilead Sciences, Inc. Intern (05/2023 – 08/2023)

Sean Connel, MBA Associate Director Business Strategy and Operations (Oncology)



Study: Clinical Project Assistant, Clinical Operations Oncology – Technical Intern VI

Role: Execution of all Phase 1-4 clinical trials across therapeutic areas by ensuring that all Gilead clinical trials are performed in accordance with applicable Standard Operating Procedures, company policies, and regulatory guidelines to provide timely and high-quality clinical data that supports global registration and commercialization of Gilead's products. I support other Clinical Operations team members in the start-up, maintenance, and close-out of clinical studies.

Chemistry Research Intern (06/2019 – 08/2019)

Prof. Melanie S. Sanford, University of Michigan Department of Chemistry

Study: Organometallics and Fluorination

Research: Nickel-Catalyzed Decarbonylative α -Arylation using carboxylic acid derivatives as electrophiles for novel cross-coupling reactions.

Chemistry Research Assistant (11/2017 – 12/2018)

Prof. Jared T. Shaw, University of California - Davis Department of Chemistry

Study: Stereoselective Synthesis and Methodology

Research: Synthesizing benzene-fused 6-membered oxygen or nitrogen heterocycles by rhodium-catalyzed C–H insertion to expand the scope of C–H insertion reactions for access to a variety of natural products and drug targets.

Neuroscience Research Assistant (06/2015 – 06/2017)

Prof. Gene G. Gurkoff, UC Davis Center for Neuroscience Department of Neurological Surgery

Study: Traumatic Brain Injury, Epilepsy, and Neuromodulation

Research: Using NeuN antibody to both verify electrode placement and use stereological analyses to evaluate the effect of seizures and/or stimulation by quantifying several populations of neurons in key regions of interest, including hippocampus and medial septum.

ACADEMIC HONORS and AWARDS

University of Michigan Department of Chemistry Dissertation Award: Fall 2024

University of Michigan Rackham Graduate School Additional RMF Term Award: Spring/Summer 2024

Dr. Gary D. Glick Graduate Student Endowment Fund Award: 2023

Rackham Doctoral Intern Fellowship Program Award: 2023

Isabella & Jerome Karle Symposium Poster Award: 2022

University of Michigan Hillel Conference Scholarship: 2022

Diverse: Issues In Higher Education Rising Graduate Scholar nominee: 2022

Bouchet Graduate Honor Society inductee at the University of Michigan: 2022

Harold and Vivian Shapiro/John Malik/Jean Forrest Award: 2021-2022

NASEM Ford Foundation Predoctoral Fellowship Honorable Mention: 2021

University of Michigan Rackham Graduate School Rackham Merit Fellowship (RMF): 2019
 NSF-Louis Stokes California Alliance for Minority Participation (LSAMP/CAMP) Symposium Honorable Mention: 2018
 UC Davis Annual Undergraduate Research, Scholarship & Creative Activities Conference Research Award: 2017-2018
 UC Davis Louis Stokes California Alliance for Minority Participation (CAMP) Program Research Award: 2017-2018
 Smile Urgicenter Urgent Care Award (Graduation Scholarship): 2017-2018
 We Are Aggie Pride UC Davis Spring 2017 Stores Award: Cap N' Gown
 Alpha Kappa Alpha Sorority, Inc. Eta Gamma Omega Chapter (Academic Achievement Scholarship): 2016-2017
 Capitol City Seventh Day Adventist (SDA) Church Certificate of Achievement: 2016-2017
 Adventist Christian Fellowship (ACF) "Don't Stop Achieving" Award: 2016-2017
 Sacramento Area Black Caucus Rosenwald "Robbie" Robertson Memorial Scholarship: 2016-2017
 Alpha Kappa Alpha Educational Advancement Foundation, Inc. Scholarship (Financial Need): 2015-2016
 Sacramento Area Black Caucus Black Parallel School Board Scholarship for Outstanding Achievement: 2015-2016
 UC Davis Black Student Union and Cross Cultural Center Rising Phoenix Award: May 29, 2015
 Deans List: Spring Quarter 2014
 100 Black Men of America, Inc. Future Leader Scholarship: 2014-2015
 California Legislative Black Caucus Scholarship: 2014-2015
 NIH-Biology Undergraduate Scholars Program Most Improved Student Award: 2013-2014
 Sacramento Area Black Caucus Rosenwald "Robbie" Robertson Memorial Scholarship: 2013-2014
 Sacramento Chapter of Community NETwork (AT&T) Scholarship: 2013-2014
 Tuskegee Airmen, Inc. George "Spanky" Roberts Chapter Scholarship: 2013-2014
 Alpha Kappa Alpha Sorority, Inc. Eta Gamma Omega Chapter (Academic Scholarship): 2012-2013
 Ronald McDonald House Charities Tuition Scholarship (Community, Academic, and Personal Achievement): 2012-2013
 Delta Sigma Theta Sorority, Inc. Sacramento Alumnae Chapter (Academic Scholarship): 2012-2013
 National Coalition of 100 Black Women, Inc. Sacramento Chapter (Certificate of Excellence & Scholarship): 2012-2013
 Laguna Creek High School Academic Achievement Award: 2012-2013
 Herff Jones Believe in U Award (Certificate of Recognition): 2012-2013
 Laguna Creek High School Principal's Award (academics, leadership, community activities): 2012-2013
 Capitol City Seventh Day Adventist (SDA) Church Certificate of Achievement: 2012-2013
 Elk Grove Regional Scholarship Foundation - Sam Uner Memorial Scholarship: 2012-2013
 Laguna Creek High School Black Student Union Chapter Certificate of Appreciation: 2012-2013
 Laguna Creek High School Special Recognition Award: 2012-2013
 Omega Psi Phi EΞ Chapter Certificate of Achievement (accomplishments & contributions): 2012-2013
 Alpha Phi Alpha Fraternity, Inc. Zeta Beta Lamda Chapter Academic Achievement Scholarship: 2012-2013
 New Millennium Secondary School Executive Director's Circle Award (Superior Academic Achievement) 2011-2012
 New Millennium Secondary School Executive Director's Circle Award (Superior Academic Achievement) 2010-2011
 Stockton Early College Academy (SECA) Timber Wolf Honor Roll Award: 2009-2010

SELECTED PUBLICATIONS

[2] **Culberson, Matthew**, Siqi Dong; Wolfe, John,* "Cascade Pd-Catalyzed Intermolecular N-Arylation/Intramolecular Alkene Carboamination Reactions for the Synthesis of Dihydroindoloindoles." *Org. Lett.* **2025**, 27, 24, 6445 - 6448 DOI: 10.1021/acs.orglett.5c01747

[1] Nickerson, Leslie; Bergstrom, Benjamin; Gao, Mingchun; Shiue, Yuan-Shin; Laconsay, Croix; **Culberson, Matthew**; Knauss, Walker; Fettinger, James; Tantillo, Dean; Shaw, Jared,* “Enantioselective Synthesis of Isochromans by C–H Insertion of Donor/Donor Carbenes.” *Chem. Sci.* **2020**, 11, 494 - 498. DOI: 10.1039/C9SC05111B

SCIENTIFIC PRESENTATIONS

“Site Insights & Feasibility Intelligence (SiFi) in Clinical Operations” **M. R. Culberson**. Presented at Gilead Science Inc., Foster City, CA August 10, **2023** (Oral Talk)

“Palladium-Catalyzed Stereoselective Synthesis of Tricyclic Nitrogen Heterocycles via Tandem Intermolecular N-Arylation/Carbamination Reactions of Aminoalkenes” **M. R. Culberson**, J. P. Wolfe.* Presented at the 2022 Merck Symposium, University of Michigan, Ann Arbor, MI, August 18, **2022** (Poster)

“Palladium-Catalyzed Stereoselective Synthesis of Tricyclic Nitrogen Heterocycles via Tandem Intermolecular N-Arylation/Carbamination Reactions of Aminoalkenes” **M. R. Culberson**, J. P. Wolfe.* Presented at the 2022 Isabella and Jerome Karle Symposium, University of Michigan, Ann Arbor, MI, August 12, **2022** (Poster)

“Palladium-Catalyzed Stereoselective Synthesis of Tricyclic Nitrogen Heterocycles via Tandem Intermolecular N-Arylation/Carbamination Reactions of Aminoalkenes” **M. R. Culberson**, J. P. Wolfe.* Presented at the 18th Annual Yale Bouchet Conference on Diversity and Graduate Education, Virtual, April 7, **2022** (Oral Talk)

“Enantioselective Synthesis of Isochromans by C–H Insertion.” **M. R. Culberson**, L. A. Nickerson, L. W. Souza, B. D. Bergstrom, J. T. Shaw.* Presented at the Richard Larock Undergraduate Research Conference, UC Davis, Davis, CA, May 19, **2018**. (Oral Talk)

“Enantioselective Synthesis of Novel 6-Membered Ring Products by C-H Insertions.” **M. R. Culberson**, L. A. Nickerson, L. W. Souza, B. D. Bergstrom, J. T. Shaw.* Presented at the 29th Annual Undergraduate Research, Scholarship and Creative Activities Conference, UC Davis, Davis, CA, April 27, **2018**. (Poster)

“Enantioselective Synthesis of Novel 6-Membered Ring Products by C-H Insertions.” **M. R. Culberson**, L. A. Nickerson, L. W. Souza, B. D. Bergstrom, J. T. Shaw.* Presented at the Louis Stokes California Alliance for Minority Participation Statewide Undergraduate Research Symposium, UC Irvine, Irvine, CA, Feb 03, **2018**. (Poster)

LEADERSHIP, COMMUNITY INVOLVEMENT, and EXTRACURRICULAR ACTIVITIES

Chemistry Ambassador, Students of Color Rackham (SCOR), University of Michigan (2021 – 2022)

Panelist, College of Biological Sciences AvenueB Program, UC Davis (2021)

Student Liaison, Department of Chemistry Faculty Diversity Committee, University of Michigan (2020 – 2022)

Member, American Chemical Society (ACS), University of Michigan (2021 – 2023)

Treasurer, National Organization of Black Chemist & Chemical Engineers (NOBCCHE), U. Michigan (2020 – 2021)

YouTube Coordinator, Department of Chemistry Social Media Committee, University of Michigan (2020 – 2021)

V.P. & co-founder, Department of Chemistry commUNITY Pipeline Program, University of Michigan (2020 – 2021)

Panelist, Michigan Chemistry Opportunities for Research and Education (MCORE), University of Michigan (2020)

Mentor, CAMP/MURPPS Virtual Summer Mentor Program, University of California - Davis (2020)

Speaker, UC Davis Special Transitional Enrichment Program (STEP) Fall Keynote Speaker, UC Davis (2018)

Presenter, Student Academic Success Center Tutoring Strategies Workshop, UC Davis (2018)

Speaker, UC Davis African American Faculty and Staff Association Appreciation Luncheon, UC Davis (2018)

Scholar, NSF-California Louis Stokes Alliance for Minority Participation (CAMP), UC Davis (2017 – 2018)

Community Servicer, Capitol City SDAC: Members & Homeless, Sacramento, CA (2012 – 2019)

Speaker, UC Davis Educational Opportunity Program (EOP) Fall Welcome Keynote Speaker, UC Davis (2017)

Scholar, NIH-Biology Undergraduate Scholars Program (BUSP), University of California, Davis (2013 – 2015)

Speaker, Laguna Creek High School Graduation Class Speech (2013) – Class Rank 65 of 405: GPA 3.82

VOLUNTEER EXPERIENCE

Intern, UC Davis Medical School Health Related Internship: Emergency Department, Sacramento, CA. (May – Dec 2015)

Volunteer, UC Davis Medical School's Student Run Health Clinic: Imani Clinic, Sacramento, CA. (May – Sept. 2015)

Volunteer, Kaiser Permanente South Sacramento Medical: Emergency Department, Sacramento, CA. (June – Sept. 2013)

Volunteer, Kaiser Permanente Elk Grove Medical Office, Elk Grove, CA. (July 2012 – Sept. 2013)

Volunteer, Animal Protection League (APL), Stockton, CA. (June - July 2011; February – March 2015)

ADDITIONAL WORK EXPERIENCE

Mashgiach, Seal-K Kosher Certification (Feb. 2024 – July 2024)

Sales Representative, Big 5 Sporting Goods, Inc., Woodland, CA. (June 29, 2016 – Sept. 19, 2016)

STANDARDIZED TEST SCORES

MCAT (Oct. 4, 2017) 491 Chem/Phys 126 (67 pct) CARS 120 (8 pct) Bio/Biochem 124 (42 pct) Psych/Soc 121 (10 pct)

GRE – General (Nov. 8, 2018) Verbal Score: 149 (42 pct) Quant. Score: 147 (42 pct) Analytical Score: 3.5 (42 pct)

GRE – Chemistry (Oct. 27, 2018) Scaled Score 700 (52 pct)

SAT (Dec. 02, 2012): 1550 Critical Reading 500 Math 520 Written 530

ACT (Oct. 27, 2012) Composite: 23 English: 24 Math: 26 Reading: 21 Science: 23 Writing 09

PERSONAL INTERESTS

Coaching/motivating students, predicting movie endings with my wife, learning history, studying Torah (Tanakh).

16Personalities Test Result: INFJ (Advocate)

- The rarest personality type, making up < 2% of the world; a rich inner world of ideas, visions, and deep thoughts.
- They possess a strong intuition about people and can often sense others' emotions and motivations.
- INFJs are driven by a profound sense of purpose and a desire to positively impact the world. They tend to be perfectionists, setting high standards for themselves and others.

CliftonStrengths Test Results:

1. **Learner:** Love to learn and drawn to the process of learning.
2. **Harmony:** View there is little to be gained from conflict and friction, steering confrontation toward harmony.
3. **Connectedness:** Things happen for a reason, and we are part of something larger. Considerate, caring, accepting.
4. **Intellection:** Like to think, mental activities that exercise the muscles of the brain and enjoy time alone.
5. **Discipline:** World needs to be predictable, ordered, and planned with structure and routines with short-term plans.

DIVERSITY STATEMENT

During my Ph.D. studies at the University of Michigan, I planned and implemented programming, engaged student relations and needs, created and executed of developed ideas for projects and programs, and served as a liaison for various student groups. I have a gift to assist students from various backgrounds, possess good communication skills, and can be resilient to change. I am a Bouchet Graduate Honor Society member, with pillars rooted in commitment to diversity in the academic, professional or civic realm through work experience, volunteer engagement, and leadership of student or community organizations. I have dedicated my efforts to reduce social, educational, or economic disparities based on race, ethnicity, religion, and/or gender because diversity enhances the academic experience and novel thought pathways.

REFERENCES

John P. Wolfe, Ph.D.
*Professor of Chemistry &
Associate Chair for
Undergraduate Education*
University of Michigan
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Melanie S. Sanford, Ph.D.
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University Professor of Chemistry*
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