

Clayton Hull-Crew

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Chemistry educator with direct experience at all levels of course design and execution, with a passion for advancing understanding and achievement of all students. Practiced in presenting challenging concepts using traditional and modern teaching methods. Practiced in working with students as individuals and providing personalized academic support. Committed to maintaining an inclusive and productive environment for students of all identities and backgrounds.

Education

M.Sc. in Biochemistry (Expected Aug 2025) – University of Colorado Colorado Springs

- Research Track with Thesis Defense, 3.97/4.00 GPA
- Thesis: “*Consequences of Large-Scale Genome Rearrangements in Neurospora crassa*”

B.Sc. in Biochemistry (May 2022) – University of Colorado Colorado Springs

- Summa Cum Laude, Honors with High Distinction in Research, 4.00 GPA
- Thesis: “*Alkyne Functionalization and 1,2,3-Triazole Synthesis Toward Polymer and Small Molecule Development*”

Teaching Experience

Adjunct Chemistry Instructor – Ascend College Prep (August 2024 – Present)

Core responsibility: Design and execute all aspects of a one-year chemistry course consistent with CASS and UCCS departmental standards for general chemistry I (CHEM 1401/1402).

- Write and deliver lectures and class activities. Write and grade assignments and assessments.
- Design, procure supplies for, and execute lab activities.
- Ensure safety and appropriate instruction for single and dual enrollment students.
- Perform demonstrations and provide external resources to contextualize material.
- Regularly communicate with students and guardians regarding progress and concerns.
- Administer standardized testing compliant with CDOE standards.

Graduate Teaching Assistant – General Chemistry I Lab CHEM 1402 (August 2022 – May 2023)

- Delivery of lectures detailing safety, theoretical and practical considerations for lab activities, and connections to lecture material.
- Oversee laboratory classes & provide support for development of practical laboratory skills.
- Maintain safety of students. Prepare and manage lab materials and waste streams.
- Grade, provide feedback for, and offer individual support for students’ academic development.

Senior Peer Tutor – UCCS Science Excel Center (January 2017 – May 2022)

- Provide individualized academic support for students in science courses (CHEM, PES, BIO).
- Design and execute weekly “Extra Instruction” sessions to parallel course material.
- Provide extensive one-on-one tutoring to students with disabilities.
- Conduct weekly “Tutor the tutor” sessions to provide for continuing improvement of staff.

Curriculum Designer – UCCS Department of Chemistry & Biochemistry (Jan 2019 – July 2020)

- Collaborative development of academic materials for instruction, assessment, and study.
- Continuous evaluation and refinement of materials based on efficacy analysis.

Research Experience

Klocko lab, Dr. Andrew Klocko, University of Colorado Colorado Springs (May 2020 - Present)
Research focus: Fungal genomics. Wet lab and bioinformatic analysis toward advancing understanding of the epigenetics and genome organization of eukaryotic species.

- Collaboration with lab PI and student researchers to learn and execute complex protocols.
- Cooperatively conduct bioinformatic analyses of existing and experimentally derived data.
- Maintain organization of databases, materials, reagents, and biological samples.
- Mentor student researchers in theoretical and practical aspects of laboratory work.
- Write, generate figures for, and collaboratively construct and edit research publications.
- Strong emphasis on collaboration, continuing education, and contemporary research.

Schoffstall lab, Dr. Al Schoffstall, University of Colorado Colorado Springs (May 2017 – June 2020)
Research Focus: Organic synthesis of small molecules. Applications of transition metal catalysts and production polycyclic compounds for medicinal and polymer applications.

- Collaboration with lab PI and student researchers to develop new synthetic techniques.
- Optimization of existing reactions and purification methods toward Green Chemistry goals.
- Synthesis and analysis of small molecules for antifungal and antineoplastic applications.
- Development of triazole based polymers and dendrimers with novel functionalization.

Publications

Ebot-Ojong, F.; Ferraro, A. R.; Kaddar, F.; **Hull-Crew, C.**; Scadden, A. W.; Klocko, A. D.; Lewis, Z. A. Histone Deacetylase-1 Is Required for Epigenome Stability in *Neurospora Crassa*. September 29, 2025. <https://doi.org/10.1073/pnas.2503876122>

Scadden, A. W.; Graybill, A. S.; **Hull-Crew, C.**; Lundberg, T. J.; Lande, N. M.; Klocko, A. D. Histone Deacetylation and Cytosine Methylation Compartmentalize Heterochromatic Regions in the Genome Organization of *Neurospora Crassa*. *Proceedings of the National Academy of Sciences* 2023, 120 (47), e2311249120. <https://doi.org/10.1073/pnas.2311249120>

Rodriguez, S.; Ward, A.; Reckard, A. T.; Shtanko, Y.; **Hull-Crew, C.**; Klocko, A. D. The Genome Organization of *Neurospora Crassa* at High Resolution Uncovers Principles of Fungal Chromosome Topology. *G3 (Bethesda)* 2022, 12 (5). <https://doi.org/10.1093/g3journal/jkac053>.

Trujillo, M.; **Hull-Crew, C.**; Outlaw, A.; Stewart, K.; Taylor, L.; George, L.; Duensing, A.; Tracey, B.; Schoffstall, A. Green Methodologies for Copper(I)-Catalyzed Azide-Alkyne Cycloadditions: A Comparative Study. *Molecules* 2019, 24 (5), 1–12. <https://doi.org/10.3390/molecules24050973>

Relevant Skills and Proficiencies

- Statistical analysis and mathematical modeling.
- Chemical and biochemical modeling and molecular dynamics.
- Canvas, Blackboard, and Google Classroom digital infrastructure and online textbooks.
- Experience working with students with disabilities, non-traditional students, and veterans.
- Experience applying multimedia to support diverse learning styles.

Presentations

Topological Consequences of Large-Scale Genome Rearrangements in Neurospora crassa
Departmental – Master's Thesis defense – Oral presentation - 7/2/2025

Topological Consequences of Large-Scale Genome Rearrangements in Neurospora crassa
Departmental – Plan to finish – Oral presentation - 11/7/2024

Topological Consequences of Large-Scale Genome Rearrangements in Neurospora crassa
Neurospora Conference – Poster presentation – 10/02/2023

Topological Consequences of Large-Scale Genome Rearrangements in Neurospora crassa
Departmental – Intro to project – Oral Presentation – 04/27/2023

Synthesis of Fluorinated Pyridines Containing Alkynyl Components
ACS Spring 2020 – Accepted prior to conference cancellation

Alkyne Functionalization and 1,2,3-Triazole synthesis: Polymer and Small Molecule Development
Departmental Symposium – Oral Presentation – 02/21/2020

Substitution of fluorinated 1H-1,2,3-triazolopyridines by secondary amines
ACS Spring 2019 – Poster presentation – 04/02/2019
CSURF 2019 – Poster presentation – 04/06/2019