Chloe Fiveash

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Education

Southern Oregon University, Ashland, OR September 2020-present

Major: Chemistry

Concentration: Biochemistry

Minor: Biology

Anticipating graduation cum laud in June 2025

Publications

- Fiveash, Chloe. "The accumulation of fipronil and its degradation products in *Brassica rapa*", forthcoming in McNair Scholars Journal, Winter 2023 Vol. 19.
- Fiveash, Chloe. "The accumulation of fipronil and its degradation products in *Brassica rapa* and soil", McNair Association of Professionals, Summer 2023, Vol. 2.

Public Presentations

- Oregon TRIO Association Student Leadership Conference February 23, 2022
- "The accumulation of fipronil and its degradation products in *Brassica rapa*" SOU McNair Summer Research Symposium, Ashland, OR August 10, 2022.
- Press Conference for Senator Wyden, Medford, OR November 3. 2023
- "The accumulation of fipronil and its degradation products in *Brassica rapa* soil" UW Gabriel E. Gallardo Student Research Symposium, Seattle, WA April 18, 2023.
- Testifying to House of Higher Education Committee, Salem, OR May 4, 2023.
- Guest Speaker at Crater Foundation Scholar Celebration, Central Point, OR May 9, 2023.

Research Experience

- "The accumulation of fipronil and its degradation products in *Brassica rapa* presented it at the Symposium" June 21, 2022-August 10, 2022, SOU Ronald E. McNair Post-Baccalaureate Achievement Program Summer Research Internship, under the supervision of: Dr. Chris Babayco Assistant Professor of Chemistry

Characterizing the suitability of fipronil and fipronil sulfone with gas chromatography-mass spectroscopy in field mustard over a five-week growing period. To understand the health impacts of the insecticide, as well as fipronil's ability to adhere to and be absorbed by field mustard to determine if field mustard could serve as a method of phytoremediation.

- "Novel Synthesis Utilizing Hauser-Kraus Synthetic Techniques": December 1, 2022, to present. Southern Oregon University Chemistry Department, under the supervision of Dr. Samuel David Associate Professor of Chemistry

The formation of dimethyl-1,4-dihydroxynaphthalene-2,3-dicarboxylate serves as a useful project for undergraduate organic chemistry students because of its use of adduct chemistry, Michael addition reactions, and aromatization chemistry via Hauser-Kraus annulations. This project will provide synthetic methods for students to broaden their organic chemistry laboratory techniques under mild conditions.

- "Novel Synthesis of Aspernigrin" January 9, 2023, to present, Southern Oregon University Chemistry Department, under the supervision of: Dr. Samuel David Associate Professor of Chemistry

Drug synthesis of excess Ca^{2+} blockers to prevent excitotoxicity from overstimulation of glutamate receptors. The natural product aspernigrin found in *Aspergillus niger* isolated from *Axinella damicornis* is the target product for its ability to inhibit glutamate excitotoxicity in rat cell cultures. The starting material is an esterified S-phenylalanine to form Ring B using enolate chemistry. The synthetic scheme of the final product of aspernigrin is yet to be discovered.

Honors and Awards

- SOU Ronald E. McNair Post-Baccalaureate Achievement Program 2021-Present
- Southern Oregon University Provost's Winter Term 2021
- Featured on Bridge Brochure 2020-2021
- Southern Oregon University Provost's Spring Term 2022
- Undergraduate Biochemistry Award 2022-2023
- Southern Oregon University Provost's Spring Term 2023
- Barry Goldwater Scholar Awardee Spring Term 2024

Grants and Scholarships

- Federal Pell Grant: 2020-present
- Federal SEOG: 2020-present
- Oregon Opportunity Grant: 2020-present
- Churchill Freshman 2020 Scholarship: 2020-present
- Crater Foundation Scholarship for Continuing Education:2020-present
- Ralph and Mary Herbold Science Scholarship for SOU Undergraduates: 2022-2023
- Clifford B. Cordy Scholarship: 2022-2023
- Ralph and Mary Herbold Science Scholarship for SOU Undergraduates: 2023-2024
- Lloyd & Hazel Pennington Memorial Chemistry Scholarship: 2023-2024
- Barry Goldwater and Excellence in Education Foundation: 2024-2025

Work Experience

- Equipment Room Supervisor, 1250 Siskiyou Blvd, Ashland OR 97520, Bryan Sanders Southern Oregon University Football coach, August 2021-November 2023
- Private Tutor 1250 Siskiyou Blvd, Ashland OR 97520, Bryan Sanders Southern Oregon University Football coach, November 2021-November 2023
- Bridge recruiter, and editor of college prep book, 1250 Siskiyou Blvd, Ashland OR 97520, Danielle Hammer Bridge Professor, February 2021-June 2021
- Bridge master mentor, 1250 Siskiyou Blvd, Ashland OR 97520, Danielle Hammer Bridge Professor, July 2022-present

- Government Relations-General Counsel Assistant, Churchill Hall, 1250 Siskiyou Blvd, Ashland, OR 97520, Marc Overbeck and Rob Patridge Southern Oregon University Associate Vice President Government Relations and Outreach, September 2022-present

Community Service

- Phone bank, OSPRIG, 10/8/2020, two hours.
- Caregiver, Mountainview Adult Foster Home, 07/01/2020-09/02/2020, 250 hours
- Gardener, Antioch Cemetery,03/06/2021 three hours
- Private Tutor 1250 Siskiyou Blvd, Ashland OR 97520, Bryan Sanders Southern Oregon University Football coach, November 2023-present

Leadership Experience

- Peer Leader for General Chemistry Lab II: Winter term 2022
- Peer Leader for General Chemistry Lab III: Spring term 2022
- Advocate for SOU students at the Legislative Roundtable Discussion: Summer 2022
- TRU Student Lobby Day Team Captain May 4th, 2023
- University Lobby Day Team Captain February 8th, 2024
- Synthetic Chemistry Lab Mentor: Winter Term 2024-present

Professional Training and/or Workshops Attended

- Preform 2D experiments with a Bruker Ascend 400 MHz AVANCENEO NMR Spectrometer
- Training with FT-IR spectroscopy instrument
- Successfully identify and separate proteins via Western blots and SDS-PAGE
- Create and run methods with a Model 6890N gas chromatograph coupled with a 7693 autosampler and a 5973N mass selective detector.
- Trained in Python and Biopython
- Synthetic chemistry: distillations, dry reactions, column chromatography, TLC, and liquid-liquid extraction
- Can interpret informational text and discuss text to a diverse audience.
- Can direct and assist a laboratory of undergraduate students.
- Communicate and write scientific findings.
- Lobbying
- Policy writing

References

Name	Phone Number	Email
Samuel David	859-779-3432	davids1@sou.edu
Chris Babayco	573-356-2205	cbabayco@gmail.com
Ashley Robart	503-753-1921	robarta@sou.edu

(Updated: 04/05/2025)