Grace Servia

(she/her/hers)
720-234-0070 s.serviagi@gmail.com gservia@msudenver.edu

Overview

I am a hard-working, capable, and enthusiastic individual who has strong foundations in the math and chemistry fields, a broad set of technical and logical skills, and a passion for making things. My goal is to find a position in the sustainability industry that allows me to contribute to the understanding and well-being of our own society and Earth systems, work in an engaged and active community, and pursue my own interests and passions.

Education

Metropolitan State University of Denver **May 2025**
B.S. Mathematics; B.S. Chemistry - ACS Concentration *3.89 GPA*

Chaparral High School **May 2018**
4.14 GPA

Awards

- 1st Place: 2024 MSU Denver Mathematics and Statistics Student Poster Competition - Crowd Favorite
- 2nd Place: 2024 MSU Denver Mathematics and Statistics Student Poster Competition - Best Math Content
- ACS Division of Physical Chemistry 2024 Undergraduate Award in Physical Chemistry
- Spring 2024 MSU Denver Undergraduate Research $ 500 Mini-Grant
- President's Honor Roll: Fall 2020, Spring 2022, Spring 2023
- Dean's List Fall 2020, Spring 2021

Experience

Undergraduate Research | *MSU Denver Department of Chemistry and Biochemistry* **October 2021 – Present**

- Participated in ongoing extra-curricular research projects with Dr. Shailesh Ambre and associated lab group for the past several semesters
- Active laboratory time is spent each week running and monitoring reactions, working on code and instrumentation, recordkeeping, maintaining the lab space, or training new lab members and shadows on a variety of protocols, instruments, and techniques
- Time outside of lab is spent working up data, reading literature, discussing findings, contemplating future work, preparing presentations, or attending trainings, meetings, seminars, and conferences
- **Project 1 (October 2021 - May 2023):** Worked to develop a quick, mathematically-based method for determining the amount of resins added to a peptide chain
- **Project 2 (May 2023 - Present):** Focused on building a small chemical instrument that offers accurate and accessible pH readings in the organic laboratory. Awarded MSU Denver Spring 2024 $500 Mini-Grant for Undergraduate Research

Chemical Instrumentation Assistant | *MSU Denver Dept. of Chemistry and Biochemistry* **June 2023 – August 2023**

- Assisted the department safety and instrumentation specialist with summer maintenance, calibration, and installation projects for LCMS and HPLC instruments as well as general analytical lab and safety operations
- Prepared samples for analysis, operated instruments and software, and maintained instruments during experimental operations
- **Project 1:** Analyzed caffeine and other food additives on LCMS in order to standardize a method for future students who would like to analyze beverages for independent projects
- **Project 2:** Analyzed Red 40 and Blue 1 food dye samples on HPLC in order to standardize a method for students in the analytical lab to recreate the dye composition of a sports drink as their final project
- **Project 3:** Temporarily returned to setup and troubleshoot the instillation of a new HPLC system in February 2024

Supplemental Instruction Leader | *MSU Denver Student Academic Services* **May 2020 – May 2022**

- Supported multiple Calculus I and II classes (in-person and online) by attending class and engaging with content, hosting study sessions outside of class, making routine announcements, answering questions in and out of class, sharing resources, and modeling ideal learning habits
- Collaborated with faculty, co-workers, and students to create session plans, curated material, and a healthy classroom environment to help all students succeed
- Stepped into abandoned roles and led projects such as creating workplace harassment protocol

Independent Artist **2017 - Present**

- Occasionally accepts commissions for cosmetology, metalsmithing, painting, drawing, and basic design projects
- Sold wedding and prom nails, designed t-shirts, metal pieces, jewelry, and basic digital art
- Been included in art shows, hosted workshops, and won awards

Technical Skills

- Scientific research, writing, and presentation
- Teaching and instruction in laboratory and classroom settings
- Public speaking and education
- General laboratory protocols: safety and waste disposal, glassware cleaning, writing SOPs, recordkeeping, chemical storage, etc.
- Analytical laboratory protocols: using common lab tools and glassware, performing calculations, working with chemical instrumentation, etc.
- Organic laboratory protocols: running columns, pulling capillaries, using Nitrogen lines, molecular sieves, TLC plates, etc.

Computer Literacy, Electronics, and Technologies

- Google and Microsoft Suites (fully competent)
- Excel (fully competent)
- LaTeX coding (fully competent)
- Python coding (competent)
- R coding (beginner level)
- C++ (minimal exposure)
- Mathematica (minimal exposure)
- basic circuitry methods (beginner level)
- CAD: Tinkercad and Onshape (competent)
- 3D printing methods (competent)
- general troubleshooting abilities

Instrumentation Experience

Competent using general laboratory tools and software such as pH probes, drying ovens, balances, vortexers, rotary evaporators, UV lamps, gas lines, Vernier Spectrophotometers, LoggerPro, and Excel. Completed training and gained hands-on experience in sample preparation, instrument and software operation, safety protocols, and analysis techniques for the following instruments | software:

- (NMR) Advance III 300 HD Bruker NMR | ICON NMR
- (GC-MS) Hewlett Packard 6890 Series GC System Plus, Hewlett Packard 7683 Series Injector, and Hewlett Packard 5973 Mass Selective Detector | ChemStation
- (HPLC) SpectraSYSTEM P4000 HPLC | Chromeleon
- (HPLC) Agilent Technologies 1260 Infinity II | ChemStation
- (FAAS) Thermoscientific FAAS S Series AA Spectrometer | Thermo SOLAAR
- (UV-Vis Spectrophotometry) PerkinElmer Lambda 650 Dual Beam Spectrophotometer | UV WinLab
- (Fluorometer) Horiba scientific FlouroMax-4 Fluorometer | FluorEssence V3.8 Software (DSC) TA DSC 2500 | Trios
- (FTIR) ThermoScientific Nicolet 380 FT-IR | OMNIC
- (LCMS) Agilent 1290 Infinity II LCMS | Agilent MassHunter Workstation
- Melles Griot 5mW max Laser

Conferences, Seminars, and Lectures

MSU Denver Undergraduate Research Conference (April 2024): As an undergraduate student presenter, presented a poster on my instrumentation research project

MSU Denver Mathematics and Statistics Student Poster Presentation (April 2024): As an undergraduate student presenter, presented a poster covering analytical proofs and applications of The Squeeze Theorem for sequences and functions in single and multivariable settings

Colorado State University Stille Symposium: Frontiers in Organic Chemistry (May 2023): As an undergraduate student attendee, partook in speaker sessions and networking events

American Society for Biochemistry and Molecular Biology: Seattle (March 2023): As an undergraduate student attendee, partook in speaker sessions, networking events, and poster presentations

University of Nebraska Undergraduate Women in Mathematics (January 2023): As an undergraduate student attendee, partook in speaker sessions, networking events, breakout rooms, and poster presentations

MSU Denver Undergraduate Research Conference (April 2022): As an undergraduate student attendee, partook in poster presentations

MSU Denver Chemistry Seminar (Spring 2022 - Present): Attend and engage in monthly presentations given by regional experts from both industry and academia on a variety of different subjects relevant to the field of chemistry

MSU Denver Math Seminar (Spring 2022- Present): Attend and engage in monthly presentations given by regional experts from both industry and academia on a variety of different subjects relevant to the field of math

Trainings and Workshops

Hazardous Waste with Mark Pokorny, CHMM (September 2022): Learned about the identities, storage, disposal, emergency protocols, and environmental and economic impacts of hazardous materials at a university and state-wide scale

Python Programming with Dr. Andrew Bonham (Fall 2022): Attended a two-part Python programming workshop in order to build applicable computer literacy skills

Supplemental Instruction Professional Development (May 2020 - May 2022): Furthered performance in the workplace through weekly trainings on a variety of subjects including interpersonal communication, local resources, and personal growth

Volunteer Work & Public Outreach

MSU Denver Math Day **April 2022, 2024**

MSU Denver Department of Mathematics and Statistics *Denver, CO*

- Served as a judge at MSU Denver Math Day and worked with highschool students and teachers to mentor future math students, guide them through math-based challenges and competitions, and help foster curiosity and confidence for a future in the field
- Worked with MSU Denver faculty and students to coordinate and execute event

Girls in Science at DMNS **March 2020, 2023, 2024**

Denver Museum of Nature and Science, MSU Denver *Denver, CO*

- Guided attendees of all ages, genders, orientations, and backgrounds through STEM-themed activities during an annual public outreach event focused on educating and empowering girls in the STEM field
- **2024:** Led DNA extraction, slime-making, and puzzle solving activities with the MSU Denver Center for Advanced Stem Education
- **2023:** Led Kastle-Meyers testing, fingerprinting, and Thin-Layer Chromatography activities with the MSU Denver Department of Chemistry and Criminalistics and Colorado Bureau of Investigation
- **2020:** Led tissue sampling, specimen preparation, DNA processing, and species identification activities with the DMNS Zoology Preparations Lab

Blind and Low-Vision STEM Education **April 2023**

MSU Denver Department of Chemistry and Biochemistry *Denver, CO*

- Provided a fun and educational chemistry activity that students and community members with limited visibility could actively and safely participate in

All-Stars Green Team **July 2021**

Major League Baseball *Denver, CO*

- Worked in collaboration with MLB to promote more sustainable practices within the commercial sports industry
- Conducted public outreach, performed manual labor, and attended networking events and informational panels

Samuels Community Garden Volunteer Gardener **June 2021 – Present**

Denver Urban Gardens *Denver, CO*

- Harvest community-grown produce each week to provide fresh and healthy food for a local food bank
- Experience landscaping, building structures, and groundskeeping

Platelets, Plasma, and Blood donor **Fall 2020 – Present**

Vitalant *Colorado*

- Have a strong belief in helping others when possible and donate platelets, plasma, or blood as frequently as possible

Zoology Preparations Lab Volunteer **April 2019 – March 2020**

Denver Museum of Nature and Science *Denver, CO*

- Over 220 hours of lab experience preparing animal specimens for scientific study, preservation, and storage
- Experience in cataloging, recordkeeping, working with databases, and labeling
- Presented at public outreach and educational events teaching both adults and children (2020 Girls in Science, 2020 Educator's Night)
- Familiar with sanitary and safety procedures, deep cleaning, handiwork, and emergency procedures
- Hopes to return to the lab once Covid-19 restrictions, classwork, and schedule allows

Applicable Coursework

- Calculus 1, 2, & 3
- Introduction to Mathematical Proofs
- Probability and Statistics
- Proofs-Based Linear Algebra
- Real Analysis 1 & 2
- Scientific Computing with Python
- General Chemistry 1 & 2 (with labs)
- Organic Chemistry 1 & 2 (with labs)
- Advanced Organic Compound ID
- Analytical Chemistry (with lab)
- Biochemistry 1
- Instrumental Analysis (with lab)
- Physical Chemistry 1 & 2 (with labs)
- Introduction to Geology
- General Biology 1 & 2 (with labs)
- Introduction to Geographical Information Systems
- Weather and Climate (with lab)
- General Physics 1 & 2 (with labs)
- Introduction to Environmental Science

Attributes

- Highly creative
- Genuine curiosity
- Sharp attention to detail
- Strong people skills
- Motivated and enthusiastic
- Tenacious
- Works well in teams
- Positive and encouraging
- Thrives with hands-on work

Hobbies & Interests

- Weather, water, and fire science
- Chemical instrumentation and design
- Sustainability, alternative energy sources, and waste cleanup
- Climate, atmospheric, and planetary science
- Stargazing, deep space, and physics
- Skiing, rock climbing, running, and skateboarding
- Nail art, makeup, and cosmetology
- Painting, sewing, building, and metalsmithing
- Jigsaw puzzles
- Music (all genres) and live shows

References

Will be furnished upon request