**Chris deRoux**415 East Thunderbird Drive, Fort Collins, CO 80525  
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**EDUCATION**

**Colorado State University**, Fort Collins, CO  
**Master of Science in Biological Science**, August 2025  
*Research Focus: Bioinformatics, Computational Proteomics*

**Sarah Lawrence College**, Bronxville, NY  
**Bachelor of Arts in Biology** with Minor in Visual Arts, August 2017

**RESEARCH EXPERIENCE**

**Graduate Research Assistant & Graduate Teaching Assistant**, *Colorado State University*  
**Dr. Dan Sloan's Lab**, August 2023 – Present

* Conducted computational proteomics to identify evolutionary rate covariation in parasitic plants and autotrophic relatives, uncovering significant coevolutionary patterns between genes specific to each trophic style. Contributed code to ERCnet, the software pipeline for my evolutionary analysis, improving its functionality and user experience.
* As Graduate Teaching Assistant (GTA), supported BZ350 Molecular and General Genetics courses by leading recitation sections and creating supplemental curriculum.

**Intern**, *Smithsonian Institution & Hubbard Center for Genome Studies*  
Supervised by Jon Norenburg & Kelley Thomas, June 2018 – May 2022

* Compiled ultra-conserved genomic element libraries for the phylum Nemertea and genus Ototyphlonemertes. Designed probes for targeted enrichment of nemertean genomes and sequenced the genome and transcriptome of a newly discovered troglodytic species.

**Independent Study in Biological Systematics**, *Sarah Lawrence College*  
Supervised by Professor Michelle Hersh, September 2013 – May 2017

* Conducted independent research in systematics and evolutionary biology, including review studies on parasite coevolution. Developed a computational biology program in Python to simulate non-stochastic mutations in evolutionary models.

**Research Assistant**, *New York Botanical Garden*  
Supervised by Professor Kenneth Karol, Summer 2015

* Contributed to a study of phylogenetic relationships among Characeae algae. Curated and preserved algal specimens, including a novel species, and conducted DNA extraction and sequencing from degraded samples.

**Field & Lab Research Assistant**, *Sarah Lawrence College*  
Supervised by Professor Michelle Hersh, Summer 2014

* Tested the Janzen-Connel hypothesis on parasite-mediated forest diversity, cultured Ascomycete fungi, and sequenced DNA. Managed data, conducted field surveys, and created a field guide for forest biodiversity.

**PUBLICATIONS & PRESENTATIONS**

**Preprint**: "Phylogenomic prediction of interaction networks in the presence of gene duplication" (2nd author). Link: [doi: 10.1101/2024.08.06.606904](https://doi.org/10.1101/2024.08.06.606904)

**Posters & Presentations**:

* Presented at Sarah Lawrence College’s poster symposium (every semester, 2013-2017).
* Delivered research updates on ERCnet to the Mueller and Sloan labs, CSU (2023–Present).

**Science Outreach**:

* Created a science-focused webcomic series for public outreach, gaining skills in graphic design, HTML, and web publishing.

**TECHNICAL SKILLS**

* **Laboratory & Fieldwork**: Specimen handling and curation (wet/dry), microscopy, DNA/RNA extraction, PCR, gel electrophoresis, sequencing, spectrophotometry, bacterial transformation, exogenous gene transfection.
* **Computational & Programming**: Proficient in Python, R, C++, JavaScript, Unix/Linux environments, high-performance computing (HPC), web development (HTML), Adobe Creative Suite.

**RELEVANT COURSEWORK**

**Graduate Courses**: Invertebrate Zoology (University of Washington), Smithsonian Certification in Nemertean Taxonomy, Molecular Genetics, Advanced Systematics, Molecular Aspects of Plant Development, Computational Cell and Molecular Biology, Design and Data Analysis for Researchers

**Undergraduate Courses**: Human Evolution, Ecology of Symbiosis, Plant Systematics, Disease Ecology, Virology, Evolution of Reproductive Parasites, Cell Biology, Intro to Genetics, and others.

**CERTIFICATIONS & TRAINING**

* **PADI Certified Autonomous Open Water Diver**
* **Smithsonian Tropical Research Institute Certification** in Nemertean Taxonomy

**REFERENCES**

* **Dr. Dan Sloan** Professor, Colorado State University | Phone: (970)-491-2256 | Email: [dan.sloan@colostate.edu](mailto:dan.sloan@colostate.edu)
* **Dr. Jon Norenburg** Curator, Smithsonian Institution | Phone: (202) 633-1783 | Email: [norenburgj@si.edu](mailto:norenburgj@si.edu)
* **Dr. Evan Sullivan Forsythe** Professor, Oregon State University Cascades | Phone: (541) 706-2147 | Email: [evan.forsythe@osucascades.edu](mailto:evan.forsythe@osucascades.edu)