CORY GARGAS

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SUMMARY

An accomplished computational biologist with a strong track record in research, phylogenetics, microbiome analysis, genomic data analysis, taxonomic identification, and advanced statistical modeling. Expertise in data wrangling, visualization, and reporting, combined with a proficiency in classroom instruction. Known for designing efficient workflows and optimizing data management systems to drive impactful insights. Demonstrated ability to analyze complex datasets, accelerate project timelines, and deliver high-quality results under tight deadlines. Brings a broad interdisciplinary skill set and strategic thinking to enhance business growth and operational efficiency, contributing to measurable improvements in revenue and performance.

EXPERIENCE

CELLCARTA, Montreal, Quebec | **Data Manager,** 2023-2024

* Developed and maintained automated data processing scripts for multiple clinical trial studies, ensuring efficient and accurate data handling across diverse projects.
* Collaborated with data analysts to assess and validate data, managing and delivering high-quality data outputs and reports to meet both internal and external client requirements.
* Designed and maintained data management scripts, using R, Markdown, and GitHub, streamlining workflows and enhancing reproducibility in data analysis. Lead several conversions of projects from Spotfire to R.
* Authored and reviewed data transfer specifications to ensure compliance with both internal protocols and external client needs, ensuring seamless data exchange and integration.
* Engineered and optimized data compilation and transfer tools, improving the efficiency and accuracy of data reporting across projects.
* Conducted peer reviews and quality control of data files, programs, and reports, ensuring high standards of accuracy, consistency, and reliability.
* Performed data reconciliation across internal and external sources, identifying discrepancies and ensuring data integrity across systems.
* Contributed to the development of standardized analytical tools, enhancing data management throughput and improving overall workflow efficiency for the team.

UNIVERSITY OF ARKANSAS, Fayetteville, Arkansas | **Graduate Research Assistant,** 2018-2023

* Directed all aspects of two multi-year research projects on Diatom–Bacteria interactions, including designing workflows to analyze genetic and transcriptomic data from 200+ algal cultures and their associated bacteria.
* Conducted genomic and transcriptomic analyses, leveraging statistical programming and bioinformatics tools (R, Python, SQL, Linux), and utilized phylogenetics software, microbiome analysis, and HPC via Slurm workload manager.
* Communicated research findings through scientific articles, project reports, and conference presentations, producing high-quality figures with Adobe Illustrator, Photoshop, and the R package ggplot2.
* Reviewed and edited technical writing for multiple scientific publications, ensuring clarity and accuracy in presenting research insights.
* Generated detailed project reports and analytical workflows, using Jupyter notebooks, Markdown, and Quarto, maintaining code repositories on GitHub.
* Achieved intermediate proficiency in Microsoft Excel and applied experience in statistical analysis and data visualization across various platforms.
* Gained foundational experience in Shiny app development and big data handling with Apache Arrow.
* Led the development and maintenance of analytical workflows, ensuring reproducibility and robustness in data processing pipelines.

UNIVERSITY OF ARKANSAS, Fayetteville, Arkansas | **Teaching Assistant,** 2018-2023

* Led human anatomy course instruction, designing and delivering engaging content to enhance student understanding of human structure and function.
* Guided students through complex anatomical and physiological concepts, fostering a deeper comprehension of human biology.
* Provided hands-on support during dissections, assisting students in mastering the techniques and ethical considerations of biological specimen analysis.
* Conducted in-lab assessments, using anatomical models and real biological specimens, ensuring a comprehensive and immersive learning experience.
* Managed the delivery of over $900K in instructional services, grading assignments for more than 500 students and maintaining high standards of academic excellence.

JOHN CARROLL UNIVERSITY, University Heights, Ohio | **Graduate Research Assistant / JCU Cyanobacteria Collection Curator,** 2016-2018

* Led all aspects of two-year research project to determine the evolutionary relationships of rare terrestrial diatoms, employing molecular phylogenetics to uncover novel insights into their taxonomy and evolutionary relationships and resulting in a published manuscript.
* Executed complex molecular techniques, including DNA extraction, PCR amplification, gel electrophoresis, and molecular cloning, to drive key findings in diatom research.
* Cultivated and maintained hundreds of unialgal Cyanobacteria and diatom cultures, ensuring healthy, high-quality specimens for experimental studies.
* Prepared specialized culture media (Z8 and WC) to support the growth and analysis of photosynthetic microalgae, optimizing conditions for diverse species.
* Managed and updated a comprehensive culture collection database, streamlining data accessibility and ensuring accurate tracking of microbial cultures.
* Leveraged advanced statistical programming in R and conducted spatial analyses with ArcGIS to interpret complex ecological data and visualize trends.
* Proficient in data processing, management, exploratory analysis, statistical testing, and visualization, enabling effective communication of research findings and insights.

JOHN CARROLL UNIVERSITY, University Heights, Ohio | **Teaching Assistant,** 2016-2018

* Led laboratory instruction for Principles of Biology I, II, and III, delivering dynamic and engaging hands-on experiences to students across multiple levels of biological study.
* Facilitated interactive labs that reinforced core scientific concepts, nurtured critical thinking skills, and equipped students with practical expertise in biological research methodologies.
* Emphasized the theory of evolution and provided in-depth coverage of biological diversity across all domains of life, ensuring students gained a comprehensive understanding of evolutionary principles.
* Contributed over $300K in instructional services, managing grading and academic support for more than 90 students, while maintaining rigorous standards of academic excellence.

ENVIROSCIENCE, INC., Stow, Ohio | **Lab and Field Technician,** 2014-2016

* Performed species-level identification of diatoms, contributing to high-accuracy environmental assessments.
* Identified macroinvertebrates, freshwater fish, and algal phyla to genus level, enhancing ecological data precision and biodiversity monitoring.
* Utilized both plotless and plot-based sampling techniques, optimizing data collection methods for diverse aquatic environments.
* Conducted comprehensive quantitative and qualitative collections of algal and macroinvertebrate samples, providing robust datasets for ecological analysis.
* Applied short-term toxicity assessment methods to evaluate the chronic impact of effluents and receiving waters on freshwater organisms, ensuring environmental protection.
* Prepared and analyzed soft algae and diatom samples for microscopic examination and applied the Utermöhl method to phytoplankton analysis for high-resolution data.
* Analyzed key biological indicators including ash-free dry weight, ATP, and chlorophyll-a to assess ecosystem health and productivity.
* Contributed to significant environmental assessments, using bioindicators:
  + Cleveland Hopkins Airport Biofilm Project (2014-2016): Investigated biofilm dynamics in urban water systems.
  + USGS Waukegan Harbor Phytoplankton and Zooplankton Assessment (2015): Assisted in aquatic ecosystem health evaluation.
  + National Rivers and Streams Assessment (2013-2014): Supported nationwide water quality monitoring.

Volunteer Experience

UNIVERSITY OF ARKANSAS, Fayetteville, Arkansas | **Graduate Student Mentor,** 2020-2023

* Engaged in the Biology Graduate Student Association (BGSA) Peer Mentorship Program, providing guidance and support to new graduate students in their academic and professional development.
* Advised incoming graduate students on course selection to align with their research interests, helping to tailor their academic path for success.
* Offered strategic mentorship on selecting faculty committee members and potential research collaborators and navigating complex academic processes and departmental dynamics.

education

UNIVERSITY OF ARKANSAS, FAYETTEVILLE, Fayetteville, Arkansas | **Ph.D., Biology,** 2023

JOHN CARROLL UNIVERSITY, University Heights, Ohio | **M.S., Biology,** 2018

KENT STATE UNIVERSITY, Kent, Ohio | **B.S., Conservation Biology,** 2013

professional development

*Graphic Design with ggplot2,* 2022

technical skills

R | Markdown | Quarto | Bash | CLI | Linux | SQL | Python | Shiny | Apache Arrow

disclaimer