

Virág Varga

Lund, Sweden

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EDUCATION

Lund University, Department of Biology, Lund, Sweden 2020-present
Master of Sciences in Bioinformatics

University of Cincinnati, College of Arts and Sciences, Cincinnati, OH, USA 2014-2019
Bachelor of Science in Biological Sciences | Bachelor of Arts in German Studies, Anthropology,
Archaeology (Social Complexity)
GPA 3.762/4.0

TECHNICAL EXPERIENCE

Scripting Languages: Python (including Pandas), Bash/Shell, AWK, R
Reproducible Science: Snakemake, Jupyter, Git Docker (rudimentary)
Key Software Experience: Orthologous Clustering programs, Protein function prediction programs,
BEAST, CLUSTALW, MEGA-X, Galaxy Web Platform, QGIS
Database Experience: SQLite (including integration with Python)

PROJECTS

MSc Thesis: Comparative Genomics & *Trichomonas vaginalis* July 2021 – Present
Department of Biology, Lund University | Lund, Sweden

- Undertook a MSc Thesis project with the goal of clarifying the transition from free-living to pathogenic lifestyles in Trichomonad parasites using comparative genomics
- Installed and utilized a variety of protein function prediction and orthologous clustering software
- Performed gene flux analysis with software Count

Mushroom Horizontal Gene Transfer Project March 2021 – June 2021
Department of Biology, Lund University | Lund, Sweden

- Undertook a research project investigating a potential horizontal gene transfer in mushroom-forming fungi
- Queried the NCBI and JGI databases for relevant comparative genomic data, using both remote and web methods
- Constructed phylogenetic trees using MEGA-X and BEAST, a software with which a molecular clock analysis was also performed
- Completed an Intron-Exon pattern matching analysis using GenePainter

Screwworm Genome Project

August 2018 – May 2019

Insect Physiology Lab, University of Cincinnati | Cincinnati, OH, USA

- Utilized CLC Genomics Workbench and the Galaxy Web Platform to complete an RNASeq analysis to highlight stage-specific gene expression differences in the New World Screwworm
- Constructed a Gene Ontology (GO) analysis using web tools and visualized differentially expressed genes in heatmaps constructed with R in RStudio
- Presented the results of this research at the North Central Branch of the Entomological Society of America's Annual Meeting on March 19th, 2019 (Poster Title: "Transcriptomic Analysis Reveals Stage-Specific Gene Expression in New World Screwworm *Cochliomyia hominivorax*")

Tick Genome Analysis

January 2018 – April 2018

Insect Physiology Lab, University of Cincinnati | Cincinnati, OH, USA

- Utilized Bash/Shell and the Galaxy Web Platform to complete an RNASeq analysis of *Ixodes scapularis* tick genes
- Analyzed gene expression data with BLAST against the NCBI Database

Bronze Age Körös Off-Tell Archaeology Project

June 2015 – July 2019

Quinnipiac University | Békés, Hungary

- Excavated at the Bronze Age cemetery at Békés, Hungary over the course of two field seasons, with a lab season and an off-year in between
- Analyzed the bronze artifacts recovered from the site in terms of spatial distribution, grave associations, and historical context; these analyses involved the creation of maps in QGIS, statistical analyses in Microsoft Excel, and an intensive literature review
- Presented two different stages of this research at the Society for American Archaeology's Annual Meetings in 2016 (Poster Title: "A preliminary analysis of the metal finds from Békés 103") and 2017 (Poster Title: "Metals in Transition: A Visual Comparison of Copper and Bronze Age Trade in the Eastern Carpathian Basin")

EMPLOYMENT EXPERIENCE

Graduate Teaching Assistant, Bioinformatics

August 2021 – Present

Department of Biology, Lund University | Lund, Sweden

- Assisted in the instruction of first year students in the Bioinformatics MSc program, particularly with regards to the following topics: Pandas, Snakemake, Gene Annotation
- Acted as a peer resource for students to ask questions about both classroom content and the structure of the Bioinformatics MSc program

Supplemental Instruction Leader & Mentor

August 2015 – May 2019

Department of the Learning Commons, University of Cincinnati | Cincinnati, OH, USA

- Designed review content and facilitated review sessions for college students in General Biology and General Chemistry to aid them in mastering course content and gain valuable study skills to ensure their continuing success
- Designed and facilitated training for new and returning employees, mentoring them in order to ensure they possessed the skills to facilitate group learning and help their students master course content

(Head) Resident Advisor

August 2016 – April 2017; August 2018 – May 2019

Department of Resident Education and Development, University of Cincinnati | Cincinnati, OH, USA

- Facilitated the transition of first-year college students into the University setting
- Created programs to educate young adults on matters related to learning, leadership, community, and inclusion
- As Head Resident Advisor (August 2018 – May 2019), scheduled shifts and organized trainings for Resident Advisors under my purview

ADDITIONAL SKILLS

Languages: English (fluent), Hungarian (fluent), German (working proficiency), Spanish (reading proficiency)

Knowledge of Bioinformatics Web Tools: OrthoVenn, DataMonkey, g:Profiler, Panther, miRDB, etc.

Organization & Planning: Through my work as a Supplemental Instructor and Resident Advisor, I have become very efficient at planning and scheduling events, facilitating trainings, presenting materials to large groups of individuals with differing levels of prior understanding of the topics, and time management

Navigating Multiple Stakeholders: Through my training in anthropology and archaeology, I have learned how to navigate situations in which there are multiple stakeholders, and not all stakeholders necessarily desire the same outcomes

Customer Service: All of my work experience has been customer-oriented, so I have experience with the importance of putting everything else aside during the shift, in order to provide the customer with the best experience possible.