

Andrew Davis

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Profile

Biology MSD student with multiple years of research experience and strong data analysis skills. Possesses a high degree of technical skills and knowledgeable in languages such as R, Python, and bash. Interested in applying ecology and bioinformatics concepts to ecosystem and population ecology research.

Education

MSD Biological Sciences, University of Essex

2018-Present

- Researching microbial structuring dynamics and the relationship between microbial diversity and ecosystem functions/services
- Applying a multitude of methods for metabarcoding, statistical modelling, and machine learning
- Assisted in instructing a R course designed for postgraduate students
- Organized Pint of Science (a scientific communication event) for my local area

BSc Biological Sciences, University of Essex

2015-2018

- 1st Class Honours Degree

Research Experience

EssexLab Research Assistant, University of Essex

Nov 2018 to Present

- Assisting in the design and setup of an eye-tracker experiment
- Working with python and eye-tracker software to help debug and stress test the experiment
- Using R to visualize and analyze eye-tracker results

Oerlikon Fairfield, Lafayette, IN

June 2018 to Sept 2018

- Worked as an inventory data analyst at a manufacturing plant
- Used excel to summarize inventory and expected gross earnings
- Increased the efficiency in identifying part shortages and relayed pertinent information to upper management

Final Year Dissertation, University of Essex

Oct 2017 to May 2018

- Investigated the interaction between microbial community composition and environmental factors using gene amplicon read data
- Wrote bash scripts to cluster sequences into unique sequence clusters using an open-source pipeline
- Used R to analyze the diversity and taxonomy of the clusters in relation to environmental factors

University of Essex UROP Placement, Colchester, UK

Dec 2017 to May 2018

- Worked on a multi-year study titled "Understanding Student's Lives"
- Using R and Qualtrics survey software, successfully integrated IAT tests into pre-existing surveys and then wrote R scripts for subsequent analysis
- Optimized surveys pre-launch by stress testing inputs and checking grammar

DeWoody Lab, Purdue University, West Lafayette, IN

June 2017 – Sept 2017

- Worked as a research assistant on an experiment investigating host/pathogen coevolution in bananaquits, *Coereba flaveola*

- Increased the efficiency of amplifying and tagging genetic samples using PCR and gel electrophoresis
- Wrote python and bash scripts to solve a problem with overlapping gene amplicons
- Practiced standard lab procedures as well as maintenance and sterilization processes

University of Essex Coral Research Lab

Oct 2015 to April 2017

- Worked as a lab assistant in the coral lab on campus
- Maintained important biogeochemical element and trace metal cycles in all the coral systems
- Was responsible for running the lab while technical staff were away

Shedd Aquarium

Summer 2016

- Worked as a field researcher assistant aboard the research vessel *Coral Reef II* analyzing the distribution of Queen Conch populations in the Bahamas
- Utilized both shallow water survey techniques and a deep-water array to collect data
- Was proactive in ensuring all data was logged electronically prior to the research cruise ending

Greenforce

Summer of 2014 and 2015

- Worked as an intern in the Bahamas conducting coral reef monitoring in a marine protected area using AGGRA identification methodologies
- One of the first members of the team to achieve AGGRA certification which allowed me to play a larger role in data collection
- Taught volunteers AGGRA species identifications

Awards and Scholarships

John Shire Prize for Biology (£150) - most outstanding performance in BSc Biological Sciences **2018**

Environmental and Conservation Prize (£150) - most outstanding performance in an Environmental and Conservation-based course **2018**

Abel-Imray Project Prize (£100) - most outstanding final year project in an Environmental and Conservation based course **2018**

University of Essex Dean's List **2015 - 2018**

Vice-Chancellor's International Scholarship (£1,500) **2015**

Skills and Qualifications

Programming

- Proficient in R, Python, bash, and MS office suite
- Experience developing my own packages and functions for practical use
- Strong data analysis skills and proficient in both linear and general linear modelling

Technical Aptitude

- Possess a high level of computer literacy and am comfortable learning and operating different software
- Experience working in UNIX environments with bioinformatics programs for genome analysis

Activities

Dungeons and Dragons

Oct 2018 to Present

- Player and Dungeon Master for my local group
- Improving my teamwork and abstract problem solving skills

University of Essex Scuba Diving Club

September 2016 to May 2018

- Served as both treasurer and equipment manager of the university's scuba diving club
- PADI Rescue Diver certification (63 dives total)