QUINN ASENA

Post-doctoral research associate developing and applying new statistical methods to palaeoecological data to understand ecosystem responses to environmental change. Working with Jack Williams and Tony Ives on data across North America on an NSF funded project: Abrupt Change in Ecosystems. I also like to get hands on in the field and lab.

EDUCATION

2021 | 2017

PhD, University of Auckland

School of Environment — Auckland, NZ

- Exploring virtual ecological methods for generating pseudoproxy data to assess statistical inferences under data uncertainty.
- Supervised by George Perry and Janet Wilmshurst.

2016 | 2012

MEnv. Environmental Science

University of York — York, UK

- 1st class integrated masters degree in environmental science. Master's researched involved environmental monitoring using sensor networks and robotics.
- Courses included: Ecological Principles; Biogeography, Applied Ecology and Environmental Management; Protected Areas; Design and Implementation; Climate Change: Science, Observation & Impacts; Research Skills and Statistical Methods.

2010 | 2005

Music School

Royal Academy of Music — London, UK

- Study in performance, composition and musical theory. Multiple competition awards.
- ABRSM Grade 8 Piano Performance.
- ABRSM Grade 5 Music Theory.

Certified Carpentries instructor

Global digital skills community — Virtual

- Certified to host and assist in running workshops from The Carpentries organisation.

SELECTED POSITIONS

Present | 2022

Post-doctoral research associate

University or Wisconsin-Madison — Madison, WI

- NSF grant, developing state-space modelling methods to analyse palaeoeological records.
- Abrupt change in ecosystems project lead by Jack Williams and Anthony Ives.

2022 | 2021

Research Assistant

University of Auckland — Auckland, NZ

- Conducting a bibliometric analysis on the topic of climate justice.

2022 | 2021

Engagement Specialist

Centre for e-Research — Auckland, NZ

- Engaging with researchers providing extensive research support by setting up virtual machines, data storage, and analytical workflows for graduate students and research staff.
- Includes technical skills for virtual machines (Linux, Bash, Slurm), high performance computing, and version control.

CONTACT

qasena@wisc.edu
QuinnAsena
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` +1 (608) 598 8345

ONLINE RESOURCES

Workshop: Quarto for Colaboration

`fisheR`: R package for calculating Fisher's Information on time-series. Available at github.

`app`: Population growth

`app`: Population growth for lecture

Lecture: Ecological modelling

REFERENCES

Professor Jack Williams

jwwilliams1@wisc.edu

Professor George Perry

george.perry@auckland.ac.nz

Made w/ pagedown.
Source code: github.com/nstrayer/cv.

2021 **Data Analyst**
Auckland Council — Auckland, NZ
- Role: analyse citizen science bird count data and write a technical report.

2019 **Graduate Teaching Assistant and Assistant Coordinator**
University of Auckland — Auckland, NZ
- GTA and assistant coordinator for Discovering Environmental Modelling.
- Guest lecturer on population growth.
- Developed application as a teaching aid: shiny app for lecture and [lecture slides].

2019 | 2018 **Graduate Teaching Assistant**
University of Auckland — Auckland, NZ
- GTA: Natural and Human Environmental Systems; Discovering Environmental Modelling; and, Environmental Science and Management.

2017 | 2016 **Research Assistant**
Stockholm Environment Institute — York, UK
- Assisting in the reconstruction of fire regimes in the North York Moors.
- Core preparation and microscope analysis for charcoal and SCPs
- Statistical analysis and compilation of data.

ARTICLES AND PUBLICATIONS

Accepted **Is the past recoverable from the data? Pseudoproxy modelling of uncertainties in palaeoecological data**
Holocene
- Asena, Perry and Wilmshurst

2024 **A Bibliometric Review and Topic Analysis of Climate Justice Literature: Mapping Trends, Voices, and the Way Forward**
Climate Risk Management
- Parsons et al.
- Code repository publicly available.

2019 **Guidelines for Reporting and Archiving 210Pb Sediment Chronologies to Improve Fidelity and Extend Data Lifecycle**
Quaternary Geochronology
- Courtney-Mustaphi et al.

2019 **Response to comment on Peatland carbon stocks and burn history: Blanket bog peat core evidence highlights charcoal impacts on peat physical properties and long-term carbon storage by Evans et al.**
GEO: Geography and Environment
- Heinemeyer et al.
- Role: core preparation and microscopy - charcoal and spheroidal spheroidal carbonaceous particles

2018 **Peatland carbon stocks and burn history: Blanket bog peat core evidence highlights charcoal impacts on peat physical properties and long-term carbon storage**
GEO: Geography and Environment
- Heinemeyer et al.

Courses

I regularly attend courses and workshops to improve my software proficiency and scientific understanding including:

Software courses:
- Python for geospatial analysis
- Google Earth Engine for spatial analysis
- Software Carpentry
- Research Bazaar

University Modules:
- Environmental Data Analysis
- Modelling of Environmental Systems

Skills

- R programming
- High performance computing
- Microscopy
- ITRAX core scanning
- Peat core preparation

2018 **Population viability analyses in New Zealand: a review**

New Zealand Journal of Ecology

- Simpkins et al.

2018 **Assessing the links between resilience, disturbance and functional traits in paleoecological datasets**

Past Global Changes Magazine, vol. 26(2), 87

- Hamilton et al.

PACKAGES, APPS AND RESOURCES

2023 | 2022 **Authoring collaborative research projects in Quarto**

Workshop

- Workshop resources for hosting collaborative research projects using Git andGitHub
- Hosted on GitHub for ResBaz 2022-2023

2019 **fisheR**

R package

- Translation of python script for calculating Fisher's Information on time-series data
- Code available on GitHub

2019 **Population growth app**

Shiny app

- Population growth app exploring different population growth equations for educational purposes

2019 **Population growth lecture aid app**

Shiny app

- App to accompany population growth lecture and help students through population growth calculations

SELECTED WORKSHOPS AND CONFERENCES

2023 **ESA**

Ecological Society of America — Portland, OR

- Speaker: Modelling palaeoecological community data: a state-space approach

2023 **INQUA**

International Union For Quaternary Research — Rome, IT

- Lead Convenor: Data science and paleoecology: current intersections and advances

2023 | 2021 **ResBaz**

Research Bazaar — Auckland, NZ; Madison, WI

- Orgniser and helper in ResBaz Aotearoa 2021
- Workshop lead on Quarto for Colaboration virtual session for ResBaz NZ 2022
- Workshop lead on Quarto for Colaboration in-person Madison, WI, 2023

2022 **BES: Palaeo in R**

British Ecological Society — Virtual

- Speaker on virtual ecological methods to assessing uncertainty in palaeoecological data using pseudoproxies

George Perry Lab

Interested in the lab group? Visit George Perry's lab group: Spatial Ecology Group

Williams Lab

Check out the Williams lab

Ives Lab

See what the Ives Lab group do

Hobbies and Interests

Keen musician improving my piano skills

Rock climber, if I'm not working I'm probably up a mountain. I teach rock climbing safety at university clubs.

2022 **AGU**
American Geophysical Union — Chicago, IL
- Speaker on virtual ecological methods for assessing uncertainty in palaeoecological data using pseudoproxies

2022 **AMQUA**
American Quaternary Association — Madison, WI
- Poster session on virtual ecological methods to assessing uncertainty in palaeoecological data using pseudoproxies

2019 **INQUA**
International Union For Quaternary Research — Dublin, Ireland
- Speaker on pseudoproxy modelling for assessing statistical inferences

2019 **Durham**
Durham University — Durham, UK
- Invited speaker on modelling resilience in ecosystems

2019 **Biological Heritage Science Challenge**
University of Canterbury — Christchurch, NZ
- Speaker on resilience in ecosystems

2018 **International Swiss Climate Summer School Earth systems variability through time: processes, observations and models**
University of Bern — Bern, Switzerland
- Poster presentation and participant
- Accredited course worth 3 ECTS credits

2018 **Te Punaha Matatini Biomaths**
University of Auckland — Auckland, NZ
- Speaker

2018 **EcoRe3: Resistance, Recovery and Resilience in Long-term Ecological Systems**
PAGES - University of Utah — Utah, USA
- Speaker on modelling resilience in ecosystems

2018 **Paleodata Demo Derby Workshop**
University of Wisconsin — Wisconsin, USA
- Participant

2017 **Biological Heritage Science Challenge**
University of Canterbury — Christchurch, NZ
- Speaker

VOLUNTEERING AND OTHER EXPERIENCE

Present | 2024 **Neotoma Leadership Council**
Neotoma — Virtual
- Early career representative on the Neotoma leadership council.

2016 **Database Work for Literature Review**
York, UK
- Literature review work for Assoc. prof. Andy Marshal (unpublished)

2015

NightSafe Volunteer

University of York — York, UK

- Student organisation taking care of student safety throughout the night in the City of York

2015

Science and Outreach - York Institute for Tropical Ecosystems

University of York — York, UK

- Developed short films and interviews overviewing the work done by the York Institute for Tropical Ecosystems (KITE)
- Link to film
- Link to short

2014

York Students in Schools Volunteer

University of York — York, UK

- Volunteering as an assistant in school teaching a range of sciences

2012

Flood Defences - certified course

University of York — York, UK

- Design a flood defence plan for the City of York
- Team won first place

2012

Environment Department Media Development

University of York — York, UK

- Filming and editing a series of interviews of academics in the environment department for open-day presentations