Mauro Lepore

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I am an *R software developer* with interest and *experience* working towards *fighting climate change*. I now work at the Smithsonian Institution (Washington DC, US), building R packages for a global network of researchers whose mission is to better understand and predict forest dynamics in the face of climate change. My most recent work include data-driven research (a postdoc in Panama; PhD in Australia) exploring changes in coral reefs through time, with a focus on human impacts including global warming.

EXPERIENCE

R software developer

ForestGEO
2017-03 - present
National Museum of Natural History, Smithsonian Institution, Washington DC, USA

I build R packages and related software infrastructure (websites, Shiny applications, documentation, tutorials, etc.) to help researchers better understand and predict the dynamics of the world's forests in the face of climate change. The technologies I use the most include **R, Git, GitHub, and continuous integration with TravisCI**.

Data science instructor

The Carpentries
2018 - present

As a certified instructor of The Carpentries, I volunteer to **teach foundational coding and data science skills to researchers** (e.g. Excel, OpenRefine, SQL, R, Git).

Postdoctoral research fellow

O'Dea Lab: Change and Variation in Tropical Seas
2016-02 to 2017-02
Smithsonian Tropical Research Institute, Panama City, Panama

I **researched how coral reefs changed through time**, before and since **human impacts**. I supervised two wonderful interns (one undergraduate and one postgraduate student).

Teaching university students

Smithsonian Tropical Research Institute and The University of Queensland
2011-2016

Teaching assistant for university students from **Texas A&M** University (GEOS405), The **University of Queensland** (MARS2014, MARS2005), **Stanford** University, and the **University of California**.

EDUCATION

The University of Queensland, Australia

PhD in ecology, environmental sciences, and geochemistry
2011-2015
School of Biological Sciences, ARC Center of Excellence for Coral Reef Studies

I studied the "Long term dynamics of coral reefs in the inshore southern Great Barrier Reef", including the potential of a reef system to constitute a **refuge for coral reefs from global warming**. In the field and lab, I **supervised three students and 20 volunteers**.

Universidad de Buenos Aires, Argentina

Licentiate degree in biological sciences with a focus on marine ecology
1999-2008
Faculty of Natural Sciences

In addition to **coursework**, I **researched** a novel method to study the growth rate of a clam.

SKILLS

Tools & technologies

- R programming for data science (e.g. tidyverse packages, rmarkdown, shiny) and software development (e.g. usethis, rlang, devtools, roxygen2, testthat)
- Bash and Git for version control
- GitHub for collaboration and project management
- TravisCI for continuous integration

Industry knowledge

Computer software, higher education, data science, statistics, teaching, research.

LANGUAGES

English (full professional) and Spanish (native).

PROJECTS

tor: Import Multiple Files From a Single Directory at Once

2019-01 - present
URL https://CRAN.R-project.org/package=tor

The goal of tor (to-R) is to help you to import multiple files from a single directory at once, and to do so as quickly, flexibly, and simply as possible.

fgeo: Analyze Forest Diversity and Dynamics

2017-03 - present
URL https://forestgeo.github.io/fgeo/

'fgeo' is a collection of R packages to analyze forest diversity and dynamics. It includes packages to manipulate and plot ForestGEO data, and to do common analyses including abundance, demography, and species-habitats associations.

PEER-REVIEWED PUBLICATIONS

2017
Look to the past for an optimistic future
A O'dea, EM Dillon, AH Altieri, ML Lepore
Conservation Biology 31 (6), 1221-1222

2015
Long-Term Dynamics of Coral Reefs in the Inshore Southern Great Barrier Reef
ML Lepore (supervisors: J Pandolfi and JX Zhao)
PhD thesis. School of Biological Sciences, The University of Queensland

2011
Population structure, growth and production of the yellow clam *Mesodesma mactroides* (Bivalvia: Mesodesmatidae) from a high-energy, temperate beach in northern Argentina
M Herrmann, JEF Alfaya, ML Lepore, PE Penchaszadeh, WE Arntz.
Helgoland Marine Research 65 (3), 285

2009
Aplicación de calceína para la estimación del crecimiento de la almeja amarilla *Mesodesma mactroides* Reeve, 1854
ML Lepore, PE Penchaszadeh, F Alfaya, E José, M Herrmann
Revista de biología marina y oceanografía 44 (3), 767-774

2009
Growth estimations of the Argentinean wedge clam *Donax hanleyanus*: A comparison between length-frequency distribution and size-increment analysis
M Herrmann, ML Lepore, J Laudien, WE Arntz, PE Penchaszadeh
Journal of Experimental Marine Biology and Ecology 379 (1-2), 8-15

2009
Reproductive cycle and gonad development of the Northern Argentinean *Mesodesma mactroides* (Bivalvia: Mesodesmatidae)
M Herrmann, JEF Alfaya, ML Lepore, PE Penchaszadeh, J Laudien
Helgoland Marine Research 63 (3), 207

2008
Estudio del crecimiento de la almeja amarilla argentina *Mesodesma mactroides* por marcaje fluorescente in situ y comparación con el método de análisis de distribuciones de frecuencias de tallas
ML Lepore (supervisors: M Herrmann, PE Penchaszadeh)
Licentiate thesis. Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires