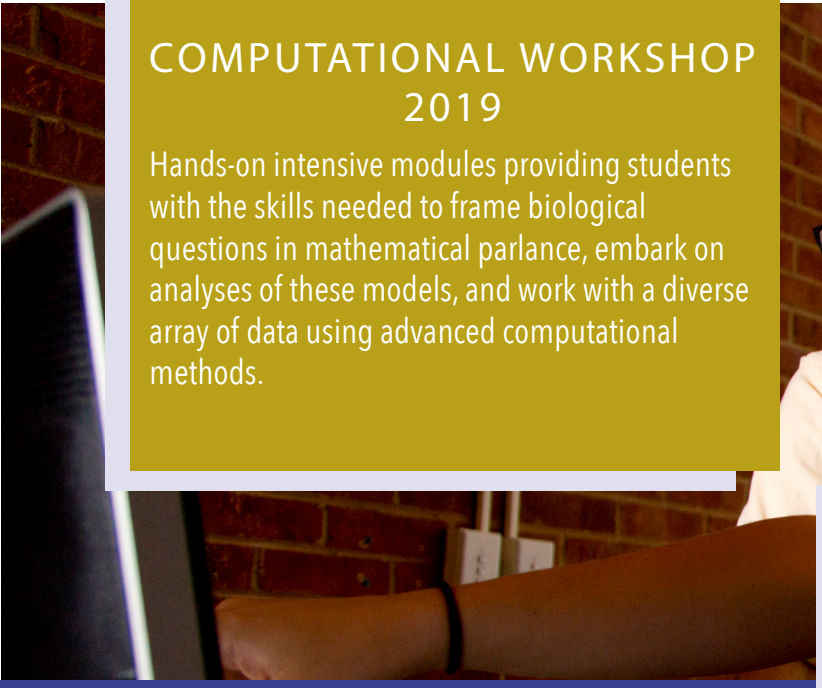
COMPUTATIONAL WORKSHOP 2019

Hands-on intensive modules providing students with the skills needed to frame biological questions in mathematical parlance, embark on analyses of these models, and work with a diverse array of data using advanced computational methods.



INTRODUCTION TO SCIENTIFIC PROGRAMMING

DATES: Monday, May 13 - Tuesday, May 14 from 8:00-5:00 and Wednesday, May 15 from 8:00-12:00

LOCATION: University of Georgia, Athens, GA, USA, Ecology Computer Lab, rm 29

INSTRUCTORS: John Drake (jdrake@uga.edu), Andrew Park (apark@uga.edu)

MODULE DESCRIPTION:

This module introduces the principles and practice of scientific computing with special emphasis on analysis of infectious disease data. Programming will be done in R. Students will be taught how to create reproducible research documents using R and R Markdown and to use git/Github for collaborative and individual projects. An introduction to scientific programming will teach basic operations and classes of base R, installation and use of R packages, data import and transformation, flow control with loops, writing functions, calculating summary statistics, data visualization, and basic mapping. The module will alternate between lectures and computer labs. **Background Reading** (optional): Hadley Wickham and Garret Grolemund. R for Data Science. 2017. O'Reilley. Online. http://r4ds.had.co.nz/

Non-UGA participants are welcome.
Tuition (per module) for non-UGA participants:

- Academic/Gov't: $260 (by April 25); $310 (regular)
- General: $340 (by April 25); $390 (regular)

MODELING INFECTIOUS DISEASES

DATES: Wednesday, May 15 from 1:00-5:00 and Thursday, May 16 - Friday, May 17 from 8:00-5:00

LOCATION: University of Georgia, Athens, GA, USA, Ecology Computer Lab, rm 29

INSTRUCTORS: John Drake (jdrake@uga.edu), Pej Rohani (Rohani@uga.edu)

MODULE DESCRIPTION:

This module covers the principles of dynamic models of infectious diseases. The module will focus on the dynamics of compartmental models such as the susceptible-infected-recovered (SIR) model and variants (SI, SIRS, and SEIR). Topics include incorporating different types of heterogeneities in transmission (resulting from age-structure, behavior or seasonality), exact stochastic birth-death models, sensitivity analysis and fitting of simple models to data. The module will alternate between lectures and computer labs. Programming will be done in R. **Background Reading**: Matt J. Keeling and Pejman Rohani. Modeling Infectious Diseases in Humans and Animals. 2007. Princeton University Press.

REGISTRATION:

This is a week-long course broken into two distinct modules. Students are invited to enroll in one or both modules.

For more information and to register:
visit the portal,
https://tinyurl.com/
CEID-IDEAS19workshop

Space is limited to 20 seats per module. Contact IDEAS@uga.edu for registration assistance.