

# EEID workshop schedule 2012

## Instructors

- Mike Antolin, Colorado State University, [michael.antolin@colostate.edu](mailto:michael.antolin@colostate.edu) (evolution)
- Roman Biek, University of Glasgow, [r.biek@bio.gla.ac.uk](mailto:r.biek@bio.gla.ac.uk) (evolution)
- Ben Bolker, McMaster University (ecology)
- Matt Ferrari, Penn State University (ecology)
- Christian Gunning
- Aaron King, University of Michigan (ecology)
- Jennie Lavine, University of Michigan (ecology)
- Micaela Martinez-Bakker, University of Michigan (tutorial)
- Helen Wearing, University of New Mexico (ecology)
- Colleen Webb, Colorado State University, [ctwebb@lamar.colostate.edu](mailto:ctwebb@lamar.colostate.edu) (evolution)

## Saturday 19 May

- 9:00–10:30 Roll call, introduction, vocabulary of R [Mike, Matt]
- 10:30 **coffee**
- 10:00–11:00 R tutorial: review 1–6 [Micaela + ?]
- 11:00–12:00 R tutorial: review 7 (random numbers), 8 (matrix), 9 (loops) [Micaela + ?]
- 12:00–13:30 Lunch
- 13:30–14:30 Presentation/discussions of data (evolution group meeting separately: see Mike)
- 14:30–17:00 R tutorial: 10 (plotting), 11 (functions), 12 (ODEs)
- 17:00–18:00 Discussion of workshop datasets

## Sunday 20 May

### Evolution

- 8:30–12:00 Estimating and interpreting phylogenies, ancestral states and coalescent models [Roman]
- 12:00–13:30 Lunch
- 13:30–17:00 Modeling Adaptive Processes in Pathogens [Colleen]
- 17:00 Student group initial presentations: propose possible questions/analyses

### Ecology

- 8:30–10:30 Maximum likelihood estimation [Matt]
- 10:30–11:00 **coffee**
- 11:30–12:30 Simulation and SIR models [Helen]
- 12:30–14:00 Lunch
- 14:00–15:00 Student group proposals
- 15:00–16:00 Exploratory data analysis, `ggplot` [Jennie]; introduction to `xts` (time series) [Christian]
- 16:00–17:00 Student group work and catchup

## Monday 21 May

### Evolution

- 8:30–12:00 Population genetics and formulating hypotheses [Mike]
- Population genetic structure of hosts and pathogens
- Using assignment probabilities for pathogen data
- 12:00–13:30 Lunch
- 13:30–17:00 Student groups
- Work, work, work.

## Ecology

- 8:30–10:00 Trajectory matching [Aaron]
- 10:00–10:30 **coffee**
- 10:30–12:30 Generalized linear (mixed) models [Ben]
- 12:30–14:00 Lunch
- 14:00–15:30 Advanced Topics: *possibly*
- stochastic dynamic models
- state-space models
- More on GLMMs
- High-performance computation (big data sets, large/slow analyses)
- 15:30–18:00 Student groups
- Work, work, work

## Tuesday 22 May

### Both sections

- 8:30–15:00 Student groups
- Work, work, work, think hard, work some more.
- 12:00–13:30 Lunch
- 15:00–17:00 Student presentations
- **10 minutes per group** to present results at the end