

NIMBioS Tutorial: Parameter Estimation for Dynamic Biological Models

Agenda

Monday, May 19, 2014

8:10-8:45 Breakfast at NIMBioS

8:45-9:00 Welcome by Suzanne Lenhart, NIMBioS Associate Director for Education & Outreach

9:00-9:30 Introduction of tutors and participants (Organizers: A. Cintron-Arias, M. Eisenberg, P. Hurtado)

9:30-10:00 Paul Hurtado: Foundational overview

10:00-10:30 Eric Carr: SSH and SFTP

10:30-10:45 Coffee break

10:45- 12:00 Paul Hurtado: Activity

12:00-1:00pm LUNCH

1:00-1:45 Paul Hurtado: From classical statistics to statistics with dynamic models

1:45-3:00 Paul Hurtado: Activity

3:00-3:30 Coffee break

3:30-4:00 Marisa Eisenberg: Introduction to parameter estimation (least squares, maximum likelihood, Bayesian)

4:00-5:00 Marisa Eisenberg: Activity

5:00-6:00pm Reception

Tuesday, May 20

8:10-8:45 Breakfast at NIMBioS

8:45-9:15 Marisa Eisenberg: Parameter Uncertainty Introduction - FIM, likelihood profiling, etc. (just broad concepts)

9:15-10:00 Ariel Cintron-Arias: Exponential Models, Introduction to Bootstrapping Methods for Uncertainty Quantification

10:00-10:30 Ariel Cintron-Arias: Activity

10:30-10:45 Coffee break

10:45-12:00 Activity wrap-up, All: Intro to Sensitivity Analysis

12:00-1:00 LUNCH

1:00-3:00 Marisa Eisenberg: Identifiability analysis: structural and practical ID (lecture & activity)

3:00-3:30 Coffee break

3:30-5:00 All: Uncertainty bounds computed by Fisher Information Matrix and Uncertainty Bounds.

Wednesday, May 21

8:10-8:45 Breakfast at NIMBioS

8:45-10:30 Ariel Cintron-Arias: Integrated Application: Least squares estimates of an epidemic model. Sensitivity functions, bootstrapping, Fisher information bounds.

10:30-10:45 Coffee break

10:45-12:00 Activity

12:00 Lunch