



UNIVERSITÄT
LEIPZIG



RESEARCH
ACADEMY
LEIPZIG

Supplementary seminars

Academic Year 2018/19

Summary:

1. Weekly seminars

1. Department of Primatology
2. Department of Evolutionary Genetics
3. Department of Human Evolution
4. Department of Human Behavior, Ecology and Culture

2. Workshops

1) Weekly seminars:

a) Department of Primatology

- **Department Seminar (Prof. Dr. Christophe Boesch) - 1 ECTS**
MPI-EVA, Deutscher Platz 6, U2.50
Tuesday, 11:00-12:00
1h/week for 1 semester, 30h incl. 15h of course time
Active participation, oral assignment
- **Field Meeting (Prof. Dr. Christophe Boesch) - 1 ECTS**
MPI-EVA, Deutscher Platz 6, U2.50
Monday, 14:00-15:00
1h/week for 1 semester, 30h incl. 15h of course time
Active participation, oral assignment
- **Lab Meeting (Dr. Linda Vigilant) - 1 ECTS**
MPI-EVA, Deutscher Platz 6, U2.50
Monday, 13:00-14:00
1h/week for 1 semester, 30h incl. 15h of course time
Active participation, oral assignment

- **Journal Club Primatology (Prof. Dr. Christophe Boesch) - 1 ECTS**
MPI-EVA, Deutscher Platz 6, U2.50
Thursday, 15:00-16:00
1h/week for 1 semester, 30h incl. 15h of course time
Presentation of a scientific paper with grade
- **Hormone Journal Club (Dr. Tobias Deschner) - 1 ECTS**
MPI-EVA, Deutscher Platz 6, U2.50
Wednesday, 10:00-11:00
1h/week for 1 semester, 30h incl. 15h of course time
Active participation, oral assignment

b) Department of Evolutionary Genetics

- **Lab Seminar (Prof. Dr. Svante Pääbo) - 1 ECTS**
MPI-EVA, Deutscher Platz 6, Seminar area Genetics, 3rd floor
Thursday, 13:00-14:00
1h/week for 1 semester, 30h incl. 15h of course time
Active participation, oral assignment
- **Journal Club Population Genetics (Prof. Dr. Svante Pääbo) - 1 ECTS**
MPI-EVA, Deutscher Platz 6, Seminar area Genetics, 3rd floor
Friday, 13:00-14:00
1h/week for 1 semester, 30h incl. 15h of course time
Active participation, oral assignment

c) Department of Human Evolution

- **Journal Club Human Evolution (Prof. Dr. Jean-Jacques Hublin) - 1 ECTS**
MPI-EVA, Deutscher Platz 6, Seminar room 4th floor
Friday, 11:00-13:00
2h/fortnightly for 1 semester, 30h incl. 15h of course time
Presentation of a scientific paper with grade
- **Dept. of Human Evolution: Internal Talk Series (Prof. Dr. Jean-Jacques Hublin) - 1 ECTS**
MPI-EVA, Deutscher Platz 6, Seminar room 4th floor
Wednesday, 13:00-15:00
2h/fortnightly for 1 academic year (2 semesters)
30h incl. 15h of course time
Presentation with grade

d) Department of Human Behavior, Ecology and Culture

- **Journal Club Human Behavior, Ecology and Culture (Prof. Dr. Richard McElreath) - 1 ECTS**
MPI-EVA, Deutscher Platz 6, Seminar area Human Behavior, 1rd floor
Thursday, 11:00 am 1h/week for 1 semester, 30h incl. 15h of course time
Active participation, oral assignment

2) Workshops

- **Scientific Writing (Linda Vigilant) - 1 ECTS**
MPI-EVA, Deutscher Platz 6, 4th floor seminar room
November 5-9, 2018, 10:00-12:00, 13:00-15:00 daily (Mon-Fri)
Active participation, written assignment
- **Statistical Rethinking—A Bayesian Course with Examples in R and Stan (Richard McElreath) - 1 ECTS**
MPI-EVA, Deutscher Platz 6, Room H4.10
December 3, 2018 to March 1, 2019 twice a week for one hour
Active participation, written assignment
- Since January 2019: Confronting the Blank Page
Coaching in Writing offered by the school
- **Shut Up and Write**
January 29 from 10 am to 5 pm
- **Prospectives: Ways into nature conservation organisations**
MPI-EVA, Deutscher Platz 6, Room U1.50
6 February 2018, 2 pm
- **Shut Up and Write**
MPI-EVA, Deutscher Platz 6, Room U1.50
February 14 from 10 am to 5 pm
- **How to do a research career in academia – 1 ECTS**
MPI-EVA, Deutscher Platz 6, Room H4.10
April 2-3, 2019 (one and a half days) – Workshop in Co-operation with the MPG
- **Linear Models and Their Application in R (Roger Mundry) - 1 ECTS**
MPI-EVA, Deutscher Platz 6, Room U0.26
March 18-29, 2019 from 10:00-13:00 and 15:00-18:00

Course Outline

Linear models represent a flexible framework allowing the analysis of the effects of one or several (quantitative or qualitative) predictors on a single response (which can be, e.g., continuous, a count, or binary). As such they encompass, for instance (linear and non-linear) regression, ANOVA, ANCOVA, the Generalized Linear Model (e.g.,

logistic, Poisson, zero-inflated or negative binomial regression), and Mixed (a.k.a. hierarchical or multi-level) Models. As such, linear models allow to address a huge variety of questions using a unified conceptual and statistical framework.

In the course I treat all the above, that is linear models from simple regression to Generalized Linear Mixed Models (GLMM). I begin with simple linear regression and then explain how this concept can be extended to model the impact of multiple predictors, categorical predictors, interactions, and non-linear relationships (i.e., the 'general linear model'). Then I proceed with introducing the 'Generalized Linear Model' (i.e., logistic, Poisson, zero-inflated, and negative binomial regression). Finally I treat the (Generalized) Linear Mixed Model (i.e., models allowing the inclusion of random effects). Further lessons will be devoted to non-linear modelling, how to formulate scientifically meaningful models, and information theory based as well as multi model inference.

Throughout the course I put much emphasis on the conceptual meaning and interpretation of the models rather than on their 'mechanics' (i.e., the mathematical background). Practically this means that we shall devote quite some time to understanding what such models reveal about 'life' (i.e., the process investigated) and particularly to understanding and interpreting interactions. In fact, I consider it an important component of the course to try teaching how models and 'life' are linked, i.e., how one can put hypotheses and questions about life into models and what these then reveal about it.

The course is largely centred around a null-hypothesis significance testing framework, largely because this still the by far most frequently used approach. However, I also explain the concept of information theory based inference (and if time allows we shall also practically apply it). Furthermore, the models themselves, i.e., their meaning, interpretation (and limitations), are unaffected by the philosophy used to draw statistical inference.

The course consists of roughly 50% theory and 50% practical applications during which we shall work ourselves through various models. As part of that, participants will also learn how to plot the results of the models treated and how to describe them in the methods and results sections of a paper. Finally, I put much emphasis on assumptions and how to check them.

The course requires some familiarity with the basic concepts of R and also some familiarity with general ideas/concepts of statistics. That is, participants should have some experience with R, for instance, knowing how to read a file into it and run some simple tests (e.g., t-test, ANOVA, or non-parametric tests) and create simple plots. Regarding this requirement, a couple of weeks before the course begins I'll make available two tutorials giving a general introduction to R and an introduction to plotting in R, and participants are expected to have a serious look at these (total of ca. 100 pages) before the course begins. Participants should also have some experience with applied statistics, and be somewhat familiar with things like null-hypothesis significance-testing, 'error level', etc..

The course takes two weeks with some six hours of classes per workday and lessons build heavily upon one another. Hence, I advice every participant to keep these days free of other obligations and participate throughout (missing even just a few hours

may make it very hard to catch up later). Also, it probably pays a lot to invest extra time to go through the treated material again outside the teaching hours. The course is accompanied with plenty of handouts which will be made available during it.

The course is open to everyone (not just students) and free of charge.

- **Prospectives: Starting a Career in Museums**
MPI-EVA, Deutscher Platz 6, Room H4.10
June 26, 2019, 2 pm
- **Opening the path of doing science -- Workshop with Corina Logan**
MPI-EVA, Deutscher Platz 6, Room H4.10
July 31, 2019, 10 to 12 am