Workshops for Young Scientists of the CRC 1310: Predictability in Evolution

In February and March 2019, the Young Scientist's Board of the CRC 1310 will hold two workshops to bring you up to speed on specific topics relevant to the CRC. Both workshops will take place at the Physics Department of the University of Cologne. The workshops are open to all members of groups participating in the CRC 1310.

We particularly aim at those of you who missed specific skills due to having studied another field and will thus have little prerequisites. However, if you have no programming experience, we strongly recommend that you spend three days on acquiring the basics of a language relevant to your workshop of choice.

Since we don't have access to sufficiently large computer rooms, we plan to have you do the practical part on your laptops. If your machine supports booting from a pen drive, you can just boot a readily-made operating system that we'll provide. Otherwise you'll have to install all the relevant software yourself (we'll issue a list in time).

If you need travel support, please state on the respective registration form.

Data Analysis, 20.–27. February 2019

Viera Kovacova and Gerrit Ansmann.

20.2.: Basics of statistical testing (GA)

21.2.: Beyond simple tests: bootstrapping and surrogates (GA)

22.2.: Application to examples with biological data (VK)

25.2.: Raw read filtering and mapping; SNP calling and filtering (VK)

26.2.: Annotation of filtered SNPs and indels; dealing with duplications, insertions, deletions (VK)

27.2.: Miscellanea on analysing sequencing data (VK)

Days will usually begin with a brief lecture-like introduction at 10 o'clock, followed by one or more practical sessions which we aim to finish at 16 o'clock. However, the duration of the latter is generally more flexible depending on your speed. Programming will happen predominantly in R.

Register until January the 21st at goo.gl/forms/z6NqYd37UcRBgeoF2

Simulations 07.–13. March 2019

Benjamin Schmiegelt, Gabriela Petrungaro, Roberto Moran Tovar, Viera Kovacova, and Gerrit Ansmann.

7.3.: Ordinary and stochastic differential equations; general modelling considerations (GA)

8.3.: Ecosystem models as an example for ODEs and SDEs (GA)

11.3.: Population dynamics and path finding on random fitness landscapes – a detailed example from research (BS)

12.3.: Population genetics with Markov chains (GP, RMT, BS)

13.3.: PAML and MrBayes (VK)

We will usually begin with a brief lecture-like introduction at 9 o'clock, followed by a practical session ending around 13 o'clock, in time for lunch. After lunch, teachers or tutors will be available if you need to catch up or have other questions. Programming will happen in Python, C++, and R.

Register until January the 21st at goo.gl/forms/1Jn09lIXF9WKhtEN2