PhD positions in Quantitative Biology: Optimal control of growth and aging

The newly founded group of Prof. Benjamin Towbin at the University of Bern is looking for two PhD students in Quantitative Biology. Our interdisciplinary group studies the effect of nutrition on animal growth and aging, combining quantitative experiments with C. elegans and mathematical modelling (http://www.towbinlab.org).

Project: Animals slow down growth and delay aging when nutrients are scarce. Theory of evolutionary tradeoffs predicts that this response provides a selective benefit. We want to test this prediction experimentally and understand how animals compute an optimal compromise between growth and aging in different conditions. To this end, we will use live imaging to measure growth, aging, and reproduction of hundreds of individuals of C. elegans in parallel and at high precision. Combined with precise genetic perturbations (e.g. by CRISPR), these measurements will serve to test quantitative models of molecular tradeoffs inspired by research on growth in bacteria (e.g. Towbin et al., Nature Comm. 2017).

Your profile: For this interdisciplinary project, we look for students with a MSc in molecular, computational, or evolutionary biology. We also welcome applications from physicists and computational scientists interested in biology. Foremost, candidates require enthusiasm for cross-disciplinary research and an interest in learning new skills. We expect you to be passionate about interacting with scientists of diverse backgrounds and thrive in a dynamic and young environment.

Our laboratory is part of the institute of cell biology at the University of Bern, which provides state-of-the-art infrastructure for live imaging and molecular biology. As the capital of Switzerland, Bern is an attractive place to live. The city is located an hour away from major alpine resorts and its old centre belongs to the UNESCO world heritage.

To apply, send a single PDF with a detailed CV, a cover letter explaining what you know, what you want to learn, and why you want to join our lab by email to Prof. Benjamin Towbin. Please, include at least 2 academic references, and copies of relevant diploma. The earliest starting date for this position is 1 November 2019.

Contact and further information:
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http://www.towbinlab.org
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