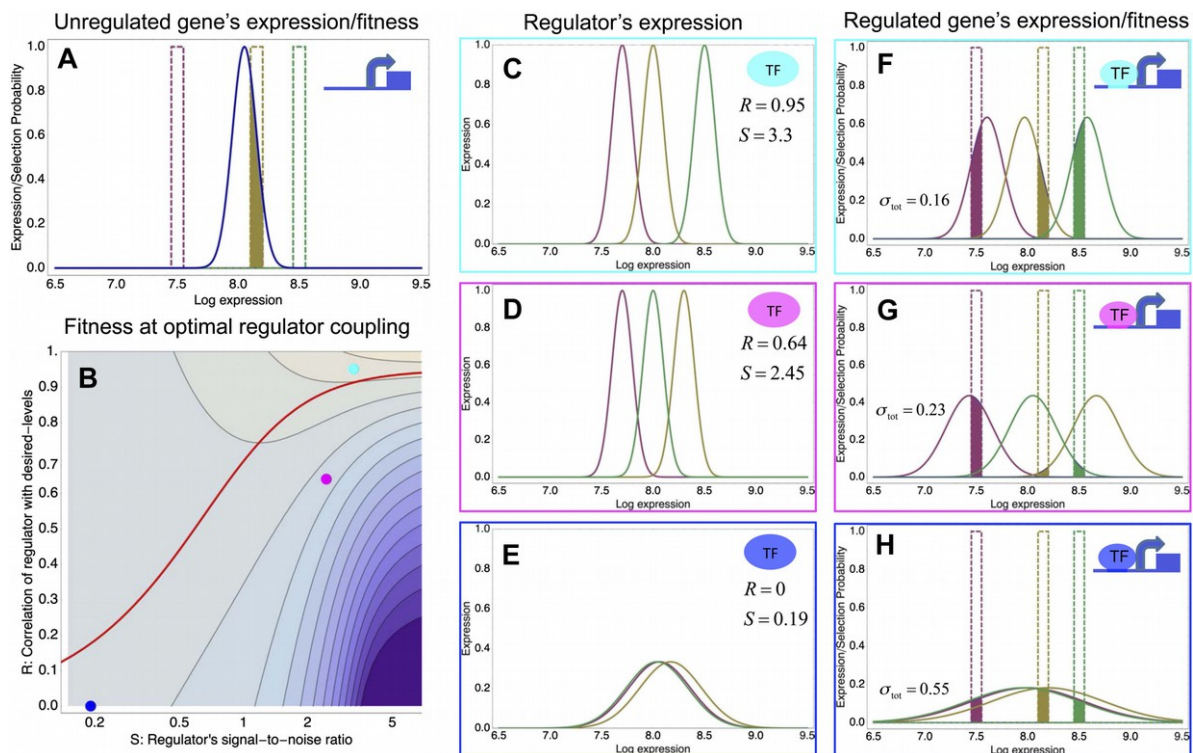


## Master thesis / internships in theory of gene regulation and theory of genome evolution

The research group of Prof. Erik van Nimwegen is looking for master students with strong mathematical and computational skills who are interested to perform theoretical and computational research in the area of gene regulation or genome evolution. The group is located at the [Biozentrum](#) [1] of the University of Basel and affiliated to the [Swiss Institute of Bioinformatics](#) [2].

Our research group is highly interdisciplinary, involving both an experimental section where researchers with a background in molecular biology are experimentally studying genome evolution and gene regulation at the single cell level in bacteria, and a theoretical section where researchers with backgrounds in theoretical physics, computer science, and applied mathematics are using techniques from Bayesian probability, evolutionary theory, dynamical systems theory, and stochastic processes, to study the function and evolution of genome-wide regulatory networks in cells. We are particularly interested in uncovering the principles by which genome-wide regulatory networks specify and maintain cell identity in multi-cellular organisms, how cells control and exploit the noise in gene regulatory processes, and how gene regulation evolves. A list of our group's publications can be found on [Google Scholar](#) [3]. Our lab also takes part in a number of collaborative projects within Switzerland including [StoNets](#) [4], which studies the ways in which cells control and exploit stochasticity in gene regulatory networks, and [BrainStemX](#) [5], which studies the gene regulatory networks underlying mammalian forebrain development. The precise topic of the internship will be determined jointly with the candidate based on his interests.

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[1] <http://www.biozentrum.unibas.ch/research/groups-platforms/overview/unit/nimwegen/>

[2] <http://www.isb-sib.ch/groups/basel/gsb-nimwegen.html>

[3] <http://scholar.google.ch/citations?user=N24KB1wAAAAJ>

[4] <http://www.stonets.org/>

[5] <http://www.brainstemx.org/>