



## 3 Year PhD Studentship available for September 2018

**Department:** Molecular and Cellular Biology

**Supervisors:** Thomas Schalch, [thomas.schalch@unige.ch](mailto:thomas.schalch@unige.ch)

**Eligibility:** UK /EU applicants only

**Project Title:** Investigating the regulation of transcription by a nucleosome remodeling and deacetylation complex

### Project Description:

#### Aims

To discover molecular mechanisms that specify heterochromatin and silence transcription.

#### Background

Epigenetic mechanisms are essential in establishing the transcriptional programs of eukaryotic cells, which drive cellular identity and are disturbed in many diseases. We focus on understanding mechanisms that silence genomic regions and use the yeast model system *S. pombe* to establish the relationship between structure and function down to the atomic level. The nucleosome remodelling and deacetylation complex SHREC is a prototype for complexes of this class, the NuRD complexes, that are conserved in animals and plants. We have established structures of the building blocks of the complex and have identified several key interactions that underpin its architecture (Job et al. 2016). Building on our previous work we now want to understand how the complex interacts with its chromatin template and how these interactions contribute to the specific recruitment of the complex to genomic regions for gene silencing.

#### Approaches

The student will use both biochemical and structural methods (X-ray crystallography, cryo-EM and NMR are available) to purify and structurally characterize the supramolecular complexes. Concomitantly the student will also employ *S. pombe* genetic methods and perform functional studies to measure silencing and recruitment of heterochromatin factors to specific genomic regions.

#### References:

Job, G., Brugger, C., Xu, T., Lowe, B.R., Pfister, Y., Qu, C., Shanker, S., Baños Sanz, J.I., Partridge, J.F., and Schalch, T. (2016). SHREC Silences Heterochromatin via Distinct Remodeling and Deacetylation Modules. *Molecular Cell* 62, 207–221.

**Funding details:**

This studentship is fully funded for 3-years by the University of Leicester, starting in September 2018. This will provide a Tuition Fee waiver at UK/EU rates and stipend at RCUK rates (for 2018 this will be £14,777) for 3 years.

**Entry requirements:**

Applicants are required to hold/or expect to obtain a UK Bachelor Degree 2:1 or better in a relevant subject. The University of Leicester [English language](#) requirements apply where applicable.

**How to apply:**

You should submit your application using our [online application system](#).

**Apply for Molecular and Cell Biology Research / September 2018**

In the funding section of the application please indicate you wish to be considered for A **College of Life Sciences Studentship**

In the proposal section please provide the **name of the supervisor and project title**. Include a personal statement explaining why you want to be considered for this project.

**Project / Funding Enquiries:**

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