
Announcement of NTNU-CSC PhD Scholarship

Type of scholarship: One-year *exchange* PhD

Period of the scholarship: From September 2021 – September 2022.

Short description of the scholarship:

We have an ongoing Sino-Norwegian project (2019-2021), funded by the Norwegian Research Council and the National Natural Science Foundation of China (No 287052 for the Norwegian group and 31861133019 for the Chinese group), entitled “*Plan – insect relationships: imaging CO₂, pheromones, and plant odors in the olfactory pathway of an herbivorous insect*”. The principle investigator (PI) for the Chinese partner is Professor Guirong Wang, Chinese Academy of Agricultural Sciences, and for the Norwegian partner, the PI is me, Bente G. Berg.

Based on our already comprehensive achievements on the male-specific pheromone system of *H. armigera* – the Chinese group having contributed in the field of peripheral mechanisms and the Norwegian group on central principles – we have a unique basis for carrying out new research experiments dealing with a *female-specific neural circuit*. By combining various advanced methods including olfactory receptor characterization, calcium imaging, electrophysiological recording, and behavioral assays, we have the opportunity of establishing new knowledge on a so far unexplored issue.

The main aim of the exchange scholarship applied for here, is to initiate a research project intending to map the neural pathways involved in odor-regulated oviposition behavior – from periphery to higher brain centers. The PhD candidate will perform morphological/physiological identification of relevant brain neurons via the intracellular recording/staining technique. Our Chinese collaborators have recently performed a series of preliminary experiments on candidate oviposition deterrents (ODs) in *H. armigera*. Several ODs components were successfully identified from the egg surface of *H. armigera* and behavioral studies testing responses to several of them evoked repellent behavior in fertile females. The plant-eating noctuid moth being the subject for our investigations, named *Helicoverpa armigera*, is one of the globally most harmful pest insects. In addition to promoting knowledge about sex-specific chemosensory systems, the findings may contribute to development of more environment-friendly pest regulators.

Qualification and requirement:

As this scholarship is a one-year exchange, the candidate should already be incorporated into a PhD program within a Chinese institution.

Scholarship:

Exchange PhD for 12 months (September 2021 – September 2022). The Department of Psychology guarantees to contribute with 4500 NOK each of 12 months. Together with the 12 500 NOK per month from the China Scholarship Council, this means that the PhD candidate will receive a total amount of 17 000 NOK per month. The total amount for the whole year will include 150 000 NOK from CSC and 54 000 from the Department of Psychology, NTNU.

Supervisor info:

- ✓ main supervisor: Professor Bente G. Berg, Department of Psychology, bente.berg@ntnu.no, +4748296688
- ✓ co-supervisor: Dr. Xi Chu, Department of Psychology

Email and contact information for where to send the application:

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