

China Scholarship Council – University Maastricht

PhD Programme Application form

Basic information

- To be filled in by the prospective UM supervisors -

1. Information on prospective UM supervisors and Promotor

1a. First Supervisor/promoter:

- Title(s), initial(s), first name, surname: Prof. Dr. JHHJ Prickaerts
- Research group: Department of Psychiatry & Neuropsychology, School for Mental Health and Neuroscience, Faculty of Health, Medicine and Life Sciences
- Address for correspondence: Universiteitssingel 50, 6229 ER Maastricht / Room 1.124
- Telephone: +31 (0)43 3881168 / +31 (0)6 53171977
- E-mail: jos.prickaerts@maastrichtuniversity.nl

1b. Second Supervisor/copromoter:

- Title(s), initial(s), first name, surname: Dr. T Vanmierlo
- Research group: Department of Psychiatry & Neuropsychology, School for Mental Health and Neuroscience, Faculty of Health, Medicine and Life Sciences
- Address for correspondence: Universiteitssingel 50, 6229 ER Maastricht / Room 1.116
- Telephone: +32(0)486 826927
- E-mail: t.vanmierlo@maastrichtuniversity.nl

1c. Third Supervisor/copromoter:

- Title(s), initial(s), first name, surname: Dr. AMF Carlier
- Research group: Department of Cell Biology-Inspired Tissue Engineering, MERLN Institute for Technology-Inspired Regenerative Medicine, Faculty of Health, Medicine and Life Sciences
- Address for correspondence: Universiteitssingel 40, 6229 ER Maastricht / Room C3.577
- Telephone: +32 473 452 501
- E-mail: a.carlier@maastrichtuniversity.nl

2. Information on UM Faculty/ Department/ Institute/ School contact person:

When the application is granted by both the CSC and UM, the contact person is responsible for the practical arrangements (i.e. assistance in obtaining a visa, finding accommodation, etc.) of the visit of the PhD candidate:

- Title(s), initial(s), first name, surname: Prof. Dr. JHHJ Prickaerts
- Research group: Department of Psychiatry & Neuropsychology, School for Mental Health and Neuroscience, Faculty of Health, Medicine and Life Sciences
- Address for correspondence: Universiteitssingel 50, 6229 ER Maastricht / Room 1.124
- Telephone: +31 (0)43 3881168 / +31 (0)6 53171977
- E-mail: jos.prickaerts@maastrichtuniversity.nl

- To be filled in by the applicant if already known -

1. Information on the applicant

- Initial(s), first name, surname:
- Male/female:
- Current work address:

- Telephone:
- E-mail:
- Private address:

2. Details of applicant's home university

Note! A separate letter of recommendation by the supervisor or faculty dean of the home university is required.

- Name of home university:
- Address:

- Telephone:
- E-mail:
- Website (if available):

3. Applicant's home university Master Thesis supervisor:

- Title(s), initial(s), first name, surname:
- Address for correspondence:

- Telephone:
- E-mail: WeChat:

4. Research field(s)

neuroscience, computational modeling, cAMP signaling

5. Title of research plan for CSC-UM PhD Programme

Computational modeling of cAMP signaling

6. Short summary of research plan (max. 250 words) (A full plan has to be submitted later)

Background: Neurons constantly receive signals from other neurons and the environment via a wide array of receptors, leading to the production of cyclic AMP (cAMP) within the cell. Although a wide variety of receptors exist, most of them seem to influence cAMP production. In order for the cell to generate specific effects using the generic cAMP, concentrations of cAMP are spatiotemporally regulated in specific intracellular domains. Understanding of this regulation is crucial for developing safe and efficacious medication for, among others, Alzheimer's disease, because cAMP is essential for memory formation. Using the modelling software VCell we can better study and comprehend the dynamic and complex regulation of cAMP levels within the cell.

Study objective: This PhD will entail the use of VCell software to build a computational model of cAMP regulation including its synthesis, degradation and associated feedback loops, combined with dedicated experimental in vitro cellular work for model calibration and validation.

Expected Results: 1) dedicated dynamical data on the key players in cAMP signaling 2) A literature-based overview of the effects and spatiotemporal dynamics of cAMP inhibitors (e.g. PDE4 isoforms) 3) Validated computational model of cAMP signaling 4) Identification of the crucial PDE4 isoforms involved in cAMP signaling through synthesis of 1) and 2).

Requirements: background in neuroscience, a background in computational modeling is a plus, affiliation with biochemical experiments, good English writing skills

Group's performance: Publications: ; H-Index: ; number of citations .

Prof. Prickaerts: 200+; 58; 10.000+

Dr. Vanmierlo: 78; 30; 2499

Dr. Carlier: 35; 16; 816

None of the three supervisors has supervised a CSC student yet directly, although Prof. Prickaerts is the head of the division Translational Neuroscience of MHeNS which is currently hosting 8 CSC students. He has experienced firsthand what the needs of CSC students are when introduced in a new country and lab environment. The CSC PhD student will therefore be fully integrated in the PhD student teams of the supervisors (15+ PhD students). The team has already supervised 20+ completed PhD student projects in international and multidisciplinary research projects.

7. Motivation for CSC-UM PhD application (max. 250 words)

Two letters are required, one from the student and one from the promotion team.

Applicant's Curriculum Vitae (if available)

8. Personal details

Applicant

- Title(s), initial(s), first name, surname:

CSC-UM PhD programme start 1-9-2022

- Surname:

- Nationality: Chinese

- Date of Birth:

- Country and place of birth:

9. Master's degree (if applicable)

Note! Add a copy of your Master's degree to your application

University:

Faculty/discipline:

City and country:

Date:

Grade average:

Title Master's thesis (if applicable):

Thesis grade: