

# TRAINING PROGRAMME IN COLLABORATIVE MATHEMATICAL RESEARCH



The CRM welcomes applications for one postdoctoral position for 2 years and two doctoral positions for 3 years starting preferably in September 1st, 2018 within the CRM – “la Caixa” Foundation Collaborative Mathematical Research programme.

## Proposed projects

Fellows must apply to a position to develop one of the following projects:

### ***Disentangling the network: Understanding pattern formation in angiogenesis through mathematical modelling***

Project for a Ph.D. Grant  
Advisor: Tomás Alarcón  
Computational and Mathematical Biology Group

### ***Unveiling the mathematical laws of language and music***

Project for a Ph.D. or Postdoctoral Grant  
Advisors: Álvaro Corral, Isabel Serra  
Complex Systems Group

### ***Moving boundary problems at the nanoscale***

Project for a Postdoctoral Grant  
Advisor: Tim Myers  
Industrial Mathematics Group

### ***Flexible rewiring of neuronal assemblies through fluctuation-driven plasticity***

Project for a Ph.D. or Postdoctoral Grant  
Advisor: Alex Roxin  
Computational Neuroscience Group

### ***The Collaborative mathematics of pattern formation in embryonic development and evolution***

Project for a Ph.D. or Postdoctoral Grant  
Advisor: Isaac Salazar  
Computational and Mathematical Biology Group

### ***A Dynamical Systems Analysis of Microbial Multi-Species Ecosystems***

Project for a Ph.D. Grant  
Advisor: Josep Sardanyés  
Computational and Mathematical Biology Group

### ***Approximation and big data analysis***

Project for a Ph.D. or Postdoctoral Grant  
Advisor: Sergey Tikhonov  
Harmonic Analysis and Approximation Theory Group

### ***Neural code and computational mechanisms of working memory***

Project for a Ph.D. Grant  
Advisor: Klaus Wimmer  
Computational Neuroscience Group

## Eligibility criteria

The programme is open to applicants of all nationalities.

### **Doctoral students:**

- A basic requirement to be admitted to the programme is fulfilling the admission criteria of a doctoral programme in mathematics of some Catalan university when beginning the doctoral project. For more information see [here](#).
- The candidates must have outstanding academic records and a good level of English.

### **Postdoctoral researchers:**

- Candidates must hold a PhD at the time of joining the programme.

## Contract conditions

### **Doctoral students:**

- Doctoral students in this programme will become members of the CRM Doctoral Training Unit (see [here](#)).
- The doctoral students who pass the selection process will join the programme for 36 months. This includes an initial contract of 12 months renewable for a second and a third year with a gross salary of €18.000 Euros per year.
- Contract renewal is subject to the positive reports emitted by the supervisor.
- The CRM will pay the tuition fees for a doctoral programme in mathematics at a Catalan university. Students will be given a mobility allowance for activities related to their training (600 €/year) and will sign a credential form.

### **Postdoctoral researchers:**

- The postdoctoral researcher contract will be for 12 months renewable for a second year, subject to a positive evaluation of the supervisor. The gross salary will be €25,000 per year.
- Postdocs will be given a mobility allowance for activities related to their training (2.000 €/year) and will sign a credential form.

## How to apply

To apply to these positions, candidates must send an email with the following information to [crmcalls@crm.cat](mailto:crmcalls@crm.cat):

- CV including name, personal address, email and phone number
- The contact information from two researchers who are able to provide recommendation letters in favour of the candidate.
- An expression of interest specifying the project on which the candidate wants to collaborate.
- For Doctoral applicants, the academic records

## Applications Deadline

The deadline to submit an application is **July 29, 2018**. Applicants should be available for interviews (possibly via Skype) on **July 30 and 31 and from September 3 to 7**.

## Selection process

Admission to the programme is on a competitive basis. Applications will be screened initially by the CRM executive committee to ensure that they are complete and eligible. All eligible applications will be reviewed by a selection committee, which will evaluate candidates based on the following criteria:

- The candidate's academic merit and potential for successful research while at the CRM, as evidenced by their qualifications and grades, and previous research experience.
- The information given by the candidate on the application form, and in particular the motivation letter.

The selection committee will consider all the applications and select a number of candidates to be interviewed by potential supervisors and discuss their research interests. Shortlisted candidates will be selected by the Selection Committee on the basis of this personal interview.

Applicants will be notified of the Selection Committee's final decision by e-mail. Successful candidates are requested to inform the CRM whether they accept or decline the offer within 1 week after being notified.

## Governance and administration

The implementation of this programme will be monitored by an ad hoc Governing Committee consisting of representatives of Fundació "La Caixa" and the CRM, who will meet at least once a year.

The CRM administration will provide the necessary general support for the deployment of the programme (diffusion, contracts, interviews, organization,...).

The CRM administration will also provide administrative support in visa formalities, lodging, travel, etc. to selected applicants, if required.