



CALL FOR AWARDING RESEARCH FELLOWSHIPS WITHIN PROJECT GRANTS AND R&D INSTITUTIONS

1 Research Fellowship

One Research Fellowship is opened at **Fundação da Faculdade de Ciências da Universidade de Lisboa**, in the project Dualizability of Algebras from Congruence-Permutable Varieties at CAUL, PCOFUND-GA-2009-246542, financed by the European Union Seventh Framework Programme (FP7/2007-2013) and by FCT, under the following conditions:

1. **Scientific Area:** Mathematics

2. **Requirements for admission:**

Ph.D. in Mathematics obtained less than 5 years ago, or a Masters degree in Mathematics and Ph. D. received before the fellowship starts;
Fluency in written and spoken English;
Research experience in algebra, preferably in universal algebra or in a related field;

Also, it is desirable that the candidate has experience in working within a team setting and good communication skills. Experience with duality theory would be an asset, but is not required.

3. **Work plan:**

The candidate will work on the objectives of the project, in collaboration with the other team members. Duality theory examines category-theoretical connections between algebraic structures and topological structures, which involve full and partial operations and a topology. Apart from making the elements of the algebra more concrete, this representation allows us to solve algebraic questions using topological methods.

The aim of the project is to classify dualizability for algebras that generate a congruence-permutable variety. While this class is considered to be well-understood with regard to many algebraic aspects, there has been a lack of results on dualizability. We aim to address this discrepancy.

After an initial phase of studying the basics of duality theory (if without prior knowledge), the successful candidate will work in close connection with the other group members to find conditions that force or prevent dualizability. Initial areas of study might be related to the recent successes of the project in clarifying the role of nilpotency for dualities, however this might also shift in response to new developments. Related work will address the underlying theoretical framework, such as the role of entailment.

The work environment will usually take the form of informal meetings among project members, and occasional formal meetings of all involved researchers to discuss and review the progress of the project and to make strategic decisions on the future course of action. Participation in seminars at the Center of Algebra will be expected.

4. **Legislation framework:** Portuguese Law Nr. 12/2013, from 29 January (Research Grant Holder Statute); Fundação para a Ciência e a Tecnologia, I.P. Fellowships Regulation of 2012.

5. **Place of work:** The work will be developed at Centro de Álgebra da Universidade de Lisboa, da Faculdade de Ciências da Universidade de Lisboa, under the scientific guidance of Doctor Wolfram Bentz.



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6. **Fellowship duration:** This position is opened for 16 months and will last from June 2013 until the end of September 2014. Upon request by the candidate for good cause, a later start date may be accommodated; however note that this will leave the ending date of the fellowship fixed and instead shorten its duration.

7. **Monthly allowance:** The fellowship amounts to €1495, according to table values of the scholarships awarded directly by the FCT, IP. (<http://www.fct.pt/apoios/bolsas/valores>).

The grant holder will have a personal accident insurance and, if not covered by any social protection scheme can ensure the right to social security through adherence to the voluntary social insurance scheme, pursuant to Código dos Regimes Contributivos do Sistema Previdencial de Segurança Social.

The scholarships will be paid monthly by bank transfer.

8. **Selection method:** Candidates will be assessed by the quality of their CV (65%), their research statement and the information obtained from the referees (if solicited by the jury) (35%).

Short-listed candidates will be asked to have an interview, which will may be conducted remotely and will then be taken into account as well.

9. **Selection Committee:** Doctor Wolfram Bentz (president)
Professor Maria João Gouveia
Professor Luís Fernando Sequeira

10. **Publication/notification of results:** The final results of the evaluation will become public, through an ordered list, which will be posted at the entrance hall of the **Fundação da Faculdade de Ciências da Universidade de Lisboa**, located at the Faculdade de Ciências da Universidade de Lisboa, C1 bldg – 3rd floor, Campo Grande, 1749-016 Lisboa, and the selected candidate will be notified by e-mail.

11. **Deadlines:** This call for applications is open from April 15, 2013 to April 29, 2013.

12. **Application:** Applications may be sent via e-mail to Doctor Wolfram Bentz (wfbentz@fc.ul.pt) and Ms Patrícia Paraíba (patricia-paraiba@ul.pt), by attaching the following documents:

Covering letter

Detailed Academic Curriculum Vitae including a list of publications

Indication of at least two referees and their contact information.

A research statement addressing past research experience and how it relates to the project

Certificate of obtained degrees