EU FUNDING AND TOOLS TO CARRY OUT MATHEMATICAL RESEARCH IN EUROPE



Fomentos e ferramentas europeus para realizar pesquisa matemática na Europa





A União Europeia



- 28 países
- 500 milhões de pessoas
- 7% da população mundial
- 24% dos investimentos em pesquisa mundiais
- 32 Universidades Europeias no Top 100 mundial
- Um único mercado*

*Livre circulação de pessoas, mercadorias, serviços e capitais



Member states of the European Union

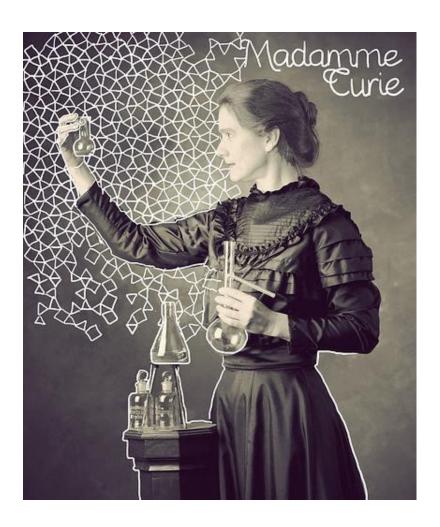


Fomentos da pesquisa pela Comissão Europeia

Marie Sklodowska Curie Actions (MSCA)



Marie Sklodowska Curie Actions (MSCA)



- Formação de excelência em Pesquisa e Inovação
- Oportunidades de carreira
- Troca de conhecimentos por meio da mobilidade internacional e intersetorial



Ações Marie Skłodowska-Curie - MSCA

Objetivos

"Assegurar o melhor desenvolvimento do capital intelectual da Europa e usa-lo de maneira a criar novas habilidades, conhecimento e inovação"

"Brain gain and brain circulation"



MSCA - Características principais

Orçamento 2014-2020: 6,162 bilhões €

- Bottom-up
- Mobilidade é um requisito obrigatório
- Global: aberto aos pesquisadores/staff de
 - todas as nacionalidades,
 - todos os níveis de experiência,
 - todas as áreas do conhecimento e inovação.
- Inovação: participação de organizações não acadêmicas encorajado



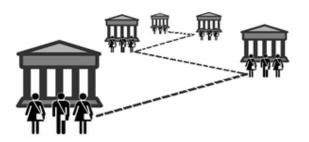
MSCA – Tipos de ações



IFIndividual Fellowships



ITN
Innovative Training Networks



RISE
Research and Innovation
Staff Exchange



COFUND

Co-funding of regional, national and international programmes

MSCA para os pesquisadores sediados no Brasil

Pesquisadores Brasileiros ou sediados no Brasil são elegíveis às MSCA para:

Realizar um DOUTORAMENTO na Europa (ITN & Cofund)

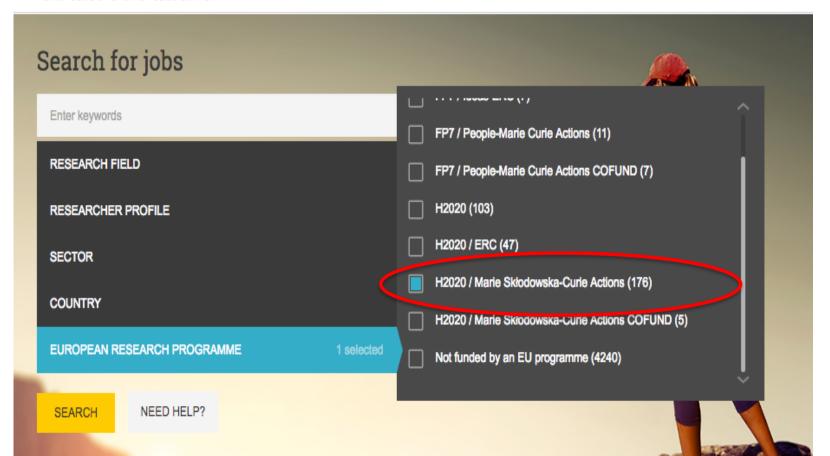


Doutoramento na Europa (ITN/Cofund) => anunciados no portal EURAXESS Jobs

jobs.euraxess.org



HOME , JOBS & FUNDING , JOBS SEARCH



MSCA para os pesquisadores sediados no Brasil

Pesquisadores Brasileiros ou sediados no Brasil são elegíveis às MSCA para:

Realizar um DOUTORAMENTO na Europa (ITN & Cofund)

Realizar um pós-doc (IF)

Chamadas anuais (abril-setembro 2018)

Candidatura com uma instituição de acolhimento, do setor acadêmico ou não

Bolsas generosas, prestigiosas e competitivas

MSCA para instituições brasileiras

Instituições brasileiras (públicas, privadas, do setor acadêmico ou não) podem participar de:

- rede inovadora de formação com parceiros europeus (ITN)
- projetos conjuntos de pesquisa e inovação implementados graças à mobilidade curta do seu staff (RISE)
- => ITN&RISE: parte brasileira traz co-fomento
- receber gratuitamente um pesquisador sediado na Europa, para até 2 anos (IF)

Chamadas MSCA 2018

ITN	13/09/2018 - 15/01/2019	€ 470 million
RISE	22/11/2017 - 21/03/2018	€ 80 million
IF	12/04/2018 - 12/09/2018	€ 273 million
COFUND	12/04/2018 - 27/09/2018	€ 80 million



MSCA para os Brasileiros – Recursos adicionais

Ponto focal no Brasil (MSCA NCP):

Elisa Natola, CONFAP: elisa.confap@gmail.com

Pontos focais MSCA na Europa: bit.ly/Horizon NCP

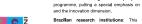
Associação de alumni brasileiros:

https://www.mariecuriealumni.eu

Video **MSCA** in a nutshell

Focus MSCA - What's in it for Brazil? http://bit.ly/FocusMSCA

MSCA IF **Guide for applicants** aqui (2018)





Marie Curie Alumr Association – MCAA

MCAA Facebook page

MCAA sign-up page for MSC fellows to join the association

eu/user/register Membership of the MCAA is free of charge, and open to any past or present Marie

Marie Skłodowska Curie Actions (MSCA) – European Commission's website providing all relevant information regarding the Marie Skłodowska-Curie programmes, fellowships, calls and applications

> tp://ec.europa.eu/research/ ariecurieactions/aboutsca/actions/index_en.htm

Click here to read our Interview with Snezana Krstic, Chair of the Marie Curie Alumni Association (http://bit.ly/interview_MCA

MSCA - What's in it for Brazilian researchers?

 Innovative Training Networks (ITN) is the main European doctoral training programme, putting a special emphasis on non-academic sector participation and the innovation dimension.

Brazilian research institutions: This action is meant primarily for organisations such as universities, research centres or companies, that propose a research training network. Brazilian organizations can join the consortia to submit a proposal.

Brazilian researchers: can apply to the PhD positions created by these networks, including Industrial Doctorate and Joint Doctorate. They are advertised on the Euraxess Job portal.

Calls are annual and advertised on the Horizon 2020 Participant Portal.

 Individual Fellowships (IF) are for experienced researchers to undertake their own research project at a host organisation in another country, thus gaining new skills through advanced training and possibly, intersectoral mobility.

Researchers based in Brazil can apply for a European followship, choosing to apply either for a re-integration grant, a scientific grant or a society & entreprise grantin the non-academic sector.

Researchers based in Europe can apply for a global fellowship to carry out research in a third country such as Brazil and return to Europe. They can also apply to a European fellowship for mobility within the <u>EU or associated countries</u>.

Calls are annual and advertised on the Horizon 2020 Participant Portal

Research and Innovation Staff Exchange (RISE) enables international
and intersectoral collaboration, based on short-term staff exchanges between
organisations worldwide. The RISE programme is the successor programme of
the previous IRSES programme.

Brazilian research institutions can join a consortia as partner, but can't receive direct funding from the European Commisson for the secondment of

Calls are annual and advertised on the Horizon 2020 Participant Portal.

4. Co-Funding of regional, national and international programmes (COFUND) cells are open to European research (funding) institutions, Brazilian organisations can be partner organisations in a proposal. COFUND supports many high-quality fellowahips or doctoral programme positions, which include transnational mobility.

Brazilian researchers can apply directly to COFUND positions advertised on

The European Research Council



What does ERC offer?

ERC Grant Schemes



Starting Grants

2-7 years after PhD (≥ 50% commitment) up to €1.5 Million for 5 years

Consolidator Grants

7-12 years after PhD (≥ 40% commitment) up to €2 Million for 5 years

Advanced Grants

track-record of significant research achievements in the last 10 years (≥ 30% commitment) up to €2.5 Million for 5 years

Proof-of-Concept

of marketable innovation
up to €150,000 for ERC grant holders only

Synergy Grants

2-4 PIs up to €10 million for 6 years to lead to breakthroughs that cannot be achieved by a PI working alone

Complementary Funding Schemes

Horizon 2020

Commission for Research & Innovation

European Union funding



ERC Advanced Grant ERC Consolidator Grant Senior Professors AMERICAN GRANT SYNORGY **ERC Starting Grant** Marie Skłodowska-Curie **Full Professors** actions - Research Fellowship **Junior Professors / Programme** Junior Researchers / **Associated Professors Erasmus Post-docs Programme** Post **Graduates Students**

How ERC research proposals are evaluated?

Excellence is the sole evaluation criterion



Evaluation of excellence at two levels:

- Excellence of the Research Project
 - ✓ Ground breaking nature
 - ✓ Potential impact
 - Scientific Approach
- Excellence of the Principal Investigator
 - ✓ Intellectual capacity
 - Creativity
 - ✓ Commitment



Priority to Young Scientists



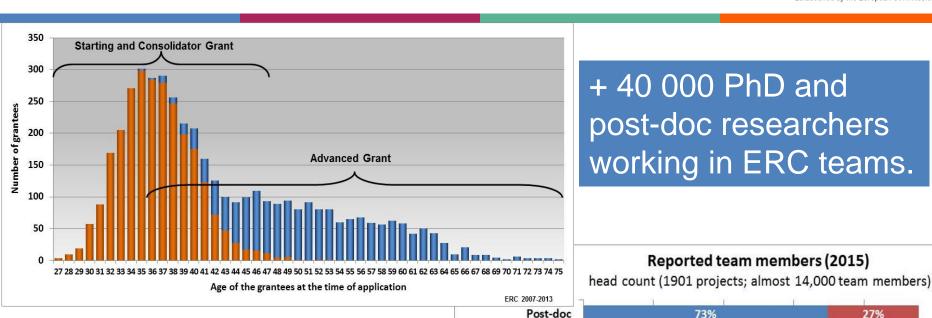
27%

■ ERA

4000

non-ERA

5000



+ 40 000 PhD and post-doc researchers working in ERC teams.

Reported team members (2015)

73%

2000

3000

Two-thirds of ERC grants to early-career Principal Investigators.



Doctoral researcher 80% 20% Senior researcher 89% 119 Research assistant 84% 16% Researcher 23% Technical staff 10% Senior technical staff

1000

Administrator

Evaluation Panel Structure 2019



Each panel: Panel Chair and 10-16 Panel Members

Life Sciences

- LS1 Molecular Biology, Biochemistry,
 Structural Biology and Molecular Biophysics
- LS2 Genetics, 'Omics', Bioinformatics and Systems Biology
- LS3 Cellular and Developmental Biology
- LS4 Physiology, Pathophysiology and Endocrinology
- LS5 Neuroscience and Neural Disorders
- LS6 Immunity and Infection
- LS7 Applied Medical Technologies,
 Diagnostics, Therapies and Public Health
- LS8 Ecology, Evolution and Environmental Biology
- LS9 Applied Life Sciences, Biotechnology and Molecular and Biosystems Engineering

Physical Sciences & Engineering

- PE1 Mathematics
- PE2 Fundamental Constituents of Matter
- PE3 Condensed Matter Physics
- PE4 Physical and Analytical Chemical Sciences
- PE5 Synthetic Chemistry and Materials
- PE6 Computer Science and Informatics
- PE7 Systems and Communication Engineering
- PE8 Products and Processes Engineering
- PE9 Universe Sciences
- PE10 Earth System Science

Social Sciences and Humanities

- SH1 Individuals, Markets and Organisations
- SH2 Institutions, Values, Environment and Space
- SH3 The Social World, Diversity, Population
- SH4 The Human Mind and Its Complexity
- SH5 Cultures and Cultural Production
- SH6 The Study of the Human Past

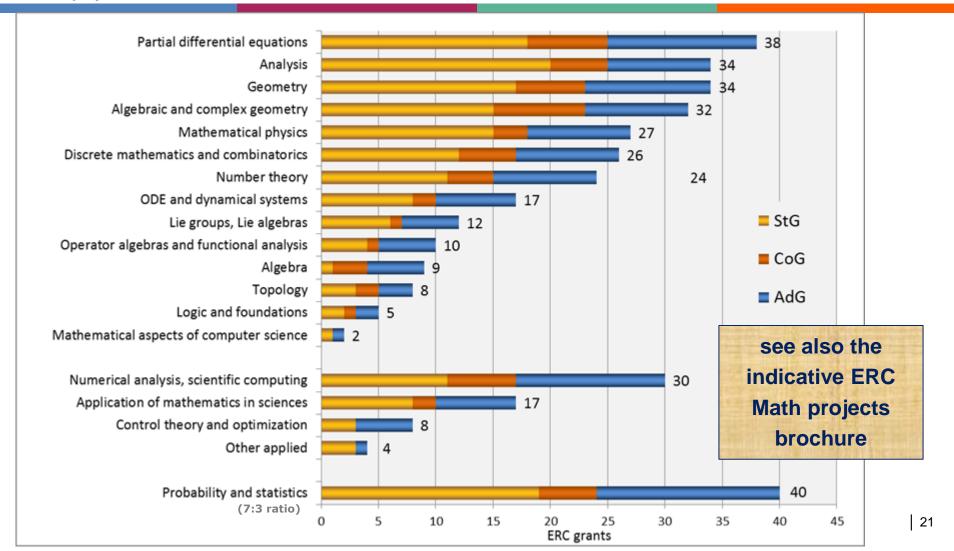
PE1 Mathematics: All areas of mathematics, pure and applied, plus mathematical foundations of computer science, mathematical physics and statistics



(Panel descriptors do <u>not</u> represent ERC scientific priorities)

377 projects in mathematics funded 2007-2017

European Research Council
Established by the European Commission



Researchers of any nationality, also if (at the time of application) based outside Europe, can apply to the ERC



(HI to be in EU or Associated Country – PI ≥50% of working time in EU or AC)

European Research Council
Established by the European Commission

- Additional funding is available to cover 'start-up' costs for scientists moving to Europe (up to €500 000 for Starting grantees, up to €750 000 for Consolidator grantees and up to € 1 000 000 for Advanced grantees).
- ➤ Dual affiliation is also possible: ERC grantees are required to spend 50% of their time in Europe





38 Non-EU/Associated Countries PI Nationalities



645 ERC grants (8% of total) go to principal investigators who are Third Country nationals

Non-EU/AC Principal Investigators	Starting and Consolidator grants	Advanced grants	Total grants
USA	162	107	269
Canada	60	14	74
Russia	40	9	49
India	43	3	46
Australia	37	7	44
Japan	23	7	30
China	27	0	27
New Zealand	10	7	17
Argentina	16	1	17
Brazil	6	1	7
Other	64	8	65
Total	488	164	645





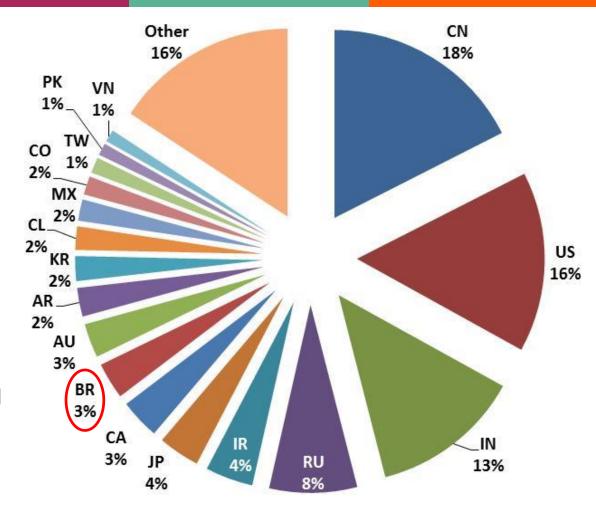
Attracting Bright Minds from around

the World Nationality of ERC project team members (Pls not included)



In all ERC grants
+ 10,000 non-ERA
team members

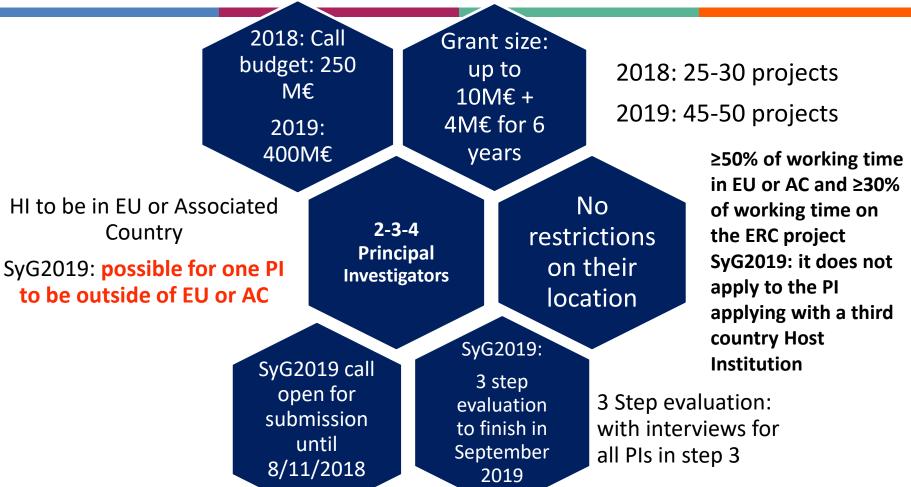
There are currently an estimated **270** team members of Brazilian nationality engaged in ERC projects.



Design of the Synergy call in a nutshell

Information on SyG2019 is pending on the adoption of the ERC 2019 Work Programme at the end of July 2018





Implementing Arrangements



Promote opportunity for non-European researchers supported by national agencies to visit ERC research teams

- United States, signed July 2012 with the National Science Foundation (NSF)
- Korea, signed November 2013 with the Ministry of Science, ICT and Future Planning
- Argentina signed in March 2015 with the Ministry of Science, Technology and Productive Innovation
- Japan, signed May 2015 with the Society for the Promotion of Science (JSPS)
- China, signed in June 2015 with the National Natural Science Foundation (NSFC)
- South Africa, signed in October 2015 with the National Research Foundation (NRF)
- Mexico, signed in November 2015 with the Mexican National Council of Science and Technology (Conacyt)
- Brazil, signed in October 2016 with the Brazilian National Council of the State funding agencies (CONFAP)
- Canada, signed in October 2016 with the Tri-agency Institutional Programs Secretariat
- India, signed in October 2017 with the Scientific Engineering Research Board (SERB)



Implementing arrangements 2012-2017



(about 300 ERC grantees express interest each year to host non-EU/AC researchers)

Numbe	er of non-E	U research	visitors by	year and b	y country	
Country	2012	2013	2014	2015	2016	Total
India					0	0
Canada					3	3
Mexico					5	5
Brazil					12	12
Argentina				5	4	9
China				11	12	23
Japan				3	13	16
South Africa				5	2	7
Republic of Korea		31	28	20	30	109
USA	12	23		11		46
Total	12	54	28	55	81	230

Brazil, signed October 2016 with Brazilian National Council of the State funding agencies (CONFAP)



Implementing arrangements - Brazil



- Local call by CONFAP (The Brazilian National Council of State Funding Agencies) and CNPq (National Council for Scientific and Technological Development) is currently open until 30 August 2018
- Active researchers from Brazil, holding a PhD, who are conducting research at Brazilian universities, institutes or research centers can express their interest in joining ERC funded teams in Europe for 6 to 12 months visits
- They will then receive a list of ERC PIs who have expressed their interest to receive Brazilian researchers, will contact them and negotiate a joint work plan

Indicative summary main calls 2019 provisional budget



ERC Calls	Call date	Submission Deadline	Budget € M (est. grants)
Starting Grants ERC-2019-StG	~mid-September 2018	17 October 2018	580 (390)
Consolidator Grants ERC-2019-CoG	24 October 2018	7 February 2019	602 (314)
Advanced Grants ERC-2019-AdG	21 May 2019	29 August 2019	390 (166)
Synergy Grants ERC-2019-SyG	~mid-September 2018	8 November 2018	400 (48)

The European Research Council



- More information: erc.europa.eu
 - or watch: https://player.vimeo.com/video/154715819
 - https://vimeo.com/94179654
- Sign up for news alerts: erc.europa.eu/keep-updated-erc
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Thank you!



Realizar pesquisa matemática na Europa Como EURAXESS pode ajuda-l@s?

Charlotte Grawitz, EURAXESS Brazil European Research Day, 8 de agosto de 2018







Sobre EURAXESS



European EURAXESS is a European Commission's Directorate-Genera

EURAXESS é uma iniciativa da Comissão Europeia, apoiando a mobilidade de pesquisadores desde 2003.

Fornece GRATUITAMENTE informações e serviços, inclusive sobre fomentos.

A rede está em 40 países europeus, no **Brasil** além de outros 9 não-Europeus.

euraxess.ec.europa.eu



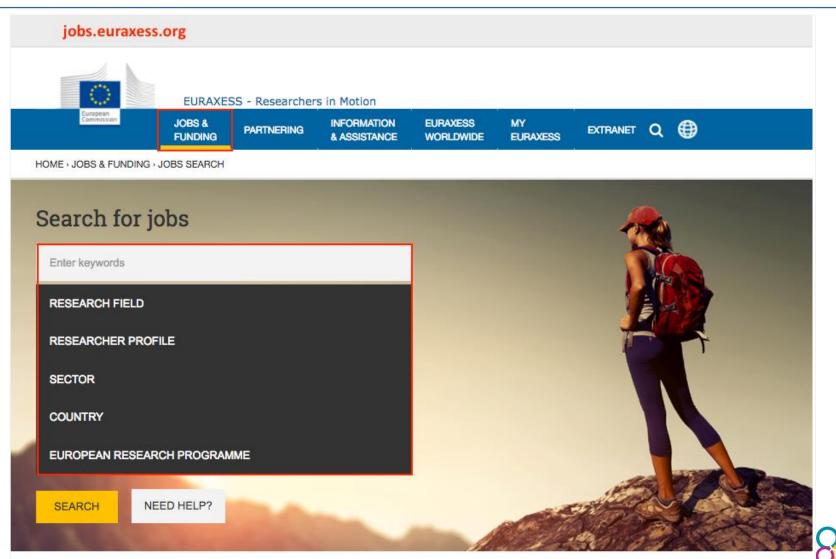
Como EURAXESS pode ajuda-lo?



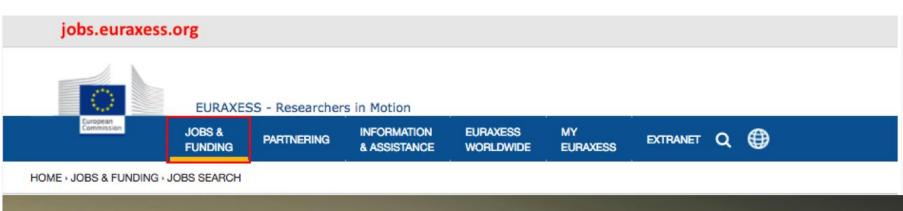
JOBS & FUNDING: ajuda você encontrar oportunidades de trabalho e financiamento

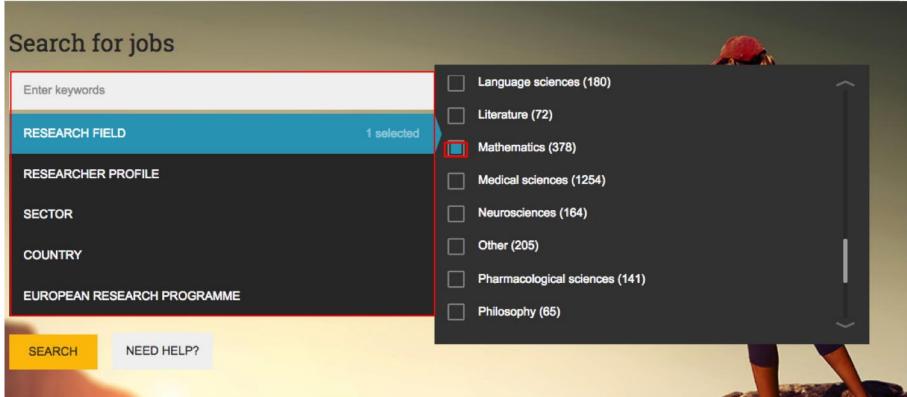


JOBS & FUNDING Jobs database



Available Offers (5181)





Your search results (378)

Selected: Mathematics X

JOBS & FUNDING Jobs database

Busca no EURAXESS Jobs, 9/08/2018, « mathematics », 378 offertas, entre elas:

- Several post-doc positions in machine learning and artificial intelligence
- PhD in program verification
- PhD position on multi-system learning control for interconnected mechatronic systems
- Study assistant 10 h/week
- University Assistant Postdoc Career Position (Institute of Mathematics)
- PhD positions in the international PhD program "Molecular Medicine"
- PhD candidate (f/m) in optoacoustic sensor development
- Scientist Model Uncertainty
- Professor and Head of Mathematics
- Dynamical systems in algebraic and topological structures, their entropies and other invariants
- Post Doctoral Researcher in Statistics Specific Purpose Contract



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Como EURAXESS pode ajuda-lo?



JOBS & FUNDING: ajuda você encontrar oportunidades de trabalho e financiamento



INFORMATION & ASSISTANCE: mais de 600 pessoas em 40 países para ajuda-lo e suas famílias



PARTNERING: encontre parceiros e instituições de acolhimento (*host*)



WORLDWIDE: conecta pesquisadores de todas as nacionalidades no mundo

EURAXESS Brazil – Como trabalhamos?

1. Fornecemos informações



Website e Facebook



Flashnotes regulares & Publicações



Apresentações e Eventos

2. Apoio aos pesquisadores individuais e instituções



EURAXESS Science Slam

Fomentando a criatividade na comunicação científica

<u>Desafio</u>: apresentar sua pesquisa de forma **CRIATIVA**, em 6 minutos para um público de leigos

- Concurso aberto a todos os pesquisadores ativos no Brasil (mestrando e acima); todas as áreas de pesquisa
- Inscrições de junha até 15 de setembro sci



sclence slam

- PREMIO: uma viagem à Europa, para visitar um instituto de pesquisa
- Treinamento: coaching individual, workshop de comunicação científica



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Charlotte Grawitz, Representante no Brasil



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