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Serafim Rodrigues
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GOBIERNO DE ESPAÑA
MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES

FECYT
FUNDACIÓN ESPAÑOLA PARA LA CIENCIA Y LA TECNOLOGÍA

General quality indicators of scientific research

This section describes briefly the main quality indicators of scientific production (periods of research activity, experience in supervising doctoral theses, total citations, articles in journals of the first quartile, H index...). It also includes other important aspects or peculiarities.

Serafim Rodrigues has published over 40 research articles in top journal of Applied Mathematics and Mathematical / Computational Neuroscience, example: PNAS, SIAM Review, Cerebral Cortex, Neuron, etc.. As of June 2020, his publications have accumulated over 1000 citations (source: Google Scholar) with an h-index of 15. Since 2016, he is an associate member of the project-team MathNeuro at Inria Sophia Antipolis (France). Since 2017, he is an Honorary Research Fellow at Plymouth and Bristol Universities (UK). Since 2014, he is a Teaching Fellow of the Higher Education Academy (UK). He has supervised 4 PhD students and mentored 3 postdoctoral researchers; he has supervised over 20 MSc theses. He has taught at all University levels, given over 50 conference talks and seminar presentations across Europe and in the USA. Since he joined BCAM as an ikerbasque Research Professor (March 2017), he has obtained the following grants.

Serafim Rodrigues

Surname(s):	**Rodrigues**
Name:	**Serafim**
ORCID:	**0000-0002-3601-5760**

Current professional situation

Employing entity: FUNDACION IKERBASQUE/IKERBASQUE FUNDAZIOA
Professional category: Research Professor
Start date: 06/03/2017
Type of contract: Permanent employment contract

Employing entity: ASOC BCAM - BASQUE CENTER FOR APPLIED MATHEMATICS
Professional category: Research Professor
Start date: 06/03/2017
Type of contract: Permanent employment contract   **Dedication regime:** Full time
Primary (UNESCO code): 129900 - Other mathematical specialities; 229900 - Other physical specialities (specify)
Tertiary (UNESCO code): 331499 - Other (specify)

Previous positions and activities

	Employing entity	Professional category	Start date
1	Plymouth University, UK	Researcher and Lecturer	01/01/2012
2	Bristol University, UK	Postdoctoral Fellow	01/06/2019
3	Centre National de la Recherche Scientifique	Research Associate	01/01/2009
4	Bristol University	Research Associate	01/11/2006
5	Instituto de Engenharia de Sistemas e Computadores - INESC-ID	Research Associate	01/10/2001

1   **Employing entity:** Plymouth University, UK
   Professional category: Researcher and Lecturer
   Start-End date: 01/01/2012 - 01/03/2017

2   **Employing entity:** Bristol University, UK   **Type of entity:** University
   Professional category: Postdoctoral Fellow
   Start-End date: 01/06/2019 - 01/12/2011

3   **Employing entity:** Centre National de la   **Type of entity:** R&D Centre
   Recherche Scientifique
   Professional category: Research Associate

Start-End date: 01/01/2009 - 01/05/2010

4   **Employing entity:** Bristol University   **Type of entity:** University
Professional category: Research Associate
Start-End date: 01/11/2006 - 01/11/2008

5   **Employing entity:** Instituto de Engenharia de   **Type of entity:** R&D Centre
Sistemas e Computadores - INESC-ID
Professional category: Research Associate
Start-End date: 01/10/2001 - 01/10/2003

Education

University education

1st and 2nd cycle studies and pre-Bologna degrees

University degree: Higher degree
Name of qualification: Graduado o Graduada en Ingeniería Informática - Ingeniería de Computadores
Degree awarding entity: Instituto Superior Tecnico - **Type of entity:** University
Universidade Tecnica de Lisboa
Date of qualification: 01/10/2001

Doctorates

Doctorate programme: Doctor en Programa Oficial de Posgrado en Ingeniería Matemática
Degree awarding entity: Loughborough University, **Type of entity:** University
UK
Date of degree: 01/01/2007

Language skills

Language	Listening skills	Reading skills	Spoken interaction	Speaking skills	Writing skills
English	A1	A1	A1	A1	A1
Portuguese	A1	A1	A1	A1	A1
Spanish	B1	B1	B1	B1	C1

Teaching experience

Experience supervising doctoral thesis and/or final year projects

1 **Project title:** Representing Turing machines and memory on a dynamical system
Entity: Plymouth University **Type of entity:** University
Student: Carmantini Giovanni
Date of reading: 01/11/2016

2 **Project title:** Dynamics of Absence Seizures
Entity: University of Bristol **Type of entity:** University
Student: Benjamin Oscar
Date of reading: 01/12/2011

3   **Project title:** Analysis of Seizure Evolution using Neural Mass Models
Entity: University of Bristol   **Type of entity:** University
Student: Marten Frank
Date of reading: 01/09/2011

Healthcare experience

Other activities/achievements not included above

Other relevant activities: AI initiative grant from the Basque government for drug discovery related to Alzheimer's Disease
Entity where project took place: ASOC BCAM - BASQUE CENTER FOR APPLIED MATHEMATICS
End date: 31/12/2020

Scientific and technological experience

Scientific or technological activities

R&D projects funded through competitive calls of public or private entities

1   **Name of the project:** Inria associated team NeuroTransSF
Entity where project took place: ASOC BCAM - BASQUE CENTER FOR APPLIED MATHEMATICS
City of entity: Bilbao, Basque Country, Spain
Name principal investigator (PI, Co-PI....): Desroches Mathieu; Rodrigues Serafim
Nº of researchers: 2
Start-End date: 01/01/2018 - 01/01/2023
Total amount: 25 €

2   **Name of the project:** Development of novel mathematical and experimental methodologies to control neuronal activity and dissect spatio-temporal neuronal codes
Entity where project took place: ASOC BCAM - BASQUE CENTER FOR APPLIED MATHEMATICS
City of entity: Bilbao, Basque Country, Spain
Nº of researchers: 1
Start-End date: 01/01/2019 - 31/12/2021
Total amount: 40 €

3   **Name of the project:** Mathematical Neuroscience to Characterise Architecture and Dynamics in the Brain (MathNEURO)
Entity where project took place: ASOC BCAM - BASQUE CENTER FOR APPLIED MATHEMATICS
City of entity: Bilbao, Basque Country, Spain
Nº of researchers: 1
Start-End date: 01/01/2019 - 31/12/2021
Total amount: 36 €

4   **Name of the project:** AI initiative grant from the Basque government, BCAM grant "GV-AI-HEALTH",
"CURE-AD"
Entity where project took place: ASOC BCAM - BASQUE CENTER FOR APPLIED MATHEMATICS
City of entity: Bilbao, Basque Country, Spain
Start-End date: 01/09/2019 - 31/12/2020
Total amount: 60 €

5   **Name of the project:** NeuroMath Lab : Mathematical, Computational and Experimental Neuroscience
Entity where project took place: ASOC BCAM - BASQUE CENTER FOR APPLIED MATHEMATICS
City of entity: Bilbao, Basque Country, Spain
Nº of researchers: 1
Start date: 03/06/2019
Total amount: 56,61 €

Scientific and technological activities

Scientific production

Publications, scientific and technical documents

1   T Fülöp; U Munawara; A Larbi; M Desroches; S Rodrigues; M Catanzaro; A Guidolin; A Khalil; F Bernier; AE
Barron; others. Targeting Infectious Agents as a Therapeutic Strategy in Alzheimer's Disease. CNS Drugs. 2020.
Type of production: Scientific paper   **Format:** Journal

2   M Desroches; J Rinzel; S Rodrigues. Towards a new classification of bursting patterns: review & extensions. arXiv
preprint arXiv:2001.09625. 2020.
Type of production: Scientific paper   **Format:** Journal

3   E K{\"o}ksal Ers{\"o}z; M Desroches; CR Mirasso; S Rodrigues. Anticipation via canards in excitable systems.
Chaos: An Interdisciplinary Journal of Nonlinear Science. 29 - 1, pp. 013111 - 013111. AIP Publishing LLC, 2019.
Type of production: Scientific paper   **Format:** Journal

4   A Chizhov; F Campillo; M Desroches; A Guillamon; S Rodrigues. Conductance-based refractory density approach
for a population of bursting neurons. Bulletin of Mathematical Biology. 81 - 10, pp. 4124 - 4143. Springer, 2019.
Type of production: Scientific paper   **Format:** Journal

5   P beim Graben; A Jimenez-Marin; I Diez; JM Cortes; M Desroches; S Rodrigues. Metastable resting state brain
dynamics. Frontiers in computational neuroscience. 13, pp. 62 - 62. Frontiers, 2019.
Type of production: Scientific paper   **Format:** Journal

6   GS Carmantini; P beim Graben; M Desroches; S Rodrigues. A modular architecture for transparent computation in
recurrent neural networks. Neural Networks. 85, pp. 85 - 105. Elsevier, 2017.
Type of production: Scientific paper   **Format:** Journal

7   T Lissek; others. Building bridges through science. Neuron. 96 - 4, pp. 730 - 735. Elsevier, 2017.
Type of production: Scientific paper   **Format:** Journal

Works submitted to national or international conferences

1 **Title of the work:** Can Topology-Structure-Function relationship help understand ageing?
Name of the conference: Biology of Aging: Understanding aging to better intervene
City of event: Montréal, Canada
Date of event: 09/11/2019
End date: 11/11/2019
Organising entity: University of Sherbrooke
City organizing entity: Sherbrooke, Canada

2 **Title of the work:** Time-coded neurotransmitter release at excitatory and inhibitory synapses a slow-fast modelling approach
Name of the conference: New Trends in Mathematical Biology
City of event: Barcelona, Catalonia, Spain
Date of event: 04/06/2018
End date: 08/06/2018
Organising entity: Centre de Recerca Matemàtica   **Type of entity:** Research Center
City organizing entity: Barcelona, Catalonia, Spain

3 **Title of the work:** Time-coded neurotransmitter release at excitatory and inhibitory synapses: a slow-fast modeling approach
Name of the conference: QBIO2018 - Quantitative Biomedicine in Health and Disease
City of event: Bilbao, Basque Country, Spain
Date of event: 20/02/2018
End date: 01/03/2018
Organising entity: ASOC BCAM - BASQUE CENTER FOR APPLIED MATHEMATICS
City organizing entity: Bilbao, Basque Country, Spain

4 **Title of the work:** Time-coded neurotransmitter release at excitatory and inibitory synapses
Name of the conference: Barcelona Computational, Cognitive and Systems Neuroscience (BARCCSYN) 2017
City of event: Barcelona, Catalonia, Spain
Date of event: 15/06/2017
End date: 16/06/2017
Organising entity: Centre de Recerca Matemàtica   **Type of entity:** Research Center
City organizing entity: Barcelona, Catalonia, Spain

5 **Title of the work:** Mathematical modelling, Bridging the gap between Mathematicians and Experimentalists
Name of the conference: Achucarro Colloquium
City of event: Leioa, Basque Country, Spain
Date of event: 19/05/2017
End date: 19/05/2017
Organising entity: Achucarro - Basque Center for   **Type of entity:** Public Research Body
Neuroscience
City organizing entity: Leioa, Basque Country, Spain

6 **Title of the work:** Mathematical Modelling, Neuronal Control and Learning
Name of the conference: NeuroKafe
City of event: Barakaldo, Basque Country, Spain

Date of event: 19/01/2017
End date: 19/01/2017
Organising entity: Biocruces Bizkaia Health   **Type of entity:** Healthcare Institutions
Research Institute
City organizing entity: Barakaldo, Basque Country, Spain

R&D management and participation in scientific committees

Scientific, technical and/or assessment committees

1 **Committee title:** Dynamics Days Europe
   Primary (UNESCO code): 120000 - Mathematics
   Secondary (UNESCO code): 240400 - Biomathematics
   Affiliation entity: Université Côte d'Azur   **Type of entity:** University
   City affiliation entity: Nice, Provence-Alpes-Côte d'Azur, France
   Start-End date: 23/08/2021 - 27/08/2021

2 **Committee title:** Scientific Committee Member, 2nd International workshop in Neurodynamics
   Primary (UNESCO code): 120000 - Mathematics
   Secondary (UNESCO code): 240400 - Biomathematics
   Tertiary (UNESCO code): 249000 - Neurosciences
   Affiliation entity: Universidad de Zaragoza   **Type of entity:** University
   City affiliation entity: Castro-Urdiales, Cantabria, Spain
   Start-End date: 26/09/2018 - 29/09/2018

Organization of R&D activities

1 **Title of the activity:** BioNCB'20: 1st Bilbao Neuroscience and Computational Biology workshop
   Type of activity: Conference   **Geographical area:** Non EU International
   Convening entity: ASOC BCAM - BASQUE CENTER FOR APPLIED MATHEMATICS
   City convening entity: Bilbao, Basque Country, Spain
   Start-End date: 01/06/2021 - 04/06/2021   **Duration:** 4 days

2 **Title of the activity:** Mathematical Neuroscience
   Type of activity: Mini-Symposium at the ICIAM   **Geographical area:** Non EU International
   Conference
   Convening entity: University of Valencia / SeMA   **Type of entity:** University
   City convening entity: Valencia, Valencian Community, Spain
   Start-End date: 15/07/2019 - 19/07/2019   **Duration:** 5 days

3 **Title of the activity:** Introduction to Piecewise Deterministic Markov Processes and Applications to
   Neuroscience
   Type of activity: Course (MSc and PhD level)   **Geographical area:** European Union
   Convening entity: ASOC BCAM - BASQUE CENTER FOR APPLIED MATHEMATICS
   City convening entity: Bilbao, Basque Country, Spain
   Start-End date: 10/06/2019 - 14/06/2019   **Duration:** 5 days

4 **Title of the activity:** Introduction to Mathematical Neuroscience: Neuronal models and their bifurcations
Type of activity: Course (MSc and PhD level)   **Geographical area:** European Union
Convening entity: ASOC BCAM - BASQUE CENTER FOR APPLIED MATHEMATICS
City convening entity: Bilbao, Basque Country, Spain
Start-End date: 18/06/2018 - 22/06/2018   **Duration:** 5 days

Other achievements

Stays in public or private R&D centres

1 **Entity:** Inria Sophia Antipolis Méditerranée   **Type of entity:** Public Research Body
Faculty, institute or centre: MathNeuro Research Team
City of entity: Sophia Antipolis, Provence-Alpes-Côte d'Azur, France
Start-End date: 02/03/2020 - 16/03/2020   **Duration:** 15 days
Goals of the stay: Guest
Provable tasks: publication

2 **Entity:** Inria Sophia Antipolis Méditerranée   **Type of entity:** Public Research Body
Faculty, institute or centre: MathNeuro Research Team
City of entity: Sophia Antipolis, Provence-Alpes-Côte d'Azur, France
Start-End date: 20/08/2019 - 30/08/2019   **Duration:** 11 days
Goals of the stay: Guest
Provable tasks: publication