

# Nikolaos Karalis

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## Current position

### Research fellow

2018 - now Friedrich Miescher Institute for Biomedical Research  
Project: *Neuromodulatory organization of amygdala circuits*  
Group leader: Dr. Andreas Lüthi

## Education

### Ph.D. in Neuroscience

2013 - 2018 Faculty of Medicine, Ludwig-Maximilians University Munich  
Thesis: *Oscillatory architecture of memory circuits*  
Advisor: Prof. Dr. Anton Sirota

### M.Sc. Neurasmus Joint Master in Neuroscience

2011-2012 Charité University Medicine, Berlin – Medical Neuroscience  
2012-2013 University Bordeaux II – Neuroscience and Neuropsychopharmacology  
Thesis: *Neuronal signatures of fear memory* Grade 18/20  
Ranking 1/5

### B.Sc. & M.Sc. School of Applied Mathematics and Physical Sciences

2004 – 2011 National Technical University of Athens (NTUA) Grade 7.42/10  
Majors: Computational Mathematics, Statistics  
Thesis: *EEG signal analysis methods for characterization of meditative states* Grade 10/10

## Research methods

- large-scale *in vivo* electrophysiology
- high-dimensional data analysis
- silicon-probe recordings
- closed-loop optogenetics
- fiber photometry

## Selected Publications (Citations: 567; h-index: 7)

1. Breathing coordinates limbic network dynamics underlying memory consolidation  
**Karalis N, Sirota A** **bioRxiv, 2018**
2. Re-thinking the etiological framework of neurodegeneration  
Castillo X, ..., **Karalis N**, ..., Villringer A, Winek K, Zille M **Front. in Neuroscience, 2019**
3. IgSF9b regulates anxiety behaviors through centromedial amygdala inhibitory synapses  
Babaev O, Cruces-Solis H, ..., **Karalis N**, ..., Brose N, Krueger-Burg D **Nature Communications, 2018**
4. Prefrontal-periaqueductal gray-projecting neurons mediate context fear discrimination  
Rozeske R, Jercog D, **Karalis N**, Chaudun F, Khoder S, Girard D, Winke N, Herry C **Neuron, 2018**
5. Prefrontal neuronal assemblies temporally control fear behavior.  
Dejean C\*, Courtin J\*, **Karalis N\***, Chaudun F, Wurtz H, Thomas Bienvenu, Herry C **Nature, 2016**
6. 4 Hz oscillations synchronize prefrontal - amygdala circuits during fear behaviour.  
**Karalis N\***, Dejean C\*, Chaudun F\*, ..., Benchenane K, Sirota A, Courtin J, Herry C **Nature Neuroscience, 2016**
7. Prefrontal parvalbumin interneurons shape neuronal activity to drive fear expression.  
Courtin J, Chaudun F, Rozeske R, **Karalis N**, ..., Bienvenu T, Herry C **Nature, 2013**
8. Persistence of amygdala gamma oscillations during extinction learning predicts spontaneous fear recovery.  
Courtin J, **Karalis N**, Gonzalez-Campo C, Wurtz H, Herry C **Neurobiology of Learning and Memory, 2013**
9. Effects of Himalayan tradition meditation during a SSVEP study.  
**Karalis N**, Karanasiou I, Uzunoglu N, & Braboszcz C **Neuroscience Letters, 2011**

\*: equal contribution

## Invited Talks

<b>2020</b>	Breathing coordinates cortical network dynamics Breathing coordinates cortical network dynamics	Neurizons – Young Investigator Talks Neuromatch 2.0
<b>2019</b>	Internal clocks for circuit organization	FENS-Hertie Winter School
<b>2017</b>	Neuronal synchrony and oscillatory coupling Neuronal correlates of breathing Respiratory entrainment of memory circuits Respiratory entrainment of prefrontal circuits Prefrontal oscillatory mechanisms of fear behavior	Coupling & Causality in Complex Systems Bernstein Conference PhD Symposium Harvard-LMU Young Scientists' Forum Japan Neuroscience Society meeting British Neuroscience Association meeting
<b>2016</b>	Oscillatory circuit organization during fear behavior Neuronal signatures of fear behavior	LMU lecture series Neurizons – Young Investigator Talks
<b>2015</b>	High-density characterization of network activity	German Neuroscience Society
<b>2014</b>	Neurophysiological correlates of rodent communication	Animal Communication Workshop
<b>2013</b>	Neuronal signatures of fear memory Neuronal signatures of fear memory	Neurasmus Workshop Neurasmus Orientation Week
<b>2011</b>	SSVEP effects of Himalayan tradition meditation	Breaking Convention
<b>2007</b>	Novel graph invariants for fast graph isomorphism Combinatorial and statistical analysis of keno game	Mitacs Industrial Math Summer School Canadian Undergraduate Mathematics Conference

## Research Experience

<b>2019 – today</b>	<b>Research Fellow</b>	<b>Friedrich Miescher Institute for Biomedical Research</b>	
	Project: <i>Neuromodulatory organization of amygdala circuits</i> Group leader: Dr. Andreas Lüthi		
<b>2013 – 2018</b>	<b>Ph.D. Thesis</b>	<b>Ludwig-Maximilians-Universität München</b>	Faculty of Medicine
	<i>Mechanisms of memory consolidation across hippocampal and cortical circuits</i> Advisor: Prof. Dr. Anton Sirota		
<b>2012 – 2013</b>	<b>M.Sc. Thesis</b>	<b>Neurocenter Magendie, Bordeaux</b>	INSERM
	<i>Neuronal signatures of fear memory</i> Supervisor: Dr. Cyril Herry		
<b>2009 – 2011</b>	<b>M.Sc. Thesis</b>	<b>National Technical University of Athens</b>	Electrical Engineering Dept.
	<i>EEG Analysis of the neurophysiological effects of meditation on visual evoked potentials</i> Supervisors: Dr. Irene Karanasiou & Dr. Nikolaos Uzunoglou		
<b>2005 – 2009</b>	<b>Research assistance</b>	<b>National Technical University of Athens</b>	High Energy Physics Dept.
	CERN Grid Computing infrastructure - Network development and administration		

## Scholarships and Grants

<b>2019 – 2021</b>	Marie Curie Individual Fellowship	(191.000 EUR)
<b>2019 – 2021</b>	EMBO Long-Term Fellowship	(130.000 CHF)
<b>2014 – 2017</b>	Ludwig-Maximilians-Universität München	
<b>2013 – 2014</b>	Centre for Integrative Neuroscience (CIN) - University of Tübingen	
<b>2011 – 2013</b>	Erasmus Mundus scholarship for the Neurasmus Joint Master degree program in Neuroscience	
<b>2010</b>	University of Pennsylvania Grant	
<b>2009</b>	Erasmus scholarship (Research exchange)	
<b>2007</b>	MITACS scholarship	

## Awards

<b>2010</b>	“ <i>Thomaideio Award</i> ” for conference presentation from National Technical University of Athens for the presentation “Short term effects of Vipassanā meditation in a single subject SSVEP study”
<b>2008</b>	“ <i>Thomaideio Award</i> ” for best journal publication from National Technical University of Athens for the publication “Effect of meteorological variables on the incidence of lower urinary tract infections”

## Selected conferences, summer schools, and workshops

- 2019** FENS CAJAL course - Biosensors and actuators for cellular and systems neuroscience, Bordeaux  
Neuromodulation of Neural Microcircuits, Champéry  
Computational and Systems Neuroscience (Cosyne), Lisbon
- 2018** FENS-Hertie Winter School – Neural Control of Instinctive and Innate Behaviour, Obergurgl  
Exploring New Etiological Paths Towards Neurodegeneration, Mexico City  
11<sup>th</sup> FENS forum, Berlin  
68<sup>th</sup> Lindau Nobel Laureate Meeting in Physiology & Medicine
- 2017** Junior Scientist Workshop on Neural Circuits and Behavior, Janelia Farm, Washington  
Society for Neuroscience Meeting, Washington, DC  
Bernstein Conference, Göttingen  
Harvard-LMU Young Scientists' Forum, Munich  
Japan Neuroscience Society annual meeting, Tokyo  
EMBL Symposium Neural Circuits in the Past, Present and Future, Heidelberg  
37<sup>th</sup> Blankenese Conference on Synaptic plasticity & stability, Hamburg  
British Neuroscience Association festival, Birmingham
- 2016** Probing neuronal circuits during behavior, Bordeaux  
Neurizons, Göttingen
- 2015** Mechanisms of Memory Consolidation, Reconsolidation and Extinction, Lausanne  
3<sup>rd</sup> Baltic-Nordic Summer School on Neuroinformatics, University of Tartu  
Optogenetics Workshop SPP1665, Ruhr University Bochum  
7<sup>th</sup> G-Node Winter Course in Neural Data Analysis, LMU  
Bernstein Conference, Heidelberg  
11<sup>th</sup> Meeting of the German Neuroscience Society, Göttingen
- 2014** NIN Interneuron Summer School, Amsterdam  
Optogenetics: controlling the brain with light, University of Oxford  
Society for Neuroscience Meeting, Washington, DC  
9<sup>th</sup> FENS Forum of Neuroscience, Milan
- 2013** 1<sup>st</sup> Live Cell Imaging and Electrophysiology Workshop, Pasteur Institute, Athens  
11<sup>th</sup> Summer Course on Computational Neuroscience, Göttingen  
5<sup>th</sup> G-Node Winter Course in Neural Data Analysis, LMU  
Bernstein Conference, Tübingen
- 2012** Super Resolution Imaging Techniques Workshop, Bordeaux Imaging Center  
Mathematical Cell Biology Graduate Summer Course, University of British Columbia, Vancouver  
8<sup>th</sup> FENS Forum of Neuroscience, Barcelona  
7<sup>th</sup> International Symposium on Neuroprotection and Neurorepair, Potsdam
- 2011** Society of Applied Neuroscience meeting, Thessaloniki  
Breaking Convention, University of Kent
- 2010** 5<sup>th</sup> International Summer School on Emerging Technologies in Biomedicine, Patras  
Summer Program in Computational Neuroscience, University of Pennsylvania, Philadelphia
- 2008** 66<sup>th</sup> European Study Group with Industry, Technical University of Denmark, Copenhagen  
Graduate Industrial Mathematics Modeling Camp, University of Regina  
2<sup>nd</sup> Workshop for Drug Design, National Hellenic Research Foundation, Athens
- 2007** MITACS Industrial Math Summer School, Simon Fraser University, Vancouver
- 2006** Arizona Winter School “Computational Aspects of Algebra and Arithmetic”, Tucson, Arizona

## Travel grants

- 2019** Travel grant to attend the Neuromodulation of Neural Microcircuits conference  
Travel grant to attend the Computation and Systems Neuroscience (Cosyne) conference
- 2018** Onassis Foundation nomination and grant to attend Lindau Nobel Laureate Meeting  
FENS-IBRO/PERC travel grant to attend FENS Forum 2018
- 2017** BCCN travel grant to attend Bernstein Conference  
Janelia Farm travel grant to attend Junior Scientist Workshop on Neural Circuits and Behavior  
FENS travel grant to attend JNS Annual Meeting  
Travel grant to attend EMBL Symposium on Neural Circuits  
Travel grant to attend 37<sup>th</sup> Blankenese Conference
- 2015** University of Tartu – INCF travel grant
- 2014** British Neuroscience Association travel grant
- 2013** Hellenic Pasteur Institute travel grant
- 2011** Thomaideio grant (NTUA) for active participation in conference.
- 2010** COST Grant (5<sup>th</sup> International Summer School on Emerging Technologies in Biomedicine)  
Centrum Wiskunde & Informatica (CWI) (Study group Mathematics with Industry)
- 2009** Centre de Recherche Cerveau et Cognition
- 2008** Danish Center for Applied Mathematics and Mechanics (DCAMM)  
University of Crete travel grant  
Pacific Institute for the Mathematical Sciences (PIMS) grant
- 2006** FORTH scholarship, Athens Information Technology (AIT) scholarship, Hellenic National Science Foundation (NSF) scholarship

## Experimental Techniques

<b>Electrophysiology</b>	<i>in vivo</i> extracellular recordings (tetrodes, silicon probes, ECoG) in freely behaving & head-fixed rodents, high-dimensional neural data analysis, human EEG recordings
<b>Imaging</b>	calcium imaging in freely-behaving mice (miniscope), fiber photometry
<b>Circuit manipulation</b>	closed-loop optogenetics, pharmacogenetics & pharmacology
<b>Programming</b>	Matlab, Python, Julia, Java, C++, PHP, HTML, SQLite
<b>Electronics</b>	circuit design and implementation, electrophysiology and behavioral equipment setup, 3D printing
<b>Lab techniques</b>	stereotaxic neurosurgeries, behavioral analysis, immunohistochemistry, microscopy, cell cultures

## Student supervision

<b>2016 – 2017</b>	Jialiang Lu	M.Sc. Thesis	Currently: Graduate student at Caltech
<b>2017</b>	Auguste Schulz	Research Internship	Currently: M.Sc. student at TUM
<b>2016</b>	Sandra Reinert	Research Internship	Currently: Graduate student at LMU
<b>2015 – 2016</b>	Elena Itzcovich	Research Internship	Currently: Graduate student at LMU
<b>2015 – 2016</b>	Amar Roy	M.Sc. Thesis	Currently: Industry
<b>2015 – 2016</b>	Felix Brechtmann	Research Internship	Currently: Industry

## Patents

**WO/2017/021542** Method and device for modulating fear and/or anxiety

## Other publications

10. Combinatorial and statistical analysis of keno game. **CUMC Annual, 2007**  
**Karalis N**
11. Effect of meteorological variables on the incidence of lower urinary tract infections. **European Journal of Clinical Microbiology and Infectious Diseases, 2009**  
Falagas ME, Peppas G, Matthaiou DK, Karageorgopoulos DE,  
**Karalis N, Theocharis G**
12. Novel graph invariants for fast graph isomorphism identification. **Mitacs Proceedings, 2007**  
**Karalis N, Aliaga R, Arnold R, Wu W**

## Academic service & outreach

<b>2020</b>	FENS 2020 Twitter Ambassador
<b>2019 – today</b>	Peer reviewer, Cosyne conference
<b>2016 – today</b>	Administrator of Systems Neuroscience mailing list
<b>2016 – today</b>	Peer reviewer (PLOS, Front. Comp. Neuro, Neurocomputing, Neuroscience Letters, CODY, Cosyne)
<b>2015 – today</b>	Organizer of Neurophysiology Nights seminar series, LMU
<b>2012 – 2015</b>	Writer & editorial board of the “CNS Charité Neuroscience Newsletter”
<b>2012 – 2013</b>	Neurasmus course representative at the Erasmus Mundus Association (EMA)
<b>2012 – today</b>	Scholarpedia Assistant Editor
<b>2011 – 2014</b>	TED talks translator
<b>2008 – 2010</b>	American Mathematical Society's (AMS) poster series “Mathematical Moments” translator
<b>2004 – 2006</b>	Organizer and invigilator - National mathematical competitions - Hellenic Mathematical Society (HMS)
<b>2004</b>	Coordinator, guide and invigilator at the International Mathematical Olympiad (IMO) 2004
<b>2004</b>	Coordinator, guide and invigilator at the International Informatics Olympiad (IOI) 2004

## Teaching experience

<b>2019</b>	Tutoring at FENS CAJAL course - Biosensors and actuators for cellular and systems neuroscience, Bordeaux
<b>2017</b>	Assistance at Miniscope Workshop Munich
<b>2015 - 2017</b>	Student supervision
<b>2015</b>	Tutor at the 7th G-Node Winter Course in Neural Data Analysis
<b>2012</b>	“Speaking to the public” (M.Sc. course), Charité University Hospital, Berlin
<b>2004 – 2012</b>	Private and group tutor (university and high school students), Athens

## Internships

- 2011 – 2012**    **Lab Rotations - Charité - Universitätsmedizin Berlin**  
“Comparison of cell counting techniques for the assessment of cell death in tissue slices”  
“Effects of PEDF on primary neuronal cells after oxygen-glucose deprivation”  
Departments of Experimental Neurosurgery & Experimental Neurology  
Supervisors: Dr. Ana Luisa Piña – Dr. Marietta Zille
- 2010**            **Summer research scholar - University of Pennsylvania**  
Department of Psychiatry, Supervisor: Dr. Ruben Gur
- 2009**            **M.Sc. Thesis - Université Paul Sabatier, Toulouse**  
Centre de Recherche Cerveau et Cognition (CERCO), Supervisor: Dr. Arnaud Delorme
- 2008**            **Internship on Biostatistics - Alfa Institute of Biomedical Sciences (AIBS)**  
Supervisors: Dr. Matthew E. Falagas - Dr. Dimitrios Matthaïou
- 2007**            **Graph theory research for MapleSoft – Simon Fraser University (SFU)**  
“Algorithmic graph isomorphism determination”  
Centre for Experimental and Constructive Mathematics (CECM)  
Supervisors: Dr. Michael Monagan - Mohammad Ghebleh

## Languages

Language	Level		Certification
Greek	First language		
English	Fluent	C2	Cambridge First Certificate in English (2001)
German	Intermediate	C1	Zentrale Mittelstufenprüfung (2002) Zertifikat Deutsch als Fremdsprache (2000)
Spanish	Intermediate	B2	
French	Intermediate	B2	

## Professional memberships

<b>2018 – today</b>	Lindau Alumni Network
<b>2017 – today</b>	Japan Neuroscience Association
<b>2014 – today</b>	Society for Neuroscience
<b>2013 – today</b>	Bernstein Center for Computational Neuroscience
<b>2013 – today</b>	Neurasmus Alumni Association
<b>2012 – today</b>	Neuroscience in Bordeaux Association
<b>2012 – today</b>	Federation of European Neuroscience Societies
<b>2012 – today</b>	Hellenic Society for Neurosciences
<b>2011 – today</b>	“School of Applied Mathematics and Physics” Alumni Association
<b>2004 – today</b>	Hellenic Mathematical Society

## Volunteering work

<b>2011</b>	Volunteering for EDASA (Forest Wildfire Protection), Athens
<b>2010</b>	JeffHOPE student-run free clinics, Philadelphia, PA
<b>2010</b>	Books Through Bars, Philadelphia, PA
<b>2009 – 2012</b>	Photographer in various artistic events
<b>2007</b>	Teaching computer skills to immigrants at the Underground Free University, Athens
<b>2005</b>	European Youth Week 2005, Athens

## Non-academic work experience

<b>2011 – 2012</b>	Civic Consulting (Research assistance), Berlin, Germany
<b>2011</b>	Greek Population Census
<b>2010 – 2012</b>	Founder of tutoring and career counseling organization
<b>2009 – 2011</b>	Photographer (freelance, Demotix agency)
<b>2007 – 2011</b>	Animateur
<b>2004 – 2012</b>	Web development (PHP, HTML, CSS, Javascript, LaTeX, SQL)
<b>2010</b>	Hellenic Post
<b>2004</b>	Hellenic Telecommunications Organization (OTE)
<b>2004</b>	Athens Urban Transportation Organization (OASA)

## Soft skills courses

<b>2017</b>	Patent and IP workshop, Center for Nanoscience, Munich
<b>2015</b>	Project management workshop, LMU Graduate School, Munich
<b>2015</b>	Grant writing workshop, LMU Graduate School, Munich
<b>2015</b>	Academic presentation workshop, LMU Graduate School, Munich
<b>2014</b>	Educational course on manuscript and grant writing, Milan

## Conference abstracts

- 2020** Breathing coordinates cortical and subcortical network dynamics  
**Karalis N, Sirota A** [Neuromatch 2.0]  
Breathing coordinates cortical and subcortical network dynamics  
**Karalis N, Sirota A** [Neurizons 2020]
- 2019** Breathing coordinates network dynamics underlying memory consolidation  
**Karalis N, Sirota A** [Cosyne 2019]  
Breathing coordinates network dynamics underlying memory consolidation  
**Karalis N, Sirota A** [FENS-Hertie Winter School]
- 2018** Dynamic organization of limbic circuit dynamics by breathing  
**Karalis N, Sirota A** [FENS forum 2018]
- 2017** Respiratory entrainment of memory circuits  
**Karalis N, Sirota A** [Junior Scientist Workshop on Neural Circuits and Behavior]  
Respiratory entrainment of memory circuits  
**Karalis N, Sirota A** [SfN Meeting 2017]  
Neuronal synchrony and oscillatory coupling - Functional role and implementation  
**Karalis N, Sirota A** [Coupling and Causality in Complex Systems Conference]  
Respiratory entrainment of prefrontal circuits  
**Karalis N, Sirota A** [Bernstein Conference 2017]  
Respiratory entrainment of prefrontal circuits  
**Karalis N, Sirota A** [40th Meeting of Japan Neuroscience Society]  
Respiratory entrainment of prefrontal circuits  
**Karalis N, Sirota A** [Causation, Explanation, Conditionals workshop]  
Respiratory entrainment of prefrontal circuits  
**Karalis N, Sirota A** [EMBL Symposium Neural Circuits in the Past, Present and Future]  
Respiratory entrainment of prefrontal circuits  
**Karalis N, Sirota A** [37th Blankenese Conference on Synaptic plasticity & stability]
- 2016** Manipulating and interpreting fast oscillatory dynamics using optogenetics  
**Karalis N, Lu J, Sirota A** [3rd Bordeaux Neurocampus Conference]  
Manipulating and interpreting network dynamics using optogenetics  
**Karalis N, Lu J, Sirota A** [Bernstein Retreat - 10th Sparks Workshop]  
Oscillatory circuit organization during fear behavior  
**Karalis N, Courtin, J, Dejean C, Chaudun F, Rozeske R, Wurtz H, Herry C** [Neurizons]
- 2015** High-density electrophysiological characterization of the hippocampal and cortical network activity  
**Karalis N, Blanco-Hernandez E, Sirota A** [11th Meeting of the German Neuroscience Society 2015]  
Multichannel extracellular recordings in freely behaving rodents  
Resnik E, **Karalis N, Schwesig G, Sirota A** [Center of Competence in Neuroengineering Meeting 2015]
- 2014** Synchronized prefrontal-amygdala 4Hz oscillations mediate fear behavior  
**Karalis N, Courtin, J, Dejean C, Chaudun F, Rozeske R, Wurtz H, Herry C** [SfN Meeting 2014]  
Prefrontal circuits of contextual fear discrimination and generalization  
**Rozeske R, Khoder S, Chaudun F, Karalis N, Wurtz H, Herry C** [SfN Meeting 2014]  
Towards the dissection of the olfactory sampling strategies during exploratory activity  
Blanco-Hernandez E, Graboski J, **Karalis N, Sirota A** [Olfaction SPP 5th Annual Meeting].  
Long-range synchronization of prefrontal-amygdala neuronal circuits during fear behavior  
**Karalis N, Courtin, J, Dejean C, Chaudun F, Rozeske R, Wurtz H, Herry C** [FENS Meeting 2014]  
Prefrontal Circuits of Contextual Fear Discrimination  
Rozeske R, Chaudun F, Khoder S, **Karalis N, Wurtz H, Herry C** [FENS Meeting 2014]  
Medial prefrontal cortex neuronal ensembles encode conditioned fear behavior  
Dejean C, Courtin, J, **Karalis N, Wurtz H, Herry C** [FENS Meeting 2014]  
Synchronized prefrontal-amygdala 4Hz oscillations mediate fear behavior  
**Karalis N, Courtin, J, Dejean C, Chaudun F, Rozeske R, Wurtz H, Herry C** [NIN Interneurons Summer School]
- 2013** Increased prelimbic neuronal activity is associated with contextual fear discrimination  
Rozeske R, **Karalis N, Khoder S, Herry C** [4th GDR Congress]
- 2011** Effects of Himalayan tradition meditation during a SSVEP study  
**Karalis N, Karanasiou I, Uzunoglu N** [Meeting of the Society of Applied Neurosciences 2011]
- 2010** Short term effects of Vipassanā meditation in a single subject SSVEP study  
**Karalis N, Karanasiou I, Uzunoglu N** [4<sup>th</sup> Congress for Electr. Engin. Students]
- 2006** Grid Computing [TEE Research and Technology Days]

## Conference and workshop participation

- 2020** Neuromatch 2.0  
Neurizons
- 2019** Fear Learning – From Neuronal Circuits to Translation, Lausanne  
The Sleeping Brain, Paris  
Neuromodulation of Neural Microcircuits, Champéry  
Computational and Systems Neuroscience (Cosyne), Lisbon  
FENS CAJAL course - Biosensors and actuators for cellular and systems neuroscience, Bordeaux  
FENS-Hertie Winter School – Neural Control of Instinctive and Innate Behaviour, Obergurgl
- 2018** 68<sup>th</sup> Lindau Nobel Laureate Meeting in Physiology & Medicine  
11<sup>th</sup> FENS forum, Berlin  
Exploring New Etiological Paths Towards Neurodegeneration, Mexico City
- 2017** Junior Scientist Workshop on Neural Circuits and Behavior, Janelia Farm, Washington  
Society for Neuroscience Meeting, Washington, DC  
Bernstein Conference 2017, Göttingen  
Coupling & Causality in Complex Systems, Cologne  
Harvard-LMU Young Scientists' Forum, Munich  
Japan Neuroscience Society annual meeting, Tokyo  
Bernstein Retreat and Causation, Explanation, Conditionals Workshop, Tutzing  
EMBL Symposium Neural Circuits in the Past, Present and Future, Heidelberg  
37<sup>th</sup> Blankenese Conference on Synaptic plasticity & stability, Hamburg  
British Neuroscience Association festival, Birmingham  
Swiss Society for Neuroscience annual Meeting, Basel
- 2016** Probing neuronal circuits during behavior, Bordeaux  
Neurizons, Göttingen  
Bernstein Retreat and Multichannel Electrophysiology Workshop, Tutzing
- 2015** Mechanisms of Memory Consolidation, Reconsolidation and Extinction, Lausanne  
Why trust a theory? – Modern Physics Scientific Methodology, LMU  
3rd Baltic-Nordic Summer School on Neuroinformatics, University of Tartu  
Optogenetics Workshop SPP1665, Ruhr University Bochum  
7<sup>th</sup> G-Node Winter Course in Neural Data Analysis, LMU  
Bernstein Conference, Heidelberg  
Cutting Edge Technologies, Munich  
Bernstein Retreat and Virtual Reality Workshop, Tutzing  
11<sup>th</sup> Meeting of the German Neuroscience Society, Göttingen  
Center of Competence on Neuroengineering Meeting, Technical University of Munich
- 2014** NIN Interneuron Summer School, Amsterdam  
Understanding Sleep: Novel Perspectives in Neurosciences, European Sleep Research Society, Milan  
Optogenetics: controlling the brain with light, University of Oxford  
International Course on Animal Communication, University of Tübingen  
Practical course optical imaging in Neuroscience, University of Tübingen  
Society for Neuroscience Meeting, Washington, DC  
9<sup>th</sup> FENS Forum of Neuroscience, Milan
- 2013** Models of Synaptic Plasticity Doctoral Course, University of Tübingen  
1st Live Cell Imaging and Electrophysiology Workshop, Pasteur Institute, Athens  
11<sup>th</sup> Summer Course on Computational Neuroscience, Göttingen  
Neurasmus Workshop, Coimbra  
5<sup>th</sup> G-Node Winter Course in Neural Data Analysis, LMU  
Brain-Computer Interface workshop and hands-on seminar, INRIA, Bordeaux  
Bernstein Conference, Tübingen  
1st European Neuroscience Conference by Doctoral Students, Bordeaux  
European Neuroscience Campus Annual Meeting, Bordeaux
- 2012** Super Resolution Imaging Techniques Workshop, Bordeaux Imaging Center  
Neurasmus Workshop, Barcelona  
Mathematical Cell Biology Graduate Summer Course, University of British Columbia, Vancouver  
Cerebral Ischemia: in vivo and in vitro models (Methods Course), Dept. Of Exp. Neurology, Charité, Berlin  
FELASA category B training (License for experimentation on living animals), Charité, Berlin  
8<sup>th</sup> FENS Forum of Neuroscience, Barcelona  
ENC Network Annual Joint Meeting, Barcelona  
Erasmus Mundus Association General Assembly, Prague  
7<sup>th</sup> International Symposium on Neuroprotection and Neurorepair, Potsdam
- 2011** Berlin Brain Days  
22<sup>nd</sup> European Students Conference on Regenerative Medicine, Berlin  
Society of Applied Neuroscience meeting, Thessaloniki  
Breaking Convention, University of Kent  
34<sup>th</sup> European Conference on Visual Perception, Toulouse  
25<sup>th</sup> Annual Hellenic Congress of Neurosurgery, Athens  
25<sup>th</sup> Annual Hellenic Congress of Neurology, Athens



- 2010** 5th International Summer School on Emerging Technologies in Biomedicine, Patras  
 Summer Program in Computational Neuroscience, University of Pennsylvania, Philadelphia  
 Study Group Mathematics with Industry, Amsterdam  
 4<sup>th</sup> Congress for Electrical Engineering Students, Patras
- 2009** 8th EEGLAB Workshop, Aspet  
 The Brain: Function, Imaging and Repair, Athens
- 2008** Modern Methods in Industrial Mathematics Ph.D. Course, Technical University of Denmark, Copenhagen  
 66th European Study Group with Industry, Technical University of Denmark, Copenhagen  
 Mathematics Summer School, University of Crete  
 Graduate Industrial Mathematics Modeling Camp, University of Regina  
 Industrial Problem Solving Workshop, University of Regina  
 2nd Workshop for Drug Design, National Hellenic Research Foundation, Athens
- 2007** Canadian Undergraduate Mathematics Conference, Simon Fraser University, Vancouver  
 MITACS Industrial Math Summer School, Simon Fraser University, Vancouver
- 2006** Arizona Winter School “Computational Aspects of Algebra and Arithmetic”, Tucson, Arizona  
 Introduction to Grid Computing, Athens  
 Next Generation Computing Systems - AIT Summer School, Athens  
 BEST Robotics Summer School, Athens  
 Which mathematics for biology?, FORTH, University of Crete
- 2001 – 2004** Participation in national mathematical competitions