

CURRICULUM VITAE

SELMA SUPEK Ph.D, Assistant Professor
Senior scientific associate
Head of the Neurodynamic imaging group

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www.brain.com.hr



Date of birth: May 12, 1955

ACADEMIC EDUCATION

-B.Sc., Physics at the University of Zagreb, Croatia 1981;

-M.Sc., Physics at the University of Zagreb, Croatia 1987;

-Ph.D., Physics at University of Zagreb, Zagreb 1993.

Thesis: “*Multi-source Modeling in Magnetoencefalography: Simulation and Empirical Studies*”

Mentors: Cheryl J. Aine , Ph.D. and Leon Heller, Ph.D; thesis conducted at the Biophysics Group, Los Alamos National Laboratory (LANL), Los Alamos, NM, USA; *LA-UR – 93-195*

Foreign languages

English - C2

Italian - B2

French - B1

German - B1

ACADEMIC AND RESEARCH EXPERIENCE:

- **Assistant Professor**, Dept. of Physics, Faculty of Science, University of Zagreb, **1998-present**; **Senior Scientific Associate/ Associate Research Professor - May 17, 2013**
- Higher Scientific Assistant, Dept. of Physics, Faculty of Science, Univ. of Zagreb, 1995-1998.
- Graduate Research Assistant, Physics Division, Biophysics Group, Los Alamos National Laboratory, Los Alamos, New Mexico, USA, 1988. - 1993.
- Scientific Assistant, Dept. of Physics, Faculty of Science, 1985-1995.
- Teaching Assistant, Faculty of Printing Engineering, University of Zagreb, 1983-1985.

FUNCTIONS AND MEMBERSHIP IN PROGRAMS, INSTITUTIONS AND BOARDS

- Member of the **BiomagCentral** portal **Editorial Board**
- **IAB** of the BIOMAG Conferences **Coordinator** for the BiomagCentral portal
- Member of the **Board for Neuroscience and Diseases of the Brain, Division of Medical Sciences, Croatian Academy of Arts and Science** (2015 – now)
- Member of the **Working group for the Northern Campus of the University of Zagreb** (2014 - now)
- Member of the **Coordination for Biomedical Engineering of the University of Zagreb**, 03/2012 – now
- **Secretary General of the IAB** of the BIOMAG conferences (2012-2014)
- **President of the IAB** of the BIOMAG conferences (2010-2012)
- Member of the **National MEG Initiative Board (CroMEGin)**, 2009 – now
- Member of the International Advisory Board for the series of International Conferences on Biomagnetism – **IAB of the BIOMAG** conferences (2008 – now)
- Member of the **Operational board for the Nikola Tesla Year** in the Republic of Croatia – 2006
- Member of the **Managing Board of the Mediterranean Institute for Life Sciences (MedILS)** – 2005- 2006
- Member of the **Working group of the Croatian Physical Society for the World Year of Physics**, 2005
- Co-director of the **Interdisciplinary graduate study "Language Communication and Cognitive Neuroscience"**, University of Zagreb, 2003 – 2004

VISITING SCIENTIST

- Visiting Scientist – **Dept. of Biomedical Engineering and Computational Science (BECS), Aalto University**, 02/2014
- Visiting Scientist – **Multi-Modal Imaging Laboratory, Department of Radiology, University of California San Diego - UCSD**, 04/2011
- Visiting Scientist, **MIND Research Network, University of New Mexico**, 09/2007; 05/2011.
- Visiting Scientist, **Fridrich Schiller University, Jena**, 10/2008.
- Visiting Scientist, **Technical University Ilmenau**, 07/2007.
- Visiting Scientist, **Biomagnetism Section, Department of Neurology, University of Heidelberg**, Heidelberg, Germany, 05/2000, 03/2002 and 08/2002, 10/2005, 10/2006, 11/2007, 11/2008, 10/2009; 11/2011; 03/2012.
- Visiting Scientist, **BioMag Laboratory, Helsinki University Central Hospital**, Helsinki, Finland, 04/2002
- Visiting Scientist, **Institute of Advanced Biomedical Technologies (ITAB), University "G. D'Annunzio"**, Chieti, Italy, 05/2000.
- Visiting Faculty, **Physics Division, Biophysics Group, Los Alamos National Laboratory**, Los Alamos, New Mexico, USA, 08/95 - 02/96.
- Consultant, **Physics Division, Biophysics Group, Los Alamos National Laboratory**, Los Alamos, New Mexico, USA, 06/93 -08/93
- Guest Scientist, **Life Sciences Division, Los Alamos National Laboratory**, Los Alamos, New Mexico, USA, 07/87 - 02/88.

FUNDED RESEARCH PROJECTS

- 2018 -2022 H2020 MSCA-ITN-2018-ETN**
"INtegrating Functional Assessment measures for Neonatal Safeguard – INFANS "
Project duration: **48 months**
Funding decision: **June 2018**
Total Evaluation Score: **99%** (Treshold 70/100)
Selma Supek – member of the External Advisory Bord
- 2018 Support RESEARCH, University of Zagreb**
Collaborator on the project "Magnetska i električna svojstva novih i izabranih materijala", P.I.: Kreso Zadro
- 2017 **Support RESEARCH, University of Zagreb**
Collaborator on the project "Magnetska i električna svojstva novih i izabranih materijala", P.I.: Damir Pajić
- 2014 **Support COLLABORATION, University of Zagreb for research mobility individual mobility support for Selma Supek**
- 2011 – 2015 **MC i WG-5 Member COST TD1007 Action – Bimodal PET-MRI molecular imaging technologies and applications for in vivo monitoring of disease and biological processes**
- 2011 – 2014 **MC i WG-2 Member COST TD0904 Action – Time in Mental activity: theoretical, behavioral, bioimaging and clinical perspectives (TIMELY)**
- 2007-2014 **Principal Investigator of the project Cognitive Neurodynamics** (119-1081870-1252, Croatian Ministry of Science, Education and Sport – MZOS)
- 2012 *Collaborator on the project: Networking in Neuroscience* (Fund for the Development, University of Zagreb, Program Excellence, P.I.: Ivica Kostovic)
- 2012 *Collaborator on the project: Exploration of students' strategies in solving simple algebraic equations Istraživanje učeničkih strategija u rješavanju jednostavnih algebarskih jednadžbi* (Fund for the Development, University of Zagreb, Program Docent, P.I.: Ana Sušac)
- 2008 – 2011 **MC i WG-2 Member COST BM0601 Action – Advanced methods for the estimation of human brain activity and connectivity (NEUROMATH)**
- 2008 – 2011 **MC i WG-2 Member COST BM0605 Action – Consciousness: A Transdisciplinary, Integrated Approach**
- 2006 – 2009 **WG-3 Member COST B27 Action – Electrical neuronal oscillations and cognition (ENOC)**
- 2005-2009 **Coordinator of the project: Detection of small metal objects by multi-compartment magnetic measurements** (NATO PDD(CP) – PST.EAP.CLG981130)
- 2002-2006 **Principal Investigator of the project Functional imaging of the brain using neurodynamic methods** (Croatian Ministry of Science and Technology - MZT, #0119265)
- 1994-2002 *Collaborator on the project: Nuclear structure, chaos, and computational physics* (Croatian Ministry of Science and Technology, #1192111, P.I.: Vladimir Paar)
- 1990 – 1996 *Collaborator on the project: Neuromagnetic mapping of multiple visual areas in humans* (NIH/NEI EY08610, P.I. Cheryl J. Aine)

SUBMITTED but NOT FUNDED PROJECT APPLICATIONS between 2010 and 2016:

Applications for international projects:

1. **MSCA-ITN-2017-ETN "Neural Function Assessment for Neonatal and infant life Safeguard - INFANS "**
Selma Supek – member of the External Advisory Bord
Application deadline: January 10, 2017
2. **MSCA-ITN-2016-ETN "Neural Function Assessment for Neonatal and infant life Safeguard - INFANS "**
Selma Supek – member of the External Advisory Bord
Application deadline: January 12, 2016
3. **UKF 1B - "Crossing Borders"**
"Dynamic Cortical Networks Subservicing Executive Functions of the Human Brain - DynEXE_Net"
Selma Supek, P.I., Ksenija Marinkovic co-P.I.
Application deadline: June 12, 2015
Evaluation score: 4.05/5.00;
Requested funds: 1.500.000 HRK (UKF);
1.882.000 HRK (UKF+matching funds)
4. **MSCA-ITN-2016-ETN "Neural Function Assessment for Neonatal and infant life Safeguard - INFANS "**
Selma Supek – member of the External Advisory Bord
Application deadline: January 13, 2015
5. **H2020 FET-OPEN-2014-2015 RIA**
"SEEDIFF - Seeing Differently"
Selma Supek Coordinator UNIZAG and WP 4 Leader
Application deadline: September 30, 2014.
Requested funds for Faculty of Science, Dept. of Physics: 400.560 EUR
6. **H2020 Widespread 2014-1 Teaming – Phase 1:**
"Croatian Institute for Cognitive Neuroscience - CICN"
Selma Supek collaborator in the project
Application deadline: September 17, 2014
Requested funds for the University of Zagreb: 220.000 EUR
7. **IMÉRA : Call for Team applications:**
"Multi-sensory experience of art: From brain processes to emerging technologies for enriched environment NeuroART"
Selma Supek P.I.
Application deadline: April 7, 2014
8. **ITAB-NEUROMED application for Euro-BioImaging Node**
Selma Supek, as a Future user of Neuro-BioImaging Node
Sent a *Letter of intent*, and *Outline of the intended project*
Application deadline: April 23, 2013
If funded the project would allow support for Selma Supek and her collaborators for multiple visits to the ITAB laboratories for functional brain imaging as well as conducting all experimental measurements free of charge as proposed in the preliminary research plan.

- 9. FP7-ICT-2013-C FET-Open: Challenging current thinking – Stage 2**
 "Seeing Differently – SEEDIFF"
Selma Supek Coordinator UNIZAG and WP 5 Leader
 Application deadline: April 15, 2013
Requested funds for Faculty of Science, Dept. of Physics: 348.000 EUR
- 10. FP7 ICT-2011.9.1 FET-Open: Challenging current thinking – Stage 1**
 "Seeing Differently – SEEDIFF"
Selma Supek Coordinator UNIZAG and WP 5 Leader
 Application deadline: September 11, 2012
Requested funds for Faculty of Science, Dept. of Physics: 348.000 EUR
Short application was scored positively.
- 11. Erasmus Mundus Action 1.B. - Joint Doctorate Programmes – Call EACEA/29/09:**
 "FUNCTIONAL Neuroimaging – methods and applications of noninvasive functional neuroimaging - FUN"
Selma Supek Coordinator from partner university UNIZAG
 Application deadline: April 30, 2011
- 12. Erasmus Mundus Action 1.B. - Joint Doctorate Programmes – Call EACEA/29/09:**
 "FUNCTIONAL Neuroimaging – methods and applications of noninvasive functional neuroimaging - FUN"
Selma Supek Coordinator from partner university UNIZAG
 Application deadline: April 30, 2010

Applications for national projects:

- 1. HRZZ IP-06-2016**
 "Neurodynamic imaging of multi-sensory processing of the human brain -Neuro_MULTI-SENS "
Selma Supek, P.I.
 Application deadline: June 2, 2016
Funds requested: 920.000 HRK
- 2. HRZZ IP-2014**
 "Neurodynamic imaging of multi-sensory processing of the human brain -Neuro_MULTI-SENS "
Selma Supek, P.I.
 Application deadline: September 15, 2014.
Funds requested: 902.000 HRK
- 3. Zaklada Adris, Program: Znaje i otkrića**
 " International symposium on functional neuroimaging: Basic and translational research, March 5-7, 2012 "
Selma Supek, P.I.
 Application deadline: July 29, 2011
Funds requested: 56.500 HRK
- 4. Fond za razvoj Sveučilišta u Zagrebu, Program razvoja: Laboratorij**
 "Neurodinamičko oslikavanje mozga – NeurOM"
Selma Supek voditelj projekta
 Application deadline: October 31, 2010
Funds requested: 287.183,36 HRK

SUPERVISED DOCTORAL DISSERTATIONS AND OTHER ACADEMIC THESES

Mentor of **27 diploma/master theses in physics**

(not listed, available on <https://bib.irb.hr/lista-radova?autor=156604>)

Mentor of **2 doctoral students**, Department of Physics, Doctoral program of physics, branch biophysics

- Ana Susac, *Neurodynamics of face processing*, Thesis defence, September 4, 2008.
- Sanja Josef-Golubic, *Neurodynamics of normal and pathology-changed sensory processing* Thesis defence January 23, 2014.

Member of the committees for doctoral thesis approval, evaluation and defence for 6 students:

- Sanja Josef Golubic – Department of Physics, Faculty of Science, University of Zagreb
- Anonymous candidate – Medical faculty, University of Split
- Ivan Cimo – Department of biology, Faculty of science, University of Zagreb
- Ana Jeroncic – Department of biology, Faculty of science, University of Zagreb
- Sonja Tomaskovic - **University of Groningen RuG School of Behavioral and Cognitive Neuroscience BCN and Faculty of Science**

ORGANIZATION OF INTERNATIONAL COURSES AND STUDY PROGRAMS

FOUNDATION AND DIRECTORSHIP OF NEW STUDY PROGRAMS

Co-founder and Co-director of the Interdisciplinary graduate study "LANGUAGE COMMUNICATION AND COGNITIVE NEUROSCIENCE", University of Zagreb, 2003-2004.

FOUNDER AND DIRECTOR OF THE SERIES OF INTERNATIONAL GRADUATE COURSES:

www.brain.com.hr

- *Joint COST B27/SAN Training School: Neurofeedback and ADHD and Mind and Brain VI: Neuroplasticity of Brain and Behavior*, April 16-21, 2009, IUC-Dubrovnik, Croatia
- *Mind and Brain V: Physics and the Brain*, September 17-23, 2006, IUC-Dubrovnik, Croatia
- *Mind and Brain IV: Images of the working brain*, September 20-26, 2004, IUC-Dubrovnik, Croatia
- *Mind and Brain III: Audition, Language, Communication*, April 26- May 4, 2003, IUC-Dubrovnik, Croatia
- *Mind and Brain II: An Interdisciplinary Approach*, October 15-18, 2001, IUC-Dubrovnik, Croatia.

DUTIES AS SCIENTIFIC EXPERT

Editor-in-Chief

Magnetoencephalography – From Signals to Dynamic Cortical Networks,
2nd Edition / Springer Major Reference Work – in progress, to be published 2019

Selma Supek and Cheryl J. Aine, Editors-in-Chief

Selma Supek, Corresponding Editor-in-Chief (2017 – now)

Guest Editor

Medical & Biological Engineering & Computing – **MBEC Special Issue** on *Neurodynamic Insight into Functional Connectivity and Cognition*, Med. Biol. Eng. Comput. **49(5)**, 2011.

Editors, Special Issue: Selma Supek and Ratko Magjarevic

Member of the Editorial Board

International Journal of Physical Sciences member (2006 – 2017)

Reviewer for projects:

- 2018 **Slovenian Ministry for Science, Education and Sport**– Expert in the Evaluation Panel
- 2014 – 2016 **FP7 FET**– European Commission Expert Project Monitor
- 2015- now **COST Association**– External Academic Expert
- 2013-2014 **Croatian Science Foundation** – Member of the Evaluation Panel
- 2006 **Ministry of Science, Education and Sport national projects**– Expert Reviewer
- 2002-2006 **TEMPUS III Joint European Projects**– European Commission Academic Expert

Reviewer for journals:

IEEE Transactions on Biomedical Engineering

Human Brain Mapping

IOP Physics in Medicine and Biology

IOP Physiological Measurements

Audiology and Neuro-Otology

Medical and Biological Engineering and Computing

Brain Topography

Neurology and Clinical Neurophysiology

International Journal of Physical Sciences

Computational Intelligence and Neuroscience

Croatian Medical Journal

European Journal of Neuroscience

NeuroImage Clinical

Neuroscience Letters

Computational and Mathematical Methods in Medicine

Sensors and Actuators A. Physical

SpringerPlus

Frontiers in Human Neuroscience

Biomedical Engineering

Entropy

Reviewer for books

2002 IMIA Yearbook of Medical Informatics

2003 IMIA Yearbook of Medical Informatics

2004 IMIA Yearbook of Medical Informatics

2005 IMIA Yearbook of Medical Informatics

2006 IMIA Yearbook of Medical Informatics

2007 IMIA Yearbook of Medical Informatics

2011 IMIA Yearbook of Medical Informatics

2012 IMIA Yearbook of Medical Informatics

Reviewer – for conferences:

Biomag2004, Biomag2010, 2012, Biomag2016, Biomag2018
MIE 2006, 2008, 2009, 2012, 2013, 2014, 2015, 2017, 2018
HEC 2016
EFMI STC 2016
MBEC2014
OHBM 2006, 2007, 2011, 2012
NFSI 1999, 2001, 2003
AtoS 2005
MEDINFO 2004, 2007
COST B27 Dubrovnik 2009
MEDICON 2010, 2016
COST BM0601 Dubrovnik 2010
IMEKO 1998

Reviewer – other

- Member of the Biomag2012 Award Committee for *James Zimmerman Prize* 18th International International Conference on Biomagnetism, Biomag2012, August 26-31, 2012, Paris, France
- Reviewer for the *Croatian national award for science* for young investigators, 2007.
- Reviewer/judge in the *Young Investigator Award* competition, 14th International International Conference on Biomagnetism, Biomag2004, August 7-12, 2004, Boston, MA

ORGANIZATION OF INTERNATIONAL MEETINGS

Conference Chair

17th International Conference on Biomagnetism BIOMAG2010, March 27 – April 1, 2010, Dubrovnik, Croatia www.biomag2010.brain.com.hr

Symposium Organizer and Chair

- *First Symposium Toward translational research in brain and heart studies: Achievements and challenges in knowledge and technology transfer*, February 18, 2008; Zagreb, Croatia
- *NIKOLA TESLA Symposium: Electromagnetism and the Brain*, September 18, 2008, International course and conference MIND AND BRAIN V: Physics and the Brain, September 17-23, 2006, Dubrovnik, Croatia www.brain.com.hr
- Symposium 1: *Modelling and inverse problem*, August 13, 2000; 12th International Conference on Biomagnetism, August 13-17, 2000, Espoo, Finland
- *2nd International Symposium on Noninvasive Functional Source Imaging - NFSI-99*, September 3-7, 1999, Zagreb, Croatia www.brain.com.hr

Workshop organizer

- **Special topics workshop: Biomagnetism**, May 28, 2012
2012 World Congress on Medical Physics and Biomedical Engineering – WC2012,
May 26 – 31, 2012, Beijing, China
- **WGs and MC Meeting and Workshop of the NeuroMath COST Action BM0601**
‘Neurodynamic insight into functional connectivity, cognition and consciousness’
March 27-28, 2010, Dubrovnik, Croatia

Conference symposium organizer and chair:

- **Special Session SS11: Real-time neuroimaging of the human brain: Methods and applications**,
September 8, 2014
6th European Conference of the International Federation of Medical and Biological Engineering
MBEC2014, September 7-11, 2014, Dubrovnik, Croatia
- **Mini-symposium: Magnetoencephalography**, May 31, 2012
2012 World Congress on Medical Physics and Biomedical Engineering – WC2012,
May 26 – 31, 2012, Beijing, China
- **Presidential Plenary symposium S-6: Four decades of SQUIDs in Brain and Heart Research**, March 30,
2010, 17th International Conference on Biomagnetism, March 28-April 1, 2010, Dubrovnik, Croatia
- Symposium 1: **Modelling and inverse problem**, August 13, 2000; 12th International Conference on
Biomagnetism, August 13-17, 2000, Espoo, Finland

Course and Conference Organizing Director:

International course and conference: **Mind and Brain V: Physics and the Brain**, September 17-23, 2006, IUC-
Dubrovnik, Croatia

Member of the Scientific Program Committee of international scientific meetings

14. 21th International Conference on Biomagnetism – Biomag2018, August 26-30, 2018, Philadelphia,
Pennsylvania, USA
13. 5th Croatian Neuroscience Congress, September 17-19, 2015, Split, Croatia
12. 6th European Conference of the International Federation for Medical and Biological Engineering
MBEC2014, September 7-11, 2014, Dubrovnik, Croatia
11. 18th International Conference on Biomagnetism – Biomag2012, August 26 – 30, 2012, Paris, France
10. 5th European Conference of the International Federation for Medical and Biological Engineering European
IFMBE MBEC 2011, September 14-18, 2011, Budapest, Hungary
9. WGs and MC Meeting and Workshop of the NeuroMath COST Action BM0601
‘Neurodynamic insight into functional connectivity, cognition and consciousness’
March 27-28, 2010, Dubrovnik, Croatia
8. 17th International Conference on Biomagnetism – Biomag2010, March 28-April 1, 2010, Dubrovnik, Croatia,
Scientific Program Committee Chair
7. 13th Annual Meeting of the Organization for Human Brain Mapping, OHBM-2007,
June 10-14, 2007, Chicago, IL, USA
6. 12th Annual Meeting of the Organization for Human Brain Mapping, OHBM-2006,
June 11-15, 2006, Florence, Italy
5. 11th Annual Meeting of the Organization for Human Brain Mapping, OHBM-2005,
June 12-16, 2005, Toronto, Canada
4. 4th International Symposium on Noninvasive Functional Source Imaging - NFSI-2003, September 20-24,
2003, Chieti, Italy

3. 3rd International Symposium on Noninvasive Functional Source Imaging - NFSI-2001, *September 6-9, 2001, Innsbruck, Austria*
2. 3rd International Conference on Bioelectromagnetism, October 8-12, 2000, Bled, Slovenia
1. 2nd International Symposium on Noninvasive Functional Source Imaging - NFSI-99, September 3-7, 1999, Zagreb, Croatia

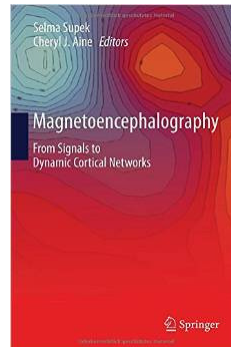
Session Chair at international scientific meetings

13. *Special Session SS11: Real-time neuroimaging of the human brain: Methods and applications*, September 8, 2014
6th European Conference of the International Federation of Medical and Biological Engineering MBEC2014, September 7-11, 2014, Dubrovnik, Croatia
12. *Mini-symposium: Magnetoencephalography*, May 31, 2012
2012 World Congress on Medical Physics and Biomedical Engineering – WC2012, May 26 – 31, 2012, Beijing, China
11. *Special topics workshop: Biomagnetism*, May 28, 2012
2012 World Congress on Medical Physics and Biomedical Engineering – WC2012, May 26 – 31, 2012, Beijing, China
10. Morning Session, Thursday, September 30, 2010, 09:00 – 14:00
International Summer School on Emerging Technologies in Biomedicine “High Throughput Communication between Brain and Machines”, European COST Action NeuroMath (BM0601) September 26-October 1, 2010, Patras, Greece
9. *Morning session: March 26, 2010*
WGs and MC Meeting and Workshop of the NeuroMath COST Action BM0601
“Neurodynamic insight into functional connectivity, cognition and consciousness”
March 27-28, 2010, Dubrovnik, Croatia
8. Morning Session B: Neuronal Biophysics, February 13,
Regional Biophysics Conference 2009, February 10-14, 2009, Linz, Austria
7. *Session 1: Method 1: Commercial EEG/MEG software presentations: Overview, unique aspects and their applications*, November, 19, 2003
14th Conference of the International Society for Brain Electromagnetic Topography, November 19-23, 2003, Santa Fe, NM
6. *Special Topics - oral presentations, September 6, 2001*
fMRI - Brain Mapping, September 7, 2001
3rd International Symposium on Noninvasive Functional Source Imaging, NFSI-2001, September 6-9, 2001, Innsbruck, Austria
5. *Medical Imaging, June 15, 2001*
MEDICON 2001, June 12-15, 2001, Pula, Croatia
4. *TM: Theory and Models (platform presentations), October 9, 2000*
3rd International Conference on Bioelectromagnetism, October 8-12, 2000, Bled, Slovenia
3. *Tutorial on source modeling, September 14, 2000*
12th International Conference on Biomagnetism, August 13-17, 2000, Espoo, Finland
2. *Invited tutorial: MEG, September 3, 1999*
2nd International Symposium on Noninvasive Functional Source Imaging - NFSI-99, September 3-7, 1999, Zagreb, Croatia, September 3, 1999.
1. *Medical imaging, September 19, 1998*
8th International IMEKO Conference on Measurement in Clinical Medicine Biomedical Measurement and Instrumentation and 12th International Symposium on Biomedical Engineering, Dubrovnik, Croatia, September 16-19, 1998.

MEMBERSHIP

1. International Brain Research Organization (**IBRO**)
2. Organization for Human Brain Mapping (**OHBM**)
3. Molecular and Cellular Cognition Society (**MCCS**)
4. Society for Applied Neuroscience (**SAN**)
5. New York Academy of Sciences (**NYAS**)
6. International Society for Bioelectromagnetism (**ISBEM**)
7. Croatian Physical Society (**CPS**) – Tresurer (2006-2008);
 - Member of the Organizational and Scientific Boards (2006-2008)
 - Member of the WG *Women in Physics* (2010-2012)
8. Croatian Biophysical Society (**CBS**) – Member of the Management Board (2000-2002)
 - Member of the Supervisory Board (2002-2010)
9. Croatian Society for Biomedical Engineering and Medical Physics
 - Delegate at the IFMBE Assembly at WC2012 in Beijing, China)
10. Croatian Society for Neuroscience (**CSFN**) – Member of the Scientific Board

SCIENTIFIC ACTIVITY



EDITED BOOK: 1 (Springer-Verlag, 2014)

PUBLICATIONS: total of **43**: **2 book chapters, 23 journal papers, 4 review papers, 14 conference papers with international review**

EDITED PROCEEDINGS BOOKS: **8**

EDITED JOURNALS: 1 MBEC Special Issues

INTERNATIONAL AND DOMESTIC CONFERENCE PRESENTATIONS: **98**

INVATED LECTURES: **26 (23 at international and 3 at national meetings)**

SEMINARS AT INTERNATIONAL INSTITUTIONS: **6**

PUBLIC LECTURES and SEMINARS: **30**

Selma Supek obtained her diploma, M.Sc., and doctoral degrees in physics at the Department of Physics. Her thesis research on the retinotopic organization of the human visual cortex and spatio-temporal resolution of MEG was done at the Biophysics Group, *Los Alamos National Laboratory - LANL* (1988-1993, NIH/NEI EY08610, mentors Cheryl Aine and Leon Heller). After returning back to Zagreb she established collaborations with MEG laboratories at LANL; UNM (via bilateral University agreement) and the Mind Research Network; ITAB, Chieti; BioMag Laboratory, Helsinki; Department of Neurology, University of Heidelberg; TU Ilmenau (via bilateral University agreement); and University of Jena and introduced functional brain imaging methods, in particular MEG in Croatia both in research and education programs. Without any laboratory facility, and a rather low research funding, she started research projects covering topics of sensory and cognitive neurodynamics. She mentored 27 diploma and 2 doctoral physics students. So far 6 of her physics students obtained doctoral degrees with their thesis topics related to functional brain imaging (4 at international laboratories and 2 at the Department of Physics). Selma Supek introduced also the field of functional brain imaging to diploma and doctoral programs at the Department of Physics, Faculty of Science and the School of Medicine, both within University of Zagreb. She also founded a series of intensive graduate courses *MIND AND BRAIN* www.brain.com.hr within the academic program of the InterUniversity Centre Dubrovnik and co-founded the first university interdisciplinary international postgraduate program "*Language Communication and Cognitive Neuroscience*" at the University of Zagreb.

Research interests of Selma Supek include: cognitive neurodynamics, aging and neurodegeneration, educational neuroscience, neurodynamics of auditory cortex, functional and retinotopic organization of the visual cortex (doctoral and current research), spatio-temporal resolution of magnetoencephalography (doctoral and current research), semi-empirical methods for a quantum theory of small molecules (master program research). Future interests include multi-sensory integration, cross-sensory processing, time processing, perceptual integration, translational and clinical MEG research.

LIST OF PUBLISHED SCIENTIFIC PUBLICATIONS

Edited Book

1. **Supek, S.** and Aine, C.J. (Eds.) *Magnetoencephalography: From Signals to Dynamic Cortical Networks*, Springer-Verlag, Heidelberg, 2014, ISBN: 978-3-642-33044-5

Book chapters

2. Aine, Cheryl J.; **Supek, Selma**; Stephen, Julia M.: *Transition from basic visual to assessment of memory functions*. In: Magnetoencephalography: From Signals to Dynamic Cortical Networks, Supek, Selma and Aine, Cheryl J. (Eds.). Heidelberg: Springer Verlag, 2014. pp. 767-800.
1. Papanicolaou, A.C.; Greenblatt, R. E.; Aine, C.J.; Zouridakis, G.; Castillo, E.M.; Buchanan, D.S.; **Supek, Selma**: *The Method*, Clinical Magnetoencephalography and Magnetic Source Imaging / Papanicolaou, Andrew C., Cambridge : Cambridge University Press, 2009, pp. 3-56.

Publications in journals

23. Josef Golubic, Sanja; Aine, Cheryl J; Stephen, Julia M.; John C. Adair.; Janice E. Knoefel; **Supek, Selma**: "MEG biomarker of Alzheimer's disease: Inactivation of prefrontal generator within the auditory sensory gating network", *Human Brain Mapping*, **38**:5180–5194, 2017
22. Alejandro Tabas, Anita Siebert, **Selma Supek**, Daniel Pressnitzer, Emili Balaguer-Ballester., Andre Rupp: "Insights on the neuromagnetic representation of temporal asymmetry in human auditory cortex", *PLoS ONE* 11(4):e0153947. doi:10.1371/journal.pone.0153947; 1-21, 2016
21. Josef Golubic, Sanja; Aine, Cheryl J; Stephe, Julia; Adair, John C; Knoefel, Janice E; **Supek, Selma**; Modulatory role of the prefrontal generator within the M50 network. *NeuroImage*, **92C**: 120-131, 2014
20. Susac, Ana; Sušac, Ana; Heslenfeld, Dirk; Huonker, Ralph; **Supek, Selma**. Magnetic source localization of early visual mismatch response. *Brain topography*, **27**: 1-4, 2013
19. Vecchiato, Giovanni; Sušac, Ana; Margeti, Stavroula; **Supek, Selma**; Planinić, Maja; Babiloni, Fabio. High-Resolution EEG Analysis of Power Spectral Density Maps and Coherence Networks in a Proportional Reasoning Task. *Brain Topography*, **26**(2), 303-14 2012

18. **Supek S**, Magjarevic R: Neurodynamic measures of functional connectivity and cognition, *Med. Bio. Eng. Comput.*, **49(5)**, 507-509, 2011.
17. Josef Golubic S, Susac A, Grilj V, Huonker R, Haueisen J, **Supek S**. Size matters: MEG empirical and simulation study on source localization of the earliest visual activity in the occipital cortex. *Med. Bio. Eng. Comput.*, **49(5)**, 545-554 2011.
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Seminars at international institutions and round-table discussions at international meetings

6. **Supek, S.:** "*MEG studies on face activated cortical networks and stimulus size-related location biases*", Seminars at the Mind Research Network, Albuquerque, NM, USA, May 6, 2011, 13:00
5. **Supek, S.:** "*MEG studies of the dynamic cortical networks of the human visual cortex*", Brain Talks seminars at the Multi-Modal Imaging Laboratory, Department of Radiology, University of California San Diego (UCSD), San Diego, CA, USA, April 28, 2011, 12:00.
4. **Supek, S.:** "*Neuromagnetic studies on early visual processing*", Seminars at the Institute for Biomedical Engineering and Informatics, Technical University, Ilmenau, Germany, July 9, 2007, 14:00.
3. **Supek, S.:** "*Parameter estimation accuracy in magnetic source imaging*", Seminars at the BioMag Laboratory, Helsinki University Central Hospital, Helsinki, Finland, April 26, 2002, 9:00.
2. Round table: *Young physicists in the aging physics community: where is the perspective?* (moderator V. Paar, A. Wolfendale, **S. Supek**, S.D. Bosanac, F. Burnet, M. Major, A. Siber), 15th International Conference for Physics Students, Monday, August 7, 2000, 20:00, Zadar, Croatia.
1. **Supek, S.:** "*Multisource resolution in meg: numerical simulations and visual studies*", Seminars at the Department of Clinical Sciences and Biomedical Imaging, Institute of Advanced Biomedical Technologies (ITAB), University "G. D'Annunzio", Chieti, Italy, May 10, 2000, 18:00.

Public lectures and seminars in Croatia

30. **Supek, S.** *Što je biofizika i zašto je bitna / What is biophysics and why it matters, Affiliate Event of the Biophysics Week 2018*, X-gimanzija Ivan Supek, kino dvorana na 3. katu, 14. ožujka 2018, 13:15 – 14:45
29. **Supek, S.** *Transformativne uloga biofizike u istraživačkim i visokoškolskim programima / Transformative role of biophysics in research and higher education programs, Affiliate Event of the Biophysics Week 2018*, Filozofski fakultet Sveučilišta u Zagreb, D-VII, 12. ožujka 2018, 17:00 – 19:00
28. **Supek, S.** *Transformativna uloga biofizike / Transformational role of biophysics, Affiliate Event of the Biophysics Week 2017*, "Priroda uživo", Hrvatsko prirodoslovno društvo, Knjižnica Bogdana Ogrizovića, 9. ožujka 2017, 18:00 – 20:00

27. **Supek, S.** *Magnetoencefalografija (MEG): Neurodinamička istraživanja senzornih procesa i nove dijagnostičke mogućnosti*, Tjedan mozga 2014, Sveučilište u Zagrebu, Medicinski fakultet, Nova vijećnica, 10. ožujka 2014, 17:00 – 19:00
26. **Supek, S.** *Magnetoencefalografija (MEG) – Neinvazivni uvid u dinamičke kortikalne mreže*, CFI-IRB "Znanstveni četvrtak", 27. studenog 2013., IRB-III, 18:00
25. **Supek, S.** Kako mozak radi?, Neformalni seminar Studentske sekcije Hrvatskog fizikalnog društva (SSHFD), Fizički odsjek, F-13, Zagreb, 8. studenog 2012., 13:00
24. **Supek, S.** *Magnetoencefalografija (MEG) - neinvazivna lokalizacija epileptičkog žarišta*, Epi-Centar, Zagreb, 23. travnja 2012.
23. **Supek, S.** Magnetoencefalografija – neinvazivno oslikavanje kortikalne dinamike, Kolokvij Društva matematičara i fizičara, Rijeka, 10. ožujka 2011, 18:30.
22. **Supek, S.** *Neinvazivno funkcionalno oslikavanje mozga: magnetoencefalografija (MEG)*, Farmaceutsko-biokemijski fakultet, Zavod za fiziku, 19. siječnja 2010., 18:00
21. **Supek, S.** *Magnetoencefalografija (MEG) - neinvazivna lokalizacija epileptičkog žarišta*, Epi-Centar, Zagreb, 19. travnja 2008.
20. **Supek, S.** gost okruglog stola s temom 'Žene u znanosti' u okviru Festivala znanosti, srijeda, 25. travnja 2007, 17:15
19. **Supek, S.:** "Pričamo o biofizici"
Journal Club Studentske sekcije HFD-a, srijeda, 18. siječnja 2006, 14 - 16 sati
18. **Supek, S.:** "Signali mozga – slike uma", MedILS Škola znanstvenog novinarstva, MedILS, Split, 6. svibnja, 2006
17. **Supek, S.:** "Fizika i mozak", Tjedan fizike u okviru programa obilježavanja Svjetske godine fizike (WYP2005), Fizički odsjek, PMF, Sveučilište u Zagrebu, 10. studeni 2005.
16. **Supek, S.:** "Zašto nas biomagnetizam zanima već 40 godina?" Izvjestaj o sudjelovanju na 14th International Conference on Biomagnetism, Boston, August 8 -12, 2004, Hrvatsko biofizičko društvo, utorak, 25. siječnja 2005, 14:00 sati
15. **Supek, S.:** "Magnetoencefalografija – uvid u kognitivnu neurodinamiku" EpiCentar Zagreb, četvrtak, 24. studeni 2005. u 12:00
14. **Supek, S.:** "Magnetoencefalografija - izazovi u prostorno-vremenskom lokaliziranju neuronske aktivnosti", Odsjek za psihologiju, Filozofski fakultet, Sveučilište u Rijeci, petak, 21. siječnja 2005, 15:30 sati
13. **Supek, S.:** "Funkcionalnim oslikavanjem do kognitivne neuroznanosti", Odsjek za psihologiju I Odsjek za filozofiju, Filozofski fakultet, Sveučilište u Rijeci, petak, 21. siječnja 2005, 14:00 sati
12. **Supek, S.:** "Pričamo o biofizici" Journal Club Studentske sekcije HFD-a, utorak, 1. lipnja 2004, 14 - 16 sati

11. **Supek, S.:** "*Neinvazivno oslikavanje moždanih funkcija*" Nastavna sekcija Hrvatskog fizikalnog društva, utorak 18. svibnja 2004., 19 sati
10. **Supek, S.:** "*Kako znamo kako mozak radi*", Festival znanosti, petak, 30. travnja 2004., 18:30-19:30 sati
9. **Supek, S.:** "*Slike uma*", Tjedan mozga na Institutu Ruđer Bošković, utorak, 11. ožujka 2003., IRB-III, 16:00 sati
8. Kovačević, M., Jelaska, Z., Matasović, R., **Supek, S.:** "*Predstavljanje novog sveučilišnog poslijediplomskog studija Jezična komunikacija i kognitivna neuroznanost - JEKON*", Sveučilište u Zagrebu, Mala vijećnica, Trg maršala Tita 14, utorak, 11. ožujka 2003, 13:00 sati
7. **Supek, S.:** "*Metode za funkcionalno oslikavanje mozga čine um vidljivim*" Okrugli stol "Stoljeće uma", Institut društvenih znanosti "Ivo Pilar", ponedjeljak, 10. ožujka 2003, Marulićev trg 19/I, 10-14 sati
6. **Supek, S.:** "*Biofizika - znanost 21. stoljeća*", Seminari studentske sekcije Hrvatskog fizikalnog društva, ponedjeljak, 26.3. 2001., Fizički odsjek PMF-a
5. **Supek, S.:** "*Magnetoencefalografija u istraživanjima moždanih funkcija*" Institut Ruder Boškovic, Seminar Zavoda za molekularnu genetiku, srijeda 22. travanj 1998.
4. **Tribina:** "*Biofizika u hrvatskoj: stvarnost ili iluzija?*" (**gost tribine**) Studentska sekcija Hrvatskog fizikalnog društva, srijeda 5. studeni 1997., 17 sati
3. **Supek, S.:** "*Magnetoencefalografija - neinvazivna metoda za funkcionalno oslikavanje mozga*", Hrvatsko biofizičko društvo, srijeda 26. studeni, 1997. 14 sati i 30 minuta
2. **Supek, S.:** "*Lokalizacija kortikalnih aktivnosti magnetoencefalografijom*" Seminar Instituta za fiziku, Sveučilišta u Zagrebu, četvrtak, 23. ožujka 1995., 14 sati
1. **Supek, S.:** "*Proučavanje funkcija mozga magnetoencefalografijom*" Nastavna sekcija Hrvatskog fizikalnog društva, utorak 21. veljace 1995., 19 sati

Promotion of science in media

1. 30 public lectures and public round-table discussions

2. MEG booth at the *Open Day at the Department of Physics*, April 4, 2014

3. TV interviews at HRT-1:

- "Znanstveni krugovi" (March 6, 2018)
- "Društvena mreža – Znanstveni četvrtak" (April 6, 2017)
- "Trenutak spoznaje" (March, 2012)
- "Znanstvena petica" (April, 2010)
- "Znanstvene novosti" (September, 2006; February, 2008)
- "Trenutak spoznaje" (June, 2002; March, 2003; March, 2007)
- "Znanstvena sučeljavanja" (April, 2002)

3. Radio interviews:

- **HR-3** – journalist Tanjom Rudež, 1994;
 - journalist Blanka Jergović "Znanost i društvo", April 13, 2016 and April 20, 2016
- **Radio Splita**, May 2006; September, 2006
- **Radio Dubrovnik** – April, 2003; April, 2004, September, 2006;
 - "Plavi razgovor", April, 2010.
- **HR-1**, "Eppur si muove" – April 7, 2014.

5. Interview to **Jutarnji list – Jutarnji2**, "Nove metode otkrivaju tajne ljudskog ponašanja", 12. 02. 2007, p. 33, journalist Tanja Rudež

5. Interview for **CROATIA putni časopis - Inflight Magazine**, *Images of the working brain and heart – Slike aktivnog mozga i srca*, 140-144, Spring 2010, journalist Davorka Vukov-Colić

EDUCATIONAL ACTIVITIES

Selma Supek developed *new courses in biophysics* (*Foundations of Biophysics, Seminars in Foundations in Biophysics, and Biophysics*) and developed *new doctoral courses* (listed in the table below) within the doctoral programs at the Department of Physics, Faculty of Science and the School of Medicine as well as within the university program *Language Communication and Cognitive Neuroscience* of the University of Zagreb.

From the academic year 2014/2015 Selma Supek is offering the following courses in English:

1. **Biophysics – diploma and integrated course**
2. **Neurodynamics – doctoral course**
3. **Functional localization of neurodynamic sources – doctoral course**

COURSES HELD IN ENGLISH

Course title:	Study program:	Academic year:
Biophysics	IST F, IV year Erasmus + students BO – Biology Dept students	2016/2017 2017/2018

Diploma and integrated programs courses developed and held since 1996:

Course title:	Study program:	Academic year:
Biophysics	IST F, IV year PFM, V year PFI, IV year PF, IV year PFT, III year PFK, III year	2007/2008 – NOW Two groups
Biophysics	PF, IV year PFM, V year	1999/2000 till 2006/2007
Foundations of Biophysics	Physics program (dipl inž fiz), III year PFI, IV year since 2002	1996/1997 till 2006/2007
Seminar – Foundations of Biophysics	Physics program (dipl inž fiz), III year PFI, IV year since 2002	1996/1997 till 2006/2007

Doctoral courses developed and held since 1999:

Course title:	Study program:	Academic year:
Neurodynamics	Doctoral program in physics, branch biophysics Department of Physics, Faculty of Science, University of Zagreb	2008/2009 - NOW
Functional localization of neurodynamic sources	Doctoral study program in neuroscience, Faculty of Medicine, University of Zagreb	2007/2008 - NOW
Functional brain imaging	Language Communication and Cognitive Neuroscience, - JEKON, University of Zagreb	2002/2003
Noninvasive methods for functional brain imaging	Doctoral program in physics, branch biophysics Department of Physics, Faculty of Science, University of Zagreb	2001/2002 till 2006/2007
Noninvasive methods for the structural and functional brain imaging	Postgraduate scientific program in biomedicine, School of Medicine	1999/2000 till 2001/2002