Bin He, Ph.D.

Trustee Professor of Biomedical Engineering
Professor of Electrical and Computer Engineering (Courtesy)
Professor of Neuroscience Institute
Carnegie Mellon University
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Bin He's major research interests include electrophysiological neuroimaging, brain-computer interface, and neuromodulation. He has made significant contributions to the field of neuroengineering at a systems level, which aims to deepen our understanding of the brain and manage neurological disorders through engineering innovations. He's innovation has contributed to transforming electroencephalography (EEG) from a 1-dimensional sensing technology into a modern 3-dimensional dynamic functional brain imaging modality for mapping and imaging of spatio-temporal brain activity and functional connectivity. This work has a significant impact on a better understanding of brain function and dysfunction as well as reducing healthcare cost. His work on EEG-based brain-computer interface has led to major advancements. His team was the first to enable a human to fly a drone as well as the first to control a robotic arm to continuously move, reach and grasp an object in 3-dimensional space, using "thoughts" alone decoded from noninvasive EEG. This work has significantly increased the capabilities and applications of noninvasive brain computer interface. He's research group has also innovated magnetoacoustic imaging of tissue electrical properties with high spatial resolution, and transcranial focused ultrasound neuromodulation to encode information in the central nervous system with spatial precision and deep brain penetration. He's research has direct impacts on neuroimaging, neuromodulation, and neural interfacing for managing neurological disorders - the leading cause of disability and 2nd leading cause of death.

He has published about 300 peer-reviewed journal articles, 18 book chapters, and 10 granted US patents, some of which are licensed to medical device companies. He has given over 180 plenary, keynote, and invited talks at a number of national and international conferences and institutions. He's research has been recognized by various federal funding agencies with over $45M in funding as PI/Co-PI over the past 10 years.

He's research contributions have been recognized internationally in the field of bioengineering. He is a Fellow of the National Academy of Inventors (NAI), the International Academy of Medical and Biological Engineering (IAMBE), the IEEE, the American Institute of Medical and Biological Engineering (AIMBE), and the Biomedical Engineering Society (BMES). His major awards include the IEEE Biomedical Engineering Award, IEEE EMBS Academic Achievement Award, IEEE EMBS William J. Morlock Award, IEEE EMBS Distinguished Service Award, and American Heart Association Established Investigator Award. He is the Editor-in-Chief of the IEEE Reviews in Biomedical Engineering and was the 2013-2018 Editor-in-Chief of the IEEE Transactions on Biomedical Engineering, one of the oldest bioengineering journals.

He has served in multiple leadership positions in the national and international bioengineering community. He served as the 2009-2010 President of the IEEE Engineering in Medicine and Biology Society, a premier bioengineering society with 11,000+ members from 100+ countries, and the 2011-2013 Co-Chair of IEEE Life Science Initiative, coordinating activities of over a dozen of IEEE societies. He was the 2018-2021 Chair of the International Academy of Medical and Biological Engineering, which is affiliated with the International Federation of Medical and Biological Engineering, whose member societies have 120,000+ individual members. He also served in several positions facilitating the national BRAIN Initiative, including as Chair of NSF Workshop on Mapping

and Engineering the Brain (2013), Chair of IEEE EMBS BRAIN Grand Challenges Conference (2014), a Member of NIH BRAIN Multi-Council Working Group (2014-2019), and a Member of the National Advisory Council for Complementary and Integrative Health (2015-2019). He served as the biomedical engineering department head at Carnegie Mellon University from 2018-2021. During his tenure, the department expanded faculty, increased its research expenditure and PhD student population by over 50%, and improved its graduate program national ranking from the top 26th to the top 17th according to USNWR. At the University of Minnesota, He served as director of the Institute for Engineering in Medicine (2012-2017) and as the founding director of Center for Neuroengineering (2007-2017), contributing significantly to interdisciplinary research collaboration and graduate education.

PROFESSIONAL EXPERIENCE

2018-present	Professor of Biomedical Engineering, Carnegie Mellon University (CMU)
2018-present	Professor of Electrical & Computer Engineering, CMU (Courtesy)
2019-present	Professor of Neuroscience Institute, CMU
2021-present	Director, NIH Neural Interfacing Training Program, CMU
2018-2021	Head, Department of Biomedical Engineering, CMU
2004-2018	Professor of Biomedical Engineering, University of Minnesota (UMN)
2012-2017	Director, Institute for Engineering in Medicine, UMN
2010-2012	Associate Director for Research, Institute for Engineering in Medicine, UMN
2012-2017	Director of Graduate Studies, Neuroengineering PhD Minor, UMN
2007-2017	Founding Director, Center for Neuroengineering, UMN
2011-2018	Director, NSF IGERT Neuroengineering Training Program, UMN
2008-2018	Director, NIH Neuroimaging Training Program, UMN
2004-2006	Director of Undergraduate Studies, Department of Biomedical Engineering, UMN
2004-2018	Graduate Faculty in Neuroscience, UMN
2004-2018	Graduate Faculty in Electrical and Computer Engineering, UMN
2003	Professor of Bioengineering and of Electrical and Computer Engineering, University of Illinois at Chicago (UIC)
2002-2003	Director of Undergraduate Studies, Department of Bioengineering, UIC
2000-2003	Associate Professor of Bioengineering and of Electrical & Computer Engineering, UIC
1994-2000	Assistant Professor of Electrical Engineering and Computer Science, and of Bioengineering, UIC
1991-1994	Research Scientist Harvard University – MIT Division of Health Sciences and Technology Massachusetts Institute of Technology

SELECTED AWARDS AND RECOGNITIONS

2022	Fellow, National Academy of Inventors
2020	Top Influential Engineers Today, Academic Influence
2019	IEEE EMBS William J. Morlock Award
2019-	Trustee Professorship in Biomedical Engineering, Carnegie Mellon University
2018-2021	Chair, International Academy of Medical & Biological Engineering
2017	IEEE Biomedical Engineering Award

2017	Fellow, Biomedical Engineering Society
2015	IEEE EMBS Academic Career Achievement Award
2012	Fellow, International Academy of Medical & Biological Engineering
2012-2017	Medtronic-Bakken Endowed Chair, University of Minnesota
2009-2010	President of IEEE Engineering in Medicine and Biology Society
2009-2018	Distinguished McKnight University Professorship, University of Minnesota
2009	Fellow, International Society for Functional Source Imaging
2007-2008	President of International Society for Functional Source Imaging
2005	Fellow, American Institute of Medical & Biological Engineering
2004	Fellow, IEEE
2002-2005	President of International Society of Bioelectromagnetism
2002	Faculty Research Award, University of Illinois at Chicago College of Engineering
2001	American Heart Association Established Investigator Award
1999	University of Illinois University Scholar Award
1999	National Science Foundation CAREER Award
1992	NASPE Young Investigator Award (2nd Place)
1990	American Heart Association Postdoctoral Fellowship Award
1989	Tejima Prize for Outstanding PhD Dissertation

EDUCATION

1989-1991	Postdoctoral Fellow Harvard University – MIT Division of Health Sciences and Technology Massachusetts Institute of Technology, Cambridge, MA
1988	PhD, Bioelectrical Engineering Tokyo Institute of Technology, Yokohama, Japan
1985	MS, Electrical Engineering Tokyo Institute of Technology, Yokohama, Japan
1982	BS, Electrical Engineering Zhejiang University, Hangzhou, China

GRANTS

Active Grants

09/23-08/26	NIH RF1NS131069 (PI: He) "Electrophysiology-Compatible Wearable Transcranial Focused Ultrasound Neuromodulation Array Probes"
06/23-05/27	NIH R01 NS127849-01A1 (PI: He) "Imaging Focal Epilepsy Sources by Means of Biophysically Constrained Deep Neural Networks"
04/22-03/26	NIH 2R01 NS096761-07 (PI: He) "Electrophysiological source imaging of partial epilepsy"
09/21-08/24	NIH R01 NS124564 (PI: He) "Characterization of in vivo neuronal and inter-neuronal responses to transcranial

focused ultrasound”

09/21-08/26 NIH T32 EB029365 (PI: He)
“Integrative training in neural interfacing”

03/19-06/24 DARPA HR001118S0029-N3-FP-019 (PI: Grover)
“SharpFocus: Attaining sub-millimeter and millisecond resolution for noninvasive stimulation and sensing”

Completed Grants over the Past 10 Years as PI/Co-PI

09/19-09/23 NIH U18 EB029354 (PI: He)
“Treating pain in sickle cell disease by means of focused ultrasound neuromodulation”

09/16-05/23 NIH R01 AT009263 (PI: He)
“Mind-body awareness training and brain-computer interface”

06/16-01/23 NIH R01 EB021027 (PI: He)
“Spatio-temporal dynamic imaging of seizure sources”

07/17-05/22 NIH RF1 MH114233 (PI: He)
“Electrophysiological source imaging guided transcranial focused ultrasound”

06/16-03/22 NIH R01 NS096761-01 (PI: He)
“Electrophysiological source imaging of partial epilepsy”

08/13-05/19 NIH U01 HL117664 (Contact PI: Gupta; Role: Co-PI)
“Cannabinoid-based therapy and approaches to quantify pain in sickle cell disease”

04/15-03/20 NIH 2T32 EB008389-06A1 (PI: He)
“Integrative training program in neuroimaging”
(Resigned from the PI position due to institutional move as of Feb 1, 2018)

09/11-08/18 NSF DGE-1069104 (PI: He)
“IGERT: Interacting with the brain: mechanism, optimization, and innovation”
(Resigned from the PI position due to institutional move as of Feb 1, 2018)

04/16-03/18 NIH 1S10OD021721-01 (PI: He)
“MRI-compatible integrated NIRS/EEG system for applications to clinical neuroscience”

03/15-02/18 NIH U01 HL127479 (Contact PI: Muscoplat; Role: multiple PI)
“MIN-REACH research evaluation and commercialization hub”

09/12-08/17 NIH R01 EY023101 (PI: He)
“CRCNS: Spatiotemporal imaging study of the mechanisms of binocular rivalry”

09/13-08/17 NIH R21 EB017069-01A1 (PI: He)
“Magnetic resonance electrical property tomography”

09/14-08/17 NSF CBET-1450956 (PI: He)
“BRAIN EAGER: High-resolution multimodal acousto-electromagnetic neuroimaging of brain activity”

09/13-08/17 NSF CBET-1264782 (PI: He)
“A Brain centered neuroengineering approach for motor recovery after stroke: Combined rTMS and BCI training”

09/12-01/16 NIH R21 EB014353-01A1 (PI: He)
"Multi-excitation magnetoacoustic imaging of tissue conductivities"

05/09-02/15 NIH R01 EB006433-01A2 (PI: He)
"Multimodal imaging of brain activity and connectivity"

08/07-04/13 NIH R01 EB007920 (PI: He)
"A Computational approach to 3-D brain source imaging"

09/07-06/13 NIH R01 HL080093 (PI: He)
"Three-dimensional electrocardiographic imaging"

05/08-04/14 NIH T32 EB008389 (PI: He)
"Integrative training program in neuroimaging"

09/09-08/13 NSF CBET-0933067 (PI: He)
"Neuroimaging of motor imagery for brain computer interface applications"

10/08-09/13 NSF CBET-0756331 (PI: He)
"A Novel cardiac electrical imaging approach from intracavity recordings"

INVITED PRESENTATIONS

Plenary/Keynote and Named Lectures:

2024 Earl Bakken Keynote Lecture, AI for Dynamic Brain Imaging, AIMBE Annual Event, DC, March 2024.

2023 Keynote Lecture, AI for Mapping and Interfacing with the Brain, IEEE EMBS International Conference in Biomedical and Health Informatics, Pittsburgh, Oct 2023.

2023 Keynote Lecture, Bidirectional Brain-Computer Interface, International Conference of Human Augmentation and Performance Modeling, August 2023 (online).

2023 Keynote Lecture, How ML/AI Helps EEG to Become an Imaging Modality? 16th Brain Informatics Conference, Hoboken, Aug 2023.

2023 Keynote Lecture, AI for Mapping Brain Dynamics and Managing Intractable Epilepsy, Georgia Tech Suddath Symposium, Atlanta, March 2023.

2022 Nobel Fest Lecture Series, Brain-Machine Intelligence – Mind Over Mechanics, Oct 2022 (online).

2022 Keynote Lecture, Dynamic Imaging and Localization of Brain and Cardiac Rhythm Disorders, 17th IEEE International Summer School and Symposium on Medical Devices and Biosensors, August 2022 (online).

2022 Keynote Lecture, Dynamic Brain Imaging and Brain-Computer Interface, IEEE EMBS International Summer School of Neural Engineering, July 2022 (online).

2022 Maury Strauss Distinguished Public Lecture, Virginia Tech, Dynamic Brain Imaging and Brain-Computer Interface, May 2022.

2022 Keynote Lecture, Electrophysiological Source Imaging of Epileptic Tissue, 3rd International Conference on Medical Imaging and Case Reports, March 2022 (online).

2021 Plenary Lecture, The Inverse Problem of Brain Electromagnetic Fields: Recent Advancement and Applications, 8th International Conference on Electromagnetic Field Problems and Applications, October 2021 (online).

2021 Keynote Lecture, Mind Control: Why, What and How, 20th World Congress of Psychophysiology, September 2021 (online).

2019 Plenary Lecture, Neural imaging, Interfacing, and Modulation – Challenges and Opportunities, 2019 China Biomedical Engineering Conference, Jinan, November 2019.

2019 Beishizhang Lecture, Institute of Biophysics, Chinese Academy of Sciences, Dynamic Brain Mapping and Interfacing with the Brain, Beijing, June 2019.

2018 Plenary Lecture, Dynamic Mapping and Interfacing with the Brain, 9th Cairo International Biomedical Engineering Conference, Cairo, December 2018.

2018 Plenary Lecture, Electrophysiological Source Imaging and Brain-Computer Interface using EEG, Joint Meeting of EEG & Clinical Neuroscience Society, International Society for Functional Source Imaging, International Society for Brain Electromagnetic Topography, and International Society for Neuroimaging in Psychiatry, Pittsburgh, September 2018.

2018 Keynote Lecture, University of Pittsburgh BIOE DAY, Understanding and Interfacing with the Brain – A Neuroengineering Journey, Pittsburgh, April 2018.

2017 Plenary Lecture, Inverse Imaging: What, How, and the Impact to Health, 39th Annual International Conference of IEEE EMBS, Jeju Island, July 2017.

2017 Plenary Lecture, Mind-control of a Robot: Principles and Challenges, Robotic Alley Conference & Expo, Minneapolis, March 2017.

2016 Keynote Lecture, Mapping and Interfacing with the Brain: Challenges and Opportunities, Future Technology Conference, San Francisco, December 2016.

2016 BRAIN Plenary Symposium Lecture, Electrophysiological Neuroimaging and Brain-Computer Interfaces, 38th Annual International Conference of IEEE EMBS, Orlando, August 2016.

2016 Plenary Lecture, Mapping and Interfacing with the Human Brain, IEEE International Joint Conference on Neural Networks, Vancouver, July 2016.

2015 Opening Keynote Lecture, Bioelectricity and the Brain: From EEG to BCI, International Conference on Basic and Clinical Multimodal Imaging, Utrecht, September 2015.

2015 Palmer Distinguished Lecture, Department of Electrical and Computer Engineering, Iowa State University, Mapping and Interfacing with the Brain, Ames, April 2015.

2014 Keynote Lecture, BRAIN Initiative and Dynamic Brain Mapping, International Workshop on Brain Technology Initiative, Shanghai, December 2014.

2014 Plenary Lecture, Mapping and Decoding Brain Dynamics in vivo, IEEE EMBS BRAIN Grand Challenges Conference, Washington DC, November 2014.

2014 Integrative Medicine Research Lecture, NIH, How to Map the Dynamics of Your Brain – From EEG to BCI, Bethesda, September 2014.

2014 Theme Keynote Lecture, Dynamic Mapping and Interfacing with the Human Brain, IEEE EMBS Annual International Conference, Chicago, August 2014.

2014 Hamlyn Distinguished Lecture, Imperial College, Mapping and Interfacing with the Brain, London, June 2014.

2013 Keynote Lecture, Mind Controlled Medical Devices, MD & M Minneapolis Conference, Minneapolis, October 2013.

2013 Plenary Lecture, High-resolution Dynamic Neuroimaging of Brain Activity, NSF Workshop on Mapping and Engineering the Brain, Arlington, August 2013.

2013 Plenary Lecture, Engineering the Future of Medicine, Design of Medical Devices Conference, Minneapolis, April 2013.

2012 Keynote Lecture, Challenges and Opportunities in Neuroengineering: Understanding and Interfacing with the Brain, Design of Medical Devices Conference, Minneapolis, April 2012.

2011 Keynote Lecture, Functional Neuroimaging, Yangtze River International Conference on the Applications of Medical Imaging Physics & The 6th National Annual Meeting of Medical Imaging Physics, Hangzhou, October 2011.

2011 Plenary Lecture, Spatio-Temporal Functional Neuroimaging of Brain Activity, 5th IEEE EMBS International Conference on Neural Engineering, Cancun, April 2011.

2010 Keynote Lecture, Electrical Source and Impedance Imaging: Challenges and Opportunities, Workshop on MR-based Impedance Imaging, Seoul, December 2010.

2010 Plenary Lecture, Imaging and Interacting with the Brain: Challenges and Opportunities, Annual Conference of Chinese Society of Biomedical Engineering, Beijing, December 2010.

2010 Keynote Lecture, Toward High-resolution Spatio-temporal Functional Brain Imaging, IEEE – EMBS Forum on Grand Challenges in Neuroengineering, Bethesda, May 2010.

2010 Plenary Lecture, XIVth Conference on Electrical Biompedance and the 11th Conference on Biomedical Applications of Electrical Impedance Tomography, Gainesville, April 2010.

2009 Plenary Lecture, Emerging Frontiers in Biomedical Engineering and Functional Neuroimaging, Chinese Conference on Biomedical Engineering, Chongqing, October 2009.

2009 Keynote Lecture, Neuroengineering: Opportunities and Challenges to Reverse Engineer the Brain, Second International Conference on BioMedical Engineering and Informatics and the Second International Congress on Image and Signal Processing, Tianjin, October 2009.

2009 Plenary Lecture, Functional Imaging of Brain and Heart Activity, Joint Meeting of the 7th International Symposium on Noninvasive Functional Source Imaging & 7th International Conference on Bioelectromagnetism, Rome, May 2009.

2008 Keynote Lecture, Functional Neuroimaging of Dynamic Brain Activity, 5th International Conference on Information Technology and Applications in Biomedicine, Shenzhen, May 2008.

2007 Keynote Lecture, Electrophysiological Neuroimaging: Past, Present and Future, Joint Meeting of the 6th International Symposium on Noninvasive Functional Source Imaging of Brain and Heart and the International Conference on Functional Biomedical Imaging, Hangzhou, October 2007.

2007 Keynote Lecture, Electrophysiological Imaging of Brain and Cardiac Electrical Activity, The 6th International Conference on Bioelectromagnetism, Aizu, October 2007.

2005 Plenary Lecture, Electrocardiographic Imaging: From 2-dimension towards 3-dimension, Joint Meeting of 5th International Conference on Bioelectromagnetism and 5th International Symposium on Noninvasive Functional Source Imaging within the Human Brain and Heart, Minneapolis, May 2005.

2004 Plenary Lecture, From High-resolution EEG to Electrophysiological Neuroimaging, 15th International Congress on Brain Electromagnetic Topography, Tokyo, April 2004.

2002 Plenary Lecture, Electrophysiological Neuroimaging. The 4th International Conference on Bioelectromagnetism, Montreal, July 2002.

Invited Lectures, Seminars and Panels:

2023 Invited Lecture, Investigators Workshop on Source Imaging along Time and Space, American Epilepsy Society Annual Meeting, Spatio-temporal Source Imaging of Seizure from High-Density EEG, Orlando, Dec 2023.

2023 Invited Lecture, 18th European Congress of Clinical Neurophysiology, Localizing and Imaging Epileptogenic Zone, Marseille, May 2023.

2023 Invited Speaker, Future of Interface Workshop, Direct Brain Interfaces, February 2023 (online).

2023 Invited Lecture, Fourth Annual NIH HEAL Initiative® Investigator Meeting, Treating Pain in Sickle Cell Disease Using Noninvasive Focused Ultrasound Neuromodulation, Feb 2023.

2022 University of Texas at Austin, Department of Biomedical Engineering, Noninvasive Mapping and Interfacing with the Brain, Austin, November 2022.

2022 Invited Symposium Lecture, International Congress on Clinical Neurophysiology, Electrophysiological Source Imaging of High-frequency Oscillations and Ictal Oscillations from High Density EEG, Geneva, September 2022.

2022 Invited Speaker, SCIENCE Webinar, Exploring New Developments in Neuromodulation: Noninvasive Technologies to Train the Brain, September 2022 (online).

2022 Invited Lecture, NHLBI's SCD Annual Meeting, Treating Sickle Cell Pain by means of Transcranial Focused Ultrasound Neuromodulation, Aug 2022 (online).

2022 University of Melbourne, ARC Training Center in Cognitive Computing for Medical Technologies, Dynamic Brain Source Imaging and Brain-Computer Interface, July 2022 (online).

2022 neoBay Robotics Forum, Science Robotics and Shanghai Jiao Tong University, Dynamic Brain Imaging and Brain-Computer Interface, July 2022 (online).

2022 Invited Symposium Lecture, International Congress on Integrative Medicine and Health, Noninvasive Brain-Computer Interface and Mind-Body Awareness Training, Phoenix, May 2022.

2022 Invited Lecture, Rice Neuroengineering Conference, Rice University, Brain-Computer Interface and Neuromodulation, Houston, May 2022.

2022 Invited Lecture, American Clinical MEG Society Annual Meeting, Source and Connectivity Imaging of Epileptogenic Brain from EEG/MEG, May 2022 (online).

2021 BrainMap Seminar Series, Athinoula A. Martinos Center for Biomedical Imaging, Harvard Medical School, Electrophysiological Source Imaging: Recent Advancement and Applications to Brain Mapping and Neural Interfacing, October 2021 (online).

2021 Invited Academic Speaker Series, University of Toronto Institute of Biomedical Engineering, Electrophysiological Source Imaging of Brain Dynamics for Mapping Epileptogenic Networks and Brain-Computer Interface, September 2021 (online).

2021 Invited Lecture, NHLBI's 2021 Annual Sickle Cell Disease Meeting, Quantifying and Treating SCD Pain Using qEEG and Transcranial Focused Ultrasound Neuromodulation, August 2021 (online).

2021 Invited Lecture, University of Florida Bioelectronics for Pain and Addiction Symposium, Non-invasive Neuromodulation of Pain with Focused Ultrasound, August 2021 (online).

2021 University of Bath, Department of Electrical and Electronic Engineering, Dynamic Brain Mapping and Brain-Computer Interface, June 2021 (online).

2021 University of Pittsburgh Epilepsy Center Grand Rounds, Electrophysiological Source Imaging of Epileptogenic Brain in Focal Epilepsy, May 2021 (online).

2021 Texas A & M University, Department of Biomedical Engineering, Brain Mapping and Brain-Computer Interface, April 2021 (online).

2021 Biomedical Engineering Distinguished Speaker Series, Stevens Institute of Technology, Dynamic Brain Mapping and Brain-Computer Interface, April 2021 (online).

2021 Invited Lecture, NIH BRAIN Initiative Transformative Non-Invasive Imaging Technologies Workshop, Brain-Computer Interface by Means of EEG and EEG Source Imaging, March 2021 (online).

2021 Biomedical Engineering Leadership Seminar, University of Florida, Department of Biomedical Engineering, Dynamic Brain Mapping and Brain-Computer Interface, March 2021 (online).

2021 University of Alabama at Birmingham, Department of Biomedical Engineering, Dynamic Brain Mapping and Brain-Computer Interface, February 2021 (online).

2021 Biomedical Engineering Distinguished Lecturer Series, University of California at Irvine, Noninvasive Human Brain Mapping and Brain-Computer Interface, February 2021 (online).

2020 SUNY Stony Brooks, Department of Biomedical Engineering, Noninvasive Human Brain Mapping and Brain-Computer Interface, November 2020 (online).

2020 WACBE Distinguished Biomedical Engineering Webinar, Noninvasive Human Brain Mapping and Brain-Computer Interface, November 2020 (online).

2020 Invited Speaker, 7th International Symposium on Focused Ultrasound, Electrophysiological Source Imaging Guided Transcranial Focused Ultrasound Neuromodulation, November 2020 (online).

2020 Tulane University, Department of Biomedical Engineering, Noninvasive Human Brain Mapping and Brain-Computer Interface, November 2020 (online).

2020 NanoBio Seminar Series, MIT, Noninvasive Human Brain Mapping and Brain-Computer Interface, October 2020 (online).

2020 Phillips Healthcare, EEG-based Dynamic Brain Mapping and Brain-Computer Interface, June 2020 (online).

2020 iCANX Talks Webinar, EEG-based Dynamic Brain Imaging and Brain-Computer Interface, May 2020 (online).

2020 Biomedical Engineering Distinguished Speaker Series, University of California at Davis, Noninvasive Human Brain Mapping and Brain-Computer Interface, April 2020 (online).

2020 University of Pittsburgh, Pittsburgh Institute for Neurodegenerative Diseases, Mapping, Interfacing, and Modulating the Brain, Pittsburgh, February 2020.

2019 University of Texas at Arlington, Department of Biomedical Engineering, Noninvasive Human Brain Mapping and Brain-Computer Interface, Arlington, November 2019.

2019 Columbia University, Department of Biomedical Engineering, Noninvasive Human Brain Mapping and Brain-Computer Interface, New York, November 2019.

2019 Department of Bioengineering Distinguished Guest Seminar, University of Louisville, Noninvasive Human Brain Mapping and Brain-Computer Interface, Louisville, October 2019.

2019 Capital Medical University, Xuanwu Hospital, Department of Neurology, Dynamic Brain Mapping and Interfacing with the Brain, Beijing, June 2019.

2019 Tsinghua University, Department of Biomedical Engineering, Dynamic Brain Mapping and Interfacing with the Brain, Beijing, June 2019.

2019 Peking University, Department of Biomedical Engineering, Dynamic Brain Mapping and Interfacing with the Brain, Beijing, June 2019.

2019 Nanjing University, Department of Biomedical Engineering, Dynamic Brain Mapping and Interfacing with the Brain, Nanjing, June 2019.

2019 Shanghai Jiao Tong University, School of Mechanical Engineering, Dynamic Brain Mapping and Interfacing with the Brain, Shanghai, May 2019.

2019 Fudan University, Department of Electronic Engineering, Dynamic Brain Mapping and Interfacing with the Brain, Shanghai, May 2019.

2019 POSTECH, Department of Creative IT Engineering, Dynamic Mapping and Interfacing with the Brain, Korea, May 2019.

2019 Penn State University, Department of Biomedical Engineering, Dynamic Mapping and Interfacing with the Brain, State College, April 2019.

2019 University of California at Riverside, Department of Bioengineering, Dynamic Mapping and Interfacing with the Brain, Riverside, February 2019.

2018 UCLA, Department of Bioengineering, Dynamic Mapping and Interfacing with the Brain, LA, November 2018.

2018 Invited Lecture, Gordon Research Conference on Advanced Health Informatics, Functional Dynamic Brain Imaging: Why, What and How, Hong Kong, June 2018.

2018 Hong Kong Science and Technology University, Department of Electronic and Computer Engineering, Dynamic Mapping and Interfacing with the Brain, Hong Kong, June 2018.

2018 Zhejiang University, College of Biomedical Engineering and Instrumentation Science, Neuroengineering and Brain Imaging, Hangzhou, June 2018.

2018 Shanghai Jiao Tong University, School of Biomedical Engineering, Brain-Heart Interactions underlying Traditional Tibetan Buddhist Meditation, Shanghai, June 2018.

2018 Invited Symposium Lecture, 31st International Congress of Clinical Neurophysiology, Noninvasive Source Imaging of Seizure from High Density Scalp EEG, Washington DC, May 2018.

2018 Carnegie Mellon University, Department of Electrical and Computer Engineering, Dynamic Mapping and Interfacing with the Brain, Pittsburgh, March 2018.

2017 Invited Lecture, International Workshop on Seizure Prediction, Electrophysiological Source Imaging of Epileptic Brain, Minneapolis, August 2017.

2017 Zhejiang University, College of Biomedical Engineering and Instrumentation Science, Dynamic Mapping and Interfacing with the Brain: From EEG to BCI, Hangzhou, June 2017.

2017 Invited Symposium Lecture, 8th International IEEE EMBS Neural Engineering Conference, Dynamic Neuroimaging of Brain Activity and Functional Connectivity, Shanghai, May 2017.

2017 Shanghai Jiao Tong University, School of Biomedical Engineering, Cardiac Activation Imaging for Guiding Catheter Ablation of Arrhythmia, Shanghai, May 2017.

2017 Dean's Distinguished Lecture, University of Southern California, Dynamic Mapping and Interfacing with the Brain: From EEG to BCI, Los Angeles, April 2017.

2016 Distinguished Seminar, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Mapping and Interfacing with the Brain, Toronto, December 2016.

2016 Johns Hopkins University, Department of Biomedical Engineering, Challenges in Neuroengineering Research – Dynamic Brain Mapping and Brain-Computer Interface, Baltimore, November 2016.

2016 EPFL, Biotech Campus, Dynamic Mapping and Interfacing with the Human Brain, Geneva, June 2016.

2016 Invited Symposium Lecture, Annual Meeting of the Organization for Human Brain Mapping, Mapping Brain Electrophysiological Connectome, Geneva, June 2016.

2015 Invited Lecture, 2nd BRAIN Initiative Investigators Meeting, Imaging and Modulating the Human Brain, Bethesda, December 2015.

2015 Columbia University, Department of Biomedical Engineering, Mapping and Interfacing with the Human Brain, New York, October 2015.

2015 Invited Lecture, International Workshop on Seizure Prediction, Dynamic Seizure Imaging and Localization from EEG and High Frequency Activity, Melbourne, August 2015.

2015 National Jiao Tong University, Mapping and Interfacing with the Human Brain, Taiwan, July 2015.

2015 Brain and Spine Institute, Mapping and Decoding Brain Dynamics, Paris, France, April 2015.

2015 Invited Symposium Lecture, 7th IEEE EMBS International Conference on Neural Engineering, Noninvasive Brain-Computer Interface: Challenges and Opportunities, Montpellier, April 2015.

2014 Mayo Clinic, Department of Bioengineering and Physiology, Dynamic Mapping and Interfacing with the Brain, Rochester, September 2014.

2014 Shanghai Jiao Tong University, School of Biomedical Engineering, Functional Neuroimaging and Interfacing with the Human Brain, Shanghai, July 2014.

2014 Humboldt-University, Bernstein Center for Computational Neuroscience Berlin, Multimodal Functional Neuroimaging of Brain Activity, Berlin, June 2014.

2014 Southeast University, School of Biomedical Engineering, Functional Mapping and Interfacing with the Brain, Nanjing, May 2014.

2014 Tsinghua University, Department of Biomedical Engineering, Mapping and Interfacing with the Brain, April 2014.

2014 Distinguished Faculty Luncheon Series, University of Minnesota, Office of the Provost, Mapping and Interacting with the Brain, Minneapolis, April 2014.

2013 University of Michigan, Department of Physical Medicine and Rehabilitation, Non-invasive Sensorimotor System Brain-Computer Interfaces, Ann Arbor, December 2013.

2013 Rehabilitation Robotics Seminar, University of Michigan, Controlling a flying robot by mind, Ann Arbor, December 2013.

2013 Cornell University, Department of Electrical and Computer Engineering, Functional Mapping and Interfacing with the Brain: Challenges and Opportunities, Ithaca, November 2013.

2013 Distinguished Lecture, Department of Electrical and Computer Engineering, Texas A & M University, Spatio-temporal Functional Neuroimaging: Challenges and Opportunities, College Station, October 2013.

2013 UCLA, Institute for Pure and Applied Mathematics, Functional Neuroimaging of Brain Activity, LA, March 2013.

2012 Invited Symposium Lecture, EEG Source and Connectivity Imaging of Epilepsy, American Clinical Neurophysiology Society Annual Meeting, San Antonio, February 2012.

2012 University of Minnesota, Institute for Engineering in Medicine Seminar, Spatio-temporal Functional Neuroimaging: Challenges and Opportunities, Minneapolis, February 2012.

2011 Zhejiang University, School of Biomedical Engineering, Imaging and Engineering the Brain – a Grand Challenge in Biomedical Engineering, Hangzhou, October 2011.

2011 University of Florida, Department of Biomedical Engineering, Spatio-temporal Functional Imaging of Brain Activity, Gainesville, June 2011.

2011 Invited Workshop Lecture, 17th Annual Meeting of Organization on Human Brain Mapping, Dynamic Integration of EEG with fMRI in Event Related Paradigms and Resting States, Quebec City, June 2011.

2011 Invited Lecture, Biologically-driven Navigation (BioNav) Workshop**,** EEG-based Navigational Control of Virtual Helicopter in 3-D Space, DARPA, Arlington, May 2011.

2011 Rice University, Joint Center for Neuroengineering, Imaging and Interfacing with the Human Brain, Houston, March 2011.

2011 University of Illinois at Chicago, Department of Bioengineering, Imaging and Interfacing with the Human Brain, Chicago, March 2011.

2011 Case Western Reserve University, Epilepsy Grand Rounds, University Hospital Case Medical Center, Functional Source Imaging of Focal Epilepsy, Cleveland, February 2011.

2010 Lecture Series in Complex Systems and Intelligence Science, Chinese Academy of Sciences, Imaging and Interfacing with the Human Brain, Beijing, December 2010.

2010 Carnegie Mellon University, Department of Electrical and Computer Engineering, Spatio-temporal Functional Neuroimaging of Brain Activity, Pittsburgh, September 2010.

2010 Politecnico di Milano, Functional Neuroimaging of Brain Activity, Milan, June 2010.

2010 University of Glasgow, Functional Neuroimaging of Brain Activity, Glasgow, June 2010.

2010 Technical University of Lisbon, Neuroengineering, Lisbon, June 2010.

2010 Peking University, Department of Biomedical Engineering, Spatio-temporal Functional Neuroimaging of Brain Activity, Beijing, April 2010.

2010 Distinguished Speaker Seminar Series, School of Biomedical Engineering, BEIHANG University, Spatio-temporal Imaging of Brain Activity, Beijing, April 2010.

2010 University of Florida, Department of Biomedical Engineering, Spatio-temporal Imaging of Brain Functions and Dysfunctions, Gainesville, April 2010.

2010 Neuroengineering Seminar, University of Alabama at Birmingham, Spatio-temporal Functional Imaging of Brain Activity, Birmingham February 2010.

2010 Cardiac Electrophysiology Seminar, University of Alabama at Birmingham, Noninvasive Cardiac Tomographic Electric Imaging, Birmingham, February 2010.

2009 Mayo Clinic, Department of Bioengineering and Physiology, Spatio-temporal Functional Neuroimaging of Brain Activity, Rochester, December 2009.

2009 MIT, Functional Neuroimaging: Opportunities and Challenges, December 2009.

2009 Invited Lecture, The Xiangshan Science Conferences 346th Session, Electrophysiological Sensing and Imaging of Cardiac Activity, Beijing, April 2009.

2009 Institute of Electrical Engineering, Chinese Academy of Sciences, Multimodal Functional Neuroimaging, Beijing, April 2009.

2008 University of Colorado at Boulder, Institute of Cognitive Science, Multimodal Functional Neuroimaging of Brain Activity and Connectivity, Boulder, October 2008.

2008 Invited Talk, NIH Blueprint Workshop on Non-invasive Imaging of Brain Structure and Function, Multimodal Functional Neuroimaging Integrating fMRI and EEG, Washington DC, September 2008.

2008 Invited Talk, Multimodal Neuroimaging of Brain Activity and Connectivity, Grand Challenges in Neuroscience Workshop, Institute of Medicine of the National Academies, Washington DC, June 2008.

2008 Tsinghua University, Department of Biomedical Engineering, Magnetoacoustic Imaging with Magnetic Induction, Beijing, May 2008.

2008 Institute of Biomedical Engineering, Chinese Academy of Medical Sciences, Magnetoacoustic Imaging with Magnetic Induction, Tianjin, May 2008.

2008 Tianjin University, Neuroengineering: Recent Progress and Applications, Tianjin, May 2008.

2007 Invited Symposium Lecture, World Congress on Neuromodulation, Electrophysiological Neuroimaging of Cortical Sources, Acapulco, December 2007.

2007 Institute of Biomedical and Health Engineering, Chinese Academy of Sciences, Neuroengineering: From neuroimaging to neuron-interfacing, Shenzhen, October 2007.

2007 Peking University, Department of Psychology, Electrophysiological Imaging of Brain Activity, Beijing, October 2007.

2007 Georgia Tech, Electrophysiological Imaging of Brain Activity: Principles and Applications, Department of Biomedical Engineering, Atlanta, September 2007.

2007 University of Geneva, Department of Neurology, Electrophysiological Neuroimaging, Geneva, August 2007.

2007 University of Michigan, Department of Biomedical Engineering, Electrophysiological Neuroimaging of Brain Activity, Ann Arbor, March 2007.

2007 Cornell University, Department of Radiology, Electrophysiological Neuroimaging of Brain Activity, New York, March 2007.

2007 Illinois Institute of Technology, Department of Biomedical Engineering, Recent Progress in Electrophysiological Neuroimaging, Chicago, February 2007.

2006 Institute of Electrical Engineering, Chinese Academy of Science, Bioelectromagnetic Imaging, Beijing, July 2006.

2006 Institute of Automation, Chinese Academy of Science, Electrophysiological Functional Neuroimaging, Beijing, July 2006.

2006 Shanghai Jiao Tong University, Electrophysiological Neuroimaging of Brain Activity and Functional Connectivity, Shanghai, July 2006.

2006 Tongji University, Electrophysiological Imaging of Cardiac and Brain Activity, Shanghai, July 2006.

2006 University of Chicago, Source Localization, Activation / Causality Mapping of Epileptiform Activity, Chicago, May 2006.

2005 Case Western Reserve University, Department of Biomedical Engineering, Electrophysiological Neuroimaging and Applications to Epilepsy, Cleveland, November 2005.

2005 Johns Hopkins University, Department of Biomedical Engineering, Electrophysiological Neuroimaging: Principles and Applications, Baltimore, October 2005.

2004 Distinguished Seminar, Department of Electrical and Computer Engineering, Michigan State University, Electrophysiological Neuroimaging, Michigan, November 2004.

2004 Zhejiang University, College of Biomedical Engineering, Brain Computer Interface, Hangzhou, April 2004.

2004 Shanghai Jiao Tong University, Department of Biomedical Engineering, Electrophysiological Neuroimaging, Shanghai, April 2004.

2003 University of Chicago, Electrophysiological Cortical Imaging of Epileptiform Activity in Pediatric Epilepsy Patients, Chicago, July 2003.

2003 University of Minnesota, Department of Biomedical Engineering, Electrophysiological Neuroimaging: Principles, Validation and Application to Imaging Epileptiform Activity, Minneapolis, April 2003.

2003 Texas A&M University, Department of Biomedical Engineering, Spatio-temporal Cardiac Source Imaging, College Station, February 2003.

2002 Harvard Medical School, MGH/MIT/HMS A.A. Martinos Center for Biomedical Imaging, Electrophysiological Neuroimaging by Solving the EEG Inverse Problem, Boston, November 2002.

2002 University of Chicago, Department of Neurology, Electrophysiological Neuroimaging and Applications to Localization of Epileptogenic Foci, Chicago, April 2002.

2002 Chinese Academy of Science, Beijing Laboratory of Cognitive Science, Electrophysiological neuroimaging: Principles and applications, Beijing, April 2002.

2002 Tsinghua University, Department of Electrical Engineering, EEG Cortical Imaging, Beijing, April 2002.

2001 Northwestern University, Department of Biomedical Engineering, High-resolution Bioelectrical Source Imaging, Evanston, May 2001.

2000 Rehabilitation Institute of Chicago, Brain Electric Source Imaging, Chicago, September 2000.

2000 University of Chicago, Department of Radiology, Bioelectrical Source Imaging, Chicago, March 2000.

2000 University of Illinois at Urbana-Champaign, Beckman Institute, Recent Progress in Brain Electric Source Imaging, Urbana, March 2000.

1998 Brain Research Seminar, Tokyo Institute of Technology, Cortical Electrical Imaging from Scalp EEGs, Tokyo, 1998.

1996 Northwestern University, Cardiac Electrical Imaging, Evanston, 1996.

1995 Tokyo Institute of Technology, Department of Applied Electronics, Bioelectrical Imaging, Yokohama, 1995.

1995 University of Tokyo, Institute of Medical Electronics, Body Surface Equivalent Charge Mapping, Tokyo, 1995.

1994 Harvard Medical School, Eaton-Peabody Laboratory of Auditory Physiology, EEG Dipole Tracing, Boston, 1994.

1994 Worcester Polytechnic Institute, Biomedical Engineering Department, Body surface Laplacian ECG imaging, Worcester, 1994.

1994 University of Connecticut, Department of Electrical and Systems Engineering, Body surface Laplacian imaging of cardiac electrical activity, Connecticut, 1994.

PROFESSIONAL ACTIVITIES

Editorships / Editorial Board Memberships:

2023-present Editor-in-Chief, IEEE Reviews in Biomedical Engineering

2023-present Editorial Board Member, Scientific Data

2022-present Advisory Board Member, Med-X

2020-present Editorial Board Member, Biomedical Engineering Advances

2019-present Associate Editor, Frontiers in Human Neuroscience

2019-present Scientific Advisory Board Member, IEEE Transactions on Biomedical Engineering

2016-present Editorial Board Member, Current Opinion in Biomedical Engineering

2010-present Section Editor, Brain Topography

2020-2022 Scientific Advisory Board Member, IEEE Reviews in Biomedical Engineering

2013-2022 Editorial Board Member, Technology

2020 Editor, Neural Engineering, 3rd Edition, Springer

2013-2018 Editor-in-Chief, IEEE Transactions on Biomedical Engineering
2012-2016 Senior Editor, IEEE Transactions on Neural Systems & Rehabilitation Engineering
2015 Guest Editor-in-Chief, Engineering (Special Issue - Medical Instrumentation)
2014-2018 Academic Editor, PLoS ONE
2010-2016 Editorial Board Member, IEEE Reviews in Biomedical Engineering
2009-2015 Editorial Advisory Board Member, IEEE Spectrum
2013-2015 Founding Editorial Board Member, IEEE Access
2013-2014 Reviewing Editor, Computerized Medical Imaging and Graphics
2004-2013 Founding Editorial Board Member, Journal of Neural Engineering
2002-2012 Associate Editor, IEEE Transactions on Biomedical Engineering
2006-2012 Associate Editor, IEEE Transactions on Neural Systems & Rehabilitation Engineering
2013 Editor, Neural Engineering, 2nd Edition, Springer
2008-2010 Associate Editor, Brain Topography
2004-2011 Editorial Board Member, Clinical Neurophysiology
2010 Co-Editor, Cardiac Electrophysiology Methods and Models, Springer
2004-2007 Associate Editor, IEEE Transactions on Information Technology in Biomedicine
2005 Editor, Neural Engineering, Kluwer Academic-Plenum Publishers
2004 Editor, Modeling and Imaging of Bioelectrical Activity – Principles & Applications Kluwer Academic-Plenum Publishers
2004 Editorial Board Member, Neurological Research
2001 Ad Hoc Associate Editor, Medical Physics

Major Professional Society Activities:

2023-present Member, Nomination Committee
American Institute of Medical and Biological Engineering (AIMBE)
2023-present Member, Administrative Committee,
IEEE Engineering in Medicine and Biology Society (EMBS)
2023-present Member, IEEE-EMBS Publications Committee
2022-present Member, Fellows Committee, Biomedical Engineering Society
2021-present Past Chair, International Academy of Medical and Biological Engineering
2021-present Chair, Nomination Committee, International Academy of Medical and Biological Engineering
2021-present AIMBE Delegate to International Federation of Medical and Biological Engineering (IFMBE)
2012-present Member, Governing Council
International Academy of Medical and Biological Engineering
2018-2021 Chair, International Academy of Medical and Biological Engineering
2015-2018 Chair-elect, International Academy of Medical and Biological Engineering
2015-2016 Member, IEEE PSPB Strategic Planning Committee
2013-2018 Member, Administrative Committee, IEEE-EMBS
2013-2018 Member, IEEE-EMBS Publications Committee
2013-2014 Member, IEEE Fellow Evaluation Committee

2012-2018 Chair, Membership Committee
International Academy of Medical and Biological Engineering
2012-2013 Chair, Steering Committee on Neural Engineering Conference, IEEE-EMBS
2012 Chair, IEEE-EMBS Technical Committee on Biomedical Imaging
2011-2014 Chair of Publications Committee
American Institute for Medical and Biological Engineering
2011-2013 Co-Chair, IEEE Life Sciences Initiative
2011-2012 Chair, Nominating Committee, IEEE-EMBS
2011 Chair, Technical Activities Committee, IEEE-EMBS
2011 Chair, Strategic Planning Committee, IEEE-EMBS
2011 Chair, Constitutions and Bylaws Committee, IEEE-EMBS
2011 Member, IEEE Fellow Evaluation Committee
2009-2010 President, IEEE Engineering in Medicine and Biology Society
2009-2010 Member, IEEE Technical Activity Board
2009-2015 Chair, Fellow Committee, International Society for Functional Source Imaging
2008 Chair, Technical Activities Committee, IEEE-EMBS
2008 Chair, Strategic Planning Committee, IEEE-EMBS
2008 Chair, Constitutions and Bylaws Committee, IEEE-EMBS
2007 Vice President for Publications, IEEE-EMBS
2007-2008 President, International Society for Functional Source Imaging
2007-2019 Member, Board of Directors, Int. Society for Functional Source Imaging
2007-2009 Member, Steering Committee, IEEE Reviews in Biomedical Engineering
2007 Chair, Editor-in-Chief Search Committee
IEEE Reviews in Biomedical Engineering
2007 Chair, Editor-in-Chief Search Committee
IEEE Transactions on NanoBioscience
2006-2013 Member, IEEE-EMBS Conference Committee
2006-2007 Chair, Editor-in-Chief Search Committee
IEEE Transactions on Information Technology in Biomedicine
2006-2007 Chair, Editor-in-Chief Search Committee
International Journal of Bioelectromagnetism
2005-2006 Chair, Editor-in-Chief Search Committee
IEEE Transactions on Biomedical Engineering
2005-2006 Chair, Editor-in-Chief Search Committee
IEEE Transactions on Neural Systems and Rehabilitation Engineering
2005-2007 Member, Steering Committee, IEEE Transactions on NanoBioscience
2005-2006 Member, IEEEE-EMBS Technical Activities Committee
2005-2006 Vice President for Publications and Technical Activities, IEEE-EMBS
2005-2011 Member, Executive Committee, IEEE-EMBS
2005-2007 Chair, Publications Committee, IEEE-EMBS
2006 Member, IEEE-EMBS Financial Planning Committee
2004 Chair, IEEE-EMBS Ad Hoc Publications Strategic Planning Committee

2004 Chair, IEEE-EMBS Education Committee
2004-2006 Member, IEEE-EMBS Award Committee
2002-2011 Member, Administrative Committee, IEEE-EMBS
2002-2004 Chair, IEEE-EMBS Regional Conference Committee
2002-2005 President, International Society of Bioelectromagnetism
2000-2002 Vice President, International Society of Bioelectromagnetism
2002-2013 Council Member, International Society of Bioelectromagnetism

Major Conference Activities:

2024 Member, Advisory Board, The 17th International Conference on Brain Informatics, Bangkok
2023 General Chair, The 16th International Conference on Brain Informatics, New York
2022 Member, International Scientific Committee,
World Congress on Medical Physics and Biomedical Engineering, Singapore
2021 Member, Scientific Committee
5th International Conference on Basic and Clinical Multimodal Imaging (online)
2021 Member, Scientific Advisory Board
20th World Congress of Psychophysiology (online)
2020 Chair, 3rd Carnegie Mellon Forum on Biomedical Engineering (online)
2020 Co-Chair, International Program Committee
IEEE EMBS Annual International Conference (online)
2019 Chair, 2nd Carnegie Mellon Forum on Biomedical Engineering, Pittsburgh
2019 Member, International Program Committee
IEEE EMBS Annual International Conference, Berlin
2019 Member, Program Committee
4th International Conference on Basic and Clinical Multimodal Imaging, Chengdu
2018 Chair, 1st Carnegie Mellon Forum on Biomedical Engineering, Pittsburgh
2018 Member, International Program Committee
IEEE EMBS Annual International Conference, Hawaii
2017 Chair, 5th Annual Minnesota Neuromodulation Symposium, Minneapolis
2017 Member, Organizing Committee
IEEE EMBS 8th International Conference on Neural Engineering, Shanghai
2017 Member, International Advisory Board
IEEE EMBS Annual International Conference, Jeju Island
2017 Member, Scientific Committee
European Medical and Biological Engineering Conference, Tampere
2016 Chair, 4th Annual Minnesota Neuromodulation Symposium, Minneapolis
2016 Member, International Committee
IEEE EMBS Annual International Conference, Orlando
2016 Member, International Program Committee
IEEE EMBS Int. Conference on Biomedical and Health Informatics, Las Vegas
2015 Member, International Scientific Committee

IEEE EMBS Annual International Conference, Milan

2015 Co-Chair, Steering Committee
IEEE EMBS Summer School in Neuroengineering, Shanghai

2015 Chair, 3rd Annual Minnesota Neuromodulation Symposium, Minneapolis

2015 Member, Organizing Committee
IEEE EMBS 7th International Conference on Neural Engineering, Montpellier

2015 Member, International Program Committee
IEEE Biomedical Circuits and Systems Conference, Atlanta

2014 Chair, IEEE EMBS BRAIN Grand Challenges Conference, Washington DC

2014 Co-Chair, IEEE International Symposium on Biomedical Imaging, Beijing

2014 Chair, 2nd Annual Minnesota Neuromodulation Symposium, Minneapolis

2014 Member, International Program Committee
International Conference on Biomedical and Health Informatics, Spain

2014 Member, International Program Committee
6th European Conference of International Federation for Medical and Biological Engineering, Croatia

2013 Chair, IEEE EMBS 6th International Conference on Neural Engineering, San Diego

2013 Chair, NSF Workshop on Mapping and Engineering the Brain, Arlington

2013 Chair, 1st Minnesota Neuromodulation Symposium, Minneapolis

2013 Member, Steering Committee, IEEE Life Sciences Grand Challenges Conference, Singapore

2013 Member, International Advisory Committee
International Conference on Biomedical Engineering, Singapore

2013 Member, International Program Committee
Annual International Conference of IEEE EMBS, Osaka

2013 Member, Scientific Committee
International Conference on Basic and Clinical Multimodal Imaging, Geneva

2013 Member, Steering Committee, Fifth International Brain-Computer Interface Meeting

2012 Chair, IEEE Life Sciences Grand Challenges Conference, Washington DC

2012 Co-Chair, Scientific Committee
World Congress on Medical Physics and Biomedical Engineering, Beijing

2012 Member, International Program Committee
Annual International Conference of IEEE EMBS, San Diego

2011 Chair, Symposium on Biomedical Engineering Education
Annual International Conference of IEEE EMBS, Boston

2011 Member, Organizational Advisory Committee
Annual International Conference of IEEE EMBS, Boston

2011 Co-Chair, Yangtze River Int. Conference on the Applications of Medical Imaging Physics & The 6th National Annual Meeting of Medical Imaging Physics, Hangzhou

2011 Member, International Advisory Committee, the 8th Int. Symposium on Noninvasive Functional Source Imaging & 8th Int. Conference on Bioelectromagnetism, Banff

2010 Chair, Steering Committee

IEEE-EMBS Forum on Grand Challenges in Neuroengineering, Bethesda

2010 Member, Program Committee

The Fourth International Brain-Computer Interface Meeting, Pacific Grove

2009 General Chair

Annual International Conference of IEEE EMBS, Minneapolis

2009 Member, Advisory Board

World Congress on Medical Physics and Biomedical Engineering, Germany

2009 Member, Advisory Council, Healthcare Reform – or Transformation?

A Scientific Community – Interoperability Summit, Washington DC

2009 Member, International Advisory Committee

7th International Symposium on Noninvasive Functional Source Imaging & 7th International Conference on Bioelectromagnetism, Rome

2009 Member, Program Committee

International Workshop on Biosignal Interpretation, New Haven

2008 Publicity Chair

Annual International Conference of IEEE EMBS, Vancouver

2008 Theme Co-Chair, Biomedical Imaging and Image Processing Theme

IEEE-EMBS Annual International Conference, Vancouver

2007 Co-Chair, Joint Meeting of the 6th International Symposium on Noninvasive

International Conference on Functional Biomedical Imaging, Hangzhou

2007 Theme Co-Chair, Biomedical Imaging and Image Processing Theme,

IEEE-EMBS Annual International Conference, Lyon

2006 Theme Chair, Biomedical Imaging and Image Processing Theme

IEEE-EMBS Annual International Conference, New York

2006 Bioelectricity and Biomagnetism Track Chair

World Congress on Medical Physics and Biomedical Engineering, Korea

2006 Neural Engineering Track Chair

Annual Conference of Biomedical Engineering Society, Chicago

2006 Chair, Symposium on Frontiers in Neural Engineering

Annual Conference of Biomedical Engineering Society, Chicago

2005 Chair, Joint Meeting of the Fifth International Conference on Bioelectromagnetism and the Fifth International Symposium on Noninvasive Functional Source Imaging within the Human Brain and Heart, Minneapolis

2005 Member, International Advisory Committee

2nd IEEE-EMBS International Conference on Neural Engineering, DC

2005 Theme Chair, Medical Imaging and Image Processing Theme

IEEE-EMBS Annual International Conference, Shanghai

2005 Member, Program Committee

The 5th International Workshop on Biosignal Interpretation, Tokyo

2004 Theme Chair, Neural & Rehabilitation Engineering Theme,

IEEE-EMBS Annual International Conference, San Francisco

2003 Member, Program Committee

	The 1st IEEE-EMBS International Conference on Neural Engineering, Capri
2003	Member, Scientific Committee, XXX Int. Conf. on Electrocardiology, Helsinki
2003	Theme Chair, Signal and Image Modeling and Processing Theme, IEEE-EMBS Asian-Pacific Conference on Biomedical Engineering, Kyoto
2002	Member, Program Committee The 4th International Workshop on Biosignal Interpretation, Italy
2001	Member, Scientific Board, The 3rd International Symposium on Noninvasive Functional Source Imaging within the Human Brain and Heart, Innsbruck
2000	Program Chair IEEE-EMBS Asia-Pacific Conference on Biomedical Engineering, Hangzhou
2000	Chair, IEEE-EMBS Workshop on Modeling/Imaging of Bioelectrical Activity, Chicago
1999	General Chair, The 3rd International Workshop on Biosignal Interpretation, Chicago
1999	World Topic Animator on Modeling and Simulation European Medical and Biological Engineering Conference, Vienna
1998	Theme Co-Chair, Brain and Neural Engineering Theme Annual International Conference of IEEE-EMBS, Hong Kong
1997	Member, Conference Committee, Annual Int. Conf. of IEEE-EMBS, Chicago
1997	Member, Program Committee URSI-IEEE International Scientific Meeting on Electromagnetics in Medicine
1997	Local Arrangements Chair URSI-IEEE International Scientific Meeting on Electromagnetics in Medicine
1996	Member, Organizing Committee The 2nd IFMBE-IMIA International Workshop on Biosignal Interpretation

Major Institutional Service:

2021-present	Director, Neural Interfacing Training Program, CMU
2021-present	Member, Biomedical Engineering Graduate Admission Committee, CMU
2019-2022	Member, Steering Committee, Neuroscience Institute, CMU
2018-2021	Head, Department of Biomedical Engineering, CMU
2012-2017	Director, Institute for Engineering in Medicine, UMN
2007-2017	Founding Director, Center for Neuroengineering, UMN
2012-2017	Director of Graduate Studies, Neuroengineering PhD Minor, UMN
2011-2018	Director, IGERT Neuroengineering Training Program, UMN
2010-2012	Associate Director for Research, Institute for Engineering in Medicine, UMN
2008-2018	Director, Neuroimaging Training Program, UMN
2004-2006	Director of Undergraduate Studies, Department of Biomedical Engineering, UMN
2014-2017	Member, Executive Steering Committee, Office of VP for Research, UMN
2013-2017	Member, MnDrive Brain Conditions Steering Committee, UMN
2013-2017	Member, MnDrive Robotics, Sensors and Manufacturing Advisory Committee, UMN
2007-2017	Member, Steering Committee, Institute of Translational Neuroscience, UMN
2008-2017	Member, Medical Devices Center Advisory Board, UMN
2015-2017	Chair, Faculty Search Committee, Department of Biomedical Engineering, UMN

2011,2016 Chair, Biomedical Engineering Department Head Review Committee, UMN
2008-2010 Member, University Senate, UMN
2007-2009 Chair, Neuroengineering Faculty Search Committee, UMN
2008 Acting Director of Undergraduate Studies, Dept of Biomedical Engineering, UMN
2005-2007 Member, Faculty Advisory Board, Biomedical Engineering Institute, UMN
2004-2006 Chair, Scholarship Committee, Department of Biomedical Engineering, UMN
2004-2006 Member, Curriculum Committee, Institute of Technology, UMN
2004-2006 Member, Academic Standards and Student Affairs Committee, Institute of Technology, UMN
2004-2006 Director of Undergraduate Studies, Department of Biomedical Engineering, UMN
2002-2003 Director of Undergraduate Studies, Department of Bioengineering, UIC
2002-2003 Member, College of Engineering Faculty Research Award Committee, UIC
2001-2003 Member, Bioengineering Department Advisory Committee, UIC
2000-2002 Member, Undergraduate Committee, EECS Department, UIC
1999-2000 Member, Advisory Committee, EECS Department, UIC
1996-1997 Member, College of Engineering Bioengineering Task Force, UIC
1995-1998 Member, Bioengineering Advisory Board, UIC
1994-1995 Member, Bioengineering Curriculum Committee, UIC

Review Service for Funding Agencies:

National Institutes of Health
- Member, BRAIN Multi-Council Working Group
- Member, National Advisory Council for Complementary and Integrative Health
- Standing Member, Neuroscience and Ophthalmic Imaging Technologies Study Section
- Ad Hoc Member of Numerous Study Sections

National Science Foundation
- Panelist of Biomedical Engineering Grant Program Review Panels
- Panelist of Biomedical Engineering CAREER Program Review Panels
- Panelist of NSF/ONR/NIH Sponsored World Technology Evaluation (WTEC) study on Global Assessment on Research in Neuroimaging

Medical Research Council of Canada
Natural Sciences and Engineering Research Council of Canada
Canadian Institutes of Health Research
Austrian Science Fund
Alzheimer's Association
American Heart Association
Chinese Minister of Education
Czech Science Foundation
Danish Agency for Science, Technology and Innovation
European Science Foundation
Israel Science Foundation
Medical Research Council, U.K.

Netherlands Organization for Scientific Research
Portuguese Science and Technology Foundation
Royal Society of New Zealand
Swiss National Science Foundation
Research Foundation Flanders
United Engineering Foundation
Wellcome Trust, U.K.

STUDENTS GRADUATED & POSTDOCS/FELLOWS SUPERVISED

PhD Students:

** Fellowship Awardee; ** Conference Young Investigator/Student Paper Competition Awardee*

1. Rui Sun*, PhD Student, 1/18-5/23
   Thesis – Deep learning-based Source Imaging Improves Spatiotemporal Imaging of Epileptic Sources
   Placement: Data Scientist, Takeda Pharmaceutical
2. Zhengxiang Cai*,**, PhD Student, 1/18-2/23
   Thesis – Imaging the Epileptic Brain via High-frequency Oscillations from Multiscale Electrophysiological Analysis
   Placement: Postdoc, Carnegie Mellon University
3. Shuai Ye, PhD Student, 1/18-5/22
   Thesis – Estimating Epileptic Networks with High Density Electroencephalography and Magnetoencephalography
   Placement: Software Engineer, Google
4. Daniel Suma*,**, PhD Student, 1/18-2/22
   Thesis – Towards intuitive continuous EEG endogenous neurorobotic arm control
   Placement: Engineer, US Navy
5. Rachel Niu*,**, PhD Student, 1/18-2/22
   Thesis – Investigation of Mechanisms of Low Intensity Transcranial Focused Ultrasound Stimulation in the Central Nervous System of in vivo Rodent Models
   Placement: Senior Management Consultant, Guidehouse
6. James Stieger*, PhD Student, 11/14-12/20
   Thesis – How to Use Brains and Computers to Enhance Brain Computer Interfacing
   Placement: Postdoc, Stanford University
7. Vishal Vijayakumar, PhD Student, 1/16-5/18
   Thesis – Automated Detection and Quantification of Pain Using Electroencephalography
   Placement: Engineer, Starkey
8. Chris Cline*,**, PhD Student, 11/13-Present
   Thesis – Noninvasive neuroimaging of responses to transcranial magnetic stimulation
   Placement: Postdoc, Stanford Medical School
9. Michelle Case*, PhD Student, 11/13-5/18
   Thesis – Functional Multimodal Imaging of Sickle Cell Disease Patients to Understand how Chronic Pain Affects Neural Dynamics of Patients

Placement: Research Scientist, Medtronic Neuromodulation

10. Yicun Wang**, PhD Student, 11/13-5/18

    Thesis – Magnetic Resonance based Electrical Properties Tomography (EPT) Using Multi-channel Transmission for Imaging Human Brain and Animal Cancer Models

    Placement: Postdoc, NIH

11. Ting Yang, PhD Student, 11/13-12/17

    Thesis – Noninvasive Cardiac Imaging of Activation Sequence and Activation Recovery Interval, and Localization of Ventricular Arrhythmias

    Placement: Research Scientist, Phillips Healthcare

12. Abbas Sohrabpour*,**, PhD Student, 1/13-5/18

    Thesis – Noninvasive Electromagnetic Neuroimaging of Epilepsy Networks

    Placement: Postdoc, Carnegie Mellon University

13. Brad Edelman*,**, PhD Student, 11/12-2/18

    Thesis – A Neuroimaging Approach to Noninvasive Brain-Computer Interface Control

    Placement: Postdoc, Stanford University

14. Kai Yu*,**, PhD Student, 11/12-8/18

    Thesis Topic – Dual-mode Ultrasound: Magnetoacoustics for Biological Tissue Imaging and Ultrasound Mediated Neuromodulation

    Placement: Postdoc, Carnegie Mellon University

15. Bryan Baxter*,**, PhD Student, 11/11-5/17

    Thesis – Targeting the Brain in Brain-Computer Interfacing: The Effect of Transcranial Current Stimulation and Control of a Physical Effector on Performance and Electrophysiology Underlying Noninvasive Brain-Computer Interfaces

    Placement: Postdoc, Harvard Medical School

16. Abhrajeet Roy*,**, PhD Student, 11/10-12/16

    Thesis – Delineating the Neural Correlates of Visual Awareness through the Integration of Multimodal Neuroimaging and Noninvasive Electrical Neuromodulation

    Placement: Postdoc, University of Minnesota Medical School

17. Long Yu**, PhD Student, 11/10-12/16

    Thesis – Three Dimensional Cardiac Electrical Imaging: From Designs to Applications

    Placement: Systems Engineer, GE Healthcare

18. Jiaen Liu*,**, PhD Student, 11/09-11/15

    Thesis – Imaging Electrical Properties Using MRI and In Vivo Applications

    Current Position – Assistant Professor, UT Southwestern Medical Center

19. Huishi Zhang*, PhD Student, 11/09-05/15

    Thesis – Multimodal Neuroimaging in Epilepsy and Pain

    Placement – Consultant, Accenture

20. Keith Jamison*, PhD Student, 11/08-05/14

    Thesis Topic – Cognitive Neuroimaging

    Placement – Research Staff, CMRR, University of Minnesota Medical School

21. Yunfeng Lu*,**, PhD Student, 11/08-5/14

    Thesis – Noninvasive functional neuroimaging of electrophysiological brain activities in epilepsy patients

Placement – Biomedical Engineer, Medtronic, Inc.

22. Zhaoye Zhou, PhD Student, 11/08-08/14
    Thesis – Noninvasive Imaging of Cardiac Electrophysiology in Pathological Hearts
    Placement: Research Scientist, Medtronic, Inc.
23. Leo Mariappan, PhD Student, 09/07-05/14
    Thesis – Magnetoacoustic Tomography with Magnetic Induction for Electrical Conductivity based Tissue imaging
    Placement: Systems Engineer, Acutus Medical
24. Chengzong Han*,**, PhD Student, 09/06-08/12
    Thesis – Noninvasive Imaging of Three-dimensional Ventricular Electrical Activity
    Placement: Research Scientist, Philips Healthcare
25. Lin Yang*,**, PhD Student, 09/06-07/12
    Thesis – Functional neuroimaging of electrophysiological rhythms in pathological and normal brains
    Placement: Member of Research Staff, Phillips Research
26. Han Yuan*,**, PhD Student, 08/05-11/10
    Thesis – Functional Imaging of Rhythmic Brain Activity during Movement and Motor Imagination
    Current Position: Associate Professor, University of Oklahoma
27. Xu Li*,**, PhD Student, 08/04-09/10
    Thesis – Magnetoacoustic Tomography with Magnetic Induction for Electrical Conductivity Imaging of Biological Tissue
    Current Position: Assistant Professor, Johns Hopkins University
28. Chenguang Liu*,**, PhD Candidate, 08/03-12/09
    Thesis – Functional Mapping of Three-Dimensional Electrical Activation Sequence in Ventricles
    Current Position: Research Scientist, Phillips Healthcare
29. Christopher Wilke*, MD/PhD Student, 08/05-09/09
    Thesis – Causal-based Analysis of Epileptogenic Networks
    Current Position: Assistant Professor, University of Minnesota Medical School
30. Zhongming Liu*,**, PhD Student, 08/03-09/08
    Thesis – Multimodal Neuroimaging integrating fMRI and EEG
    Current Position: Associate Professor, University of Michigan
31. Yuan Lai**, PhD, 08/01-05/06
    Thesis – Cortical Electrophysiological Imaging of Brain Electrical Activity
    Placement: Senior Engineer, Philips Healthcare
32. Lei Ding*,**, PhD, 08/01-01/07
    Thesis – Electrophysiological Neuroimaging: New Models & Computational Methods
    Current Position: Professor and Institute Director, University of Oklahoma
33. Xin Zhang*,**, PhD Student, 08/99-08/05
    Thesis – A Computational and Experimental Study of a Heart-Model-Based Electrocardiographic Imaging Approach
    Current Position: VP of Business Development, Peijia Medical Co., Ltd.

34. Jie Lian*,**, PhD Student, 08/97-07/02
    Thesis – High Resolution Imaging of Bioelectric Sources
    Placement: Senior Biomedical Engineer, Micro Systems Engineering, Inc.
35. Dongsheng Wu**, PhD Student, 01/95-07/98
    Thesis – Theoretical Study of Forward and Inverse Laplacian Electrocardiography
    Placement: Postdoc, University of Illinois at Chicago

MS/Graduate Students:

** Fellowship/Scholarship Awardee*

1. Jeehyun Kim, MS Student, 8/21-5/23
   Thesis – Immediate effects of short-term meditation on sensorimotor rhythm-based brain-computer interface performance
   Placement: Research Associate, CMU
2. Yunruo Ni*, MS Student, 9/21-5/23
   Thesis – 3D Displacement Simulations for Trans-cranial Focused Ultrasound Applications
   Placement: BME PhD Program, Virginia Tech
3. Hao Zhu*, MS Student, 2/21-12/22
   Thesis – On the Deep Learning Models for EEG-based Brain-Computer Interface Using Motor Imagery
   Placement: BME PhD Program, Lehigh University
4. Hyonyoung Shin, MS Student, 8/20-5/22
   Thesis – Closed-loop motor imagery EEG simulation for brain-computer interfaces
   Placement: ECE PhD Program, UT Austin
5. Chang Liu, MS Student, 9/18-5/20
   Thesis – Electrophysiological Source Imaging Brain Activation at Human Primary Somatosensory Cortex Induced by Transcranial Focused Ultrasound Stimulation
   Placement: BME PhD Program, Boston University
6. Chris Coogan*, Graduate Student, 11/16-12/17
   Thesis Topic – Brain-Computer Interface
   Placement: Software Engineer, Johns Hopkins University
7. Seyed Amir Hosseini*, Graduate Student, 5/16-12/17
   Thesis Topic – Epilepsy Source Localization
   Placement: ECE PhD Program, University of Minnesota
8. Sina Shirinpour, Graduate Student, 11/15-8/17
   Thesis Topic – Neuroimaging of Pain
   Placement: BME PhD Program, University of Minnesota
9. Alex Doud*, MD/MS Student, 8/12-6/13
   Thesis Topic – Brain Computer Interface Studies in Stroke Patients
   Placement: Medical School Resident, University of Washington
10. Eren Gulpte, Graduate Student, 9/09-5/11
    Thesis – A linear/nonlinear characterization of resting state brain networks in fMRI time course
    Placement: PhD Program, UC Davis

11. Ke-Chun Chou, MS Student, 08/05 – 05/06
    Thesis – An Interfacing System for Body surface Potential Mapping
    Placement: Engineer, Epic Systems Corporation
12. Baharan Kamousi, MS Student, 06/04-9/05
    Thesis – Classification of Motor Imagery Tasks by means of EEG Inverse Solutions for Brain Computer Interface Applications
    Current Position: Senior Engineer, St. Jude Medical
13. Ying Ni, MS Student, 05/02-07/04
    Thesis Topic – Cortical Imaging of Motor Potentials and Interictal Epileptic Discharges
    Current Position: Research Scientist, Case Western Reserve University
14. Jie Deng, MS Student, 08/02-01/04
    Thesis Topic – Brain-Computer Interface
    Current Position: Associate Professor, Rush University Medical Center
15. Jia Cheng, MS Student, 08/00 – 07/02
    Thesis – Visualization of Electrical Activity of Human Heart and Brain
    Placement: Research Associate, University of Chicago Hospital
16. Pathyusha K Salla, MS Student, 08/99 – 12/00
    Thesis – Body Surface ECG Mapping during Normal Ventricular Depolarization
    Placement: Engineer, GE Medical Systems
17. Sriram Srinivasan, MS Student, 01/98 – 12/99
    Thesis – Estimation of Noise Level in Laplacian Electrocardiogram during Ventricular Depolarization
    Placement: Research Scientist, Medtronic, Inc.
18. Dongning Wu, MS Student, 08/97 – 01/99
    Thesis – Development of an Advanced ECG Mapping Software System
    Placement: Engineer, Motorola
19. Ho Chie Tsai, MS Student, 09/96-07/98
    Thesis – Imaging Abnormal Cardiac Conduction by Means of Body Surface Laplacian Mapping
    Placement: MD Program, University of Illinois at Chicago College of Medicine
20. Greg Krumdick, MS Student, 08/96-05/98
    Thesis – Development of a Visual Stimulation System and its Application to Visual Evoked Potentials
    Placement: Staff, Argonne National Laboratory
21. Nabil Mehid, MS Student, 08/95-07/97
    Thesis – Experimental investigation of body surface Laplacian mapping during ventricular depolarization
    Placement: Engineer, Baxter Health Care
22. Yi Li, MS Student, 01/96-10/96
    Thesis – On the estimation of the body surface Laplacian from noisy body surface potential data
    Placement: Engineer, Sharp USA
23. Xian Yu, MS Student, 08/94-10/96

Thesis – Development of a cardiac electric mapping software system
Placement: Engineer, Motorola

24. Mike O'Hara, MS Student, 08/94-10/96
Thesis – Investigation of body surface Laplacian maps of ventricular depolarization in adult males
Placement: Engineer, Baxter Health Care

Undergraduate Students Advising:

Over 100 undergraduate students advised at CMU, UMN, and UIC.

Postdoctoral/Visiting Fellows Supervision:

** Fellowship awardees*

1. Abbas Sohrabpour*, PhD, 6/18-5/22
Project: Functional Neuroimaging of Epilepsy
Placement: Distinguished David Cohen Fellow, Harvard Medical School
2. Kai Yu, PhD, 9/18-10/19
Project: Focused Ultrasound Neuromodulation
Placement: Research Scientist, Special Faculty, Carnegie Mellon University
3. Haiteng Jiang, PhD, 6/16-6/21
Project: Functional Brain Connectivity Mapping
Placement: Research Professor, Zhejiang University
4. Jianjun Meng, PhD, 2/14-8/19
Project: Brain-Computer Interface Control of a Robotic Arm
Placement: Associate Professor, Shanghai Jiao Tong University
5. Xiaotong Zhang**, PhD, 7/09-9/15
Project: MR Electrical Property Imaging
Placement: Associate Professor, Zhejiang University
6. Li Zhang, PhD, 10/13-10/14
Project: Brain-Computer Interface
Current Position: Associate Professor, Chongqing University
7. Shuai Zhang, PhD, 3/13-3/14
Project: Magnetoacoustic Imaging
Current Position: Professor and Vice Dean, Hebei Institute of Technology
8. Junfeng Sun, PhD, 8/12-8/13
Project: Functional Neuroimaging of Schizophrenia
Current Position: Associate Professor, Shanghai Jiao Tong University
9. Gang Hu, PhD, 11/08-11/11
Project: Magnetoacoustic Imaging
Placement: Research Fellow, Harvard Medical School
10. Dakun Lai, PhD, 8/08-11/12
Project: Cardiac Electrical Imaging
Placement: Associate Professor, Electronic Univ of Science and Technology of China

11. Ardalan Aarabi, PhD, 1/10-8/11
    Project: Seizure Prediction
    Current Position: Associate Professor, University of Picardie Jules Verne, France
12. Yakang Dai, PhD, 7/09-7/11
    Project: Neuroimaging
    Current Position: Professor, Chinese Academy of Sciences
13. Jun Liu*, PhD, 02/09-02/11
    Project: Electromagneto-acoustic Imaging
    Current Position: Associate Professor, Zhejiang University
14. Jungang Qin, PhD, 4/10-4/11
    Project: Cognitive Neuroimaging
    Placement: Postdoc, National University of Singapore
15. Chenguang Liu, PhD, 1/10-3/11
    Project: Cardiac Electric Tomography
    Current Position: Research Scientist, Philips Healthcare
16. Gang Wang, PhD, 4/08-6/10
    Project: EEG Source Localization
    Placement: Associate Professor, Xi'an Jiao Tong University
17. Zhongming Liu, PhD, 10/08-04/09
    Project: Multimodal Neuroimaging
    Current Position: Associate Professor, University of Michigan
18. Wei Zhang, PhD, 11/07-11/08
    Project: Epilepsy Signal Processing
    Placement: Assistant Professor, Tongji University, China
19. Qingyu Ma, PhD, 11/06-10/07
    Project: Magnetoacoustic Imaging
    Current Position: Professor, Nanjing Normal University, China
20. Nuo Gao, PhD, 7/06-7/07
    Project: Magnetic Resonance Electrical Impedance Imaging
    Placement: Associate Professor, Shandong Architecture Materials Industry University
21. Rongmin Xia, PhD, 8/06 – 8/07
    Project: Magnetoacoustic Imaging
    Placement: Postdoc, Cornell Medical School
22. Xiaoxiao Bai*, PhD, 7/04 – 6/07
    Project: EEG Source Localization
    Placement: Research Associate, Yale University
23. Yingchun Zhang*, PhD, 9/04 – 7/07
    Project: Finite Element Modeling of Bioelectrical Activity
    Current Position: Associate Professor, University of Houston
24. Chang-Hwan Im*, PhD, 3/05 – 2/06
    Project: Brain Source Imaging
    Current Position: Professor, Hanyang University, Korea

25. Yuan Xu, PhD, 9/04 – 6/05
    Project: Electrical Impedance Imaging
    Current Position: Associate Professor, Ryerson University, Canada
26. Tao Wang, PhD, 12/02 – 12/03
    Project: Neural Modeling and Imaging
    Current Position: Professor, Southern Medical University, China
27. Guanglin Li, PhD, 7/00 – 6/02
    Project: Cardiac Source Localization and Mapping
    Current Position: Professor and Institute Director, Chinese Academy of Sciences
28. Masao Sumiya*, PhD, 5/01 – 3/02
    Project: Brain Imaging
    Placement: Associate Professor, Ibaraki Industrial College
29. Junichi Hori*, PhD, 10/99-8/00
    Project: Signal and Image Processing
    Placement: Associate Professor, Niigata University
30. Hiroshi Sasaki*, PhD, 6/99 – 2/00
    Project: Human Brain Mapping
    Placement: Associate Professor, Tamagawa University
31. Dongsheng Wu, PhD, 8/98 – 4/99
    Project: 3-dimensional Bioelectric Imaging
    Placement: Member of Technical Staff, Morningstar, Inc.
32. Ken Umetani*, MD, 6/95-7/97
    Project: Body Surface Mapping and Heart Rate Variability
    Placement: Associate Professor, Yamagashi Medical University
33. Masafumi Nakagawa*, MD, 4/96-6/97
    Project: Brain Mapping
    Placement: Associate Professor, Juntendo University
34. Yunhua Wang, PhD, 12/95-11/96
    Project: Cortical Electrical Imaging from Scalp EEG
    Placement: Research Associate, McGill University, Canada

Awards and Recognitions of Students and Postdocs/Fellows:

2023-26 NSF Graduate Research Fellowship (Joshua Kosnoff)
2023 NIH Neural Interfacing Traineeship (Annabel Frake)
2023 NIH Neural Interfacing Traineeship (Jesse Rong)
2023 NSF Graduate Research Fellowship, Honorable Mention (Colton Gonsisko)
2022 NIH Neural Interfacing Traineeship (Joshua Kosnoff)
2022 NIH Neural Interfacing Traineeship (Colton Gonsisko)
2022 Dowd's Fellowship, Carnegie Mellon University (Sandhya Ramachandran)
2022 David Cohen Distinguished Postdoctoral Fellowship (Abbas Sohrabpour)
Athinoula A. Martinos Center for Biomedical Imaging, Harvard Medical School
2021 CMLH Fellowship in Digital Health (Rui Sun)

	Center for Machine Learning and Health, Carnegie Mellon University
2021	Neuroscience Outstanding Postdoctoral Research Award (Abbas Sohrabpour) Carnegie Mellon University
2021	Doctoral Presidential Fellowship (Daniel Suma) College of Engineering, Carnegie Mellon University
2020-22	NIH/NINDS F31 Individual Predoctoral Fellowship (Daniel Suma)
2020	Biomedical Engineering Outstanding Postdoctoral Research Award (Abbas Sohrabpour), Carnegie Mellon University
2019	Doctoral Presidential Fellowship (Zhengxiang Cai) College of Engineering, Carnegie Mellon University
2019	Doctoral Presidential Fellowship (Xiaodan Niu) Neuroscience Institute, Carnegie Mellon University
2019	2nd Place, Three Minutes PhD Thesis Competition (Xiaodan Niu) Carnegie Mellon University
2019	People's Choice Award, Three Minutes PhD Thesis Competition (Xiaodan Niu) Carnegie Mellon University
2018	Bradford and Diane Smith Graduate Fellowship (Daniel Suma) Carnegie Mellon University
2018	Liang Ji-Dian Graduate Fellowship, Carnegie Mellon University (Xiaodan Niu)
2016	EMBS Early Career Achievement Award (Lei Ding – Former PhD advisee)
2016	Finalist of Student Paper Competition (Abbas Sohrabpour, Long Yu) IEEE EMBS Annual International Conference
2016-2017	Doctoral Dissertation Fellowship, University of Minnesota (UMN) (Kai Yu)
2016-2018	NIH/NINDS F31 Individual Predoctoral Fellowship (Brad Edelman)
2016-2017	Doctoral Interdisciplinary Fellowship, UMN (Abbas Sohrabpour)
2016	3rd Place, Best Poster Award, 4th MN Neuromodulation Symposium (Bryan Baxter)
2015	Finalist of Student Paper Competition (Chris Cline) IEEE EMBS Annual International Conference
2015	Best Poster Award, 1st Place in Medical Imaging Theme (Kai Yu) Institute for Engineering in Medicine Annual Conference and Retreat, UMN
2015	Best Poster Award, 2nd Place in Medical Imaging Theme (Yicun Wang) Institute for Engineering in Medicine Annual Conference and Retreat, UMN
2015	MnDrive Neuromodulation Graduate Fellowship, UMN (Kai Yu)
2015	MnDrive Neuromodulation Graduate Fellowship, UMN (Bryan Baxter)
2014	NIH Biobehavioral Research Awards for Innovative New Scientists (Zhongming Liu – Former PhD advisee)
2014	NSF IGERT Neuroengineering Fellowship (James Stieger)
2014	Young Investigator Award (Brad Edelman) IEEE EMBS BRAIN Grand Challenges Conference
2014	Best Poster Award, 2nd Place in Medical Devices Theme (Albert You) Institute for Engineering in Medicine Annual Conference and Retreat, UMN
2014	2nd Place, IEEE EMBS Student Paper Competition Award (Jianen Liu)

	Annual International Conference of IEEE EMBS
2014	2nd Place, BRAIN Young Investigator Award competition (Jianen Liu)
	Annual International Conference of IEEE EMBS
2014-2015	Doctoral Dissertation Fellowship, Graduate School, UMN (Huishi Zhang)
2014	Whitaker International Program Summer Grant (Brad Edelman)
2014	NSF IGERT Neuroengineering Fellowship (Chris Cline)
2014	2nd Place, Student Paper Competition Award (Abhrajeet Roy)
	2nd Annual Minnesota Neuromodulation Symposium
2014	ISMRM Merit Award Magna Cum Laude (Xiaotong Zhang)
	International Society for Magnetic Resonance in Medicine
2014	Scholar Award from P.E.O. International, 2014 (Nessa Johnson)
2014	NSF IGERT Neuroengineering Fellowship (Michelle Case)
2013-2014	UMN College of Science and Engineering Graduate Fellowship (Chris Cline)
2013-2014	Doctoral Dissertation Fellowship, Graduate School, UMN (Yunfeng Lu, Jiaen Liu)
2013-2014	Doctoral Interdisciplinary Fellowship, UMN Graduate School (Nessa Johnson)
2012	Second Place, IEEE EMBS Student Paper Competition (Yunfeng Lu)
	Annual Int. Conf. of IEEE Engineering in Medicine & Biology Society
2012	NSF IGERT Neuroengineering Fellowship (Brad Edelman)
2012	NSF IGERT Neuroengineering Fellowship (Bryan Baxter)
2011	ARCS Foundation Fellowship (Nessa Johnson)
2011	Finalist, Student Paper Competition (Chengzong Han)
	Annual Int. Conf. of IEEE Engineering in Medicine & Biology Society
2011-2012	UMN Doctoral Interdisciplinary Fellowship (Huishi Zhang)
2011-2012	UMN Doctoral Dissertation Fellowship (Lin Yang)
2010	NSF CAREER Award (Lei Ding – Former PhD advisee)
2010	NIH K99/R00 Award (Yingchun Zhang – Former Postdoc advisee)
2010	UMN Best Doctoral Dissertation Award (Zhongming Liu)
2010-2012	NIH Neuroimaging Fellowship (Nessa Johnson)
2010-2012	NIH Neuroimaging Fellowship (Abhrajeet Roy)
2009-2010	Barry M. Goldwater Scholarship (Rebecca Szarkowski)
2009-2010	National Astronaut Foundation Scholarship (Rebecca Szarkowski)
2009-2010	NIH Neuroimaging Fellowship (Keith Jamison)
2009-2010	UMN Doctoral Interdisciplinary Fellowship (Yunfeng Lu)
2009-2010	UMN Doctoral Dissertation Fellowship (Han Yuan)
2009	Travel Fellowship (Xiaotong Zhang)
	Annual Int. Conf. of IEEE Engineering in Medicine & Biology Society
2008-2009	NIH Neuro-Computational-Physical Sciences Fellowship (Keith Jamison)
2008-2009	NIH Neuroimaging Fellowship (Christopher Wilke)
2008-2009	NIH Neuroimaging Fellowship (Audrey Royer)
2008-2009	Doctoral Interdisciplinary Fellowship, UMN Graduate School (Lin Yang)
2008-2009	American Heart Association Predoctoral Fellowship (Chengzong Han)
2008	Life Science Alley Conference Poster Award (Christopher Wilke)

2008	Travel Fellowship (Chenguang Liu)
	Annual Int. Conf. of IEEE Engineering in Medicine & Biology Society
2007	First Prize of Student Paper Competition (Han Yuan)
	Joint Meeting of 6th Int. Symposium on Noninvasive Functional Source Imaging of the Brain and Heart and Int. Conference on Functional Biomedical imaging
2007	Life Science Alley Conference Poster Award (Chengzong Han)
2007-2008	Doctoral Dissertation Fellowship, UMN (Chenguang Liu)
2007	Design of Medical Devices Scientific Poster Session Award (Xu Li)
2005-2007	NIH Neuro-Computational-Physical Sciences Fellowship (Xu Li)
2006-2007	NIH Neuro-Computational-Physical Sciences Fellowship (Han Yuan)
2005-2007	American Heart Association Predoctoral Fellowship (Chenguang Liu)
2006-2007	American Heart Association Predoctoral Fellowship (Zhongming Liu)
2006-2007	Supercomputing Institute Research Scholarship, UMN (Xiaoxiao Bai)
2005-2006	Korean Research Foundation Postdoctoral Fellowship (Chang-Huwn Im)
2006	China Scholarship Council Scholarship (Lei Ding)
2006	Life Science Alley Conference Poster Award (Han Yuan)
	UMN Institute of Technology Award
2006	Finalist, Student Paper Competition (Zhongming Liu)
	Annual Int. Conf. of IEEE Engineering in Medicine & Biology Society
2006	2nd place of the Best Poster Award (Chenguang Liu)
	Design of Medical Device Conference Finalist, Student Paper Competition
2005-2006	UMN Doctoral Dissertation Fellowship (Lei Ding)
2005	Second Prize, Young Investigator Award Competition (Zhongming Liu)
	Joint Meeting of the 5th International Conference on Bioelectromagnetism
	& the 5th International Symposium on Noninvasive Functional Source Imaging within the Human Brain and Heart
2005	Finalist, Student Paper Competition (Lei Ding)
	Annual Int. Conf. of IEEE Engineering in Medicine & Biology Society
2005	Medical Alley Conference Poster Guidant Award (Chenguang Liu)
2005	Medical Alley Conference Poster Boston Scientific Award (Yuan Lai)
2004	The Rosanna Degani Young Investigator Award (Xin Zhang)
	Computers in Cardiology International Conference
2004	China Scholarship Council Scholarship (Xin Zhang)
2004	Medical Alley Conference Poster Award – BMEI Director Award (Yuan Lai)
2004	Appointed to General Chair of the 15th Congress of the Int. Society of
	Brain Electromagnetic Topography (Masafumi Nakagawa – Former Postdoc)
2001	Finalist, Student Paper Competition (Jie Lian)
	Annual Int. Conference of IEEE Engineering in Medicine & Biology Society
2001	University of Illinois at Chicago University Fellowship (Lei Ding)
2001	University of Illinois at Chicago University Fellowship (Jie Lian)
2001	University of Illinois at Chicago Int. Student Service Award (Xin Zhang)
2001	Japanese Government Research Fellowship (Masao Sumiya)

2000 Student Paper Competition Award (3rd Prize) (Jie Lian)
IEEE-EMBS Asia-Pacific Conference on Biomedical Engineering
1999 Japanese Government Research Fellowship (Junichi Hori)
1999 Japanese Government Research Fellowship (Hiroshi Sasaki)
1998 The Okazaki Award, The Sixth international Symposium on Evoked Potentials (Masafumi Nakagawa)
1997 Young Scientist Paper Prize (2nd Place) (Dongsheng Wu)
The URSI-IEEE Int. Scientific Meeting on Electromagnetics in Medicine
1997 Postdoctoral Paper Award (2nd Place) (Ken Umetani)
The 15th Southern Conference on Biomedical Engineering

COURSES LECTURED

Advanced Biomedical Imaging
Bioelectromagnetism
Bioelectricity and Bioinstrumentation
Biomedical Functional Imaging
Bioinstrumentation and Measurements
Bioinstrumentation and Measurements Lab
Biological Signal Analysis
Brain-Computer Interfaces: Principles and Applications
Circuit and Signal Processing
Introduction to Bioelectric phenomena
Neural Engineering
Neuroengineering Practicum
Pattern Recognition
Professional Issues in Biomedical Engineering

PUBLICATIONS

(H-index: 85, Google Scholar / 69, Scopus)

Note: *Italicized names* indicate those under He's direct supervision.

Preprints:

1. *Kim M**, Yu K*, Fouda R, Argueta D, Kiven S, *Ni Y*, *Niu X*, Chen Q, Kim K, Gupta K, He B: “Low-intensity transcranial focused ultrasound changes pain-associated behaviors by modulating pain processing brain circuits,” bioRxiv, doi: https://doi.org/10.1101/2022.12.07.519518 (* contributed equally).
2. *Ye S*, Bagic A, He B: “Disentanglement of Resting State Brain Networks for Localizing Epileptogenic Zone in Focal Epilepsy,” bioRxiv, doi: https://doi.org/10.1101/2022.06.13.495945.
3. *Kosnoff J*, Yu K, *Liu C*, He B: "Transcranial Focused Ultrasound to V5 Enhances Human Visual Motion Brain-Computer Interface by Modulating Feature-Based Attention," bioRxiv, doi: https://doi.org/10.1101/2023.09.04.556252.

4. *Forenzo D, Zhu H, Shanahan J, Lim J*, He B: "Continuous Tracking using Deep Learning-based Decoding for Non-invasive Brain-Computer Interface," bioRxiv, doi: https://doi.org/10.1101/2023.10.12.562084.

Peer-reviewed Journal Articles:

1. *Sun R*, Zhang W, Bagic A, He B: "Deep learning based source imaging provides strong sublobar localization of epileptogenic zone from MEG interictal spikes," NeuroImage, 281, 120366. https://doi.org/10.1016/j.neuroimage.2023.120366, 2023.
2. *Forenzo D, Liu Y, Kim J, Ding Y, Yoon T*, He B: "Integrating simultaneous motor imagery and spatial attention for EEG-BCI control," IEEE Transactions on Biomedical Engineering, doi: 10.1109/TBME.2023.3298957, 2023.
3. *Sun R, Sohrabpour A*, Worrell GA, He B: "Deep Neural Networks Constrained by Neural Mass Models Improve Electrophysiological Source Imaging of Spatio-temporal Brain Dynamics," *PNAS*, 119(31), e2201128119, 2022.
4. *Kim J, Jiang X, Forenzo D, Liu Y, Anderson N*, Greco CM, He B: "Immediate effects of short-term meditation on sensorimotor rhythm-based brain–computer interface performance," *Frontiers in Human Neuroscience*, https://doi.org/10.3389/fnhum.2022.1019279, 2022.
5. *Cai Z*, He B: "Ictal Source Localization from Intracranial Recordings," *Clinical Neurophysiology*, https://doi.org/10.1016/j.clinph.2022.09.013, 2022.
6. *Zhu H, Forenzo D*, He B: "On the Deep Learning Models for EEG-based Brain-Computer Interface Using Motor Imagery," *IEEE Trans. Neural Systems and Rehabilitation Engineering*, 30: 2283-2291, 2022.
7. *Ramachandran S, Niu R*, Yu K, He B: "Transcranial ultrasound neuromodulation induces neuronal correlation change in the rat somatosensory cortex," *Journal of Neural Engineering*, https://doi.org/10.1088/1741-2552/ac889f, 19, 056002, 2022.
8. *Jiang H*, Kokkinos V, *Ye S*, Urban A, Bagic A, Richardson M, He B: "Interictal SEEG resting-state connectivity localizes the seizure onset zone and predicts seizure outcome," *Advanced Science*, https://doi.org/10.1002/advs.202200887, 2022.
9. *Niu X*, Yu K, He B: "Transcranial focused ultrasound induces sustained synaptic plasticity in rat hippocampus," *Brain Stimulation*, 15(2): 352-359, 2022.
10. *Shin H, Suma D*, He B: "Closed-loop motor imagery EEG simulation for brain-computer interfaces," *Frontiers of Human Neuroscience*, https://doi.org/10.3389/fnhum.2022.951591, 2022.
11. Guo X, Wang M, Wang X, Guo M, Xue T, Wang Z, Li H, Xu T, He B, Cui D, Tong S: "Progressive Increase of High-Frequency EEG Oscillations during Meditation is Associated with its Trait Effects on Heart Rate and Proteomics: A Study on the Tibetan Buddhist," *Cerebral Cortex*, 32(18): 3865-3877, 2022.
12. *Jiang X, Ye S, Sohrabpour A*, Bagic A, He B: "Imaging the extent and location of spatiotemporally distributed epileptiform sources from MEG measurements," *NeuroImage: Clinical*, vol. 33, 102903, 2022.
13. *Kim M*, Yu K, *Niu X*, He B: "Investigation of displacement of intracranial electrode induced by focused ultrasound stimulation," *IEEE Transactions on Instrumentation & Measurement*, 70:9600509, 2021.
14. *Cai Z, Sohrabpour A, Jiang H, Ye S*, Joseph B, Brinkmann BH, Worrell G, He B: "Noninvasive High-frequency Oscillations Riding Spikes Delineates Epileptogenic Sources" *PNAS*, 118 (17) e20111301182021, 2021.

15. Yu K*, *Niu X**, Krook-Magnuson E, He B: “Intrinsic Functional Neuron-type Selectivity and Inter-neuronal Connectivity Alteration by Transcranial Focused Ultrasound,” *Nature Communications*, 12, 2519, 2021 (* co-first-authors).
16. Li C*, Sohrabpour A, Jiang H*, He B: “High-frequency Hubs of The Ictal Cross-frequency Coupling Network Predict Surgical Outcome in Epilepsy Patients,” *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, vol. 29, pp. 1290-1299, 10.1109/TNSRE.2021.3093703, 2021.
17. DeBari MK, *Niu X*, Scott JV, Griffin MD, Pereira SR, Cook KE, He B, and Abbott RD: “Therapeutic Ultrasound Triggered Silk Fibroin Scaffold Degradation,” Adv. Healthcare Mater., 2100048, 2021.
18. *Ye S, Yang L, Lu Y*, Kucewicz MT, Brinkmann B, Nelson C, *Sohrabpour A*, Worrell G, He B: “Ictal Source Imaging Contributes to Seizure Onset Zone Localization in Focal Epilepsy Patients,” *Neurology*, 96(3), DOI: https://doi.org/10.1212/WNL.0000000000011109 , 2021.
19. *Stieger J*, Engel S, *Jiang H, Cline CC*, Kreitzer MJ, *He B*: “Mindfulness Improves Brain Computer Interface Performance by Increasing Control over Neural Activity in the Alpha Band,” *Cerebral Cortex*, 31(1): 426-438, 2021.
20. *Stieger J*, Engel S, *Suma D*, He B: “Benefits of deep learning classification of continuous noninvasive brain-computer interface control,” *Journal of Neural Engineering*, 18, 046082, 2021.
21. *Jiang H, Stieger J*, Kreitzer MJ, Engel S, He B: “Frontolimbic alpha activity tracks intentional rest BCI control improvement through mindfulness meditation,” *Scientific Reports*, 11, 6818, 2021.
22. *Stieger S*, Engel S, He B: “Continuous Sensorimotor Rhythm Based Brain Computer Interface Learning in a Large Population,” *Scientific Data*, 8, 98, 2021.
23. *Sohrabpour A*, He B: “Exploring the Extent of Source Imaging: Recent Advances in Noninvasive Electromagnetic Brain Imaging,” *Current Opinion in Biomedical Engineering*, vol. 18, 100277, 2021.
24. *Liu C**, Yu K*, *Niu X*, He B: “Transcranial Focused Ultrasound Enhances Sensory Discrimination Capability through Somatosensory Cortical Excitation,” *Ultrasound in Medicine and Biology*, 47(5): 1356-1366, 2021 (* co-first-authors).
25. *Jiang X, Lopez E, Stieger J*, Greco CM, He B: “Effects of Long-Term Meditation Practices on Sensorimotor Rhythm Based Brain-Computer Interface Learning,” *Frontiers in Neuroscience*, https://doi.org/10.3389/fnins.2020.584971, 2021.
26. Fried PJ, Santarnecchi E, Antal A, Bartres-Faz D, Bestmann S, Carpenter LL, Celnik P, Edwards D, Farzan F, Fecteau S, George MS, He B, Kim Y, Leocani L, Lisanby SH, Loo C, Luber B, Nitsche MA, Paulus W, Rossi S, Rossini PM, Rothwell J, Sack AT, Thut G, Ugawa Y, Ziemann U, Hallett M, Pascual-Leone A: “Training in the practice of noninvasive brain stimulation: recommendations from an IFCN committee,” *Clinical Neurophysiology*, 132(3): 819-837, 2021.
27. Yu K, *Liu C*, *Niu X*, He B: “Transcranial Focused Ultrasound Neuromodulation of Voluntary Movement-related Cortical Activity in Humans,” *IEEE Transactions on Biomedical Engineering*, 68(6), 1923-1931, 2021.
28. *Suma D, Meng J, Edelman B*, He B: “Spatial-temporal aspects of continuous EEG-based neurorobotic control,” *Journal of Neural Engineering*, 17, 066006, 2020.
29. Yu K*, *Niu R*,* He B: “Neuromodulation Management of Chronic Neuropathic Pain in The Central Nervous system,” *Advanced Functional Materials*, (* co-first-author), https://doi.org/10.1002/adfm.201908999, 2020.

30. *Jiang H**, He B*, Guo X, Wang X, Guo M, Wang Z, Xue T, Li H, Xu T, *Ye S, Suma D*, Tong S, Cui D: "Brain–Heart Interactions Underlying Traditional Tibetan Buddhist Meditation," *Cerebral Cortex*, 30(2), 439–450, 2020 (* co-first-author).
31. *Sohrabpour A, Cai Z, Ye S*, Brinkmann BH, Worrell G, He B: "Noninvasive electromagnetic source imaging of spatiotemporally distributed epileptogenic brain sources," *Nature Communications*, 11, 1946, 2020.
32. *Jiang H, Cai Z*, Worrell G, He B: "Multiple Oscillatory Push-Pull Antagonisms Constrain Seizure Propagation," *Annals of Neurology*, 86(5): 683-694, 2019.
33. *Wang Y*, Van de Moortele PF, He B: "Automated gradient-based electrical properties tomography in the human brain using 7-Tesla MRI," *Magnetic Resonance Imaging*, 63: 258-266, 2019. DOI: 10.1016/j.mri.2019.08.003.
34. He B, Astolfi L, Valdés-Sosa PA, Marinazzo D, Palva SO, Bénar CG, Michel CM, and Koenig T: "Electrophysiological Brain Connectivity: Theory and Implementation," *IEEE Transactions on Biomedical Engineering*, 66(7): 2115 – 2137, 2019.
35. *Edelman BJ, Meng J, Suma D, Zurn C, Nagarajan E, Baxter BS, Cline CC,* He B: "Noninvasive neuroimaging enhances continuous neural tracking for robotic device control," *Science Robotics*, Vol. 4, Issue 31, eaaw6844, 2019.
36. *Meng J*, He B: "Exploring training effect in 42 human subjects using a noninvasive sensorimotor rhythm based online BCI," *Frontiers on Human Neuroscience*, April 17, 2019 https://doi.org/10.3389/fnhum.2019.00128.
37. *Wang Y*, Van de Moortele PF, He B: "CONtrast Conformed Electrical Properties Tomography (CONCEPT) based on Multi-channel Transmission and Alternating Direction Method of Multipliers," *IEEE Transactions on Medical Imaging*, 38(2): 349-359, 2019.
38. *Case M, Shirinpour S, Vijayakumar V, Zhang H*, Datta Y, Nelson S, Pergami, Darbari D, Gupta K, He B: "Graph Theory Analysis Reveals How Sickle Cell Disease Impacts Neural Networks of Patients with More Severe Disease," *NeuroImage: Clinical*, Vol 21, 101599, 2019.
39. *Yang T*, Pogwizd S, Walcott GP, *Yu L*, He B: "Noninvasive Activation Imaging of Ventricular Arrhythmias by Spatial Gradient Sparse in Frequency Domain - Application to Mapping Reentrant Ventricular Tachycardia," *IEEE Transactions on Medical Imaging*, 38(2): 525-539, 2019.
40. Katyal S, He S, He B, Engel SA: "Frequency of alpha oscillation predicts individual differences in perceptual stability during binocular rivalry," *Human Brain Mapping*, 40 (8): 2422-2433, 2019.
41. *Cline C, Coogan C*, He B: "EEG electrode digitization with commercial virtual reality hardware," *PLoS ONE*, 13(11): e0207516, 2018.
42. *Niu X, Yu K*, He B: "On the Neuromodulatory Pathways of the In Vivo Brain by Means of Transcranial Focused Ultrasound," *Current Opinion in Biomedical Engineering*, 8: 61-69, 2018.
43. *Meng J, Streitz T, Gulacheck N, Suma D,* He B: "Three-Dimensional Brain-Computer Interface Control Through Simultaneous Overt Spatial Attention and Motor Imagery Tasks," *IEEE Transactions of Biomedical Engineering*, 65: 2417-2427, 2018.
44. *Hosseini SAH, Sohrabpour A*, Akçakaya M, He B: "Electromagnetic Brain Source Imaging by Means of a Robust Minimum Variance Beamformer," *IEEE Transactions on Biomedical Engineering*, 65(10): 2365-2374, 2018.
45. Cluitmans M, Brooks D, MacLeod RS, Doessel O, Guillem M, Van Dam P, Svehlikova J, He B, Sapp J, Wang L, Bear LR: "Validation and opportunities of electrocardiographic imaging:

From technical achievements to clinical applications", *Frontiers in Physiology-Cardiac Electrophysiology*, doi.org/10.3389/fphys.2018.01305, September 20, 2018.

46. *Wang Y*, Shao Q, Van de Moortele PF, Racila E, Liu J, Bischof J, He B: "Mapping electrical properties heterogeneity of tumor using boundary informed electrical properties tomography (BIEPT) at 7T," *Magnetic Resonance in Medicine*, 81(1): 393-409, 2019.
47. He B, *Sohrabpour A*, Brown E, Liu Z: "Electrophysiological Source Imaging: A Noninvasive Window to Brain Dynamics," *Annual Review of Biomedical Engineering*, 20: 171-196, 2018.
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2. Joshua Kosnoff*, PhD Student, 8/22-Present
3. Colton Gonsisko*, PhD Student, 8/22-Present
4. Kelly Yeh, PhD Student, 8/22-Present
5. Jesse Rong*, PhD Student, 8/22-Present
6. Yidan Ding, PhD Student, 8/22-Present
7. Dylan Forenzo, PhD Student, 8/20-Present

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