

Biyu Jade He, Ph.D.

CONTACT INFORMATION:

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EDUCATION:

2011 Methods in Computational Neuroscience course (audited), Marine Biological Laboratory, Woods Hole, MA.
 2004–2009 Ph.D., Neurosciences program, Washington University in St. Louis, MO. (Thesis advisor: M.E. Raichle)
 2006 Summer Institute in Cognitive Neuroscience, Dartmouth College, NH. Topic: “Conscious and unconscious cognition and their interface with artificial devices”.
 2000–2004 B.S., Tsinghua University, Beijing, China. Major: Biology; Minor: Neuroscience.

RESEARCH AND PROFESSIONAL EXPERIENCES:

2016/01–present Assistant professor, Departments of Neurology, Neuroscience and Physiology, and Radiology, New York University Langone Health, New York, NY
 2016/01–present Investigator, Neuroscience Institute, New York University Langone Health.
 2010/08–2015/12 Early Independent Investigator (non-tenure-track), National Institute of Neurological Disorders and Stroke (NINDS), National Institutes of Health (NIH), Bethesda, MD.
 2010/01–2010/08 Post-doctoral fellow, Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis, MO. (Advisor: Marcus E. Raichle)
 2006–2009 Ph.D. thesis work in Marcus E. Raichle’s laboratory, Washington University, St. Louis.
 2005–2006 Ph.D. thesis work in Maurizio Corbetta’s laboratory, Washington University, St. Louis.
 2003–2004 Research assistant in Yi Zhong ‘s laboratory, Tsinghua University, Beijing, China. Topic: Using *Drosophila* behavior-genetics to investigate the formation of long-term memory.

UNIVERSITY SERVICE:

2017–2019 NYU Neuroscience Colloquium selection committee
 2018 NYU Neuroscience Retreat committee

FELLOWSHIPS, AWARDS AND HONORS:

2019 National Eye Institute Early Career Scientist Travel Grant
 2018 Society for Neuroscience Janett Rosenberg Trubatch Career Development Award
 2018–2023 National Science Foundation Faculty Early Career Development Program (CAREER) Award
 2016–2019 Klingenstein-Simons Fellowship Award in the Neurosciences.
 2015–2017 Leon Levy Neuroscience Fellow, Leon Levy Foundation.
 2010 NIH Early Independence Award (Intramural Research Program of the National Institute of Neurological Disorders and Stroke).
 2010 Zukunftskolleg Fellowship, University of Konstanz, Germany (declined).
 2007 C-WIN graduate student travel award, Society for Neuroscience.
 2007 Fine Science Travel Fellowship, Neuroscience graduate program, Washington University.
 2006 Hope Center for Neurological Disorders Award, Washington University in St. Louis.
 2006 Fellowship, Summer Institute in Cognitive Neuroscience, Dartmouth College.
 2000–2002 Zhou Huiqi Scholarship for Academic Excellence (highest award for academic achievement in the Department of Biology), Tsinghua University.
 2000 Scholarship for Excellent Freshman, Tsinghua University.
 2000 Champion in National College Entrance Exams, Henan Province, China.
 1998 National Mathematics Olympiad, First-class prize in the all-China finals (high-school level).

PEER-REVIEWED JOURNAL ARTICLES AND REVIEWS: (* denotes equal contribution)

1. Ella Podvalny, Matthew W. Flounders, Leana E. King, Tom Holroyd, and **Biyu J. He**. A dual role of prestimulus spontaneous neural activity in visual object recognition. *Nature Communications*. 2019 Sep; 10:3910.
2. Audrey J. Sederberg, Aurélie Pala, He J. V. Zheng, **Biyu J. He**, and Garrett B. Stanley. State-aware detection of sensory stimuli in the cortex of the awake mouse. *PLoS Computational Biology*. 2019 May; 15(5): e1006716.
3. Matthias Michel, Diane Beck, ... **Biyu J. He**, ... Masatoshi Yoshida. Opportunities and challenges for a maturing science of consciousness. *Nature Human Behavior*. 2019 Feb; 3(2):104-107.
4. Matthew W. Flounders, Carlos González-García, Richard Hardstone, and **Biyu J. He**. Neural dynamics of visual ambiguity resolution by perceptual prior. *eLife*. 2019 Mar; 8:e41861
5. Carlos González-García, Matthew W. Flounders, Raymond Chang, Alexis T. Baria, and **Biyu J. He**. Content-specific activity in frontoparietal and default-mode networks during prior-guided visual perception. *eLife*. 2018 Jul; 7:e36068. *News coverage: Science Daily, Yahoo!News*.
6. Alexander Huk, Kathryn Bonnen, and **Biyu J. He**. Beyond trial-based paradigms: Continuous behavior, ongoing neural activity, and natural stimuli. *Journal of Neuroscience*. 2018 Aug; 38(35):7551-7558.
7. **Biyu J. He**. Robust, transient neural dynamics during conscious perception. *Trends in Cognitive Sciences*. 2018 Jul; 22(7): 563-565.
8. Brian Maniscalco, Jennifer L. Lee, Patrice Abry, Amy Lin, Tom Holroyd, and **Biyu J. He**. Neural integration of stimulus history underlies prediction for naturalistically evolving sequences. *Journal of Neuroscience*. 2018 Feb; 38(6): 1541–1557.
9. Rishidev Chaudhuri, **Biyu J. He**, and Xiao-Jing Wang. Random recurrent networks near criticality capture the broadband power distribution of human ECoG dynamics. *Cerebral Cortex*. 2018 Oct;28(10):3610-3622.
10. Itzhak Fried*, Patrick Haggard*, **Biyu J. He***, and Aaron Schurger*. Volition and action in the human brain: processes, pathologies, and reasons. *Journal of Neuroscience*. 2017 Nov; 37(45):10842–10847. (*alphabetical author list*)
11. Alexis T. Baria*, Brian Maniscalco*, and **Biyu J. He**. Initial-State-Dependent, Robust, Transient Neural Dynamics Encode Conscious Visual Perception. *PLoS Computational Biology*. 2017 Nov; 13(11): e1005806.
12. Amy Lin, Brian Maniscalco, and **Biyu J. He**. Scale-free Neural and Physiological Dynamics in Naturalistic Stimuli Processing. *eNeuro*. 2016 Sep/Oct; 3(5) e0191-16.2016 1–13.
13. Raymond Chang, Alexis T. Baria, Matthew W. Flounders, and **Biyu J. He**. Unconsciously Elicited Perceptual Prior. *Neuroscience of Consciousness*. 2016 (1): niw008.
14. Brett L. Foster, **Biyu J. He**, Christopher J. Honey, Karim Jerbi, Alexander Maier, and Yuri B. Saalman. Spontaneous Neural Dynamics and Multi-scale Network Organization. *Frontiers in Systems Neuroscience*. 2016 Feb;10:7. (*alphabetical author list*)
15. Adrian Ponce-Alvarez*, **Biyu J. He***, Patric Hagmann, and Gustavo Deco. Task-driven activity reduces the cortical activity space of the brain: Experiment and whole-brain modeling. *PLoS Computational Biology*. 2015 Aug; 11(8): e1004445.
16. Zachary H. Douglas*, Brian Maniscalco*, Mark Hallett, Eric M. Wassermann, and **Biyu J. He**. Modulating Conscious Movement Intention by Noninvasive Brain Stimulation and the Underlying Neural Mechanisms. *Journal of Neuroscience*. 2015 May; 35(18): 7239–7255.
17. Megan Wang and **Biyu J. He**. A cross-modal investigation of the neural substrates for ongoing cognition. *Frontiers in Psychology*. 2014 Aug; 5:945.
18. **Biyu J. He**. Scale-free brain activity: past, present and future. *Trends in Cognitive Sciences*. 2014 Sep; 18(9): 480–487.
19. Philippe Ciuciu, Patrice Abry, and **Biyu J. He**. Interplay between functional connectivity and scale-free dynamics in intrinsic fMRI networks. *Neuroimage*. 2014 Jul; 95:248–263.
20. Qi Li, Zachary Hill, and **Biyu J. He**. Spatiotemporal dissociation of brain activity underlying subjective awareness, objective performance and confidence. *Journal of Neuroscience*. 2014 Mar; 34(12):4382–4395.

Comment in: Macerollo and Quattrocchi. Distilling Consciousness: Isolated the Underlying Brain Activity? Journal of Neuroscience 2014

21. **Biyu J. He** and John M. Zempel. Average is optimal: an inverted-U relationship between trial-to-trial brain activity and behavioral performance. *PLoS Computational Biology*. 2013 Nov; 9(11): e1003348.
22. Megan Wang*, Daniel Arteaga*, and **Biyu J. He**. Brain mechanisms for simple perception and bistable perception. *Proc Natl Acad Sci U S A*. 2013 Aug; 110(35): E3340–3349.
23. Luigi Maccotta, **Biyu J He**, Abraham Z Snyder, Lawrence N Eisenman, Tammie L Benzinger, Beau M Ances, Maurizio Corbetta, and R. Edward Hogan. Impaired and facilitated functional networks in temporal lobe epilepsy. *NeuroImage: Clinical*. 2013; 2:862–872.
24. **Biyu J. He**. Spontaneous and task-evoked brain activity negatively interact. *Journal of Neuroscience*. 2013 Mar; 33(11):4672–4682. *Comment in: Mastrovito. Interactions between resting-state and task-evoked brain activity suggest a different approach to fMRI analysis. Journal of Neuroscience 2013; News coverage: DiscoverMagazine.com*
25. **Biyu J. He**. Scale-free fMRI signals during rest and task. *Journal of Neuroscience*. 2011 Sep; 31(39):13786–13795.
26. Jennifer Rengachary, **Biyu J. He**, Gordon Shulman, and Maurizio Corbetta. A behavioral analysis of spatial neglect and its recovery after stroke. *Frontiers in Human Neuroscience*. 2011 Apr; 5:29.
27. **Biyu J. He**, John M. Zempel, Abraham Z. Snyder, and Marcus E. Raichle. The temporal structures and functional significance of scale-free brain activity. *Neuron*. 2010 May; 66(3): 353–369. *Preview in: Kayser and Ermentrout. Complex times for earthquakes, stocks, and the brain's activity. Neuron 2010.*
28. **Biyu J. He** and Marcus E. Raichle. The fMRI signal, slow cortical potential and consciousness. *Trends in Cognitive Sciences*. 2009 Jul; 13(7):302–309. *Cover illustration.*
29. **Biyu J. He**, Abraham Z. Snyder, John M. Zempel, Matthew D. Smyth, and Marcus E. Raichle. Electrophysiological correlates of the brain's intrinsic large-scale functional architecture. *Proc Natl Acad Sci U S A*. 2008 Oct; 105(41):16039–16044. *Preview in: Balduzzi, Riedner and Tononi. A BOLD window into brain waves. PNAS 2008; Reviewed in Faculty 1000; News coverage: Yahoo!News.*
30. James M. Johnston, S. Neil Vaishnavi, Matthew D. Smyth, Dongyang Zhang, **Biyu J. He**, John M. Zempel, Joshua S. Shimony, Abraham Z. Snyder, and Marcus E. Raichle. Loss of resting interhemispheric functional connectivity after complete section of the corpus callosum. *Journal of Neuroscience*. 2008 Jun; 28(25): 6453–6458.
31. **Biyu J. He**, Gordon L. Shulman, Abraham Z. Snyder, and Maurizio Corbetta. The role of impaired neuronal communication in neurological disorders. *Current Opinion in Neurology*. 2007 Dec; 20(6):655–660
32. Ayelet Sapir, Julie Kaplan, **Biyu J. He**, and Maurizio Corbetta. Neuroanatomical correlates of directional hypokinesia in patients with hemispatial neglect. *Journal of Neuroscience*. 2007 Apr; 27(15): 4045–4051
33. **Biyu J. He**, Abraham Z. Snyder, Justin L. Vincent, Adrian Epstein, Gordon L. Shulman, and Maurizio Corbetta. Breakdown of functional connectivity in frontoparietal networks underlies behavioral deficits in spatial neglect. *Neuron*. 2007 Mar; 53(6): 905–918. *Preview in: Gabrieli and Whitfield-Gabrieli. Attention to Neglect. Neuron 2007; News coverage: Medical News Today, Science Daily.*

COMMENTARIES AND EDITORIALS:

1. Anil K. Seth, **Biyu J. He**, and Jakob Hohwy. Opening Editorial. *Neuroscience of Consciousness*. 2015: 1–3.
2. Tjeerd W. Boonstra, **Biyu J. He** and Andreas Daffertshofer. Scale-free dynamics and critical phenomena in cortical activity. *Frontiers in Physiology*. 2013 Apr; 4:79.
3. **Biyu J. He** and Marcus E. Raichle. Response to Koch: Elaborations on the SCP hypothesis. *Trends in Cognitive Sciences*. 2009 Sep; 13(9):368–369.

BOOK CHAPTERS:

1. **Biyu J. He.** Resting-State Brain Signals and Functional Connectivity Mapping. In: *The brain adapting with pain: Contribution of neuroimaging technology to pain mechanisms*, A.V. Apkarian (editor). Wolters Kluwer. 2015.
2. **Biyu J. He.** Modeling the Electroencephalographic (EEG) Signals. In: *Encyclopedia of Computational Neuroscience*, Dieter Jaeger and Ranu Jung (editors). Springer. 2015.
3. **Biyu J. He** and Marcus E. Raichle. The slow cortical potential hypothesis on consciousness. In: *New Horizons in the Neuroscience of Consciousness*, Elaine Perry, Daniel Collerton, Fiona LeBeau, and Heather Ashton (editors). John Benjamins Publishing Company. 2010.
4. Gaurav Patel, **Biyu J. He**, and Maurizio Corbetta. Attentional networks in the parietal cortex. In: *Encyclopedia of Neuroscience*, Larry Squire (editor). Academic Press. 2008.

INVITED LECTURES:

- Seminar Series, Centre for Human Brain Health (CHBH), University of Birmingham, UK. (2019 Nov)
- Seminar Series, ICM Brain and Spine Institute, Pitié Salpêtrière Hospital, Paris, France. (2019 Nov)
- ION Seminar Series, Institute of Neuroscience (ION), University of Oregon, OR. (2019 Jan)
- Core for Advanced Magnetic Resonance Imaging (CAMRI) Neuroscience Seminar Series, Baylor College of Medicine, Houston, TX. (2019 Jan)
- UCSD Neurosciences Graduate Program Seminar Series, San Diego, CA. (2018 Oct)
- Center for Molecular & Behavioral Neuroscience (CMBN) colloquium, Rutgers University, NJ. (2018 Jan)
- Cognitive Science seminar series, City University of New York (CUNY) Graduate Center, New York, NY. (2017 Dec)
- Cognitive and computational neuroscience seminar series, Department of Psychiatry, Columbia University Medical Center. (2017 Nov)
- Aalto Brain Centre Seminar Series, Aalto University School of Science, Espoo, Finland. (2017 Sep)
- IBM Watson Research Center, New York, NY. (2017 May)
- Institute of Cognitive Neuroscience, University College London, London, UK. (2017 Jan)
- Swartz seminar on computational and theoretical neuroscience, Center for Neural Science, New York University. (2016 Sep)
- RIKEN Brain Science Institute, Tokyo, Japan. (2016 Jul)
- Physics Colloquium, Department of Physics, Washington University in St. Louis, St. Louis, MO. (2015 Nov)
- Coulter Department of Biomedical Engineering, Georgia Institute of Technology and Emory University, Atlanta, GA. (2015 Sep)
- The Centre for Cognitive Neuroscience, Centre National de la Recherche Scientifique (CNRS), Lyon, France. (2015 Jul)
- The Ken & Ruth Davee Department of Neurology, Northwestern University Feinberg School of Medicine, Chicago, IL. (2015 May)
- Department of Neurology, Columbia University Medical Center, New York, NY. (2015 Apr)
- Center for Magnetic Resonance Research (CMRR), University of Minnesota, MN. (2015 Apr)
- Center for Complex Systems and Brain Sciences, Florida Atlantic University, FL. (2015 Mar)
- Institute of Mental Health Research, University of Ottawa, Ottawa, Canada. (2015 Feb)
- Neuroscience Institute, New York University Langone Medical Center, NY. (2014 Oct)
- Biological Sciences Training Program (BSTP) Seminar, Department of Psychiatry, Yale University School of Medicine, CT. (2014 Sep)
- Seminar on Analysis of Neuroimaging Data (SAND), Department of Child and Adolescent Psychiatry, New York University Langone Medical Center, NY. (2014 Jul)
- Comprehensive Epilepsy Center, New York University Langone Medical Center, NY. (2014 Jul)
- Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany. (2014 May)
- “Brain and Consciousness” Seminar Series, École Normale Supérieure, Paris, France. (2014 Mar)

- Donders Institute for Brain, Cognition and Behavior, Nijmegen, the Netherlands. (2014 Mar)
- Princeton Neuroscience Institute, Princeton University, NJ. (2014 Feb)
- NIH fMRI PI seminar series, NIH, Bethesda, MD. (2013 May)
- National Center for Complementary and Alternative Medicine (NCCAM) Intramural Meeting, NIH. (2013 Jan)
- Laboratory of Brain and Cognition, National Institute of Mental Health (NIMH), NIH. (2013 Jan)
- Institute of Biophysics, Academia Sinica, Beijing, China. (2012 Jun)
- Department of Biomedical Engineering, Tsinghua University, Beijing, China. (2012 Jun)
- École Normale Supérieure de Lyon, Physics Department, Lyon, France. (2011 Dec)
- Biomedical Imaging Department, Neurospin-CEA Saclay, Paris, France. (2011 Dec)
- Neuroscience Seminar Series, Maclean Hospital, Harvard University, MA. (2011 Oct)
- NIH fMRI PI seminar series, NIH. (2011 Sep)
- Department of Psychology, Yale University (Xiao-Jing Wang lab invitation). (2011 Jul)
- Systems working group, National Institute of Neurological Disorders and Stroke (NINDS), NIH. (2011 Jun)
- Clinical Science Research Conference, Surgical Neurology Branch, NINDS, NIH. (2011 Feb)
- Human Cortical Physiology Section, NINDS, NIH. (2010 Oct)
- INSERM-CEA Cognitive Neuroimaging Unit, Neurospin, Paris, France. (2010 Jun)
- Workshop on Future Research Directions of the Zukunftskolleg at the University of Konstanz, Germany. (2010 Feb)
- Department of Psychiatry, Otto-von-Guericke University of Magdeburg, Germany. (2010 Jan)
- Cortical Physiology Laboratory, Massachusetts General Hospital, Boston, MA. (2009 Dec)
- Section on Critical Brain Dynamics, NIMH, NIH. (2009 Dec)
- Center for Sleep and Consciousness, Department of Psychiatry, University of Wisconsin – Madison, WI. (2009 Nov)
- Department of Clinical Psychology and Clinical Neuropsychology, University of Konstanz, Germany. (2009 Sep)

INVITED CONFERENCE TALKS:

- **Keynote speaker**, The 26th Annual Meeting of the Organization for Human Brain Mapping (OHBM) meeting, Montreal, Canada.
- The 19th Brain Connectivity Workshop (BCW) meeting, Toronto, Canada. (2020 Jun)
- Plenary symposium “The influence of priors and predictions on conscious perception”, Association for Scientific Study of Consciousness (ASSC) annual meeting, Tel Aviv, Israel. (2020 Jun)
- Plenary symposium “Disentangling neural correlates of consciousness”, Association for Scientific Study of Consciousness (ASSC) annual meeting, London Ontario, Canada. (2019 Jun)
- Workshop on Present and Future Frameworks of Theoretical Neuroscience, San Antonio, TX. (2019 Feb)
- ESI Systems Neuroscience Conference (ESI SyNC) on “Integrative Mechanisms of Cognitive Neuroscience”, Ernst Strüngmann Institute (ESI) for Neuroscience and Max Planck Society, Frankfurt, Germany. (2018 Aug)
- Workshop “Advances in Biomagnetic Signal Analysis” at the 21st International Conference on Biomagnetism (Biomag), Philadelphia. (2018 Aug)
- Leon Levy Fellows in Neuroscience Symposium, Rockefeller University, New York. (2018 Apr)
- WIS(Weizmann)-NYU “Next Generation” Workshop in Neuroscience, NYU, New York. (2018 Mar)
- NYU tDCS mini-symposia, NYU Langone Medical Center, New York. (2018 Jan)
- Workshop “Large-scale trends in cortical organization”, Max Planck Institute for Human Cognitive & Brain Sciences, Leipzig, Germany. (2017 Dec)
- “Neuroscience and Artificial Intelligence” conference, Mathematics Research Center, University of Montreal, Montreal, Canada. (2017 Nov)
- Symposium “Neural mechanisms of voluntary action control: from habits to intentionality in animals and humans”, Society for Neuroscience annual meeting, Washington DC. (2017 Nov)

- Plenary talk, Tübingen Systems Neuroscience Symposium, Tübingen, Germany. (2017 Oct)
- Brain & Mind Symposium, Helsinki, Finland. (2017 Sep)
- Symposium “Exploring complex relationships between evoked and intrinsic brain activity”, Organization for Human Brain Mapping annual meeting, Vancouver, Canada. (2017 Jun)
- Educational Course “EEG and MEG connectivity: Basic principles, state-of-the-art methods, and emerging vistas”, Organization for Human Brain Mapping annual meeting, Vancouver, Canada. (2017 Jun)
- Workshop “Perception and Learning of Temporal Structure in Sensory Streams”, Computational and Systems Neuroscience (Cosyne) meeting, Snowbird, UT. (2017 Feb)
- Plenary session “Cognitive Neuropsychology of Agency”, European Workshop on Cognitive Neuropsychology, Bressanone, Italy. (2017 Jan)
- Symposium “New frontiers in tDCS mechanisms”, NYC Neuromodulation Conference, NY. (2017 Jan)
- Symposium “Computational Neurostimulation”, The 6th Neurostimulation meeting, Goettingen, Germany. (2016 Sep)
- RIKEN BSI-Toyota Collaboration Center Symposium, The 31st International Congress of Psychology, Yokohama, Japan. (2016 Jul)
- **Keynote speaker**, The 20th Annual Meeting of the Association for the Scientific Study of Consciousness (ASSC), Buenos Aires, Argentina. (2016 Jun)
- Symposium “Spatiotemporal Dissociation of Brain Activity underlying Subjective Awareness, Objective Performance and Confidence”, Cognitive Neuroscience Society (CNS) meeting, New York, NY. (2016 Apr)
- Workshop “Timescales of dynamics in neural networks”, Computational and Systems Neuroscience (Cosyne) meeting, Snowbird, UT. (2016 Mar)
- Special lecture, The 6th Brain Research Institute Symposium: Neural mechanisms of brain functions that require awareness, Niigata University, Japan. (2015 Jul)
- Symposium “Neuroscience of Consciousness” at the 38th annual meeting of the Japan Neuroscience Society, Kobe, Japan. (2015 Jul)
- **Keynote speaker**, Workshop “Power laws, scale invariance and frequency scaling in neuronal systems”, European Institute for Theoretical Neuroscience, Paris, France. (2015 Mar)
- Workshop “How the brain makes prediction: Relevance of time and spontaneous activity”, Computational and Systems Neuroscience (Cosyne) meeting, Snowbird, UT. (2015 Mar)
- Minisymposium “Multimodal Investigation of Large-Scale Brain Dynamics: Combining fMRI and Intracranial EEG”, Society for Neuroscience annual meeting, Washington DC. (2014 Nov)
- Symposium “ α , β , γ , δ : Generators and functions” at the 30th International Congress on Clinical Neurophysiology, Berlin, Germany. (2014 Mar)
- BrainModes 2013 Symposium: “Criticality, connectivity and neural masses”, Amsterdam, the Netherlands. (2013 Dec)
- Workshop on “Scale-free Dynamics and Networks in Neuroscience”, Centre de Recherches Mathématiques, Université de Montréal, Canada. (2013 Oct)
- **Keynote speaker**, Inaugural International Conference on Basic and Clinical Multimodal Imaging, Geneva, Switzerland. (2013 Sep)
- Co-chair and speaker, Workshop “The Functional Implications of Brain Signal Variability” at Organization for Human Brain Mapping annual meeting, Seattle, WA. (2013 Jun)
- Symposium “Scale-free dynamics in neurosciences” at the 18th International Conference on Biomagnetism (Biomag), Paris, France. (2012 Aug)
- Plenary session “Scale-free brain structure and dynamics” at Toward a Science of Consciousness conference, Tucson, AZ. (2012 Apr)
- Symposium “Neural Systems Underlying Social Function in Normal and Pathological Conditions” at NIH Research Festival, Bethesda, MD. (2011 Oct)
- Workshop “Scale-free Dynamics and Critical Phenomena in Cortical Activity” at Organization for Human Brain Mapping annual meeting, Quebec city, Canada. (2011 Jun)
- Symposium “Ongoing fluctuation of neural activity and its relationship to visual perception” at Vision Sciences Society annual meeting, Naples, FL. (2011 May)

- Complexity Workshop, Sage Center for the Study of the Mind, University of California, Santa Barbara, CA. (2009 Jul)
- Workshop on Cognitive Neurobiology, Okinawa Institute of Science and Technology, Japan. (2007 Mar)

PROFESSIONAL SERVICE (societies and conferences):

- 2019 Organizer and chair, Symposium “Prefrontal cortex in visual perception and recognition”, Vision Sciences Society (VSS) meeting, St. Pete Beach, FL.
- 2018–now Member-at-large, Board, Association for the Scientific Study of Consciousness (ASSC).
- 2017–2018 Member, Scientific Program Committee, Association for the Scientific Study of Consciousness.
- 2017–2018 Member, OHBM Publishing Task Force.
- 2015–2018 Ad hoc member, Organization for Human Brain Mapping’s (OHBM) Program Committee.
- 2015 Organizer and chair, Workshop “How the brain makes prediction: Relevance of time and spontaneous activity”, Cosyne meeting, Snowbird, UT.
- 2014 Organizer and chair, Minisymposium “Multimodal Investigation of Large-Scale Brain Dynamics: Combining fMRI and Intracranial EEG”, SfN annual meeting, Washington DC.
- 2013 Chair, Free Communication Session “Network Analysis”, International Conference on Basic and Clinical Multimodal Imaging, Geneva, Switzerland.
- 2013 Organizer and co-chair, Workshop “The Functional Implications of Brain Signal Variability”, OHBM annual meeting, Seattle, WA.
- 2012 Chair, Oral Session “Physiology, Metabolism and Neurotransmission”, OHBM annual meeting, Beijing, China.

SCIENTIFIC REVIEW PANELS:

- 2019 NSF review panel
- 2018 Ad-hoc reviewer, Mechanisms of Sensory, Perceptual, and Cognitive Processes (SPC) study section, NIH
- 2018 Mail-in Reviewer, NSF.
- 2018 NSF review panel
- 2017 Reviewer, French National research Agency (ANR)
- 2017 NSF review panel
- 2014 Reviewer, Marie Curie Co-funding of regional, national and international programmes, European Commission, European Union
- 2014 International Peer Review College of Experts for the £150m initiative in Clinical Research Infrastructure, Medical Research Council, U.K.

TEACHING EXPERIENCE:

- 2019 Lecturer, Computational & Cognitive Neuroscience Summer School (CCNSS), Cold Spring Harbor Asia, Suzhou, China (Organizers: X-J Wang, D Angelaki, C Honey, GR Yang)
- 2019 Lecturer, Behavioral & Cognitive Neuroscience course (graduate level), NYU
- 2019 Lecturer, “Scientific Integrity and Responsible Conduct in Research” (graduate level), NYU School of Medicine
- 2016–2019 Lecturer, “Disorders of the Nervous System” (graduate level), NYU School of Medicine
- 2016 Lecturer, Medical Scientist Training Program Summer Seminar Series, NYU School of Medicine
- 2014–2015 Lecturer, NIH Summer fMRI & MRI Course
- 2005 Teaching assistant to Washington University course “Principles of the Nervous System”

PH.D. THESIS COMMITTEES:

- 2017 Apr – Rachel Swanson, New York University Ph.D. program in neuroscience. Mentors: Gyorgy present Buzsaki and Jayeeta Basu.

- 2016 Apr – present Daniel Levenstein, New York University Ph.D. program in neuroscience. Mentors: Gyorgy Buzsaki and John Rinzel.
- 2016 Feb – 2019 Mar Peter Border, Georgia Institute of Technology and Emory University, Atlanta, GA. Mentor: Garrett Stanley.
- 2014 Mar Nicolas Zilber, Neurospin, Paris, France. Mentors: Philippe Ciuciu and Virginie van Wassenhove.

EDITORIAL SERVICE:

- 2015–present **Associate Editor**, The Journal of Neuroscience (Society for Neuroscience).
- 2014–2018 **Deputy Editor**, Neuroscience of Consciousness (Oxford University Press; <http://nc.oxfordjournals.org>).
- 2015 Editorial Board Member, Scientific Reports (Nature Publishing Group).
- 2011–2013 Host Editor, Research Topic “Scale-free Dynamics and Critical Phenomena in Cortical Activity”, Frontiers in Physiology.

MENTORING:**Post-doctoral Fellows:**

- 2017–now Thomas Baumgarten
(Ph.D. in psychology, Heinrich Heine University, Dusseldorf, Germany)
Honor: Marie Skłodowska-Curie Global Fellowship, European Commission
- 2016–now Ella Podvalny (Ph.D. in neuroscience, Weizmann Institute of Science, Israel)
- 2015–now Richard Hardstone (Ph.D. in neuroscience, VU University Amsterdam, Netherlands)
- 2013–2017 Brian Maniscalco (Ph.D. in psychology, Columbia University)
Current Position: Research scientist, University of California, Riverside

PhD Students:

- 2017–2018 Jennifer Lee, rotation student, NYU Neuroscience Program
Honor: Alexander Graham Bell Postgraduate Scholarship – Doctoral, Natural Sciences and Engineering Research Council of Canada (NSERC)
- 2015–2016 Carlos González-García, visiting student from University of Granada, Spain
Honor: Fulbright scholarship, U.S. Department of State
Honor: Marie Skłodowska-Curie Individual Fellowship, European Commission

Lab managers:

- 2017–2019 Max Levinson (B.S. in Biological Sciences, Cornell University)
Next Position: Graduate student, McGill University Ph.D. Program in Neuroscience

Post-baccalaureate Intramural Research Training Award (IRTA) Fellows:

- 2015–2017 Matthew W. Flounders (B.S. in neuroscience, University of Pittsburgh)
Next Position: Medical student, Philadelphia College of Osteopathic Medicine
- 2014–2015 Raymond Chang (B.S. in psychology-neuroscience, Yale University)
Next Position: Medical student, Cornell University
- 2014–2015 Amy Lin (B.A. in neuroscience, Colorado College)
Next Position: Graduate student, UCLA Ph.D. Program in Neuroscience
- 2012–2014 Zacchary Hill Douglas (B.A. in biology-neuroscience, Washington University in St. Louis)
Next Position: Medical student, University of Washington
- 2011–2013 Megan Wang (B.S. in biology, University of California at Irvine)

Next Position: Graduate student, Stanford University Ph.D. Program in Neurosciences
Honor: National Defense Science and Engineering Graduate Fellowship

2010–2011 Daniel Arteaga (B.A. in biochemistry, Washington University in St. Louis)
Next Position: Medical student, Vanderbilt University School of Medicine
Honor: Cornelius Vanderbilt Scholarship;
Honor: American Heart Association Pre-doctoral Fellowship Award

Undergraduates (as advisor for thesis):

2016–2018 Michael Zhu (NYU neuroscience major)
Honor: NYU Training Program for Computational Neuroscience Award
Honor: NYU Dean's Undergraduate Research Fund (DURF) Grant
Honor: Simons Foundation Autism Research Initiative Undergraduate Research Award

2017–2018 Leana King (NYU Neuroscience / Psychology)
Honor: NYU Dean's Undergraduate Research Fund (DURF) Grant
Honor: Marian Diamond Fellowship (UC Berkeley Neuroscience Graduate Program)

Medical students:

2017 summer Dan Sugrue, New York University Langone Medical Center

High school interns: Karina Melnik, Henry Morford, Alexander Thorpe, Enora Rice, Felacita Leah Nez.

Visiting post-doctoral fellows: Junling Gao (Post-doc, Univ. of Hongkong, summer-fall 2017).

Mentoring of under-represented minorities: 1 African American student; 2 native American students.

GRANTS AND FUNDING:

Current:

Integrative Strategies for Understanding Neural and Cognitive Systems He (PI) 2019/10 – 2023/09
Title: "NCS-FO: Understanding How Prior Knowledge Shapes Visual Perception in the Individual Brain"
 Role: PI; Award ID: BCS-1926780; Sponsor: National Science Foundation (NSF)

Faculty Early Career Development Program (CAREER) Award He (PI) 2018/02 – 2023/01
Title: "CAREER: Large-scale brain dynamics underlying visual perceptual awareness"
 Role: PI; Award ID: BCS-1753218; Sponsor: National Science Foundation (NSF)

FACES Foundation Grant He (PI) 2019/09 – 2020/08
Title: "Neurobiology of movement intention: path to treat psychogenic non-epileptic seizures?"
 Role: PI; Sponsor: Finding a Cure for Epilepsy and Seizures (FACES) Foundation

NINDS Intramural Research Program Transition Funds He (PI) 2016/04 – 2020/08
 The goal of this project is to facilitate the transition of the He lab from NIH/NINDS intramural program to NYU Langone Medical Center, and to finish projects started at the NIH.
 Role: PI; Sponsor: NIH/NINDS Intramural Research Program

T90/R90 Training Program in Computational Neuroscience Wang (PI) 2016/09 – 2021/08
Title: "Training a new generation of computational neuroscientists bridging neurobiology and cognition"
 Role: Training mentor; Award ID: T90DA043219; Sponsor: NIH

T32 Training Program in Visual Neuroscience Movshon (PI) 1993/01 – 2019/03
Title: "Training in Visual Neuroscience"
 Role: Training mentor; Award ID: T32EY007136 Sponsor: NIH

Completed:

Klingenstein-Simons Fellowship in the Neurosciences He (PI) 2016/07 – 2019/06
Title: "From Neurobiology of Movement Intention to Potential Treatment for Psychogenic Movement Disorders"

Role: PI; Sponsor: Klingenstein Fund and Simons Foundation

FACES Foundation Grant

He (PI)

2017/10 – 2018/10

Title: “From Neurobiology of Movement Intention to Potential Treatment for Psychogenic Movement Disorders and Psychogenic Non-Epileptic Seizures”

Role: PI; Sponsor: Finding a Cure for Epilepsy and Seizures (FACES) Foundation

Simons Foundation Autism Research Initiative (SFARI) Undergraduate Summer Research Award

He (PI)

2018/05 – 2018/08

Role: PI / mentor; Award ID: 590252; Sponsor: Simons Foundation

Leon Levy Fellowship in Neuroscience

He (PI)

2016/01 – 2017/10

Title: “Large-Scale Brain Dynamics Underlying Perceptual Awareness”

Role: PI; Sponsor: Leon Levy Foundation

NINDS Intramural Research Program Early Independence Award He (PI) 2010/08 – 2015/12

This award supported the He laboratory’s research activities at the NIH during this period.

Role: PI;

New Research Initiative, McDonnell Center for Systems Neuroscience, Washington University in St. Louis

Raichle (PI) 2009

Title: “Neural Correlates of Anesthetic-Induced Loss of Consciousness in fMRI and EEG signals”

Role: Co-I;

AD HOC REVIEWER FOR SCIENTIFIC JOURNALS:

Attention, Perception, & Psychophysics	Journal of Neuroscience Methods
Biological Reviews	Nature Communications
Biological Psychology	Neuroimage
Biological Psychiatry	Neuroimage: Clinical
Brain	Neuromodulation
Brain Imaging and Behavior	Neuron
Cerebral Cortex	Neuropsychologia
Consciousness and Cognition	Neuroscience
Cortex	Neuroscience & Biobehavioral Reviews
eLife	PLoS Biology
eNeuro	PLoS Computational Biology
European Journal of Neuroscience	PLoS ONE
Frontiers in Computational Neuroscience	PNAS
Frontiers in Physiology	Proceedings of the Royal Society B: Biological Sciences
Frontiers in Systems Neuroscience	Psychophysiology
Human Brain Mapping	Science Advances
Journal of Neurophysiology	Trends in Cognitive Sciences
Journal of Neuroscience	Visual Cognition

CONFERENCE PROCEEDINGS (ORAL PRESENTATIONS ONLY)

- M. Levinson, E. Podvalny, S.H. Baete, **B.J. He**. Successful object recognition correlates with activity in category-specific and extensive category-invariant brain networks. Object Perception, Attention, & Memory (OPAM) conference, 2019, Montréal, Canada.
- E. Podvalny, M.W. Flounders, L.E. King, T. Holroyd, **B.J. He**. A dual role of spontaneous neural activity in object recognition. Vision Science Society (VSS) meeting, 2019, St. Pete Beach, FL.
- T. Baumgarten, J.L. Lee, B. Maniscalco, M.W. Flounders, **B.J. He**. Neural time windows of auditory integration scale flexibly based on rate of information. SfN meeting, 2018, San Diego.

- R. Chang, A.T. Baria, **B.J. He**. Disambiguating Mooney Images with Unconscious Prior. Association for the Scientific Study of Consciousness (ASSC) annual meeting, 2015, Paris.
- B. Maniscalco, Z.H. Douglas, M. Hallett, E.M. Wassermann, **B.J. He**. Modulating Conscious Movement Intention with Noninvasive Brain Stimulation. OHBM annual meeting, 2015, Honolulu.
- M. Wang, D. Arteaga, **B.J. He**. Brain mechanisms underlying simple perception, bistable perception, and perceptual memory: similarities and differences. SfN meeting, 2012, New Orleans.
- Q. Li, **B.J. He**. Dissociating subjective awareness and objective performance under threshold perception. SfN meeting, 2012, New Orleans.
- **B.J. He**, A.Z. Snyder, J.L. Vincent, G.L. Shulman, M. Corbetta. Breakdown of frontoparietal functional connectivity characterizes spatial neglect. Society for Neuroscience (SfN) meeting, 2006, Atlanta.

PROFESSIONAL MEMBERSHIPS:

Association for the Scientific Study of Consciousness (ASSC); Cognitive Neuroscience Society (CNS); Organization for Human Brain Mapping (OHBM); Society for Neuroscience (SfN); Vision Science Society (VSS)