

Stephen Michael LaConte, Ph.D.

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EDUCATION

1996 - 2002	University of Minnesota Biomedical Engineering, Ph.D. (Electrical Engineering minor)	Minneapolis, MN
1992 - 1996	University of Denver Bachelor of Science in Electrical Engineering (BSEE)	Denver, CO

PROFESSIONAL EXPERIENCE

ACADEMIC

2015 - present	Fralin Biomedical Research Institute Virginia Tech Roanoke, VA	Associate Professor (Primary Appointment)
	Department of Biomedical Engineering and Mechanics School of Biomedical Engineering and Sciences Virginia Tech Blacksburg, VA	Associate Professor (Tenured Appointment)
2011 - 2015	Virginia Tech Carilion Research Institute Virginia Tech Roanoke, VA	Assistant Professor (Primary Appointment)
	School of Biomedical Engineering and Sciences Virginia Tech Blacksburg, VA	Assistant Professor (Primary Tenure-Track Appointment)
2007 - 2010 (Adjunct: 2011 - 2014)	Department of Neuroscience Baylor College of Medicine Houston, TX	Assistant Professor
2004 - 2007	Department of Biomedical Engineering Georgia Institute of Technology / Emory University Atlanta, GA	Assistant Professor Research Track
2002 - 2004	Department of Biomedical Engineering Georgia Institute of Technology / Emory University Atlanta, GA	Research Associate

Secondary Appointments**Virginia Tech**

2014 - present	Faculty of Health Sciences Virginia Tech Roanoke, VA	
2012 - present	Department of Radiology Virginia Tech Carilion School of Medicine Roanoke, VA	
2011 - present	Department of Emergency Medicine Virginia Tech Carilion School of Medicine Roanoke, VA	
2011 - 2015 2018 - present	Research Service Line Salem VA Medical Center Salem, VA	Research Health Scientist

Baylor College of Medicine

2010 - 2011	Research Service Line Michael E. DeBakey VA Medical Center Houston, TX	Research Health Scientist
2009 - 2010 (Adjunct: 2011 - 2014)	Structural and Computational Biology and Molecular Biophysics Graduate Program Baylor College of Medicine Houston, TX	
2009 - 2010	Scientific and Statistical Computing Core National Institute of Mental Health Bethesda, MD	Special Volunteer
2007 - 2010	Department of Bioengineering Rice University Houston, TX	Adjunct

NON-ACADEMIC

1998 - 1999	Guidant Corporation Cardiac Pacemakers, Inc. St. Paul, MN	Engineering Internship/ Contractor
1995 - 1996	National Renewable Energy Laboratory Golden, CO	American Western Universities Undergraduate Research Fellow

AWARDS**PROFESSIONAL AWARDS**

2019 Virginia Tech Biomedical Engineering and Mechanics Departmental “Leader in Research” Award.

2014 Virginia Tech College of Engineering 2014 Dean’s Award for Outstanding New Assistant Professor.

2013 ScienceDirect Top25. Our GPU article ranked 1st for *Medical Image Analysis*, July to September.

2012 Scholar of the Week, Virginia Tech.

2011 Kavli Fellow (National Academy of Sciences, Chinese-American Frontiers of Science).

2011 NeuroImage Editors' Choice for "Decoding fMRI brain states in real-time." *NeuroImage*, 56:440-54, 2011.

2006 "Best Prediction of All Categories." Pittsburgh Brain Activity Interpretation Competition. In the PBAIC06, human volunteers watched movie clips during fMRI scans. The volunteers were instructed to rate movie clips on a spectrum of 28 characteristics (settings, characters, amusement level, faces, etc.). The competition's goal was to build predictive models capturing the relationships between the imaging data and the stimulus descriptor set. Awards were presented at the Organization for Human Brain Mapping Conference on June 15, 2006 in Florence, Italy.

POSTDOCTORAL AWARDS

2004 Travel Grant Award ISMRM 2004 conference.

2003 Travel Grant Award ISMRM 2003 conference.

GRADUATE AWARDS

2000 University of Minnesota's EMBS symposium poster competition.

2000 Travel Grant Award ISMRM 2000 conference.

UNDERGRADUATE AWARDS

1996 IEEE Student Paper Competition (First Place in Region 5 Competition - see Publications).

1996 NASA Scholar (Only invited undergraduate symposium presentation).

1996 University of Denver Pioneer Award (1 of 10 seniors recognized by yearbook for demonstrating campus leadership and involvement).

AFFILIATIONS

BMES; EMBS; IEEE; ISMRM; OHBM; SfN.

LICENSES

- Engineer-Intern in state of Colorado. Passed Fundamentals of Engineering exam (April 1996).

PATENTS

Title: Magnetic resonance eye tracking systems and methods

Inventors: LaConte, SM, Peltier, S, Heberlein K, Hu X

Owner: Emory University

Status: Provisional patent filed April 21, 2006

PCT filed April 23, 2007.

SOFTWARE

3dsvm: C-language program for support vector machine (SVM) analysis of functional magnetic resonance imaging (fMRI) data as described in (LaConte et al., 2005). 3dsvm is a wrapper for SVM- Light. It exists as a command line program and plugin for AFNI, which is a suite of neuroimaging software tools that is maintained and developed by the Scientific and Statistical Computing Core at the National Institute of Mental Health. <http://www.lacontelab.org/3dsvm.html>.

Real-Time fMRI: Using a real-time fMRI interface to 3dsvm, our rtfMRI system is integrated with the Siemens MRI software platform. Software and hardware development on Siemens equipment is enabled legally through a master research agreement (MRA). There are three ways that a researcher's developments can be disseminated - other groups can implement it independently, Siemens can implement it, or the PI can distribute it through a "C2P" legal licensing agreement. The C2P (for Core Competency Partner) provides protections that are important to Siemens and are generally beneficial to all parties, including a license for binaries only, restrictions to research (no clinical use), no commercial use, protection of Siemens and University, an "as is" clause, etc. The C2P is well supported and will be our primary strategy for sharing with other Siemens sites. For other sites (e.g. GE and Philips) we provide well-documented software examples to assist sites in writing an interface function on their scanner. The translation function will also be flexible in its communication with the main TABS functionality. To date, we have shared our Siemens code with two academic sites, and we have helped to port our technology to both a GE site and a Philips site.

INVITED TALKS

- "Brain-machine-interfaces, closed-loop neuroscience, and neurorehabilitation: Harnessing the potential of machine learning-based real-time fMRI," NeuroNET Annual Fall Retreat at University of Tennessee - Knoxville, Knoxville, TN (virtual), November 13, 2020.
- "Brain-machine-interfaces, closed-loop neuroscience, and neurorehabilitation: Harnessing the potential of machine learning-based real-time fMRI," Graduate Student Seminar Series: Computational Tissue Engineering (CTE) Interdisciplinary Graduate Education Program (IGEP) at Virginia Tech, Blacksburg, VA (virtual), October 30, 2020.
- "Directly testing the roles of resting-state networks with real-time fMRI," Global Excellence Seminar, Danish Research Centre for Magnetic Resonance, Hvidovre Hospital, December 13, 2019.
- Keynote: "Directly testing the roles of resting-state networks with real-time fMRI," Real-time functional imaging and neurofeedback conference, Maastricht, Netherlands, December 11, 2019.
- "Directly testing the roles of resting-state networks with real-time fMRI," Advancing Neuroscience Research at VT Summer Symposium, Blacksburg, VA, August 16, 2019.
- "Real-time fMRI modulation of DMN is enhanced with cognitive behavioral therapy in depression," Society of Biological Psychiatry 2019 74th Annual Meeting, Chicago, IL, May 17, 2019.
- "Decoding-based closed-loop neuroimaging," Central Virginia Chapter of the Society for Neuroscience 2019 Annual Meeting, Charlottesville, VA, April 12-13, 2019.
- "Decoding-based closed-loop neuroimaging," A Critical Examination of Real-Time fMRI Neurofeedback, Bethesda, MD, March 28-29, 2019.
- "Advanced analysis of brain activity-behavior relations," Virginia-Nordic Precision Neuroscience 2018, Oslo, Norway, September 19, 2018.
- "Experimental approaches to closed-loop experiments," NIH (Neuroimaging Research Branch, NIDA), Baltimore, MD, July 20, 2018.
- "Real-time fMRI: Nuts and Bolts," Real-time fMRI Workshop, Princeton Neuroscience Institute, Princeton, NJ, March 17, 2017.

- “Decoding the brain’s surface to track whole-brain and interior brain activity,” Virginia-Nordic Precision Neuroscience 2016, Roanoke, VA, October 6, 2016.
- “rt-fMRI Neurofeedback: Are We There Yet?” 54th ACNP Annual Meeting (American College of Neuropsychopharmacology), Study Group, Hollywood, FL, December 8, 2015.
- “Machine learning with fMRI data,” NIH (Emotion and Development Branch, NIMH), Bethesda, MD, August 6, 2015.
- “Sampling rare events in the state space dynamics of resting state networks,” Fourth Biennial Conference on Resting State Brain Connectivity, Boston/Cambridge, MA, USA. September 11, 2014.
- “Predicting intrinsic brain activity,” The 2nd Whistler scientific workshop on brain functional organization, connectivity and behavior, Whistler-Blackcomb, British Columbia, Canada. March 11, 2014.
- “Supervised learning for the analysis of functional magnetic resonance imaging data,” Department of Statistics Colloquium Speaker Series, Virginia Tech, Blacksburg, VA. November 7, 2013.
- “Brain computer interfaces increase whole-brain signal-to-noise,” Janelia Farms Seminar (Hosted by Karel Svoboda), HHMI’s Janelia Farm Research Campus, Ashburn, VA. November 4, 2013.
- “Keynote Talk: Supervised learning for the analysis of functional magnetic resonance imaging,” Inaugural Translational Biology Medicine and Health (TBMH) Visiting Student Reception, Inn at Virginia Tech, Blacksburg, VA. November 1, 2013.
- “Sampling rare events in the state space dynamics of resting state networks,” Virginia Tech Carilion Research Institute European-U.S. Workshop on Neuroscience of Cognition, Computation and Decisions. Riva San Vitale, Switzerland. October 18, 2013.
- “Sampling rare events in the state space dynamics of resting state networks,” Workshop on Engineering Systems for Mental Health (Organized by Srinivas Tadigadapa and Steven Schiff), Pennsylvania State University, University Park, PA. October 14, 2013.
- “Technological perspective: Pattern-based rtfMRI,” Radcliffe Symposium on Optimizing Real Time fMRI for Neurotherapeutic Discovery and Development (Organized by Luke Stoeckel and Eden Evins), Radcliffe Institute for Advanced Study, Harvard University, Cambridge, MA. July 11, 2013.
- “Directly testing the roles of resting-state networks with real-time fMRI,” OHBM Morning Workshop: Understanding the basis of resting-state fMRI connectivity dynamics (Organized by Daniel A. Handwerker and Catie Chang), Seattle, WA. June 17, 2013.
- “Using fMRI to track the time course of recovery from mild TBI,” Advanced Technologies and New Frontiers in Brain Injuries and Biomechanics, Arlington, VA. April 3, 2013.
- “Reading your mind: How to decode the brain mid-thought,” Roanoke-Blacksburg Technology Council, Tech and Toast, Blacksburg, VA. March 21, 2013.
- “Brain computer interfaces increase whole-brain signal-to-noise,” City College of New York, Department of Psychology, Neuroscience Colloquium, New York, NY. March 12, 2013.
- “Brain computer interfaces increase whole-brain signal-to-noise,” Martinos Center BrainMap Seminar, Athinoula A. Martinos Center, MGH, Boston, MA. January 9, 2013.
- “Brain computer interfaces increase whole-brain signal-to-noise,” VTCRI seminar series, Roanoke, VA. October 5, 2012.
- “Directly testing the roles of resting-state networks with real-time fMRI,” Third Biennial Conference on Resting State Brain Connectivity, Magdeburg, Germany. September 6, 2012.
- “Interfacing with the brain through real-time fMRI,” Imaging at Illinois: The Next Generation, Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign, June 1, 2012.

- “Keynote Lecture: Neurofeedback increases whole-brain signal-to-noise,” 1st Swiss Real Time fMRI Neurofeedback Conference, Eidgenössische Technische Hochschule (ETH), Zürich, Switzerland, February 17, 2012.
- “Interfacing with the brain through real-time fMRI,” Fourteenth Annual Chinese-American Kavli Frontiers of Science Symposium, Shenzhen, China, November 7, 2011.
- “Keynote Lecture: Enhancing supervised learning-based realtime fMRI,” IEEE International Workshop on Pattern Recognition in NeuroImaging, Seoul, Korea, May 17, 2011.
- “Temporally adaptive brain state fMRI,” Neuroimaging Technologies for Optimizing Performance, Alexandria, VA. September 24, 2010.
- “Real-time tracking of resting-state networks,” Second Biennial International Conference on Resting-State Connectivity, Milwaukee, WI. September 16, 2010.
- “Using machine learning of fMRI-based brain states to provide real-time neurofeedback,” CNS*2010 Workshop on Methods of Information Theory in Computational Neuroscience, San Antonio, TX. July 30, 2010.
- Invited participant in “Engineering Brain Functions Session,” US - Europe Workshop, Reverse Engineering of the Human Brain, Dubrovnik, Croatia, May 23-26, 2010.
- “Using machine learning of fMRI-based brain states to provide real-time neurofeedback,” ISMRM Brain Function Study Group, Stockholm, Sweden, May 4, 2010.
- “Using machine learning of fMRI-based brain states to provide real-time neurofeedback,” Virginia Tech, Blacksburg, VA. April 22, 2010.
- “Real-time fMRI and feedback stimuli,” Winter Conference on Brain Research, Panel Session: Making Sense of Multisensory Integration, with Paul Laurienti and Michael Beauchamp (Organizer, Panel Chair), Breckenridge, CO, January 25, 2010.
- “Supervised learning of fMRI-based brain states and real-time fMRI,” MIND Institute, Albuquerque, NM, September 28, 2009.
- “Neurofeedback of two motor functions using supervised learning-based real-time functional magnetic resonance imaging,” Annual International Conference of the IEEE EMBS, Minneapolis, MN. September 6, 2009.
- “Using distributed fMRI patterns to track learning and provide real-time feedback,” Rotman Rounds, Baycrest’s Rotman Research Institute, Toronto, Ontario, Canada, February 23, 2009.
- “Detecting nonlinear dynamics of functional connectivity,” Resting-state workshop. Otto von Guericke University, Magdeburg, Germany. December 5, 2008.
- “Distributed and localized approaches to real-time fMRI,” Department of Psychology Cognitive Tea Seminar, Rice University, Houston, TX. September 3, 2008.
- “Using machine learning to enhance the capabilities of functional magnetic resonance imaging,” Institute for Human and Machine Cognition (IHMC). Pensacola, FL. June 6, 2008.
- “Brain reading and rehabilitation with fMRI,” National VA Research Week Symposium, Michael E. DeBakey VA Medical Center, Houston, TX. May 14, 2008.
- “New frontiers in neuroimaging,” Eighteenth Annual Rush and Helen Record Neuroscience Forum, Galveston TX. February 17, 2008.
- “Using machine learning to enhance the capabilities of functional magnetic resonance imaging,” Fifth Annual Houston Conference on Theoretical and Computational Neuroscience, Rice University, Houston, TX. January 12, 2008.
- “Using machine learning to enhance the capabilities of functional magnetic resonance imaging,” Functional MRI 2007 Speaker Series, University of Michigan, Ann Arbor, MI. October 27, 2007.

- “Real-time feedback and other enhancements to fMRI using multi-voxel pattern analysis,” Bernstein Center for Computational Neuroscience, Humboldt University, Berlin Germany May 18, 2007.
- “Real-time feedback and other enhancements to fMRI using multi-voxel pattern analysis,” Neuroimaging Analysis Methods Group, Center for the Study of Brain, Mind, and Behavior (CSBMB). Princeton University, Princeton, NJ. May 11, 2007.
- “Enhancing functional magnetic resonance imaging with temporally predictive multivariate models,” Rice University, Department of Bioengineering, Houston TX. April 30, 2007.
- “Enhancing functional magnetic resonance imaging with temporally predictive multivariate models,” Yerkes Imaging Center. Yerkes National Primate Center of Emory University, Atlanta GA. March 7, 2007.
- “Enhancing functional magnetic resonance imaging with supervised learning,” NIPS 2006 Workshops: New directions on decoding mental states from fMRI data. Organized by John-Dylan Haynes, Francisco Pereira, Tom Mitchell. Whistler, Canada, December 8, 2006.
- “Real-time classification of brain states for adaptive fMRI experiments,” Baylor College of Medicine (Human Neuroimaging Laboratory), Houston, TX, September 22, 2006.
- “Real-time classification of brain states for adaptive fMRI experiments,” University of Pittsburgh Medical Center (Department of Radiology, MR Research Center), Pittsburgh, PA, September 18, 2006.
- “Real-time fMRI using multivariate brain state estimation,” NIH (Functional MRI Facility, DIRP, NIMH), Bethesda, MD, July 21, 2006.
- “Imaging brain states in real-time for adaptive fMRI experiments,” Intel Opportunity Scholar’s Program and Partners in Transitioning to Tech (PITT), Georgia Institute of Technology, Atlanta GA. February 28, 2006.
- “Temporal classification of fMRI data,” MIND Institute, Albuquerque, NM. July 12, 2004.

INVITED HACKATHONS

- “Intel BrainIAK Hackathon” Yale University, New Haven, CT. April 24-26, 2018.
- “AFNI DC Code Convergence Conference” National Institute of Mental Health, Bethesda, MD. 2018, 2019.

PEER REVIEW ACTIVITIES

JOURNALS

Human Brain Mapping; IEEE Transactions on Medical Imaging; IEEE Transactions on Systems, Man, and Cybernetics–Part C: Applications and Reviews; Journal of Magnetic Resonance; Journal of Magnetic Resonance Imaging; Nature Neuroscience; Nature Reviews Neuroscience; Neural Networks; NeuroImage; PLOS ONE; Trends in Cognitive Sciences.

CONFERENCES

BMES; EMBC; HBM; ICONIP; IEEE CCECE; IEEE EMBS; ISMRM.

FUNDING AGENCIES

Israel Science Foundation (1); New Jersey Commission on Brain Injury Research Scientific Merit Review Panel (1); New Jersey Commission on Spinal Cord Research Independent Scientific Merit Review Panel (3); NIH Study Section Meetings (16).

SERVICE AND OUTREACH**PROFESSIONAL**

- 2017 Biomedical Engineering Society, October 13, Session Chair, MRI.
- 2017 Biomedical Engineering Society, October 13, Session Chair, Applications of MRI and Focused Ultrasound.
- 2016 Organization for Human Brain Mapping (OHBM2016). Real-Time fMRI: Fundamental Principles for Clinical Applications, Educational Session Organizer (with Rainer Goebel). Geneva, Switzerland. June 10.
- 2015 Biomedical Engineering Society, October 8, Session Chair, Magnetic Resonance Imaging.
- 2014 Biomedical Engineering Society, October 23, Poster Session Chair, Magnetic Resonance Imaging.
- 2014 Fourth Biennial Conference on Resting State Brain Connectivity, September 11-13, Cambridge, MA, Abstract Committee.
- 2013 Organization for Human Brain Mapping, June 18, Seattle, Chair, Modeling and Analysis Methods 2: Functional Modeling.
- 2012 Biomedical Engineering Society, October 25, Atlanta, Co-chair (with Shella Keilholz), Magnetic Resonance Imaging Session.
- 2012 Third Biennial Conference on Resting State Brain Connectivity, September 5-7, Magdeburg, Germany, Abstract Committee.
- 2012 Organization for Human Brain Mapping (OHBM2012). Brain-Computer Interfaces and Real-Time fMRI Educational Session Organizer (with Rainer Goebel). Beijing, China. June 10.
- 2012 - 2016 Editorial Board of NeuroImage.
- 2012 2nd International Workshop on Pattern Recognition in Neuroimaging, July 2-4, University College London, Program Committee.
- 2009 Annual International Conference of the IEEE Engineering in Medicine and Biology Society (31st EMBC09). Functional imaging track co-chair (with Hae-Jeong Park). Minneapolis, MN. September 2-6.
- 2005 IEEE Teacher's in-service training session for promoting science and engineering for K-12 education. Sponsored by the IEEE Educational Activities Region 3, Atlanta, GA. July 23.

INSTITUTIONAL

- 2020 - present College of Engineering Task Force: Identifying Research Thrusts for Investment (member)
- 2020 - present Faculty Advisor, VTCSOM Medical Design Club Advisor
- 2020 - 2021 Quantitative Neuro Faculty Search Committee (member).
- 2019 - 2020 BEAM Promotions and Tenure Committee (member).
- 2018 "BrainIAK Hackathon" Local Organizer (Co-Sponsored and Co-Organized by Princeton, Yale, and Intel) Virginia Tech (Roanoke and Blacksburg). September 26-28, 2018.
- 2018 Virginia Nordic Precision Neuroscience 2018 Travel Awards Selection Committee (vnpn.org).
- 2018 VTCRI Brain School lecture: Kids' Night: Digital Devices and Development (panel discussion co-moderator, with Audra Van Wart), March 14, 2018.
- 2017 - 2018 Computational Neuroscience Faculty Search Committee (member).
- 2017 - 2018 Radiation Oncology Faculty Search Committee (member).
- 2017 - 2018 Center for Transformative Research on Health Behaviors (CTRHB) Search Faculty Committee (member).
- 2017 - 2019 HST Building Design Co-Chair (Imaging Core).
- 2017 Hokies in Health Sciences and Technology Open House lecture: "Hard-hitting helmet research," June 3, 2017.
- 2017 VTCRI Brain School lecture: "From brains to bytes to brain-computer-interfaces," March 14, 2017.
- 2016 - present VTCRI Molecular Visualization SURF (James Smyth, Chair) selection committee and participating mentor.

2016 - present	VTCRI NeuroSURF (Michael Fox, Chair) selection committee and participating mentor.
2016	Co-chair: Biomaterials: Body-Device Interfaces Building Planning Group.
2016	Member : August 2016 Brain Health and Disease Building Planning Group.
2016	Faculty steering committee on the “Information and Decision Sciences” destination area.
2015 - 2016	Virginia Nordic Precision Neuroscience 2016 International Organizing Committee (vnpn.org).
2015 - 2016	Chair VTCRI Frontiers in Biomedical Science seminar series selection committee for 2016-17.
2015 - 2016	Neuroscience Initiative Faculty Search Committee.
2015	ICTAS Seed Proposals JFC BioMed/Health Peer Review Panel.
2015 - present	VTCSOM M4 Written and Oral Presentation Evaluations.
2014 - present	BME Undergraduate Curriculum Committee.
2014	Virginia Science Festival, October 11, VTCRI, rtfMRI Brain-Controlled Robotic Vehicle (with Alex Leonessa and Rosalyn Moran). http://research.vtc.vt.edu/sciencefestival2014/ .
2014	Presidential Installation of Timothy Sands, 16th President of Virginia Tech. October 18, Pannel discussion: Harnessing Brain Power.
2014	SBES Biomechanics Faculty Search Committee.
2013 - present	VTCSOM M1 Written and Oral Presentation Evaluations.
2013 - present	VTCSOM M2 Oral Presentation Evaluations.
2013 - present	VTCRI Seminar Program Committee 2013-2014, 2014-2015.
2013	Pilot research grant reviewer: Collaborative inter-institutional projects fostering collaboration between Virginia Tech, Children’s National Medical Center, and George Washington University.
2011	Virginia Tech Carilion Research Institute, Faculty Search Committee (member).
2011 - present	SBES Qualifying Exam Faculty Examiner.
2011 - present	SBES and TBMH Graduate Recruiting Weekend (MRI demonstrations and VTCRI tour - co-coordinated with Gary Mason).
2011	Virginia Tech Carilion Research Institute, Institute Integration Committee (member).
2011	Virginia Tech Carilion Research Institute, Computing Resources Committee (member).
2010	Baylor College of Medicine, IT Governance Advisory Committee (research subcommittee member).
2009	Baylor College of Medicine, Department of Neuroscience, Departmental ad hoc committee to develop seminar series policies.
2007 - 2010	Baylor College of Medicine, Department of Neuroscience, Graduate Student Admissions Committee (member).
2007 - 2008	Baylor College of Medicine, Department of Neuroscience, Cognitive Neuroscience Faculty Search Committee.
2007 - 2008	Baylor College of Medicine, Department of Neuroscience, Departmental ad hoc committee to help define competencies in quantitative skills.
2005	North American IDEA User’s Meeting, Co-sponsored by Emory University and Siemens Medical Solutions, November 4-6, Atlanta, GA. Planning Committee.
2002 - 2003	Passages Structured mentoring program for faculty at Emory University. Mentored by Jim Snyder Department of Chemistry.

TEACHING

COURSES

- Introduction to Biomedical Imaging, Virginia Tech BMES 3134
2015-2020 (Last: Fall 2020 Co-Instructor with Eli Vlasisavljevich).
- College of Engineering Undergraduate Research / Independent Study, Virginia Tech BMES/BSE 4994,
(Last: Fall 2020).
- Medical Imaging II, Virginia Tech BMES 6514 / Wake Forest BMES-751,
2016, 2018 (Last: Spring 2018; MRI Lectures).

- Introduction to Functional Magnetic Resonance Imaging, Virginia Tech Special Study BMES 5984, Fall 2014, 2015.
- Brain Imaging from Cell to System, Baylor College of Medicine 350-444 Spring 2009 (entire second term, Neuroimaging, Course Coordinator: Peter Saggau).

COURSE LECTURES

- “Imaging Methods for Traumatic Brain Injury” Virginia Tech, BMES 2004, Concussion: Medical, Scientific, and Societal Perspectives (Instructor: Stefan Duma), (Last: Spring 2021).
- “Facilitator” Virginia Tech, Intro to Biomedical Engineering BMES 2104, (Instructor: Sara Arena), (Last: Fall 2020).
- “Methods of cognitive neuroscience (2 hours)” Virginia Tech, TBMH 5004, Translational Biology, Medicine, & Health (Instructor: Steve Poelzing), Fall 2020.
- “Methods of cognitive neuroscience (4 hours)” Virginia Tech, TBMH 5074, Cognitive Neuroscience (Instructor: Brooks King-Casas), (Last: Spring 2020).
- “fMRI, fMRI pattern analysis, and real-time fMRI” Virginia Tech, NEUR 3844, Computational Neuroscience and Neural Engineering (Instructor: Sujith Vijayan), (Last: Fall 2019).
- “MRI for rehabilitation, therapy, and cognitive enhancement,” CarilionClinic, Department of Emergency Medicine, Residency Program, October 18, 2018.
- “Introduction to MRI, and Demo and Tour” Virginia Tech, CHEM 5154, Methods of Biomolecular Physics (Instructor: Harry Dorn), April 11, 2018.
- “Introduction to fMRI and BOLD imaging” Virginia Tech / Wake Forest, BMES 5984 (VT)/ BMES 698 (WF) Special Studies Engineering Principles in Cardiovascular Systems (Instructor: John Chappell), December 5, 2017.
- “Introduction to MRI,” Virginia Tech, BMES 2894, then BMES 2104, Introduction to Biomedical Engineering (Instructor: Scott Verbridge), (Last: March 30, 2017).
- “fMRI pattern analysis and real-time fMRI” Virginia Tech, BMES 2894, Introduction to Biomedical Engineering (Instructor: Scott Verbridge), (Last: April 4, 2017).
- “Research Live! (Introductory lecture to research and available projects in my lab),” Virginia Tech Carilion School of Medicine, M1 Research Domain, (Last: August 23, 2019).
- “fMRI: lecture, journal discussion, and lab visit (4 hours),” Virginia Tech, NEUR 4054, Neuroscience Research and Practical Experience (Instructor: Robyn Umans), October 24, 26, and 28, 2016.
- “Introduction to MRI” Virginia Tech, CHEM 4524/5524, Molecular Structure Determination (Instructor: Harry Dorn), (Last: September 15, 2016).
- “Functional Magnetic Resonance Imaging (fMRI),” Virginia Tech, BMES 2104, Introduction to Biomedical Engineering (Instructor: Scott Verbridge), March 29, 2016.
- “Attentional Brain Networks,” Virginia Tech, TBMH 5014, Fundamentals of Neuroscience (Cognitive Neuroscience Instructor: Brooks King-Casas), March 22, 2016.
- “Introduction to MRI,” Virginia Tech, TBMH 5144, Quantitative Imaging and Time Series Analysis for Biological Systems (Instructors: Steven Poelzing and Rosalyn Moran), February 22, 2016.
- “Methods in Logic,” Virginia Tech Carilion School of Medicine and TBMH, (Last: October 14, 2015)
- “Introduction to real-time fMRI and its potential for addiction treatment” Virginia Tech, BMES 2894, Introduction to Biomedical Engineering (Instructor: Scott Verbridge), March 26, 2015.

- “Introduction to real-time fMRI and its potential for addiction treatment” Virginia Tech, TBMH 5004, Translational Biology, Medicine, & Health (Instructor: Michael Friedlander), October 8, 2014.
- “Bioimaging” Virginia Tech, BMES 2894, Introduction to Biomedical Engineering (Instructor: Pam Vandevord), May 2, 2013.
- “Biomedical Imaging: MRI Basics” Virginia Tech, BMES 2894, Introduction to Biomedical Engineering (Instructor: Pam Vandevord), April 3, 2012.
- “Faculty panel discussion on manuscript publication,” Virginia Tech Carilion School of Medicine, M1 Research Domain, March 19, 2012.
- “MRI Basics: NMR to MRI,” Virginia Tech, GRAD 5134, Polymers in Medicine and Biology (Instructors: Judy Riffle and Abby Whittington), November 17 and 29, 2011 (2 lectures).
- “Advanced neuroimaging methods for functional characterization and rehabilitation,” CarilionClinic, Department of Emergency Medicine, Residency Program, September 29, 2011.
- “Supervised learning of fMRI-based cognitive states (and real-time fMRI),” University of Texas Graduate School of Biomedical Sciences, GS140053 (also listed as Rice University Bioengineering and Psychology 471/671), Introduction to fMRI (Instructor: Michael S. Beauchamp), November 30, 2010.
- “Neuroimaging crash course,” Rice University, PSYC 362, Biopsychology (Instructor: Timothy Ellmore), February 18, 2010.
- “Measurement of higher brain function in humans,” Baylor College of Medicine, Course 350-434, Higher Brain Function (Course Director: Mariella De Biasi), February 16, 2010.
- “Introduction to MR physics,” University of Texas Graduate School of Biomedical Sciences, GS140053 (also listed as Rice University Bioengineering and Psychology 471/671), Introduction to fMRI (Instructor: Michael S. Beauchamp), September 23, 2008.
- “6 lectures on data representation, spectral methods, and classification techniques”, Baylor College of Medicine 350-425, Introduction to statistical computing and modeling (Course Coordinator: Read Montague), Spring 2008
- “Sampling and aliasing in image reconstruction,” Georgia Institute of Technology, BMED 8813, Special Topics on Magnetic Resonance Imaging (Instructor: Xiaoping Hu), September 28, 2004.
- “Continuous and discrete Fourier transforms,” Georgia Institute of Technology, BMED 8813, Special Topics on Magnetic Resonance Imaging (Instructor: Xiaoping Hu), September 23, 2004.
- “Imaging of Alzheimer’s disease with MRI,” Emory University, Chem 470 Chemistry, Biology, and Molecular Modeling (Instructor: Jim Snyder), February 26, 2003.

WORKSHOPS, TRAINING COURSES, AND INTERNATIONAL CONFERENCE EDUCATION

- “Real-Time Decoding,” (lecture and tutorial), Computational Psychiatry Course, San Diego. November 12, 2018.
- “Whole organ imaging: fMRI of the human brain,” Molecular Visualization SURF, (directed by James Smyth) Virginia Tech Carilion Research Institute, Roanoke, VA. Summer 2017, 2018, 2019.
- “Real-time fMRI and prediction of craving states,” Computational Psychiatry Course, Washington DC. November 11, 2017.
- “Pattern Recognition and real-time fMRI,” University of Michigan training course in functional magnetic resonance imaging (fMRI). Ann Arbor, Michigan. August 2009-2019. (lecture 2009-present, computer lab 2011-present, rtfMRI demo 2014-present).

- “Multivoxel Pattern-Based real-time fMRI,” Organization for Human Brain Mapping, Real-Time fMRI: Fundamental Principles for Clinical Applications, Educational Course, Geneva, Switzerland. June 26, 2016.
- “Multivoxel Pattern-Based rtfMRI,” Organization for Human Brain Mapping, Brain-Computer Interfaces and Real-Time fMRI, Educational Course, Beijing, China. June 10, 2012.
- “fMRI analysis,” International Society for Magnetic Resonance in Medicine, Sunrise Educational Course: Absolute Beginner’s Guide to Neuroimaging Methods, Melbourne, Australia. May 10, 2012.
- “fMRI in humans: Basic concepts and methods,” International Society for Magnetic Resonance in Medicine, Sunrise Educational Course - Clinical Intensive Course: Absolute Beginner’s Guide to Translational Neuroimaging, Melbourne, Australia. May 9, 2012.
- “A window into the brain: MRI anatomy from development through aging,” International Society for Magnetic Resonance in Medicine, Sunrise Educational Course - Clinical Intensive Course: Absolute Beginner’s Guide to Translational Neuroimaging, Melbourne, Australia. May 8, 2012.
- “Real-time fMRI,” NeuroImaging Training Program (NITP), The UCLA Advanced Neuroimaging Summer program, Los Angeles, California. July 19, 2011.
- “Real-time fMRI,” International Society for Magnetic Resonance in Medicine, Educational session: Advanced fMRI Techniques & Functional Connectivity Assessment Montreal, Canada. May 8, 2011.
- “Supervised learning of fMRI-based brain states and real-time fMRI,” PhD course: Advances in magnetic resonance imaging of human brain structure and function, Hvidovre Hospital, Copenhagen University, Denmark. October 8, 2009.
- “Classification of fMRI-based cognitive states using 3dsvm,” (approximately 3 lecture hours, including hands-on lab component), National Institute of Health Training - 935-09S - Advanced AFNI #5: Brain state classification using AFNI and FMRI datasets. Bethesda MD, July 22, 2009.
- “Brain imaging,” (joint lecture with Michael Beauchamp), NSF REU Undergraduate Summer Internship in Theoretical and Computational Neuroscience, Rice University-Texas Medical Center, Houston, TX. June 1, 2009.
- “FMRI pattern classification,” International Society for Magnetic Resonance in Medicine, FMRI Advanced Issues, Honolulu, HI. April 19, 2009.
- “Classification in real time,” International Society for Magnetic Resonance in Medicine, FMRI Advanced Issues, Honolulu, HI. April 19, 2009.
- “Classification of fMRI-based cognitive states,” Summer School: Mathematics in Brain Imaging, Institute for Pure and Applied Mathematics (IPAM), UCLA, Los Angeles, CA. July 25, 2008.
- “Classifier analyses and prediction of mental states from brain activity,” Organization for Human Brain Mapping, Advanced fMRI Course, Melbourne, Australia. June 15, 2008.
- “Brain imaging,” NSF REU Undergraduate Summer Internship in Theoretical and Computational Neuroscience, Rice University-Texas Medical Center, Houston, TX. June 2, 2008.
- “FMRI research and data analysis,” (approximately 8 lecture hours), Beijing advanced fMRI educational workshop, Beijing, China, June 18-23, 2006.
- “fMRI data analysis: General concepts” Emory University, Biomedical Imaging Technology Center, Training Workshop, November 23, 2002.
- “Overview of fMRI data analysis” Minnesota Workshops fMRI Training Course, October 10, 2001.

HIGH SCHOOL STUDENTS

- Jonah Vanke, Patrick Henry High School and Roanoke Valley Governor's School, 2019-2020.
- Erik Scarlatescu, Cave Spring High School and Roanoke Valley Governor's School, 2017-2020.
- Katherine M Pufko, Patrick Henry High School and Roanoke Valley Governor's School, 2017-2018.
- Mark Tenzer, Patrick Henry High School and Roanoke Valley Governor's School, 2014-2016.
- Sam McGhee, Patrick Henry High School and Roanoke Valley Governor's School, 2013-2014.
- Araba Wubah, Blacksburg High School, 2011.

UNDERGRADUATE STUDENTS

- David Norfleet, Virginia Tech, 2020-present.
- Drew Hagan, Virginia Tech, 2020-present.
- Tim Skillin, Virginia Tech, 2019-present.
- Alana Hull, Virginia Tech, 2019-present.
- Jill Grzelak, Virginia Tech, 2019-present.
- Warner McGhee, MIT, summer 2017.
- Mark Tenzer, University of Virginia, 2016-present.
- Sam McGhee, Virginia Tech, 2014-2016.
- Amnah Eltahir, Virginia Tech, 2013-2014.
- Andrew Fischer, Rice University, 2008-2010.
- Prashant Prasad, Rice University, 2007-2009.

UNDERGRADUATE SUMMER TRAINING PROGRAMS

- Alana Hull, VTCRI MolVisSURF student, 2019.
- Tippy Morrow, VTCRI MolVisSURF student, 2018.
- Jonathan Ng, Rice/TMC/UH Computational Neuroscience REU, 2009.
- Andrew Fischer, Baylor College of Medicine Summer Medical and Research Training (SMART) program, 2009.
- Andrew Fischer, Rice/TMC/UH Computational Neuroscience REU, 2008.

MEDICAL STUDENTS

- Vaishnavi Sridhar (Stephanie DeLuca, primary), Virginia Tech Carilion School of Medicine, 2018-present.
- Jeffrey Henry, Virginia Tech Carilion School of Medicine, 2017-present.
- Benjamin Stephens (Sharon Ramey, primary), Virginia Tech Carilion School of Medicine, 2014-2017.
- Juniper J. Lee Park (Stephanie DeLuca, primary), Virginia Tech Carilion School of Medicine, 2014-2017.
- Alisha Tuteja, Virginia Tech Carilion School of Medicine, 2013-2016.
- Amber Post, Virginia Tech Carilion School of Medicine, 2012-2015.

- Manek Aulakh, Virginia Tech Carilion School of Medicine, 2011-2014.
Project: “Acute sleep deprivation shows reversible effects on the multi-source interference task.”
- Sean R. Fletcher, Virginia Tech Carilion School of Medicine, 2011-2014.
Project: “Improved performance on the multi-source interference task, even during moderate alcohol intoxication.”

ROTATION STUDENTS

- Morgan Patrick, Virginia Tech, Post-baccalaureate Research and Education Program, Summer 2020.
- Jeremy Myslowski, Virginia Tech, Translational Biology Medicine and Health (TBMH) rotations, Spring 2019.
- Alyssa Brunal, Virginia Tech, Translational Biology Medicine and Health (TBMH) rotations, Summer 2016 and March 2017.
- Shaylen Greenberg, Virginia Tech, Translational Biology Medicine and Health (TBMH) rotation, January 2016.

GRADUATE STUDENTS

- Jeremy Myslowski, Virginia Tech, Translational Medicine Biology and Health, 2019-present.
- Jeff Soldate, Virginia Tech, School of Biomedical Engineering and Sciences, 2017-present.
- Caroline Norris, Virginia Tech, Biomedical Engineering and Mechanics, 2018-2019.
(Co-Advisor; Pamela VandeVord, primary)
Thesis: “Development of MRI-based Yucatan Minipig Brain Template.”
MS Biomedical Engineering.
- Harshawardhan Deshpande, Virginia Tech, School of Biomedical Engineering and Sciences, 2012-2019.
Thesis: “Univariate and multivariate fMRI investigations of delay discounting and episodic future thinking in alcohol use disorder.”
PhD Biomedical Engineering.
- Amnah Eltahir, Virginia Tech, School of Biomedical Engineering and Sciences, 2014-2018.
Thesis: “Surface Based Decoding of Fusiform Face Area Reveals Relationship Between Signal-to-Noise Ratio and Prediction Accuracy.”
MS Biomedical Engineering.
- Katherine McRoberts, Virginia Tech, School of Biomedical Engineering and Sciences, 2011-2013.
Thesis: “Magnetic Resonance Imaging Movies for Multivariate Analysis of Speech.”
MS Biomedical Engineering.
- Cyrus Eierud, Baylor College of Medicine, Structural and Computational Biology and Molecular Biophysics (SCBMB), 2009-2014.
Thesis: “Developing Neuroimaging Methods to Disentangle Mild Traumatic Brain Injury.”
PhD SCBMB.

POSTDOCTORAL AND RESEARCH FACULTY

- Spencer Bowen, 2015-2017.
- Charles Mueller, 2013-2014.
- Anders Eklund, 2012-2014.
- Richard Cameron Craddock, 2009-2012.
- Theodora Dorina Papageorgiou, 2007-2009.
- Jihong Chen, 2005.

FACULTY TRAINING AND SABBATICAL HOST

- Cherie Marvel, Summer 2017, Nexus Award for Scholarly Immersion ‘Mini Sabbatical’, Johns Hopkins.

THESIS COMMITTEES

- Carrie Cheung (advised by Vincent Wang), Virginia Tech, School of Biomedical Engineering and Sciences (SBES).
- Mark Orloff (advised by Pearl Chiu), Virginia Tech, Translational Biology Medicine and Health (TBMH).
- Joseph Sutlive (advised by Rolf Mueller), Virginia Tech, Translational Biology Medicine and Health (TBMH), PhD 2020.
- Katherine McCurry (advised by Pearl Chiu and Brooks King-Casas), Virginia Tech, Psychology, PhD 2020.
- Holly Sullivan Toole (advised by John Richey), Virginia Tech, Translational Biology Medicine and Health (TBMH), PhD 2020.
- Xu Dong (advised by Guohua Cao), Virginia Tech, Biomedical Engineering and Mechanics (BEAM), PhD 2019.
- Xiaoyang Liu (advised by Harry Dorn), Virginia Tech, Chemistry, PhD 2019.
- Mohsen Bahrami (advised by Paul Laurienti and Sean Simpson), Virginia Tech / Wake Forest, School of Biomedical Engineering and Sciences (SBES), PhD 2019.
- Alexandra M. Mellis (advised by Warren Bickel), Virginia Tech, Translational Biology Medicine and Health (TBMH), PhD 2019.
- Paul Hill (advised by Rachel Diana), Virginia Tech, Psychology, PhD 2017.
- Stephanie Roldan (advised by Anthony Cate), Virginia Tech, Psychology, PhD 2017.
- Hao Gong (advised by Guohua Cao), Virginia Tech, Biomedical Engineering and Mechanics (BEAM), PhD 2017.
- Olga Pen (advised by Guohua Cao), Virginia Tech, Biomedical Engineering and Mechanics (BEAM), MS 2016.
- Hunger Long (advised by Rosalyn Moran), Virginia Tech, Electrical and Computer Engineering (ECE), MS 2016.
- Shaza Zaghlool (advised by Chris Wyatt), Virginia Tech, Electrical and Computer Engineering (ECE), PhD 2014.
- William Charles Vogt (advised by Christopher Rylander), Virginia Tech, School of Biomedical Engineering and Sciences (SBES), PhD 2013.
- Sujith V. Sajja (advised by Pamela VandeVord), Virginia Tech, School of Biomedical Engineering and Sciences (SBES), PhD 2013.
- Ting Xiang (advised by Read Montague), Baylor College of Medicine, Neuroscience, PhD 2013.
- Josepheen De Asis Cruz (advised by Read Montague), Baylor College of Medicine, Neuroscience, PhD 2013.
- Anders Eklund (PhD Thesis Opponent, April 27, 2012; advised by Hans Knutsson), Linköpings Universitet, Medical Informatics, Department of Biomedical Engineering Linköping Sweden, PhD 2012.
- Carlos Perez Torres (advised by Robia Pautler), Baylor College of Medicine, Translational Biology and Molecular Medicine (TBMM), PhD 2012.

- Temilade Adelere (advised by Eric Schumacher), Georgia Institute of Technology/Emory University, Master's thesis 2007.
- Christian Cabrera (advised by Krish Sathian), Emory University undergraduate. Undergraduate honors thesis 2006.

RESEARCH GRANTS

ACTIVE

Next Generation Magnetoencephalography for Human Social Neuroscience

Role on Project: MPI with Read Montague

Funding Agency: NIH/NIBIB (R01 EB028772)

Project Period: 8/2020 - 4/2024

Testing Reinforcer Pathology: Mechanisms and Interventions to Change Alcohol Valuation

Role on Project: MPI with Warren Bickel

Funding Agency: NIH/NIAAA (R01 AA027381)

Project Period: 7/2019 - 6/2024

Neurobehavioral Determinants of Health Risk Behaviors: From Adolescence to Young Adulthood (Kim-Spoon, King-Casas MPIs)

Role on Project: Co-Investigator

Funding Agency: NIH/NIDA (R01 DA036017)

Project Period: 7/2019 - 6/2024

Efficacy and Neural Mediators of Response to Trauma Management Therapy for PTSD (King-Casas PI)

Role on project: Co-Investigator Funding Agency: VA/RR&D (5I01RX002354) Project Period: 7/2018 - 6/2022

Veterans Affairs Office of Rehabilitation Research and Development

Neurobehavioral Mechanisms of Social Dysfunction in Borderline Personality Disorder (King-Casas PI)

Role on Project: Co-Investigator

Funding Agency: NIH/NIMH (R01 MH115221)

Project Period: 2/2018 - 12/2022

Virginia Tech Carilion Research Institute Translational Neurobiology Summer Undergraduate Research Fellowship (VTCRI neuroSURF) (Michael Fox)

Role on Project: Program Faculty

Funding Agency: NIH/NINDS (R25NS105141)

Project Period: 1/2018 - 12/2022

Subcontract: Brain Mechanisms Supporting Individual Differences in Pain Sensitivity (Robert Coghill, PI)

Role on Project: Co-Investigator (Subcontract PI)

Funding Agency: NIH/NIMH (R01MH101555)

Project Period: 7/2015 - 4/2020

CARE 2.0: A Prospective, Longitudinal Study of the Intermediate and Cumulative Effects of Concussion and Reepetitive Head Impact Exposure in NCAA Student-Athletes and U.S. Military Service Academy Members (Thomas McAllister, Steven Broglio, & Michael McCrea, PIs)

Role on Project: Subcontract PI (with Stefan Duma and Steven Rowson)

Funding Agency: DoD NCAA

Project Period: 9/2017 - 6/2020

AWARDED

MRI Testing and Integration

Role on Project: Principal Investigator/ Contractor

Funding Agency: Medtronic

Project Period: 1/2020 - 12/2020

Virginia Brain Injury Diagnosis and Monitoring Initiative

Role on Project: Co-Principal Investigator with Michael Friedlander

Funding Agency: VA Biosciences Health Research Corp.-VA Catalyst

Project Period: 9/2017 - 3/2019

Investigating Neurological Injury Patterns in the Minipig Following Impact (Pamela VandeVord, PI)

Role on Project: Co-Investigator

Funding Agency: NIH/NINDS (R56NS099205)

Project Period: 8/2017 - 7/2018

ExAblate Neuro V2: MRI Integration

Role on Project: Principal Investigator

Funding Agency: Insightec

Project Period: 11/2017 - 10/2018

Development of a Novel Neurotechnology to Promote Emotion Recognition in Autism (Susan White, PI)

Role on Project: Co-Investigator

Funding Agency: NIH/NIMH (R33MH100268)

Project Period: 3/2016 - 2/2019

Delay Discounting as a Target for Self-regulation in Prediabetes (Bickel & Epstein, MPIs)

Role on Project: Co-Investigator

Funding Agency: NIH/NIDDK (5UH2DK109543)

Project Period: 9/2015 - 6/2018

Neural Correlates of Impulsive HIV-risk Behavior in Simulant Dependence (Micky Koffarnus, PI)

Role on Project: Co-Investigator

Funding Agency: NIDA/NIH (1R21DA040559)

Project Period: 9/2015 - 8/2017

NCAA-DoD Concussion Advanced Research Core (Thomas McAllister, Steven Broglio, & Michael McCrea, PIs)

Role on Project: Subcontract PI (with Stefan Duma and Steven Rowson)

Funding Agency: DoD NCAA

Project Period: 2014 - 2018

Development and Testing of a Novel Neurotechnology to Promote Emotion Recognition in Autism (Susan White, PI)

Role on Project: Co-Investigator

Funding Agency: NIH/NIMH (1R21MH100268)

Project Period: 3/2014 - 2/2016

Multisite RCT of 3 Neurorehabilitation Therapies for Infants with Asymmetrical CP (Sharon Ramey and Stephanie DeLuca, PIs)

Role on Project: Co-Investigator

Funding Agency: NIH (1R01HD074574)

Eunice Kennedy Shriver National Institute of Child Health & Human Development

Project Period: 3/2014 - 2/2019

The repair of self control in alcohol dependence: Working memory and real-time fMRI

Role on Project: Co-Principal Investigator with Warren Bickel

Funding Agency: NIH/NIAAA (R01 AA02152901A1)

Project Period: 9/2013 - 5/2018

Mentorship and Development Program for Biomedical Trainees (BEST) (Audra Van Wart & Michael Friedlander, MPIs)

Role on Project: Program Faculty
Funding Agency: NIH (DP7OD018428)
Project Period: 9/2013 - 8/2018

Subcontract: Real-time fMRI Neurofeedback Based Stratification of Default Network Regulation (Cameron Craddock, PI)

Role on Project: Co-Investigator (Subcontract PI)
Funding Agency: NIH/NIMH (R01MH101555)
Subcontract Total Cost: \$61,283
Project Period: 7/2013 - 5/2017

Multisite RCT of pediatric constraint-induced movement therapy (CIMT) (Sharon Ramey, Richard Stevenson & Stephanie DeLuca, MPIs)

Role on Project: Co-Investigator
Funding Agency: NIH (R01HD068345)
Eunice Kennedy Shriver National Institute of Child Health & Human Development
Project Period: 9/2012 - 7/2018

Neuroimaging major depression and nicotine dependence on axes of valuation (Pearl Chiu, PI)

Role on Project: Co-Investigator
Funding Agency: NIMH (7R01MH087692)
Project Period: 9/2012 - 1/2015
National Institute of Mental Health

Neurofeedback for default mode network regulation in major depressive disorder (Cameron Craddock, PI)

Role on Project: Co-Mentor with Helen Mayberg
Funding Agency: NARSAD Young Investigator Award
Project Period: 7/2011 - 6/2013

The biological and behavioral bases for decision-making in medical professionals (Read Montague, PI)

Role on Project: Co-Investigator
Funding Agency: NIA (RC4AG039067)
Project Period: 5/2011 - 8/2013
National Institute on Aging

Neuroimaging major depression and nicotine dependence on axes of valuation (Pearl Chiu, PI)

Role on Project: Co-Investigator
Funding Agency: NIMH (7R01MH091872)
Project Period: 4/2011 - 1/2015
National Institute of Mental Health

Localized and distributed real-time fMRI approaches to facilitate self control in substance abusers

Role on Project: Co-Principal Investigator with Pearl Chiu
Funding Agency: NIH/NIDA (R33DA026086)
Project Period: 9/2010 - 6/2013

Enhancing 3dsvm to improve its interoperability and dissemination

Role on Project: Principal Investigator
Funding Agency: NIH/NIBIB (R03EB012464)
Project Period: 9/2010 - 9/2011

Neurobehavioral metrics for the assessment and treatment of depression (Pearl Chiu, PI)

Role on Project: Co-Investigator
Funding Agency: NIH/NIMH (R01MH087692)
Project Period: 7/2010 - 3/2015

Neurobehavioral assessment of interpersonal functioning in PTSD (Brooks King-Casas, PI)

Role on project: Co-Investigator

Funding Agency: VA/RR&D (D7030R)

Project Period: 10/2009 - 9/2013

Veterans Affairs Office of Rehabilitation Research and Development

Mission Connect mild TBI translational research consortium.

Role on Project: consortium PI (Initiating PI: Alex Valadka)

Funding Agency: US Army Medical Research and Material Command (W81XWH-08-2-0144)

Project Period: 8/2008 - 7/2013

Localized and distributed real-time fMRI approaches to facilitate self control in substance abusers

Role on Project: Co-Principal Investigator with Pearl Chiu

Funding Agency: NIH/NIDA (R21DA026086)

Project Period: 9/2008 - 8/2010

Speech rehabilitation with fMRI-based biofeedback.

Role on Project: PI (with Read Montague)

Funding Agency: McNair Foundation

Project Period: 7/2007 - 6/2009

Assessing Development Effects of Prenatal Cocaine Exposure (Xiaoping Hu, PI)

Role on project: Investigator

Funding Agency: NIDA (R01DA17795)

Project Period: July 15, 2004 - April 30, 2009

National Institute on Drug Abuse

Improvement and Application of fMRI (Xiaoping Hu, PI)

Role on project: Investigator

Funding Agency: NINDS (R01EB002009)

Project Period: May 1, 2000 - Mar. 31, 2009

National Institute of Neurological Disorders and Stroke

Temporally Adaptive fMRI.

Role on Project: Principal Investigator

Funding Agency: NINDS (R21NS050183)

Project Period: Jan. 1, 2005 - Dec. 31, 2006

National Institute of Neurological Disorders and Stroke

Application of multivariate support vector pattern recognition classification methods to detect and predict neural correlates of emotion.

Role on Project: Co-Investigator (with Stephan Haman, PI and Carla Nolan, Co-PI)

Funding Agency: Emory College FMRI Seed Grant Application

Project Period: 9/2004 - 9/2005

PUBLICATIONS

Google Scholar

Citations: 5528

h-index: 33

PEER-REVIEWED ARTICLES

58. Morgan, O. P., Slapik, M. B., Iannuzzelli, K. G., LaConte, S. M., Lisinski, J. M., Nopoulos, P. C., Cochran, A. M., Kronemer, S. I., Rosenthal, L. S., and Marvel, C. L. The cerebellum and implicit sequencing: Evidence from cerebellar ataxia. *The Cerebellum*, pages 1–24, 2020.

57. Norris, C., Lisinski, J., McNeil, E., VanMeter, J. W., VandeVord, P., and LaConte, S. M. MRI brain templates of the male Yucatan minipig. *BioRxiv*, 2020.
56. Wu, Y.-C., Harezlak, J., Elsaid, N. M., Lin, Z., Wen, Q., Mustafi, S. M., Riggen, L. D., Koch, K. M., Nencka, A. S., Meier, T. B., et al. Longitudinal white-matter abnormalities in sports-related concussion: A diffusion MRI study. *Neurology*, 95(7):e781–e792, 2020.
55. Son, J., Ai, L., Lim, R., Xu, T., Colcombe, S., Franco, A. R., Cloud, J., LaConte, S., Lisinski, J., Klein, A., et al. Evaluating fMRI-based estimation of eye gaze during naturalistic viewing. *Cerebral Cortex*, 30(3):1171–1184, 2020.
54. Deshpande, H. U., Mellis, A. M., Lisinski, J. M., Stein, J. S., Koffarnus, M. N., Paluch, R., Schweser, F., Zivadinov, R., LaConte, S. M., Epstein, L. H., et al. Reinforcer pathology: Common neural substrates for delay discounting and snack purchasing in prediabetics. *Brain and Cognition*, 132:80–88, 2019.
53. Mellis, A. M., Snider, S. E., Deshpande, H. U., LaConte, S. M., and Bickel, W. K. Practicing prospection promotes patience: Repeated episodic future thinking cumulatively reduces delay discounting. *Drug and Alcohol Dependence*, 204:107507, 2019.
52. Luo, Y., Héту, S., Lohrenz, T., Hula, A., Dayan, P., Ramey, S. L., Sonnier-Netto, L., Lisinski, J., LaConte, S., Nolte, T., Fonagy, P., Rahmani, E., Montague, P. R., and Ramey, C. Early childhood investment impacts social decision-making four decades later. *Nature Communications*, 9(1):4705, 2018.
51. Mustafi, S. M., Harezlak, J., Koch, K. M., Nencka, A. S., Meier, T. B., West, J. D., Giza, C. C., DiFiori, J. P., Guskiewicz, K. M., Mihalik, J. P., LaConte, S. M., Duma, S. M., Broglio, S. P., Saykin, A. J., McCrea, M., McAllister, T. W., and Wu, Y.-C. Acute white-matter abnormalities in sports-related concussion: a diffusion tensor imaging study from the NCAA-DoD CARE Consortium. *Journal of Neurotrauma*, 35(22):2653–2664, 2018.
50. Nencka, A. S., Meier, T. B., Wang, Y., Muftuler, L. T., Wu, Y.-C., Saykin, A. J., Harezlak, J., Brooks, M. A., Giza, C. C., DiFiori, J., Guskiewicz, K. M., Mihalik, J. P., LaConte, S. M., Duma, S. M., Broglio, S., McAllister, T., McCrea, M. A., and Koch, K. M. Stability of MRI metrics in the advanced research core of the NCAA-DoD concussion assessment, research and education (CARE) consortium. *Brain Imaging and Behavior*, 12(4): 1121–1140, 2018.
49. Lee-Park, J. J., Deshpande, H., Lisinski, J., LaConte, S., Ramey, S., and DeLuca, S. Neuroimaging strategies addressing challenges in using fmri for the children with cerebral palsy. *Journal of Behavioral and Brain Science*, 8(05):306, 2018.
48. Snider, S. E., Deshpande, H. U., Lisinski, J. M., Koffarnus, M. N., LaConte, S. M., and Bickel, W. K. Working memory training improves alcohol users' episodic future thinking: A rate-dependent analysis. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*, 3(2):160–167, 2018.
47. Koffarnus, M. N., Deshpande, H. U., Lisinski, J. M., Eklund, A., Bickel, W. K., and LaConte, S. M. An adaptive, individualized fMRI delay discounting procedure to increase flexibility and optimize scanner time. *NeuroImage*, 161:56 – 66, 2017.
46. Xiao, L., Li, T., Ding, M., Yang, J., Rodríguez-Corrales, J., LaConte, S. M., Nacey, N., Weiss, D. B., Jin, L., Dorn, H. C., and Li, X. Detecting Chronic Post-Traumatic Osteomyelitis of Mouse Tibia via an IL-13R α 2 Targeted Metallofullerene Magnetic Resonance Imaging Probe. *Bioconjugate Chemistry*, 28(2):649–658, 2017.
45. McDonald, A. R., Muraskin, J., Van Dam, N. T., Froehlich, C., Puccio, B., Pellman, J., Bauer, C. C., Akeyson, A., Breland, M. M., Calhoun, V. D., Carter, S., Chang, T. P., Gessner, C., Gianonne, A., Giavasis, S., Glass, J., Homann, S., King, M., Kramer, M., Landis, D., Lieval, A., Lisinski, J., MacKay-Brandt, A., Miller, B., Panek, L., Reed, H., Santiago, C., Schoell, E., Sinnig, R., Sital, M., Taverna, E., Tobe, R., Trautman, K., Varghese, B., Walden, L., Wang, R., Waters, A. B., Wood, D. C., Castellanos, F. X., Leventhal, B., Colcombe, S. J., LaConte, S., Milham, M. P., and Craddock, R. C. The real-time fMRI neurofeedback based stratification of Default Network Regulation Neuroimaging data repository. *NeuroImage*, 146:157–170, 2017.

44. White, S. W., Richey, J. A., Gracanin, D., Coffman, M., Elias, R., LaConte, S., and Ollendick, T. H. Psychosocial and computer-assisted intervention for college students with autism spectrum disorder: Preliminary support for feasibility. *Education and Training in Autism and Developmental Disabilities*, 51(3):307–317, 2016.
43. Snider, S. E., LaConte, S. M., and Bickel, W. K. Episodic future thinking: Expansion of the temporal window in individuals with alcohol dependence. *Alcoholism: clinical and experimental research*, 40(7):1558–1566, 2016.
42. Trubanova, A., Kim, I., Coffman, M. C., Bell, M. A., Richey, J. A., LaConte, S. M., Gracanin, D., and White, S. W. The role of perspective-taking on ability to recognize fear. *Current Research in Psychology*, 6(2):22, 2015.
41. White, S., Richey, J., Gracanin, D., Bell, M., LaConte, S., Coffman, M., Trubanova, A., and Kim, I. The promise of neurotechnology in clinical translational science. *Clinical Psychological Science*, 3:797–815, 2015.
40. Li, T., Murphy, S., Kiselev, B., Bakshi, K. S., Zhang, J., Eltahir, A., Zhang, Y., Chen, Y., Zhu, J., Davis, R. M., Madsen, L. A., Morris, J. R., Karolyi, D. R., LaConte, S. M., Sheng, Z., and Dorn, H. C. A new interleukin-13 amino-coated gadolinium metallofullerene nanoparticle for targeted MRI detection of glioblastoma tumor cells. *Journal of the American Chemical Society*, 137(24):7881–7888, 2015.
39. Idelson, C. R., Vogt, W. C., King-Casas, B., LaConte, S. M., and Rylander, C. G. Effect of mechanical optical clearing on near-infrared spectroscopy. *Lasers in Surgery and Medicine*, 47(6):495–502, 2015.
38. Zuo, X.-N., Anderson, J., Bellec, P., Birn, R., Biswal, B., Blautzik, J., Breitner, J. C., Buckner, R., Calhoun, V., Castellanos, F., et al. An open science resource for establishing reliability and reproducibility in functional connectomics. *Scientific Data*, 1, 2014.
37. Stoeckel, L., Garrison, K., Ghosh, S., Wightton, P., Hanlon, C., Gilman, J., Greer, S., Turk-Browne, N., Scheinost, D., Craddock, C., et al. Optimizing real time fMRI neurofeedback for therapeutic discovery and development. *NeuroImage: Clinical*, 5:245–255, 2014.
36. Eklund, A., Dufort, P., Villani, M., and LaConte, S. BROCCOLI: Software for fast fMRI analysis on many-core CPUs and GPUs. *Frontiers in Neuroinformatics*, 8:24, 2014.
35. Zhang, J., Ye, Y., Chen, Y., Pregot, C., Li, T., Balasubramaniam, S., Hobart, D., Zhang, Y., Wi, S., Davis, R., Madsen, L., Morris, J., LaConte, S., Yee, G., and Dorn, H. Gd3n@c84(oh)x: A new egg-shaped metallofullerene magnetic resonance imaging contrast agent. *Journal of the American Chemical Society*, 136:2630–2636, 2014.
34. Eierud, C., Craddock, C., Fletcher, S., Aulakh, M., King-Casas, B., Kuehl, D., and LaConte, S. Neuroimaging after mild traumatic brain injury: Review and meta-analysis. *NeuroImage: Clinical*, 4:283–294, 2014.
33. Papageorgiou, T., Lisinski, J., McHenry, M., White, J., and LaConte, S. Brain-computer interfaces increase whole-brain signal-to-noise. *Proceedings of the National Academy of Science (USA)*, 110:1360–1365, 2013.
32. Craddock, C., Milham, M., and LaConte, S. Predicting intrinsic brain activity. *NeuroImage*, 82:127–136, 2013.
31. Eklund, A., Dufort, P., Forsberg, D., and LaConte, S. Medical image processing on the GPU - past, present and future. *Medical Image Analysis*, 17:1073–1094, 2013.
30. Sulzer, J., Haller, S., Scharnowski, F., Weiskopf, N., Birbaumer, N., Blefari, M., Bruehl, A., Cohen, L., Decharms, R., Gassert, R., Goebel, R., Herwig, U., LaConte, S., Linden, D., Luft, A., Seifritz, E., and Sitaram, R. Real-time fMRI neurofeedback: Progress and challenges. *NeuroImage*, 76:386–399, 2013.
29. Eklund, A., Villani, M., and LaConte, S. Harnessing graphics processing units for improved neuroimaging statistics. *Cognitive, Affective, and Behavioral Neuroscience*, 13:587–597, 2013.
28. Yang, Z., Zuo, X.-N., Wang, P., Li, Z., LaConte, S. M., Bandettini, P. A., and Hu, X. P. Generalized RAICAR: Discover homogeneous subject (sub)groups by reproducibility of their intrinsic connectivity networks. *NeuroImage*, 63:403–414, 2012.

27. Chiew, M., LaConte, S. M., and Graham, S. J. Investigation of fMRI neurofeedback of differential primary motor cortex activity using kinesthetic motor imagery. *NeuroImage*, 61:21–31, 2012.
26. Sathian, K., Lacey, S., Stilla, R., Gibson, G. O., Deshpande, G., Hu, X., LaConte, S., and Glielmi, C. Dual pathways for haptic and visual perception of spatial and texture information. *NeuroImage*, 57:462–475, 2011.
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