Deborah A. Barany

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EDUCATION

2013 – present **University of California, Santa Barbara**
Ph.D. candidate in Dynamical Neuroscience
Dissertation: *The Neural Dynamics of Continuous Movement*
Advisor: Dr. Scott Grafton

2011 – 2013 **University of California, Santa Barbara**
M.A. in Psychology
Thesis: *Decoding Human Sensorimotor Transformations for Goal-Directed Movement*
Advisor: Dr. Scott Grafton

2007 – 2011 **Hamilton College**, Clinton, NY
B.A. in Neuroscience (honors) and Mathematics (honors), *summa cum laude*
Thesis: *Behavioral and Neural Correlates of Movement Preparation*
Advisor: Dr. Jonathan Vaughan

ADDITIONAL RESEARCH AND TRAINING

August 2012 **Northwestern University**, Evanston, IL
Summer School in Computational Sensory-Motor Neuroscience (CoSMo)
Directors: Dr. Gunnar Blohm and Dr. Konrad Körding

Summer 2010 **University of Rochester, Center for Visual Science**, Rochester, NY
Undergraduate Summer Fellowship Program in Vision Science
Supervisor: Dr. Greg DeAngelis

Summer 2009 **University of Minnesota, Psychology Department,** Minneapolis, MN
Volunteer undergraduate researcher in Engel Vision & Imaging Lab
Supervisor: Dr. Stephen Engel

2007 – 2011 **Hamilton College, Psychology Department,** Clinton, NY
Undergraduate researcher in the Motor Lab
Supervisor: Dr. Jonathan Vaughan

FELLOWSHIPS, GRANTS, AND SCHOLARSHIPS

2015 Affiliates Graduate Dissertation Fellowship, UCSB
2014 Graduate Teaching Fellowship, School for Scientific Thought, UCSB
2014 Sigma Xi Grants-in-Aid of Research
2011 – 2014 National Science Foundation Graduate Research Fellowship
2011 Elihu Root Fellowship for Graduate Study, Hamilton College

2010	Barry M. Goldwater Scholarship
2010	University of Rochester Center for Visual Science Summer Fellowship
2010	Edward Huntington Memorial Mathematical Scholarship, Hamilton College
2008 – 2010	Dean of Faculty Summer Science Research Grant, Hamilton College
2008	Charles A. Dana Prize Scholarship, Hamilton College
2007	Robert C. Byrd Honors Scholarship

HONORS AND AWARDS

2014	Runner-up in UCSB Grad Slam 3-minute research talk competition
2013	Student Travel Award, American Psychological Association
2011	USA Today All-USA College Academic Third Team
2011	Senior Prize in Neuroscience, Hamilton College
2011	Sigma Xi Scientific Research Society, Hamilton College chapter
2011	Capital One Academic All-America Second Team (tennis)
2011	Milton H. Jannone Scholar-Athlete Award, Hamilton College
2010	Phi Beta Kappa, Hamilton College chapter
2010	Psi Chi Honor Society in Psychology, Hamilton College chapter

PUBLICATIONS

Barany, D.A., Shapiro, A.D., & Lee, T.G. (2015). Multivariate fMRI Approaches to Flexible Sensorimotor Maps in Parietal Cortex. *The Journal of Neuroscience* (Commentary)*, 35*(34), 11763 – 11765.

Barany, D. A., Della-Maggiore, V., Viswanathan, S., Cieslak, M., & Grafton, S. T. (2014). Feature Interactions Enable Decoding of Sensorimotor Transformations for Goal-Directed Movement. *The Journal of Neuroscience*, *34*(20), 6860 - 6873.

Vaughan, J., **Barany, D.A**., & Rios, T. (2012). The cost of moving with the left hand. *Experimental Brain Research, 220*(1), 11 - 22.

Vaughan, J., **Barany, D.A**., Sali, A.W., Jax, S.A., & Rosenbaum, D.A. (2010). Extending Fitts' Law to three-dimensional obstacle-avoidance movements: Support for the posture-based motion planning model. *Experimental Brain Research, 207*(1-2)*,* 133 - 138.

CONFERENCE PRESENTATIONS

Barany, D. A., Viswanathan, S., Cieslak, M., Caddigan, E., & Grafton, S.T. (October 2015). Decoding the cortical dynamics of continuous tracking movements from fMRI. Talk presented at the Annual Meeting of the Society for Neuroscience, Chicago, IL.

Lee, T.G., **Barany, D. A.,** & Grafton, S.T. (October 2015). Choking under pressure due to high incentives as a change in state distinct from motivated performance. Poster presented at the Annual Meeting of the Society for Neuroscience, Chicago, IL.

Barany, D. A., Viswanathan, S., Cieslak, M., Caddigan, E., & Grafton, S.T. (April 2015). Decoding directional selectivity in the human motor system from the dynamics of continuous tracking. Poster presented at 25th Annual Meeting of the Society for the Neural Control of Movement, Charleston, SC.

Barany, D. A., Gilbert, J., & Grafton, S.T. (March 2015). Planning interceptive actions to moving targets with ambiguous paths. Poster presented at 1st International Convention of Psychological Science, Amsterdam, The Netherlands.

Barany, D. A., Gilbert, J., & Grafton, S.T. (November 2014). Planning reaches to intercept targets with ambiguous moving paths. Poster presented at 55th Annual Meeting of the Psychonomic Society, Long Beach, CA.

Barany, D. A., Della-Maggiore, V., Viswanathan, S., Cieslak, M., & Grafton, S. T. (November 2013). Dissociating intrinsic and extrinsic reference frames in the human motor system. Poster presented at the Annual Meeting of the Society for Neuroscience, San Diego, CA.

Barany, D. A., Della-Maggiore, V., Viswanathan, S., Cieslak, M., & Grafton, S. T. (August 2013). Dissociating movement parameters in the human motor system. Poster presented at the 121st Annual Meeting of the American Psychological Association, Honolulu, HI.
**Abstract selected as finalist for the "Cutting-Edge Research From Emerging Psychological Scientists" poster session*

Cieslak, M., **Barany, D.A.,** Viswanathan, S., & Grafton, S.T. (October 2012). Dynamics of effector selection in a time-dependent decision task. Poster presented at the Annual Meeting of the Society for Neuroscience, New Orleans, LA.

Barany, D.A., Viswanathan, S., & Grafton, S.T. (April 2012). Limited visuomotor adaptation to variable amplitude gains within a movement trajectory. Poster presented at 22nd Annual Meeting of the Society for the Neural Control of Movement, Venice, Italy.

Vaughan, J., Keating, H., **Barany, D. A.,** & Rosenbaum, D. A. (November 2010). Dexterity and reaching around obstacles with a tool. Paper presented at 51st Annual Meeting of the Psychonomic Society, St. Louis, MO.

Barany, D.A., & DeAngelis, G.C. (July 2010). Deviations from optimality in the normalization model of multisensory integration. Poster presented at Center for Visual Science Undergraduate Summer Fellowship Poster Session, Rochester, NY.

Vaughan, J., **Barany, D.A**, Sali, A.W, Jax, S.A, & Rosenbaum, D.A. (November 2009). Movement time when circumventing obstacles in a 3-D workspace. Poster presented at 50th Annual Meeting of the Psychonomic Society, Boston, MA.

Barany, D.A, Sali, A.W, & Vaughan, J. (October 2009). Fitting Fitts' Law: Predicting movement times for an obstacle avoidance task in 3-D. Poster presented at Hamilton College Science Poster Session, Clinton, NY.

Barany, D.A, Sali, A.W, & Vaughan, J. (June 2009). Fitting Fitts' Law: Motor lab research in 3-D. Fifth International Conference for Posture-Based Movement, Moss Rehabilitation Research Institute, Philadelphia, PA.

INVITED TALKS

April 2015 *Using multivoxel pattern analysis of fMRI data to decode goal-directed movement.* Neuroimaging Group Seminar, Emory University, Atlanta, GA

September 2014 *Decoding goal-directed movements from human brain activity.* Psychology Department, Hamilton College, Clinton, NY

July 2014 *Big Ideas that Matter.* GRIT (Ground-breaking Research/Innovative Technology) talks series, University of California, Santa Barbara, Santa Barbara, CA

April 2014 *The Brain in Action.* Grad Slam graduate student competition for best three-minute research talk, University of California, Santa Barbara, Santa Barbara, CA

DEPARTMENTAL TALKS

November 2015 *Multivoxel pattern analysis of continuous manual tracking.* Dynamical Neuroscience Seminar, University of California, Santa Barbara, Santa Barbara, CA

February 2015 *Multisensory perception for action.* Cognition, Perception, and Cognitive Neuroscience Area Seminar, Department of Psychological and Brain Sciences, University of California, Santa Barbara, Santa Barbara, CA

May 2013 *Dissociating intrinsic and extrinsic reference frames in the human motor system.* Mini-Convention of the Department of Psychological and Brain Sciences, University of California, Santa Barbara, Santa Barbara, CA

May 2011 *Behavioral and neural correlates of movement preparation: Implications for obstacle avoidance.* Hamilton College Senior Project Presentations in Neuroscience, Clinton, NY.

October 2010 *Examining optimality in two models of multisensory integration.* Hamilton College Math Department Colloquium, Clinton, NY.

TEACHING EXPERIENCE

Teaching Associate (Instructor of Record)

Summer 2015 The Biological Basis of Psychology
Department of Psychological and Brain Sciences, UCSB

Teaching Assistant

Fall 2014 Introduction to Psychology
Department of Psychological and Brain Sciences, UCSB

Summer 2014 Multimedia Learning
Department of Psychological and Brain Sciences, UCSB

Summer 2012 Cognitive Psychology
Department of Psychological and Brain Sciences, UCSB

Outreach

2014 – 2015	*Science Women Achieving Greatness* High school outreach group, Center for Science and Engineering Partnerships, UCSB
Fall 2014	*Your Brain in Action* School for Scientific Thought (outreach program for high school students), UCSB
2012 – present	*UCSB Brain Imaging Center Tours* Lead demonstrations of real-time fMRI for student groups
2009 – 2011	*Neuroscience Lunch* Founder of weekly journal club for students interested in discussing neuroscience in an informal setting, Hamilton College

Guest Lecturer

November 2015	*Magnetic Resonance Imaging in Neuroscience Research* Lab in Biopsychology, Undergraduate course Department of Psychological and Brain Sciences, UCSB
November 2014	*Neuroscience in the news* Science in the News, Undergraduate course University of Minnesota, Minneapolis, MN
June 2014	*Multi Voxel Pattern Analysis of fMRI data* Statistical Analysis of fMRI data, Graduate course Department of Psychological and Brain Sciences, UCSB
January 2012	*Introduction to fMRI* Highland Park High School, St. Paul, MN
January 2011	*Introduction to Neuroscience* Highland Park High School, St. Paul, MN