

Noah C. Benson, Ph.D.

Departments of Psychology and Neurology
University of Pennsylvania
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Academic Experience

The University of Pennsylvania	Fall 2010 – Summer 2014
Post-doctoral Researcher	Philadelphia, PA
Departments of Neurology and Psychology	
Supervisors: Drs. David H. Brainard and Geoffrey K. Aguirre	
The University of Washington	Fall 2005 – Fall 2010
Graduate Research Assistant	Seattle, WA
Division of Biomedical and Health Informatics	
Supervisor: Dr. Valerie Daggett	
The Relationship Research Institute	Spring 2010 – Summer 2011
Research Consultant	Seattle, WA
Supervisor: Daniel J. Friend	
Purdue University	Spring 2003 – Spring 2005
Undergraduate Researcher	
Supervisor: Dr. Chris Bailey-Kellogg	

Education

The University of Washington	Fall 2005 – Fall 2010
Ph.D. in Biomedical and Health Informatics	Seattle, WA
Awarded August 2010	
Advisor: Dr. Valerie Daggett	
Purdue University	Fall 2001 – Spring 2005
B.S. in Computer Science, Mathematics, and Biology (3 majors)	

Awards and Achievements

Travel Grant Award to OHBM 2013 Conference	Summer 2013
Student Paper Competition Finalist	Summer 2006
American Medical Informatics Association (AMIA) Conference	
National Library of Medicine Research Training Grant	Fall 2005 – Summer 2008
Fully funded 3 year training grant for graduate students in the field of biomedical and health informatics	
ARCS Foundation Top Future Scientist Fellowship	Fall 2005 – Summer 2008
Three year award given to a promising student from each science department (www.arcsfoundation.org)	
Hughes Bioinformatics Undergraduate Research Fellowship	Summer 2004
Advisor: Dr. Chris Bailey-Kellogg	
Grub Scholarship	Fall 2001 – Spring 2005
Fully funded 4-year scholarship awarded to one incoming freshman in the computer science department every 4 years.	

Academic Service

Faculty Senate Committee for Planning and Budgeting Student Representative, University of Washington	2009
Admissions Committee Student Member, University of Washington Division of Biomedical and Health Informatics	2009
Prospective Student Visit Day Coordinator Student Member, University of Washington Division of Biomedical and Health Informatics	2006-2008
Graduate and Professional Student Senate Executive Committee Member	2007-2009 2008

Software

Author of Dynamanal, an embedded real-time analysis engine for the Dynameomics protein simulation database (accessible at www.dynameomics.org).

Publications

Datta R, **Benson NC**, Prasad S, Jacobson SG, Cideciyan A, *et al.* (2014). A common mode of brain alteration in blindness. *Proc. Natl. Acad. Sci. U. S. A.* **In Progress**.

Benson NC, Butt OH, Brainard DH, Aguirre GK (2014) Correction of distortion in flattened representations of the cortical surface allows prediction of V1-V3 functional organization from anatomy. *PLoS Comput. Biol.* **10**(3): e1003538.

Benson NC, Manning JR, Brainard DH (2014) Unsupervised Learning of Cone Spectral Classes from Natural Images. *PLoS Comput. Biol.* **10**(6): e1003652.

Butt OH, **Benson NC**, Datta R, Aguirre GK (2013) The organization of spontaneous resting fluctuations in visual cortex of blind and sighted subjects. *J. Neurosci.* **33**(41):16209-19.

Benson NC, Butt OH, Datta R, Radoeva PD, Brainard DH, Aguirre GK (2012) The retinotopic organization of striate cortex is well predicted by surface topology. *Curr. Biol.* **22**(21): 2081-5.

Benson NC, Daggett V (2012) A comparison of methods for the analysis of molecular dynamics simulations. *J. Phys. Chem. B.* **116**(29): 8722-31.

Benson NC, Daggett V (2012) Wavelet Analysis of Protein Motion. *Int. J. Wavelets Multi. Inf. Process.* **10**: 1250040-59.

Benson NC, Daggett V (2012) A chemical group graph representation for efficient high-throughput analysis of atomistic protein simulations. *J. Bioinformatics Comput. Biol.* **0**(2): 1250008-24.

van der Kamp MW, Schaeffer RD, Jonsson AL, Scouras AD, Simms A, Toofanny RD, **Benson NC**, Anderson PC, Merkley ED, Rysavy S, Bromley D, Beck DAC, Daggett V (2010) Dynameomics: a comprehensive database of protein dynamics. *Structure* **18**: 423-435.

Benson NC, Daggett V (2009) Dynameomics: large-scale assessment of native protein flexibility. *Protein Sci.* **17**(12): 2038-50.

Simms AM, Toofanny RD, Kehl C, **Benson NC**, Daggett V (2008) Dynameomics data warehouse: Design of a computational lab workflow and scientific data repository. *Protein Eng. Des. Sel.* **21**(6): 369-77.

Benson NC, Whipple M, Kalet IJ (2006) A Markov model approach to predicting regional tumor spread in the lymphatic system of the head and neck. *AMIA Annu. Symp. Proc.* :31-5.

Conference Abstracts

Benson NC, Butt OH, Aguirre GK (2014) Spontaneous visual cortex activity predicts eccentricity and is related to receptive field size. Talk presented at the 14th Annual Vision Sciences Society (VSS) Meeting. 16-21 May.

Benson NC, Butt OH, Brainard DH, Aguirre GK (2013) Cortical surface structure predicts extrastriate retinotopic function. Poster presented at the 13th Annual Vision Sciences Society (VSS) Meeting. 9-15 May.

Benson NC, Brainard DH (2012) An unsupervised learning technique for typing cones in the retinal mosaic. Talk presented at the 12th Annual Vision Sciences Society (VSS) Meeting. 11-16 May.

Benson NC, Boxley S, Stambolian D, Brainard DH (2012) Contrast sensitivity at soft drusen in early age-related macular degeneration using fine-detail perimetry. Poster presented at the 2012 Annual Association for Research in Vision and Ophthalmology (ARVO) Meeting. 4-10 May.

Butt OH, **Benson NC**, Datta R, Aguirre GK (2012) V1 resting-state functional connectivity reflects polar angle and eccentricity both within and between hemispheres. Poster presented at the 12th Annual Vision Sciences Society Meeting. 11-16 May.

Benson NC, Butt OH, Datta R, Brainard DH, Aguirre GK (2011) A universal retinotopic mapping of V1 with respect to anatomy. Poster presented at the 11th Annual Vision Sciences Society (VSS) Meeting. 11-16 May

Butt OH, **Benson NC**, Datta R, Brainard DH, Aguirre GK (2011) Multi-focal and phase-encoded retinotopy compared. Poster presented at the 11th Annual Vision Sciences Society (VSS) Meeting. 11-16 May

Benson NC, Daggett V (2010) Determining the molecular basis of disease in single nucleotide polymorphism variants using wavelet analysis. Poster presented at the 54th Annual Biophysical Society Meeting. 20-24 Feb