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Position **University of Pittsburgh**
Assistant Professor, Department of Bioengineering. 1/07-
Member, Center for the Neural Basis of Cognition
Member, Center for Neuroscience at the University of Pittsburgh

Education **California Institute of Technology** 9/94 – 5/99
Ph.D. in Computation and Neural Systems
Thesis title: “Contributions of Parietal Cortex to Reach Planning”

University of Pennsylvania 9/89 – 8/94
M.S.E. in Computer and Information Science
B.S.E. in Computer Science and Engineering
B.A. in Philosophy
Minor in Cognitive Science

Research experience POSTDOCTORAL ASSOCIATE, STANFORD UNIVERSITY, DEPARTMENT OF ELECTRICAL ENGINEERING. 6/03-5/07
Research with Krishna V. Shenoy

POSTDOCTORAL ASSOCIATE, HOWARD HUGHES MEDICAL INSTITUTE
STANFORD UNIVERSITY SCHOOL OF MEDICINE, HOST INSTITUTION 6/99 – 5/03
Research with William T. Newsome

GRADUATE STUDENT, CALIFORNIA INSTITUTE OF TECHNOLOGY 9/94 – 5/99
Research with Richard A. Andersen

Awards **Burroughs Wellcome Fund Career Award in the Biomedical Sciences** awarded 2003
Project title: “Neural gating within the cerebral cortex during sensory-motor behavior”

Finalist for the Donald B. Lindsley Award in Behavioral Neuroscience 2000

Publications
Peer-reviewed journal articles
Buneo CA, **Batista AP**, Jarvis MR, Andersen RA. “Time-Invariant Reference Frames for Parietal Reach Activity” *Experimental Brain Research* 188(1):77-89 (2008).
Batista AP, Yu BM, Santhanam G, Ryu SI, Afshar A, Shenoy KV. “Cortical Neural Prosthesis Performance Improves When Eye Position is Monitored” *IEEE Transactions in Neural Systems and Rehabilitation Engineering* 16(1):24-31 February 2008.

Chestek CA*, **Batista AP***, Santhanam G, Yu BM, Afshar A, Cunningham JP, Gilja V, Ryu SI, Churchland M, Shenoy KV. “Single-neuron stability during repeated reaching in macaque premotor cortex” *Journal of Neuroscience* 27:40 (2007).
(*These authors contributed equally.)

Batista AP, Santhanam G, Yu BM, Ryu S, Afshar A, Shenoy KV. “Reference frames for reach planning in macaque dorsal premotor cortex” *Journal of Neurophysiology* 98:966-983 (2007).

Quian Quiroga R, Snyder LH, **Batista AP**, Andersen RA. "Movement intention is better predicted than attention in the posterior parietal cortex" *Journal of Neuroscience* **26**:3615–3620 (2006).

Horwitz GD, **Batista AP**, Newsome WT. "Direction-selective visual responses in macaque superior colliculus induced by behavioral training" *Neuroscience Letters* **366**: 315-319 (2004).

Horwitz GD, **Batista AP**, Newsome WT. "Representation of an abstract perceptual decision in macaque superior colliculus" *Journal of Neurophysiology* **91**: 2281-2296 (2004).

(Accompanied by Editorial Focus: JL Gold, "Through the looking glass" *Journal of Neurophysiology* **91**: 1936-1937 (2004).)

Shenoy KV, Meeker D, Cao S, Kureshi SA, Pesaran B, Buneo CA, **Batista AP**, Mitra PP, Burdick JW, Andersen RA. "Neural prosthetic control signals from plan activity" *Neuroreport* **14**: 591-596 (2003).

Buneo CA, Jarvis MR, **Batista AP**, Andersen RA. "Properties of spike train spectra in two parietal reach areas" *Experimental Brain Research* **153**: 134-139 (2003).

Buneo CA, Jarvis MR, **Batista AP**, Andersen RA. "Direct visuomotor transformations for reaching" *Nature* **416**: 632-636 (2002).

Cohen YE, **Batista AP**, Andersen RA. "Comparison of auditory and visual responses in the parietal reach region" *Neuroreport* **13**(4): 891-894 (2002).

Batista AP and Andersen RA. "The parietal reach region codes the next planned movement in a sequential reach task" *Journal of Neurophysiology*. **85**: 539-544 (2001).

Snyder LH, **Batista AP**, Andersen RA. "Saccade-related activity in the parietal reach region" *Journal of Neurophysiology*. **83**: 1099-1102 (2000).

Batista AP, Buneo CA, Snyder LH, Andersen RA. "Reach plans in eye-centered coordinates" *Science* **285**: 257-260 (1999).

(Accompanied by News Focus: M Barinaga, "The mapmaking mind" *Science* **285**: 189-912 (1999).)

Snyder LH, **Batista AP**, Andersen RA. "Change in motor plans, without a change in the spatial locus of attention, modulates activity in posterior parietal cortex". *Journal of Neurophysiology* **79**: 2814-2819 (1998).

Snyder LH, **Batista AP**, Andersen RA. "Coding of intention in the posterior parietal cortex" *Nature* **386**: 167-170 (1997).

(Accompanied by News & Views: MN Shadlen, "Look but don't touch, or vice versa" *Nature* **386**: 122-123 (1997).)

Review articles **Batista, AP**. "A computational basis to object?" *Neuron* **37**:189-190 (2003).

Batista AP. "Inner space: Reference frames" *Current Biology* **12**: R380-R383 (2002).

Batista AP and Newsome WT. "Visuo-motor control: Giving the brain a hand" *Current Biology* **10**: R145-R148 (2000).

Snyder LH, **Batista AP**, Andersen RA "Intention-related activity in the posterior parietal cortex: A review" *Vision Research* **40**: 1433-1441 (2000).

Andersen RA, Snyder LH, **Batista AP**, Buneo CA, Cohen YE. "Posterior parietal areas specialized for eye movements (LIP) and reach (PRR) using a common coordinate frame" *Novartis Foundation Symposium 218: Sensory guidance of movement* 109-128 (1998).

Book chapters Andersen RA, **Batista AP**, Snyder LH, Buneo CA, Cohen YE. "Programming to look and reach in the posterior parietal cortex" *The New Cognitive Neurosciences* Michael Gazzaniga, ed., 2nd edition. MIT Press (2000).

Andersen RA, **Batista AP**, Snyder LH, Buneo CA, Cohen YE. "Parietal coding of gaze and reach" Handbook of Brain Theory and Neural Networks Michael Arbib, ed. MIT Press (1999).

Andersen RA, **Batista AP**, Snyder LH, Buneo CA, Cohen YE. "Posterior parietal areas specialized for eye movements (LIP) and reach (PRR) using a common coordinate frame" Novartis Foundation Symposium 218: Sensory Guidance of Movement p. 109-128, Wiley, Chichester (1998).

Abstracts

Chestek CA, **Batista AP**, Yu BM, Santhanam G, Ryu S, Afshar A, Shenoy KV. "The relationship between PMD neural activity and reaching behavior is stable in highly trained macaques" *Society for Neuroscience Abstracts* **32**: 148.5 (2006).

Batista AP, Yu BM, Santhanam G, Ryu S, Afshar A, Shenoy KV. "Influence of eye position on end-point decoding accuracy in dorsal premotor cortex" *Society for Neuroscience Abstracts* **32**: 148.8 (2006).

Batista AP, Yu BM, Santhanam G, Ryu S, Afshar A, Shenoy KV. "Heterogeneous reference frames for reach planning in macaque PMd" *Neural Control of Movement Abstracts* #32 (2006).

Batista AP, Yu BM, Santhanam G, Ryu S, Afshar A, Shenoy KV. "Heterogeneous coordinate frames for reaching in macaque PMd" *Society for Neuroscience Abstracts* **31**: 363.12 (2005).

Buneo CA, **Batista AP**, Jarvis MR, Andersen RA. "Time-invariant spatial representations in the posterior parietal cortex" *Society for Neuroscience Abstracts* **31**: 288.5 (2005).

Batista AP, Yu BM, Santhanam G, Ryu S, Shenoy KV. "Coordinate frames for reaching in macaque dorsal premotor cortex (PMd)" *Society for Neuroscience Abstracts* **30**: 191.7 (2004).

Quian-Quiroga R, Snyder LH, **Batista AP**, Andersen RA. "Single-trial decoding of reach and saccade intentions in the posterior parietal cortex" *Society for Neuroscience Abstracts* **28**: 14.3 (2002).

Batista AP and Newsome WT. "Supplementary eye field activity precedes superior colliculus activity in a sensory decision-making task" *Society for Neuroscience Abstracts* **27**: 59.8 (2001).

Meeker D, Shenoy KV, Cao S, Pesaran B, Scherberger H, Jarvis M, Buneo CA, **Batista AP**, Kureshi SA, Mitra PP, Burdick JW, Andersen RA. "Cognitive control signals for prosthetic systems" *Society for Neuroscience Abstracts* **27**: 63.6 (2001).

Meeker D, Shenoy KV, Kureshi SA, Cao S, Burdick JW, Pesaran B, Mitra PP, **Batista AP**, Buneo CA, Gillikin B, Dubowitz D, Andersen RA. "Toward adaptive control of neural prosthetics by parietal cortex" NICE 2000.

Buneo CA, Jarvis MR, **Batista AP**, Mitra PP, Andersen RA. "Coding of reach variables in two parietal areas" *Society of Neuroscience Abstracts* **26**: 68.6 (2000).

Shenoy KV, Kureshi SA, Meeker D, Gillikin BL, Dubowitz DJ, **Batista AP**, Buneo CA, Cao S, Burdick J, Andersen RA. "Toward prosthetic systems controlled by parietal cortex" *Society for Neuroscience Abstracts* **25**: 152.19 (1999).

Jarvis M, Buneo CA, **Batista AP**, Andersen RA. "Representation of reach related variables in two parietal areas" *Society of Neuroscience Abstracts* **25**: 471.9 (1999).

Batista AP, Buneo CA, Snyder LH, Andersen RA. "The parietal reach region (PPR) employs a predominantly retinal reference frame which updates across saccades and encodes only the impending reach" *Society of Neuroscience Abstracts* **24**: 106.4 (1998).

Buneo CA, **Batista AP**, Andersen RA. "Frames of reference for reach-related activity in two parietal areas" *Society of Neuroscience Abstracts* **24**: 106.5 (1998).

Snyder LH, **Batista AP**, Andersen RA. "Spatially Aligned Saccade and Intended Reach Responses in Monkey Posterior Parietal Cortex" *Cognitive Neuroscience Society Abstract, Journal of Cognitive Neuroscience* supplement p.90 (1998).

Snyder LH, **Batista AP**, Andersen RA. “A change in motor intention, without a shift in attention, activates posterior parietal cortex in monkey” *Society for Neuroscience Abstracts* **23**: 122.4 (1997).

Snyder LH, **Batista AP**, Andersen RA. “Coding the intention for an eye or arm movement in posterior parietal cortex of monkey” *Society for Neuroscience Abstracts* **22**: 475.6 (1996).

Snyder LH, **Batista AP**, Andersen RA. “Neural activity in parietal cortex codes planned movements” *3rd Joint Symposium on Neural Computation Proceedings xviii* (1996).

Conference proceedings

Shenoy KV, Santhanam G, Ryu SI, Afshar A, Yu BM, Gilja V, Linderman, MD, Kalmar RS, Cunningham JP, Kemere CT, **Batista AP**, Churchland MM, Meng TH. “Increasing the Performance of Cortically-Controlled Prostheses” *Proceedings of the 28th IEEE EMBS Annual International Conference*, New York Aug 30-Sept 3, 2006.

Trainees supervised

Narayanan Krishnamurthy; Ph.D. student in Bioengineering, University of Pittsburgh 1/2007-
Daniel Bacher; Ph.D. student in Bioengineering, University of Pittsburgh 7/2007-
Jason Godlove; Ph.D. student in Bioengineering, University of Pittsburgh 8/2007-

Craig Lehocky; Undergraduate student in Bioengineering, University of Pittsburgh 1/2007-
William Lultschik; Undergraduate student in Bioengineering, University of Pittsburgh 6/2007-
Emily Basara; Undergraduate student in Bioengineering, University of Pittsburgh 5/2007-
Megan Heenan, Undergraduate student in Bioengineering, University of Pittsburgh 9/2007-
Aaron Hughes, Undergraduate student in Bioengineering, University of Pittsburgh . . . 1/2008-6/2008
(Currently Ph.D. candidate in Bioengineering, University of Georgia)

Faculty service

Bioengineering Coordinator, Medical Scientists Training Program. 2008-
Coordinator, Undergraduate Biosignals and Imaging Concentration. 2008-
Member, Bioengineering Neural Engineering Track Qualifying Exam Committee. 2007-
Member, Bioengineering Biosignals Track Qualifying Exam Committee. 2008
Undergraduate Adviser 2008-