

**NeuroTraq, Inc.**  
**BIOGRAPHICAL SKETCH**  
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NAME Bonnie Billard Punske		POSITION TITLE Research Assistant Professor of Medicine & Bioengineering, University of Utah; Principal Researcher, NeuroTraq, Inc.	
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EDUCATIONAL INSTITUTIONS	DEGREE	YEAR(s)	FIELD OF STUDY
University of Arizona, Tucson, AZ	B.S.	1986	Mechanical Engineering
University of Arizona, Tucson, AZ	M.S.	1989	Mechanical Engineering
University of North Carolina, Chapel Hill, NC	PhD	1997	Biomedical Engineering
University of Utah, Salt Lake City, UT	Post Doc	1997-1999	Cardiac Electrophysiology

**Positions**

1986-1989	Graduate Research Assistant, Department of Radiation Oncology, University of Arizona, Tucson, AZ
1989-1990	Propulsion Engineer, Program Manager, Naval Air Systems Command, Washington, DC
1990-1992	Research Specialist, Department of Biochemistry, University of North Carolina, Chapel Hill NC
1992-1996	Graduate Research Assistant, Division of Cardiology, Department of Medicine, University of North Carolina, Chapel Hill, NC
1997-1999	Postdoctoral Fellow, Nora Eccles Harrison CVRTI, University of Utah, Salt Lake City, Utah
1999-present	Research Assistant Professor, Department of Internal Medicine, University of Utah, Salt Lake City, Utah
2000-present	Adjunct Research Assistant Professor, Department of Bioengineering, University of Utah, Salt Lake City, Utah
2007-present	Principal Researcher, NeuroTraq Inc., Sandy, UT

**Professional/Other Affiliations:**

1986 – present	Tau Beta Pi Engineering Honor Society
1984-1987	American Society of Mechanical Engineers
1993 – present	Biomedical Engineering Society
1994 – present	Institute for Electrical and Electronics Engineers
1999-2000	Adjunct faculty position in Department of Computational Sciences and Education at Salt Lake Community College. Instructor, Quantitative Reasoning.
2000-present	University of Utah Medical School Admissions Committee Member
2000 – present	Referee, Heart Rhythm, Journal of Cardiovascular Electrophysiology, and IEEE Transactions in Biomedical Engineering, IEEE Transactions on Medical Imaging, Annals of Biomedical Engineering, Physiological Measurement, and American Journal of Physiology - Heart and Circulatory Physiology
2002-2004	American Heart Association Western States Affiliate Summer Undergraduate Research Program Selection Committee

**Honors:**

1985	Dean's Award, University of Arizona, Tucson, AZ
1986	Halbert Miller Memorial Scholarship, University of Arizona, Tucson, AZ
1986	Tau Beta Pi Engineering Honor Society, University of Arizona
1989	Naval Air Systems Command Performance Award
1994	First place poster competition, 2 <sup>nd</sup> Carolina Conference in Biomedical Engineering, Chapel Hill, NC

### **Selected Publications** (2003 – present)

- Punske BB**, Ni Q, Lux RL, MacLeod RS, Ershler PR, Dustman TJ, Allison MJ, Taccardi B. (2003). Spatial methods of epicardial activation time determination in normal hearts. *Ann Biomed Eng*, 31(7), 781-92.
- Taccardi B, **Punske BB**. (2004). Body Surface Potential Mapping. In Zipes D, Jalife J (Eds.), *Cardiac Electrophysiology: From Cell to Bedside* (pp. 803-811). Philadelphia: Saunders.
- Sachse F, Steadman B, B Bridge J, **Punske B**, Taccardi B. (2004). Conduction velocity in myocardium modulated by strain: measurement instrumentation and initial results. *Conf Proc IEEE Eng Med Biol Soc*, 5, 3593-6.
- B. Taccardi, B.B. Punske, and P. Colli-Franzone. (2004). Epicardial and endocardial electrical mapping: historical overview, state of the art and future prospects. *Biomedizinische Technik*, 48(2), 1-2.
- Punske BB**, Rossi S, Ershler P, Rasmussen I, Abel ED. (2004). Optical mapping of propagation changes induced by elevated extracellular potassium ion concentration in genetically altered mouse hearts. *J Electrocardiol*, 37 Suppl, 128-34.
- F. B. Sachse, G. Seemann, D. L. Weiß, B. Punske, and B. Taccardi. (2004). Accuracy of activation times detected in simulated extracellular electrograms. *Computers in Cardiology*, 31, 93-96.
- Punske BB**, Taccardi B, Steadman B, Ershler PR, England A, Valencik ML, McDonald JA, Litwin SE. (2005). Effect of fiber orientation on propagation: electrical mapping of genetically altered mouse hearts. *J Electrocardiol*, 38(4 Suppl), 40-4.
- Taccardi B, **Punske BB**, Sachse F, Tricoche X, Colli-Franzone P, Pavarino LF, Zabawa C. (2005). Intramural activation and repolarization sequences in canine ventricles. Experimental and simulation studies. *J Electrocardiol*, 38(4 Suppl), 131-7.
- MacLeod RS, Shome S, Stinstra J, **Punske BB**, Hopenfeld B. (2005). Mechanisms of ischemia-induced ST-segment changes. *J Electrocardiol*, 38(4 Suppl), 8-13.
- Yilmaz B, MacLeod RS, **Punske BB**, Taccardi B, Brooks DH. (2005). Venous catheter based mapping of ectopic epicardial activation: training data set selection for statistical estimation. *IEEE Trans Biomed Eng*, 52(11), 1823-31.
- Punske BB**. (2006). Cardiac resynchronization therapy: finding the true meaning of synchrony. *Heart Rhythm*, 3(3), 311-2.
- Valencik ML, Zhang D, **Punske B**, Hu P, McDonald JA, Litwin SE. (2006). Integrin activation in the heart: a link between electrical and contractile dysfunction? *Circ Res*, 99(12), 1403-10.
- Sutherland DR, Liang Q, Sohn K, Taccardi B, **Punske BB**. (2007). Experimental Epicardial Potential Mapping in Mouse Ventricles: Effect of Fiber Architecture. *Functional Imaging and Modeling of the Heart*, 4466, 260-268.
- Sohn K, Sutherland DR, Liang Q, **Punske BB**. (2007). Experimental Measures of the Minimum Time Derivative of the Extracellular Potentials as an Index of Electrical Activity During Metabolic and Hypoxic Stress. *Functional Imaging and Modeling of the Heart*, 4466, 250-259.
- Shome S, Lux RL, **Punske BB**, MacLeod RS. (October 2007). Ischemic Preconditioning Protects Against Arrhythmogenesis Through Maintenance of Both Active as well as Passive Electrical Properties. *J Electrocardiol*.