

## Curriculum Vitae Prof. Mathew E. Diamond

### Personal

Born 17 October, 1962. Married, 3 children. Nationality: Italy, USA

### Education

1984 Bachelor of Science in Engineering with High Distinction (top 5% of graduates),  
University of Virginia, USA  
1989 Ph.D. in Neurobiology, University of North Carolina, USA  
1989-91 Postdoctoral Researcher, Brown University, USA

### Faculty appointments

1991-94 Assistant professor, Vanderbilt University, USA  
1995-2000 Non-tenured Researcher, SISSA  
2000-06 Tenured associate professor, SISSA  
2006- Tenured full professor, SISSA

**SCIENTIFIC CV.** As head of the Tactile Perception and Learning Laboratory, my research aims at understanding the neuronal language of perception – how brain activity gives rise to sensation and how sensations gain meaning and lead to decisions. Our approach is to characterize perceptual performance in a behavioral task (1) and then to examine the neuronal activity that underlies the performance (2). Interpretation of neuronal activity requires us to develop new computational methods (3). In some cases animal experiments reveal a principle that seems so fundamental as to hold true in humans; in those cases we pursue parallel experiments in human psychophysics (4). We are also interested in applying the knowledge gained from biological observation to inspire bio-mimetic artefacts (5). A final interest is dissemination to students (6).

1. Adibi M *et al.* (2012) Behavioral study of whisker-mediated vibration sensation in rats. *Proceedings of the National Academy of Sciences* 109(3):971-976.
2. Safaai H *et al.* (2013) Coordinated population activity underlying texture discrimination in rat barrel Cortex. *The Journal of Neuroscience* 33(13):5843-5855.
3. Panzeri SI *et al.* (2014) Reading spike timing without a clock: Intrinsic decoding of spike trains. *Phil. Trans. R. Soc. B*, In Press.
4. Fassihi A *et al.* (2014) Tactile perception and working memory in rats and humans. *Proceedings of the National Academy of Sciences USA*, In Press.
5. Lepora NF, *et al.* (2012) Optimal decision-making in mammals: insights from a robot study of rodent texture discrimination. *Journal of The Royal Society Interface* 9(72):1517-1528.
6. Nicholls JG, *et al.* (2011) *From Neuron to Brain* (Sinauer, Sunderland, Massachusetts).