

# David R. Wozny

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## Education

University of California	Los Angeles, CA
PhD graduate student in NeuroEngineering Thesis Advisor: Ladan Shams, Ph.D.	2004-present 4.0/4.0
University of Pittsburgh	Pittsburgh, PA
Master of Science in Electrical Engineering Thesis Advisor: Patrick Loughlin, Ph.D.	12/1997 3.7/4.0
Bachelor of Science in Electrical Engineering <i>Magna cum laude</i> , Minor in Bioengineering	04/1996 3.6/4.0

## Publications

- Wozny, D.R., Seitz, A.R., Shams, L. (under review) Automatic associative learning of simple visual and auditory features. *Frontiers in Integrative Neuroscience*.
- Wozny, D.R., Beierholm, U., Shams, L. (2008) Human trimodal perception follows optimal statistical inference. *Journal of Vision*, 8(3):24, 1-11.
- Wozny, D.R., Human Postural Control Model. (1997) Master's thesis, University of Pittsburgh.
- Baumann, S.B., Wozny, D.R., Kelly, S.K., Meno, F.M. (1997) The electrical conductivity of human cerebrospinal fluid at body temperature, *IEEE Transaction on Biomedical Engineering*, vol. 44(3), pp. 220-223.

## Refereed Abstracts of Conference Presentations

- Wozny, D., Seitz, A., Shams, L. (2008) Learning associations between simple visual and auditory features. Vision Sciences Society 2006 Annual Meeting, Naples, Florida. *Journal of Vision*, 8(6):171.
- Shams, L., Beierholm, U., Wozny, D. (2008) Human trimodal perception follows optimal statistical inference. International Multisensory Research Forum, Hamburg, Germany.
- Wozny, D., Seitz, A., Shams, L. (2007) Adaptation to artificial associations between low-level visual and auditory features. International Multisensory Research Forum, Sydney, Australia.
- Wozny, D., Beierholm, U., Körding, K., Shams, L. (2007) Integration of visual-auditory-tactile information is Bayes-optimal. IGERT Student Research Symposium, Carnegie Mellon University, Pittsburgh, PA.
- Wozny, D., Shams, L. (2006) Integration and segregation of visual-tactile-auditory information is Bayes-optimal. Vision Sciences Society 2006 Annual Meeting, Sarasota, Florida. *Journal of Vision*, 6(6):176.

## Academic Honors & Awards

2009	UCLA Graduate Division Dissertation Year Fellowship
2008	UCLA Neuroimaging Training Grant
2008	Graduate Summer School: Mathematics in Brain Imaging, UCLA Institute for Pure and Applied Mathematics
2007	International Multisensory Research Forum (IMRF), Graduate Student Travel Award
2007	Graduate Summer School: Probabilistic Models of Cognition, UCLA Institute for Pure and Applied Mathematics
2006-2007	UCLA Graduate Research Mentorship Fellowship

2006	National Science Foundation Graduate Research Fellowship, Honorable Mention
2004-2006	National Science Foundation, Integrative Graduate Education and Research Traineeship (IGERT)
1997	University of Pittsburgh Graduate Research Assistantship

## Research Experience

### 07/05–present Visual and Multisensory Perception Lab, UCLA

Researching the integration of human sensory systems (vision, audition, and haptic systems) to understand the mechanisms and principles of human perception. Orchestrating a multi-disciplined approach that utilizes psychophysics, statistical modeling, EEG and fMRI to discover the general theoretical rules governing the integration of information from different sensory modalities. Recent work has shown that human multi-sensory integration and segregation tactics closely resemble a Bayesian ideal observer model, while currently investigating unsupervised learning strategies of cross-sensory recalibration.

### 01/97–12/97 UPMC Division of Balance Disorders – Pittsburgh, PA

Researched the interaction of human sensory systems (vision, vestibular, and proprioceptive systems) towards maintaining postural control. Control algorithms and time-frequency analysis were used in developing computer simulations to explain the phenomena observed in postural sway data of control subjects vs. those with balance disorders.

### 05/95-04/96 UPMC Department of Neurological Surgery – Pittsburgh, PA

Assisted in designing and constructing instrumentation to measure the bioelectric impedance of brain tissue. The impedance measurements were used in the construction of a Finite Element Model of the head to improve source localization from EEG data in efforts to localize sources of epilepsy and tumors noninvasively.

## Teaching Experience

Spring 2008	Guest Lecturer, PSYCH 100A “Psychological Statistics”, UCLA
Winter 2008	Guest Lecturer, PSYCTRY 284A “Principles of Neuroimaging”, UCLA
Fall 2007	Teaching Assistant, NEUROSC M101A, “Cellular & System Neuroscience”, UCLA
Fall 1996	Teaching Assistant, ECE 0031 “Linear Circuits 1”, U. of Pittsburgh

## Professional Activities

Project Brainstorm Board Member, K-12 science outreach program, UCLA Brain Research Institute  
 Engineering Graduate Student Association Board Member (Webmaster), 2004-2006, UCLA  
 Society for Neuroscience Student Member, UCLA  
 Vision Sciences Society Student Member, UCLA  
 International Multisensory Research Forum Student Member, UCLA  
 Bridge Correspondent of Eta Kappa Nu (EE Honor Society), U. of Pittsburgh  
 Department Representative Engineering Graduate Student Organization (EGSO), U. of Pittsburgh  
 Golden Key National Honor Society Member, U. of Pittsburgh  
 IEEE Student Member, U. of Pittsburgh

## Technology Experience

Matlab, FSL, Java, Perl, C, KSH, HTML, JavaScript, XML, JSP, Servlets, JDBC, EJB, Web Services, RMI, JNDI, SQL, Simulink, Analyze, BEA WebLogic, Tomcat, Documentum WCM, Oracle, SQLServer

## Industry Experience

02/98-06/04                      **Manager**                      **Braun Consulting – New York, NY**

Provided full lifecycle implementations of Internet related projects for Fortune 500 companies. Progressed from a Web Developer to a Systems Architect/Project Manager, delivering a wide range of customer-centric and internal based applications. Client negotiations, meticulous project planning (\$250,000 on average), and on-time quality product delivery were key factors of success.

Primary responsibilities and areas of expertise include:

- Object-Oriented design
- Systems architecture
- Application development
- Web Services
- Taxonomy design
- Data modeling and transactional systems
- Time and resource estimations
- Project planning and task distribution
- Requirement gathering
- System deployment and support
- Project documentation

### **Client Projects**

10/01-06/03                      *Pfizer, Inc.*                      *New York, NY*

- Managed 4-5 member teams in designing, implementing and maintaining a content management portal for their global marketing teams, using BEA/Documentum technology
- Implemented single-sign-on solutions across their intranet portals
- Created a custom content driven news reporting application for chief executive officers

05/01-08/01                      *AT&T Broadband*                      *Denver, CO*

- Developed a custom Intranet application using JSP/servlet technology, which provided reporting and maintenance capabilities to the client's data repository.
- Responsible for Intranet development, project coordination, and task distribution.

09/00-04/01                      *Heritage Environmental*                      *Indianapolis, IN*

- Gathered client requirements for a B2B internet project
- Developed the system using JSP/servlet technology running a Weblogic application server
- Managed technical team in developing the system using Braun Consulting JAVA framework and methodologies

06/00-09/00                      *BidBuyBuild.com*                      *Chicago, IL*

- Gathered client requirements for a B2B internet project
- Developed the system using JHTML/servlet technology running a MOAI application server
- Responsible for task distribution among team members

01/99-04/00                      *Motorola, Inc.*                      *Schaumburg, IL*

- Built a custom intranet application to manage internal recruitment process flow of applicants
- Developed the system using a JAVA based object oriented framework accessed by a NetDynamics application server
- Designed the Oracle transactional database accessed by the application server
- Gathered client requirements and became the technical lead in developing the system

03/98-12/98                      *S.C. Johnson*                      *Racine, WI*

- DBA for an Oracle Express Database residing on a UNIX platform
- Modified data-loader scripts written in PERL and Express
- Administrator of OLAP client/server software package to access database
- Gather client requirements and lead weekly status report meetings