

CURRICULUM VITAE

Raymond M. Stanley

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EDUCATION

- 2006 – Present Georgia Institute of Technology
Currently completing requirements for a Ph.D. in Engineering
Psychology
- 2003 – 2006 Georgia Institute of Technology
Degree: Masters of Science in Engineering Psychology
- 1999 – 2003 Denison University
Degree: Bachelor of Arts in Psychology
Cum Laude with Honors

MANUSCRIPTS IN PROGRESS

Stanley, R.M., and Walker, B.N. (2008). Toward adapting spatial audio displays for use with bone conduction: Cancellation of bone conducted and air-conducted sound waves. Manuscript submitted for publication to peer-reviewed journal.

PUBLICATIONS, PRESENTATIONS, & TECHNICAL REPORTS

Stanley, R.M., & Walker, B.N. (2008). Towards a transfer function used to adjust audio for bone-conduction transducers. *Proceedings of the 155th meeting of the Acoustical Society of America*, 29 June-4 July 2008, Paris, France.

Walker, B. N., **Stanley, R. M.**, Przekwas, A., Tan, X. G., Chen, Z. J., Yang, H. W., Wilkerson, P., Harrand, V., Chancey, C., & Houtsma, A. J. M. (2007). High fidelity modeling and experimental evaluation of binaural bone conduction communication devices. *Proceedings of the 19th International Congress on Acoustics (ICA 2007)*, 2-7 September 2007, Madrid, Spain.

Przekwas, A., Tan, X., Yang, H., Harrand, V., Wilkerson, P., Walker, B. N., & **Stanley, R.M.** (2007). High-fidelity modeling tools for bone conduction communication systems. *Final Report for US Army STTR Phase I Project, submitted to the Army Research Office*.

Stanley, R.M. (2006). *Toward Adapting Spatial Audio Displays For Use With Bone Conduction: The Cancellation of Bone-conducted and Air-conducted Sound*

Waves. Master's thesis, Georgia Institute of Technology, Atlanta.

Stanley, R.M., & Walker, B.N. (2006). Lateralization of Sounds Using Bone Conduction Headsets. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting (50)*.

Eriksdottir, E., Lindsay, J., Nees, M., & **Stanley, R.M.** (2006). Auditory Device-driven Menu Navigation. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting (50)*.

Folds, D.J., Blunt, C., & **Stanley, R.M.** (2005). Training for rapid interpretation of voluminous multimodal data. Technical report prepared at GTRI for the Army Research Institute.

Folds, D.J., Blunt, C., & **Stanley, R.M.** (2005). An investigation of the elevation illusion in virtual 3D audio displays. Technical report prepared for IRAD at GTRI.

Stanley, R.M. (2005). Evaluation of headphone alternatives: What questions to ask, and how to best answer them? *Student Consortium Presentation, The Eleventh International Conference on Auditory Display*.

Walker, B. N., & **Stanley, R.M.**, & Lindsay, J. (2005). Task, User Characteristics, and Environment Interact to Affect Mobile Audio Design. *The 3rd International Conference on Pervasive Computing*.

Walker, B. N., & **Stanley, R.M.** (2005). Thresholds Of Audibility For Bone-Conduction Headsets. *Proceedings of the Eleventh International Conference on Auditory Display*.

Walker, B. N., & **Stanley, R.M.**, Iyer, N., Simpson, B.D., & Brungart, D.S. (2005). Evaluation of Bone-Conduction Headsets for Use in Multitalker Communication Environments. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting (49)*.

Walker, B. N., & **Stanley, R.M.** (2004). Eye movement and reaction time are both important in assessment of dialog box usability. *Proceedings of the of the Human Factors and Ergonomics Society Annual Meeting (48)*, pp. 798 – 803.

Stanley, R.M., & Matthews, N. (2004). A comparison of cues for auditory motion judgments. *Cognitive Neuroscience Society Abstracts*, pp. 139, C131.

Stanley, R.M. & Matthews, N. (2003). Invalid Cues Impair Auditory Motion sensitivity, *Perception*, 32(6), 731-740.

Stanley, R.M., & Matthews, N. (2003). Invalid Cues Impair Auditory Motion sensitivity. *Cognitive Neuroscience Society Abstracts*, pp. 117, C277.

CURRENT RESEARCH ACTIVITIES

Current Research Project

- Conducting empirical tests of speech intelligibility through bone conduction, in collaboration with researchers developing physical modeling of the bone-conduction hearing system.

Degree Progress

- Dissertation successfully proposed, programming dissertation studies.

Classwork

- Taking graduate seminar on vision.

Writing

- Revising manuscripts for publication based on previous research.

HUMAN FACTORS IN DESIGN

Energy Consumption Interface (Spring 2008)

- Acted as human factors specialist on interdisciplinary team designing an interface to help home dwellers to become aware of and reduce their energy consumption.
- Practiced the following engineering psychology methods: mock-up and iterative design, user testing, task analysis, heuristic usability analysis, making design recommendations.

FAA Airport Design Competition: Runway Safety/Incursion Challenge (January 2007-May 2007)

- Acted as Human Factors Consultant on interdisciplinary team designing interfaces to reduce runway incursions.
- Practiced the following engineering psychology methods: user observation and survey, task analyses, mock-up and iterative design.
- Experience with aviation personnel and environments, including control tower visits and high-fidelity flight simulation.
- Prototyped Interfaces based on these methods and knowledge of human information processing.
- Collaboration with industry partners for initial design planning, subject matter experts, task analyses, and a Red Team Review.

Music Navigation Interface (January 2007 – May 2007)

- Acted as human factors specialist on group project to create an interface for managing the categorization and playback of large digital collections of music.
- Based on user needs, came up with paradigm and interface for extracting information about their categorization of music from user.
- Design solution had users assign spatial coordinates to music in a geographical representation, and had users take a “voyage” through this representation to play music.

Sound Design for Unmanned Aerial Vehicles (July 2004 - August 2004)

- Designed sounds to communicate status of engine, threats, and weapons in multiple unmanned aerial vehicles traversing through virtual 3D auditory space.
- Used knowledge of how stream segregation, masking, and other hearing processes work to guide design of sounds.
- Developed sounds with FL Studio, SoX, and Unix Bash scripts.

Web Usability Analysis (March 2004)

- Provided heuristic evaluation of website, seniorsonthemove.org, with a team of Human Factors and Ergonomics Society members.
- Evaluation culminated in specific design change recommendations to make website easier for older adults to use and understand.

PROFESSIONAL HISTORY

Research Assistant, Georgia Institute of Technology (December 2006 – present)

Duties included:

- Research Activities: Literature reviews, computer programming, data analysis, production of research writeups.
- Supervising undergraduate and graduate assistants.
- Organizing of lab presentations.

Lab Instructor / Teaching Assistant for Research Methods (August 2006 – December 2006)

Duties included:

- Generating lab activities and materials
- Lecturing and the communication of complex material to students
- Management of classroom environment
- Grading assignments (papers, homework, presentations), and providing feedback to guide future work
- Gradekeeping

Research Assistant, Georgia Institute of Technology (December 2005 – May 2006)

Duties included:

- Research Activities: Literature reviews, programming experiments, advanced sound measurement apparatus setup, running participants, data analysis, writeups.
- Supervising undergraduate assistants
- Organizing Lab Presentations

Lab Instructor / Teaching Assistant for Research Methods (August 2005 – December 2005)

Duties Included:

- Generating lab activities and materials
- Lecturing and the communication of complex material to students

- Grading assignments (papers, homework, presentations), and providing feedback to guide future work
- Gradekeeping

Research Assistant, Georgia Tech Research Institute (May 2004 – August 2004)

Research Projects:

- The effect of training and cognitive biases on rapid decision-making in a command center context
 - Wrote final report, which involved consolidation of experiment documentation, a literature review, interpretation of results, and discussion of 5 experiments.
- Audio Elevation Illusion
 - Contributed to final report, which involved literature review, interpretation of results, and discussion of experiment.
- UAV Sound Design
 - Designed sounds to communicate status of unmanned aerial vehicles.

Research Assistant, Georgia Institute of Technology (August 2004 – May 2005)

Duties included:

- Research Activities: Literature reviews, programming experiments, running participants, data analysis, writeups.
- Organizing Lab Presentations

Research Assistant, Georgia Tech Research Institute (May 2004 – August 2004)

Research Projects:

- The effect of training and cognitive biases on rapid decision-making in a command center context.
 - Operationalized experimental conditions and generated scenarios.
 - Developed and implemented more features of stimuli hypothesized to have an effect on decision-making.
 - Created, collected, converted, and edited video, images, text, graphs, and audio recordings.
 - Funding Agent: Army Research Institute
- Accessibility Guideline Database
 - Identified, reviewed, and entered accessibility guidelines from sources including sections 508 and 255 of federal accessibility amendments, as well as EITAAC, WC3, and other literature.
 - Funding Agent: Ricoh, Pitney Bowes
- Glucose Tablet Supplements
 - Researched and generated report on candidates for glucose tablet ingredients that would improve blood sugar level stability.
 - Funding Agent: Internal Research and Development (IRAD)

Teaching Assistant for Engineering Psychology (January 2004 – May 2004)

Duties Included:

- Attending class regularly

- Develop in-class activities and project descriptions
- Evaluated students' understanding of material in test responses and projects
- Gradekeeping

Teaching Assistant for Engineering Psychology (August – December 2003)

Duties included:

- Attending class regularly
- Grade homework assignments
- Proctor and grade exams
- Gradekeeping

Teaching Assistant for General Psychology (August – December 2003)

Duties included:

- Proctor and grade exams
- Review exams with students
- Gradekeeping
- Search for in-class demonstrations

Research Assistant, Georgia Institute of Technology (July – August 2003)

Duties included:

- Running Participants
- Coding in Java
- Organizing lab space and taking inventory

Psychology Tutor, Denison University (August 2002 – May 2003)

Duties Included:

- Teaching students about concepts, skills, and theories relevant to Introductory Psychology and Sensation & Perception.

AWARDS/HONORS

NSF ICAD 2008 Thinktank Scholar

- Awarded travel funds to discuss dissertation topic with experts in the field at the International Conference for Auditory Display conference in Paris, France.

NSF ICAD 2005 Thinktank Scholar

- Awarded travel funds to discuss research ideas with experts in the field at the International Conference for Auditory Display conference in Limerick, Ireland.

FELLOWSHIP APPLICATIONS

Stanley, R.M. (2006). Top-Down and bottom-up approaches to spatial audio with bonephones. NIDDR RERC on Low Vision and Blindness.

Stanley, R.M. (2005). Evaluation of headphone alternatives: What questions to ask, and how to best answer them? Student Consortium at ICAD sponsored by NSF.

Stanley, R.M. (2004). Improving Performance with Sonification: Interactions in Context and Training. National Science Foundation Graduate Fellowship.

Stanley, R.M. (2004). Generating a set of sonification parameters that produce optimal performance for tactical tasks and environments, Naval Research Enterprise Intern Program.

Stanley, R.M. (2004). Sonification of real-time vehicle data: The effect of data sets, tasks, and mappings, National Defense Science and Engineering Graduate Fellowship.

Stanley, R.M. (2003). Training and context in Sonification: Data set complexity, mappings, and training styles, National Science Foundation Graduate Fellowship.

PROFESSIONAL ACTIVITIES

Invited Talks on Bone Conduction Program of Research (November 2006 – February 2007)

- U.S. Army, Fort Rucker, Alabama (November 15, 2006)
- U.S. Army, Aberdeen Proving Grounds (February 25, 2007)

HFES Student Chapter Officer: Webmaster (August 2006 – May 2007)

- Maintained HFES student chapter website

Social Psych club (November 2005)

- Club within Psychology department for doing community service.
- Participated in “GT outdoors” outing – rodent desecration and cabin demolition.

Disability/Diversity Days at GT

- Demonstrated Assistive Technologies from our lab.

GVU Demo Day

- Demonstrated bonephones research to professionals from academia and industry.

New Student Activities 2006 (March 2006)

- Committee membership for recruitment weekend - “Miscellaneous” committee.
- Grad Question and Answer at August orientation.

Treasurer/VP, HFES Student Chapter (August 2004 – May 2005)

- Collected dues, organized reimbursements for activity expenses.

Recruitment Weekend 2005 Activities (March 2005)

- Driver Friday and Saturday.
- Lead gift basket committee.

Master of Ceremonies, Engineering Psychology Colloquim 2005

- Organized and lead “5-minute madness” student presentation session.

Member, HFES Georgia Tech Student Chapter (August 2003 – May 2004)

- Activities
 - Helped develop and deliver interactive presentations to 3rd-5th graders about user-centered design in celebration of National Ergonomics Month.
 - Web usability evaluation

Student Representative (September 2003 – April 2004)

- Served as first-year student representative at faculty meetings.

Student Member of Denison University Human Subjects Approval Board (September 2001 – May 2002)

- Evaluated ethical merit and gave feedback on submitted research proposals.

RELEVANT COURSEWORK

Graduate:

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| • Research Design | • Multivariate Statistics |
| • Statistics I: ANOVA | • Cognitive Psychology |
| • Engineering Psychology I: Methods | • Biopsychology |
| • Statistics II: Regression | • Human Abilities |
| • Engineering Psychology II: Displays & Controls | • Biomechanics |
| • Sensation and Perception | • Assistive Technologies Seminar |
| • Professional Problems | • Psychomotor Skills |
| | • Teaching Practicum |
| | • Computer Audio |

Undergraduate:

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| • Research Methods | • Physiological Psychology lecture |
| • Child & Adolescent Development lecture and lab | • Perceptual Learning Seminar |
| • Sensation and Perception lecture and lab | • Statistics for Behavioral Sciences |
| | • History & Systems |
| | • Physics of Sound |

COMPUTER SKILLS

- Matlab
- SPSS
- Adobe Illustrator
- Unix and bash scripting
- SoX (unix-based sound development and editing program)
- SuperCollider (SmallTalk-based sound synthesis)
- Microsoft Excel
- Microsoft Access

- Visual Basic for Applications
- E-Prime
- Digital signal processing (Fourier analysis and filtering)