

NICHOLAS A. GIUDICE, PhD



CURRICULUM VITAE

University of Maine
Spatial Informatics Program
School of Computing & Information Science
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EDUCATION AND TRAINING

2005–2008 Postdoctoral Fellow, Psychological and Brain Sciences: Cognition, Perception, and Cognitive Neuroscience Program
Sponsor: Prof. Jack M. Loomis
University of California, Santa Barbara (UCSB)

1998–2004 Ph.D., Psychology: Cognitive and Biological Program
Advisors: Prof. Gordon E. Legge and Prof. Herbert L. Pick
University of Minnesota, Twin Cities (UMN)

1993–1997 B.A., (Magna Cum Laude), Psychology and Philosophy
Providence College (PC)

POSITIONS AND AFFILIATIONS

Professional Positions

2011–Present Assistant Professor, Spatial Informatics Program: School of Computing & Information Science, University of Maine (UMaine)

2008–Present Director, Virtual Environment and Multimodal Interaction Laboratory (VEMI Lab), UMaine

2008–2011 Assistant Professor, Department of Spatial Information Science and Engineering (SIE), UMaine

Cooperative Appointments

2011–Present Intermedia MFA, UMaine

2009–Present Department of Psychology, UMaine

2008–Present National Center for Geographic Information and Analysis (NCGIA), UMaine

RESEARCH INTERESTS

Multimodal Spatial Cognition: Comparing spatial learning, updating, and wayfinding behavior within and between modalities (3D sound, touch, vision, and spatial language).

Functional Equivalence of Spatial Representations: Researching whether modality-specific encoding leads to amodal representations in memory equally accessible to supporting action.

Environmental Learning With and Without Vision: Developing multimodal displays to support seamless navigation of indoor and outdoor environments (real and virtual).

Neurocognitive Engineering: Combining perceptual, cognitive neuroscientific, and human factors principles for theoretically motivated interface design.

COMPETITIVE GRANTS AND RESEARCH SUPPORT

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| 2011–2013 | NIDRR Phase II SBIR grant, H133S100049, “Indoor Route Following Tool for the Blind,” researching accessible indoor navigation systems (N.A. Giudice, UMaine PI; with Koronis Biomedical Technologies, PI, Minneapolis, MN) |
| 2011-2012 | UMaine CLAS Undergraduate Research and Creative Activity Fellowship, “Virtual simulations of age-related visual impairment” (N.A. Giudice, PI) |
| 2011-2012 | UMaine CLAS Undergraduate Research and Creative Activity Fellowship, “Visual Augmentation for Aging and Navigation” (N.A. Giudice, PI) |
| 2011-2012 | Temple University Replication Grant: Ensuring Higher Educational Opportunity for All UMaine students (N.A. Giudice, collaborator) |
| 2010–2014 | NSF grant CDI-1028895, “Perception of Indoor Scene Layouts by Machines and Visually Impaired Users,” studying automated conversion of visual images into a common spatial format suitable for linguistic output (N.A. Giudice, UMaine co-PI; with K. Beard, UMaine (PI); R. Moratz, UMaine; L.J. Latecki, Temple University; and K. Daniilidis, UPenn) |
| 2010 | UMaine Faculty Research award 5252980-13, for purchasing augmented reality hardware (N.A. Giudice, PI) |
| 2009–2012 | NSF technology supplement CDI-0936008 (N.A. Giudice, PI) |
| 2009–2012 | NSF grant IIS-0916219, “Information Integration and Human Interaction for Indoor and Outdoor Spaces,” researching formal models and user interactions for seamless navigation of OI spaces (N.A. Giudice, Co-PI; with M. Worboys, UMaine, PI) |
| 2009–2011 | NIH grant R01-EY016817, “Multimodally encoded spatial images in sighted and blind,” researching functional equivalence and amodal spatial representations (N.A. Giudice, UMaine PI; with J.M. Loomis, UCSB, PI; and R.L. Klatzky, CMU) |
| 2009–2011 | NIH grant EY017228-02A2, “Indoor Personal Navigation System for the Blind using Augmented GPS,” researching accessible indoor GPS technology (N.A. Giudice, UMaine PI; with Koronis Biomedical Technologies, PI, Minneapolis, MN) |
| 2008–2012 | NSF grant CDI-0835689, “Cyber Enhancement of Spatial Cognition for the Visually Impaired,” researching a non-visual indoor navigation system (N.A. Giudice, UMaine PI; with K. Daniilidis, UPenn, PI; S. Roumeliotis, UMN; and R. Manduchi, UCSC) |

- 2008–2009 NSF grant BCS-0745328, “Spatial Images from Vision, Touch and Hearing,” researching functional equivalence and amodal spatial representations (N.A. Giudice, UMaine PI; with J.M. Loomis, UCSB, PI; and R.L. Klatzky, CMU)
- 2008 Brain Imaging Center, seed funding for neuroimaging project (N.A. Giudice, Co-PI; with J.M. Loomis, UCSB, PI; and T. Wolbers, UCSB)
- 2005–2008 NIH postdoctoral NRSA grant EY-015963, “Spatial Learning with Multiple Sensory Modalities,” researching multimodal spatial cognition (N.A. Giudice, PI)
- 2001–2004 Visual Neuroscience pre-doctoral training grant 5T32-EY07133 (Graduate Trainee)
- 2002–2003 NIH grant F32-EY015963-01 (Graduate Research Assistant)
- 2002–2007 Multi-institution NIDRR grant H133A011903, researching indoor/outdoor wayfinding technologies for the blind (Graduate Research Assistant and Collaborator)
- 2002 Center for Cognitive Sciences mini-research grant (Graduate Trainee)
- 2001 NIH Center for Cognitive Sciences fellowship T32-HD07151 (Graduate Trainee)
- 1998–2000 NSF Vision and Motor Control fellowship GER-9454163 (Graduate Trainee)
- 1998 UMN graduate school fellowship (Graduate Trainee)

PUBLICATIONS

(Most publications are available electronically at <http://www.vemilab.org/publications>)

Books and Edited Volumes

M.J. Egenhofer, N.A. Giudice, R. Moratz and M.F. Worboys (Eds.) (2011). Spatial Information Theory. Proceedings of COSIT '11. Lecture Notes in Computer Science, Vol. 6899. Springer, Berlin. ISBN: 978-3-642-23195-7

Peer-Reviewed Journal Articles

Kelly, J.W., Avraamides, M.N., & Giudice, N.A. (in press). Haptic experiences influence visual memories: Reference frames during multimodal spatial learning. *Psychonomic Bulletin & Review*.

Wolbers, T.*, Loomis, J.M., Klatzky, R.L., Wutte, M., & Giudice, N.A.* (2011). Modality Independent Coding of Spatial Layout in the Human Brain. *Current Biology*. 21(11), 984-989. (* equal contribution of authors & corresponding author)

Giudice, N.A., Betty, M.R., & Loomis, J.M. (2011). Functional Equivalence of Spatial Images from Touch and Vision: Evidence from Spatial Updating in Blind and Sighted Individuals. *Journal of Experimental Psychology: Learning, Memory, and Cognition*. 37(3), 621-634. (corresponding author)

- Wolbers, T., Zahorik, P., & Giudice, N.A. (2011). Decoding the Direction of Auditory Motion in Blind Humans. *Neuroimage, special issue on Multivariate Decoding & brain reading*, 56(2), 681-687. (corresponding author)
- Giudice, N.A., Bakdash, J.Z., Legge, G. E., & Roy, R. (2010). Spatial Learning and Navigation Using a Virtual Verbal Display. *ACM Transactions on Applied Perception*, 7(1), 3:1-3:22 (Article 3). (corresponding author)
- Giudice, N.A., Klatzky, R. L., & Loomis, J.M. (2009). Evidence for Amodal Representations After Bimodal Learning: Integration of Haptic-Visual Layouts into a Common Spatial Image. *Spatial Cognition & Computation*, 9(4), 287-304. (corresponding author)
- Kalia, A., Legge, G.E., & Giudice, N.A. (2008). Learning Building Layouts with Non-Geometric Visual Information: The Effects of Visual Impairment and Age. *Perception*, 37(11), 1677-1699.
- Klatzky, R.L., Giudice, N.A., Tietz, J., Marston, J.R., Golledge, R.G., & Loomis, J.M. (2008). An N-Back Task Using Vibrotactile Stimulation with Comparison to an Auditory Analogue. *Behavior Research Methods*, 40(1), 367-372.
- Giudice, N.A., Bakdash, J.Z., & Legge, G.E. (2007). Wayfinding with Words: Spatial Learning and Navigation Using Dynamically-Updated Verbal Descriptions. *Psychological Research*, 71(3), 347-358. (corresponding author)
- Klatzky, R.L., Marston, J.R., Giudice, N.A., Golledge, R.G., & Loomis, J.M. (2006). Cognitive Load of Navigating Without Vision When Guided by Virtual Sound Versus Spatial Language. *Journal of Experimental Psychology: Applied*, 12(4), 223-232.

Book Chapters and Refereed Conference Proceedings

- Loomis, J.M., Klatzky, R.L., & Giudice, N.A. (in press). Sensory substitution of vision: Importance of perceptual and cognitive processing. R. Manduchi & S. Kurniawan (Eds). *Assistive Technology for Blindness and Low Vision*. CRC Press.
- Long, R.G.* , & Giudice, N.A.* (2010). Establishing and Maintaining Orientation for Orientation and Mobility. In B.B. Blasch, W.R. Wiener, & R.W. Welsh (Eds.), *Foundations of Orientation and Mobility*, 3rd Edition (Vol. 1, pp. 45-62). New York: American Foundation for the Blind.
(* equal contribution of authors & corresponding author)
- Giudice, N.A., & Tietz, J. (2008). Learning with Virtual Verbal Displays: Effects of Interface Fidelity on Cognitive Map Development. In C. Freksa, N. Newcombe, P. Gärdenfors, & S. Wölfl (Eds.), *Spatial Cognition VI: Lecture Notes in Artificial Intelligence* (Vol. 5248, pp. 121-137). Berlin: Springer. (corresponding author)
- Giudice, N.A., & Legge, G.E. (2008). Blind Navigation and the Role of Technology. In A. Helal, M. Mokhtari, & B. Abdulrazak (Eds.), *Engineering Handbook of Smart Technology for Aging, Disability, and Independence* (pp. 479-500).: John Wiley & Sons. (corresponding author)
- Riehle, T.H., Lichter, P., & Giudice, N.A. (2008). An Indoor Navigation System to Support the Visually Impaired. *Proceedings of the 30th Annual IEEE Engineering in Medicine and Biology Conference*. (Vol. 2008, pp. 4435-4438). August, Vancouver, Canada. (corresponding author)

Giudice, N.A., Marston, J.R., Klatzky, R.L., Loomis, J.M., & Golledge, R.G. (2008). Environmental Learning without Vision: Effects of Cognitive Load on Interface Design. *Proceedings of the 9th International Conference on Low Vision (vision 08)*. July, Montreal, Canada. (corresponding author)

Tjan, B.S., Beckmann, P.J., Roy, R., Giudice, N.A., & Legge, G.E. (2005). Digital Sign System for Indoor Wayfinding for the Visually Impaired. *Proceedings of the 2005 IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR) – Workshops*. (Vol. 3, pp. 30A). San Diego, CA.

Submitted Manuscripts

Giudice, N. A., Klatzky, R. L., Bennett, C. R., & Loomis, J. M. (submitted). Combining Locations from Working Memory and Long-Term Memory into a Common Spatial Image. (corresponding author)

Giudice, N.A., McHugh, B., & Miyanohara, M. (submitted). Haptic Map Learning: Effects of Display Orientation on the Acquisition and Transfer of Spatial Knowledge. (corresponding author)

Loomis, J. M., Klatzky, R. L., McHugh, B., & Giudice, N. A. (submitted). Spatial Working Memory for 3D Locations Specified by Vision and Audition.

Technical Reports

R. Moratz & N.A. Giudice. (Eds.) (2011). Extended Poster Abstracts from the Conference on Spatial Information Theory (COSIT 2011), Belfast, ME.

Unpublished Works

Cuddy, K.M. (2010). The Efficacy of Virtual Spatialized Audio for Perceiving and Remembering Azimuths of Auditory Targets. Unpublished Master's Thesis Project, May 2010, UMaine (N.A. Giudice: advisor)

Bratcher, A., Dube, M., & Schwaner, F. (2010). Indoor Navigation Using RFID Tags and Reader. COHORT V: Testbed final project white paper, May 2010, UMaine (N.A. Giudice, co-advisor).

Giudice, N.A. (2004). Navigating Novel Environments: A Comparison of Verbal and Visual Learning. *Unpublished doctoral dissertation*, Dec 2004, UMN.

Giudice, N.A. (1999). Advances in Personal Navigation Systems for the Blind: A Review and Proposal for Tomorrow's Technology. *Unpublished whitepaper*. UMN.

CONFERENCE PRESENTATIONS

Bennett, C.R., Giudice, N.A., Klatzky, R.L., & Loomis, J.M. (2011). Spatial Images Developed through Extended Touch: Comparing Updating Performance between Haptic and Visual Learning. 52nd Annual Psychonomics Society Meeting. November, Seattle, WA.

Jacobson, K.E., Giudice, N.A., & Moratz R. (2011). Towards a Theory of Spatial Assistance from a Phenomenological Perspective: Technical and Social Factors for Blind Navigation. *Conference on Spatial Information Theory (COSIT 2011)*, September, Belfast, ME.

Jain, S. & Giudice N.A. (2011). Assessing Audio Interfaces for use in an Indoor Navigation System. *Conference on Spatial Information Theory (COSIT 2011)*, September, Belfast, ME.

Kesavan, S. & Giudice N.A. (2011). Automated natural language description of indoor spaces. *Conference on Spatial Information Theory (COSIT 2011)*, September, Belfast, ME.

Li, H. & Giudice, N.A. (2011). Finding the optimal visual interface for assisting navigation. *Conference on Spatial Information Theory (COSIT 2011)*, September, Belfast, ME.

Raja, M.K. & Giudice N.A. (2011). Haptic Spatial Learning of Indoor Spaces using Touchscreen enabled Smartphone devices. *Conference on Spatial Information Theory (COSIT 2011)*, September, Belfast, ME.

Giudice, N.A., Walton, L.A., & Worboys, M. (2010). The Informatics of Indoor and Outdoor Space: A Research Agenda. Second ACM SIGSPATIAL International Workshop on Indoor Spatial Awareness (ISA 2010), November, San Jose, CA.

Cuddy, K.M. & Giudice, N.A. (2010). Spatialized Audio for Remembering Auditory Target Azimuths. *Spatial Cognition 2010 Conference*, August, Ft. Hood, OR.

McGrath, T. & Giudice, N.A. (2010). 3D Viewshed Creation for Virtual Reality Applications. Poster presented at the NSF SuperMe REU 2010 Symposium, August, UMaine.

Wolbers, T., Wutte, M., Klatzky, R.L., Loomis, J.M., & Giudice, N.A. (2010). Modality Independent Coding of 3D Layout: fMRI Evidence for PPA Involvement of Haptic and Visual Scenes, 16th Annual Meeting of the Organization for Human Brain Mapping, June, Barcelona, Spain.

Wolbers, T., Wutte, M., Klatzky, R.L., Loomis, J.M., & Giudice, N.A. (2010). Modality Independent Coding of 3D Layout: fMRI Evidence for PPA Involvement of Haptic and Visual Scenes, Meeting of the German Society of Experimental Psychologists, March, Saarbrücken, Germany.

Giudice, N.A., Wutte, M., Klatzky, R.L., Loomis, J.M., & Wolbers, T. (2009). Modality Independent Coding of 3D Layout: fMRI Evidence for PPA Involvement of Haptic and Visual Scenes by Sighted and Blind Participants, *50th Annual Psychonomics Society Meeting*. November, Boston, MA.

Giudice, N.A. (2008). Learning with Virtual Verbal Displays: Effects of Interface Fidelity on Cognitive Map Development. *Spatial Cognition 2008 Conference*, September, Freiburg, Germany.

Marston, J.R., Klatzky, R.L., Giudice, N.A., Loomis, J.M., & Golledge R.G. (2007). Measuring Cognitive Load of Non-Visual Navigation Interfaces. *Association of American Geographers (AAG) 104th Annual Meeting*, April, San Francisco, CA.

May, M., Giudice, N.A., LaPierre, C., & Ponchillia, P. (2007). Results from 5-Year NIDRR Wayfinding Grant and Future Prospects. *22nd Annual CSUN International Conference, Technology and Persons with Disabilities*, March, Los Angeles, CA.

- Giudice, N.A., Betty, M.R., & Loomis, J.M. (2006). Orientation Specificity with Vision and Touch: Map Learning, Haptic Updating, and Functional Equivalence. *Journal of Vision*, 6(6), 178a.
- Kalia, A., Legge, G.E., & Giudice, N.A. (2006). Learning Virtual Building Layouts: The Effects of Age on the Usefulness of Geometric and Nongeometric Visual Information. *Journal of Vision*, 6(6), 140a.
- Giudice, N.A. (2006). Wayfinding Without Vision: Learning Real and Virtual Environments Using Dynamically-Updated Verbal Descriptions. *Conference on Assistive Technologies for Vision and Hearing Impairment*, July, Kufstein, Austria.
- Kalia, A., Giudice, N.A., & Legge, G.E. (2005). Learning Building Layouts with Low Vision: Do Realistic Details Help or Hinder? *Vision 2005 Conference*, April, London, UK.
- Kalia, A., Giudice, N.A., & Legge, G.E. (2004). Learning Building Layouts: The Effects of Visual Information on Developing Global Knowledge. *Object Perception, Attention, and Memory Conference*, November, Minneapolis, MN.
- Giudice, N.A. & Legge, G.E. (2004). Comparing Verbal and Visual Information Displays for Learning Building Layouts. *Journal of Vision*, 4(8), 889a.
- Giudice, N.A., Legge, G.E., & Bakdash, J.Z. (2003). Navigating without Vision: A Role for Spatial Language? *Journal of Vision*, 3(9), 489a.
- Legge, G.E., Mason, S.J., Brady, M., Giudice, N.A., & Schlicht, E.J. (2003). Maplets: Local Geometrical Components of Human Cognitive Maps. *Journal of Vision*, 3(9), 136a.
- Giudice, N.A. (2002). Tactile Vision: Brain-Reorganization in the Blind: Implications for Learning and Adaptive Technology. *Seventeenth Annual CSUN International Conference on Technology and Persons with Disabilities*, March, Los Angeles, CA.
- Giudice, N.A., Mason, S.J., & Legge, G.E. (2002). The Relation of Vision and Touch: Spatial Learning of Small-Scale Layouts. *Journal of Vision*, 2(7), 522a.
- Schlicht, E.J., Legge, G.E., Stankiewicz, B.J., & Giudice, N.A. (2001). Are Visual Landmarks Necessary for Effective Transfer of Navigational Knowledge Between Real and Virtual Buildings? *Annual Meeting of the Association of Research in Vision and Ophthalmology*, Fort Lauderdale, FL.
- Giudice, N.A., Madison, C.M., Zhuang, J.C., Costello, P.A., Legge, G.E., Hu, X., & He, S. (2000). Tactile Vision in the Blind: An fMRI Experiment on Pattern Recognition and Brain Plasticity. *Annual Meeting of the Association for Research in Vision and Ophthalmology*, Supp. IOVS, 40, S49, Fort Lauderdale, FL.
- Bruggeman, H., Giudice, N.A., Stankiewicz, B.J., & Legge, G.E. (2000). Distal Target Localization by the Blind. *Annual Meeting of the Association for Research in Vision and Ophthalmology*, Supp. IOVS, 40, S431, Fort Lauderdale, FL.

INVITED LECTURES AND OTHER COLLABORATIONS

(Presentations Delivered By First Author)

Giudice, N.A. (November, 2009). Multimodal Processing of Spatial Information: The Intersection of Spatial Cognition and Neurocognitive Engineering, Institute for Research in Cognitive Science, UPenn.

Giudice, N.A. (July, 2009). A Year with Giudice: Research, Development, and Future Directions. The Minnesota Laboratory for Low-Vision Research, UMN.

Giudice, N.A. (April, 2009). Spatial Learning from Different Sensory Modalities: The Intersection of Experimental Psychology and Neurocognitive Engineering. UMaine Psychology Colloquium, Orono, ME.

Marston, J.R., Golledge, R.G., Loomis, J.M., Klatzky, R.L., & Giudice, N.A. (April, 2008). Accessible and Portable Navigation Devices for the Blind: Interface Options. Atlanta Center for the Visually Impaired and Georgia Institute of Technology, Atlanta, GA.

Marston, J.R., Golledge, R.G., Loomis, J.M., Klatzky, R.L., & Giudice, N.A. (April, 2008). Substituting for Vision: Field Experiments with Several Orientation and Navigation Devices. Atlanta VA Rehabilitation Research and Development Center of Excellence in Vision Loss, Atlanta, GA.

Loomis, J.M., Golledge, R.G., Klatzky, R.L., Marston, J.R., & Giudice, N.A. (April, 2008). Twenty Years of Research on the Personal Guidance System: What Did We Learn? ThinkSpatial Forum on Spatial Thinking, UCSB, CA.

Giudice, N.A. (February, 2008). Spatial Learning in Real and Virtual Environments: Navigation, Cognitive Mapping, and the Development of Multimodal Displays. Department of Psychology, Wichita State University, KS.

Giudice, N.A. (February, 2008). Multimodal Learning: When Different Spatial Displays Lead to the Same Spatial Behavior. Department of Geography, University of Oregon, Eugene, OR.

Giudice, N.A. (December, 2007). Spatial Learning in Real and Virtual Environments: Development of Mental Representations using Multimodal Displays. Department of Spatial Information Science and Engineering, UMaine.

Giudice, N.A. (June, 2006). What's Going on in GiudiceLand: Research Past, Present, and Future. The Minnesota Laboratory for Low-Vision Research, UMN.

Giudice, N.A. (May, 2006). Orientation Specificity with Vision and Touch: Map Learning, Haptic Updating, and Functional Equivalence. Cognition, Perception, & Cognitive Neuroscience Colloquium, UCSB, CA.

Giudice, N.A. (April, 2005). Wayfinding with Words: The Use of Spatial Language for Navigating Real and Virtual Environments. Cognitive and Perceptual Sciences Colloquium, UCSB, CA.

Legge, G.E., Beckmann, P.J., Giudice, N.A., Kalia, A., Roy, R., & Tjan, B.S. (April, 2005). Wayfinding in Buildings with Vision Impairment: Research and Adaptive Technology. Vision 2005 Conference, London, UK.

Giudice, N.A. (March, 2004). NIH: National Eye Institute, Scientific Workshop on Blindness, Brain Plasticity, and Spatial Function. Invited participant, Vanderbilt University, Nashville, TN.

Giudice, N.A. (October, 2002). Universal Design, Adaptive Technology, and Integration. Usability Professionals Association (UPA), Minneapolis, MN.

Giudice, N.A. (January, 2000). The Relation of Vision and Touch in an Angle Estimation and Production Task. Vision Science Colloquium, UMN.

CONSULTING AND ADVISORY

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|--------------|---|
| 2008–Present | Consultant for Advanced Medical Electronics Corporation on technology for blind/low-vision information access for SBIR Phase I and Phase II funding |
| 2007–Present | Consultant for Koronis Biomedical Technologies on blind/low-vision navigation for SBIR Phase I and Phase II funding |
| 2007–Present | Advisory board for Kinnexus Inc., factors affecting age-related vision loss for gerontechnology start-up company, Los Altos, CA |
| 2008–2011 | Advisory board for NIH grant 9R44AG033522-02 on indoor navigation (PI: G.E. Legge, UMN, and Advanced Medical Electronics Corporation, Minneapolis, MN) |
| 2006–2007 | Efficacy testing of Touch Graphics Talking Tactile Tablet for multimodal navigation research (www.touchgraphics.com) |
| 2003–2006 | Usability testing during several Beta cycles with Sendero Group's accessible GPS navigation system (www.senderogroup.com) |

STUDENT ADVISING AND MENTORING

Doctoral Thesis Research Advising:

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| 2011-Present | Amy Cross: i-Ph.D., joint advisor |
| 2011-Present | Rick Tanney: Relation of Distance and Familiarity in Real and Virtual Reality |
| 2010-Present | Chris Bennett: Spatial cognition and Functional Equivalence |
| 2010-Present | Hengshan Li: Spatial Cognition and Indoor Navigation |

Master's Thesis Research Advising:

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| 2011-Present | Timothy Baker: HCI and Gesture |
| 2010-Present | Monoj Kumar Raja: Indoor location-based services and tracking |
| 2010-Present | Shreyans Jain: Indoor Navigation interfaces |
| 2010-Present | Saranya Kesavan: Visual-Spatial Image Conversion |
| 2008-2010 | Kate Cuddy: Virtual Spatialized Audio |

Undergraduate Research Advising:

1998–Present Supervised 2-4 research assistants per year

Internships

2011 Dylan Lougee: internship, high school Upward Bound experience (summer)

2011 Samuel Deschamps Berger: VEMI Lab internship, from the National School of Geographic Sciences, France (summer)

2010-2011 Graduate advisor: Intermedia MFA internship in the VEMI Lab. (Fall/Spring)

Other Advising:

2010 Co-advisor for UMaine IGERT COHORT V testbed class (Spring)

2010 Undergraduate Advisor: REU Supercomputing Program in Me (Summer)

GRADUATE AND HONORS COMMITTEE PARTICIPATION**Doctoral Committees:**

Lisa Walton, SIE, UMaine (Member)

Master's Committees:

Brendan Oshaughnessy, SIE, UMaine (member)

Justin Taylor, Intermedia, UMaine (member)

2011 (Aug.) John Bell, Intermedia, UMaine (member)

2011 (Aug.) Richard Corey, Intermedia, UMaine (member)

2010 (Dec.) Benjamin Weber, SIE, UMaine (member)

2010 (May) Kate Cuddy, SIE, UMaine (chair)

Undergraduate Honors Committees:

Rafael Ramos, Psychology/Philosophy, UMaine (chair)

2011 (May) Zev Eisenberg, New Media, UMaine (member)

TEACHING

2011 Readings in Spatial Cognition 1, UMaine (Fall)

2010 Graduate Seminar, UMaine (Spring)

2009-2011 Human-Computer Interaction, UMaine (Spring)

2009-2010 Virtual Environment Technology and Research, UMaine (Fall)

2001, 2003 Perceptual Correlates of Low Vision, co-taught, UMN (Spring)

2001, 2003	Vision Laboratory, UMN (Spring)
2002	Honors seminar: Navigation and Spatial Development, co-taught, UMN (Fall)
2000	Human-Machine Interaction, teaching assistant, UMN (Fall)

HONORS AND AWARDS

2011	Nominee, UMaine Supervisor of the Year Award
2010	Early Career Research Award, UMaine College of Engineering
2009	UMaine F&A Recovery Award
2000–2003	Recipient of the UMN's Center for Cognitive Sciences James J. Jenkins Award for Outstanding Contributions to the Center
2000	American Foundation for the Blind Award for Academic Excellence
1998	American Foundation for the Blind Award for Excellent Research Potential
1998	American Council of the Blind Award for Work in Vision Sciences
1998	NSF Facilitation Award for Scientists & Engineers with Disabilities
1997	Inducted into Psychology Honors Society - Psi Chi
1997	Inducted into Philosophy Honors Society - Phi Sigma Tau
1993–1997	Dean's List, PC

PROFESSIONAL SERVICE AND LEADERSHIP

2011	General Co-Chair, Conference on Spatial Information Theory (COSIT 2011), Belfast, ME (September)
2011	Program Committee, Workshop on Processes and Events in Spatio-Temporally Distributed Data, in conjunction with COSIT2011, Belfast, ME (September)
2011	Program Committee, Cognitive Science (CogSci2011), Boston, MA (July)
2010	Program Committee, Workshop on Environmental Modeling: Using Space Syntax in Spatial Cognition Research, Mt. Hood, OR (August)
2009	General Chair, Workshop on Virtual Environment Technology, UMaine (January)
2006–2008	Coordinator, monthly interdisciplinary spatial cognition research meeting, UCSB
2006	Session Chair, Conference on Assistive Technologies for People with Vision and Hearing Impairments, Kufstein, Austria (July)

2000–2003	Chair, Center for Cognitive Sciences external colloquium series, UMN
2001–2002	Chair, bi-weekly colloquium of vision science lectures, UMN
1999–2000	Member, Editorial Board, Center for Cognitive Science's Millennium Project, UMN
1993–1997	Student Congress Representative, Junior Class Vice President, PC

INSTITUTIONAL SERVICE AND COMMITTEE PARTICIPATION

2011–Present	Information Technology Accessibility Subcommittee for the President's Council on Disabilities, UMaine
2010–Present	President's Council on Disabilities, UMaine
2010–Present	Facilities Management Committee on Pedestrian Access, UMaine
2009–Present	Academic Excellence Committee, UMaine
2008–2011	Accessible Information Committee, UMaine
2003–2004	Student Representative, Center for Cognitive Sciences Governing Council, UMN
1996–1997	Vice Chair, Legislative Affairs Committee, PC
1994–1997	Presidential Appointee, ADA Advisory Committee, PC
1995–1996	Student Representative, Curriculum Review Committee for Providence College Accreditation

PROFESSIONAL MEMBERSHIPS & ORGANIZATIONS

2010	Learning Circle on Universal Design, UMaine
2009–2010	Learning Science Special Interest Group, UMaine
2009–Present	Full Member, Psychonomics Society
2009–Present	Delegate, University Consortium for Geographic Information Science (UCGIS)
2002–2006	Member, The Vision Sciences Society

EDITORIAL SERVICE

Ad Hoc Journal Reviewer:

ACM Transactions on Applied Perception; ACM SIGCHI; Canadian Journal of Experimental Psychology; Cognition; Cognitive Processing; COSIT2011; IEEE Transactions on Systems, Man, and Cybernetics; JOSIS; Journal of Experimental Psychology- Learning, Memory, and

Cognition; Memory and Cognition; Perception; Perception and Psychophysics; Spatial Cognition and Computation; UAIS; and Visual Impairment Research.

External Grant Reviewer:

2010 NSF, GSS Early Career Award; 2009 NSF, BCS proposal; 2008 Netherlands Organization for Health Research and Development Grant for In-sight, ZonMw, Netherlands; and 2005 Ophthalmic Research Grant by the Institute of Ophthalmology, UCL, UK.

Panel Grant Reviewer:

2011 Dept. of Education, Office of Special Ed., Video Description Program.

2011 Dept. of Education, Office of Special Ed., Technology & Media Program.

Book Reviewer:

2008 MIT Press , Cambridge, MA.

COMMUNITY SERVICE

2007–2008 Member of the Access Advisory Committee for the City of Santa Barbara, CA
2007 Volunteer computer instructor, Braille Institute, Santa Barbara, CA

NEWS AND PUBLIC RELATIONS

2010 (Dec) UMaine ORSP Annual Research Highlights piece on Giudice’s NSF grant No. CDI-0835689
2010 (Nov) UMaine News piece on Giudice and collaborator’s NSF Grant No. CDI-1028895
2009 (Oct) VEMI Lab featured in news article for the UMaine College of Engineering Magazine.
2009 (April) Featured on the Economic Report, (CNN & Discovery), as part of a news piece on the Maine-based company Intelligent Spatial Technologies
2007 (April) *The Boy Who Sees With Sound*. Helped design and run experiments during filming of this BBC and Discovery channel documentary on echolocation.
2007 (March) *Checking the Coordinates*. Interviewed for Op-Ed piece on the connection between psychology and geography by R. Adelson (March 2007): APA Monitor on Psychology, 38(3), P. 16.

OTHER GENERALLY USEFUL SKILLS

Big "picture" thinker
Creative problem solver
Excellent listener and communicator

Professional dog handler

World-class hugger

Well-developed sense of humor

REFERENCES AND REPRINTS AVAILABLE ON REQUEST