JOSHUA A. MIELE, Ph.D.

Title: Scientist **Role:** Associate Director

Education

Institution and Location:	Degree:	Year:	Field Of Study:
University of California, Berkeley	B.A.	1997	Physics
University of California, Berkeley	Ph.D.	2003	Cognitive Psychology/ Psychoacoustics

Positions and Honors

Professional Experience:

1993 Co-operative Education Intern, N.A.S.A., Goddard Space Flight Center, Green Belt, MD.

1990-1996 Software Interface Designer, Berkeley Systems, Inc., Berkeley, CA.

1999-2002 Graduate Student Researcher, Department of Psychology, University of California, Berkeley.

1999, 2000 Auditory Displays Consultant, Rehabilitation Engineering Research Center, The Smith-Kettlewell Eye Research Institute, San Francisco.

2003-2006 Post-Doctoral Fellow, The Smith-Kettlewell Eye Research Institute.

2006-2007 Research Associate, The Smith-Kettlewell Eye Research Institute.

2008-2013 Associate Scientist, The Smith-Kettlewell Eye Research Institute.

2011-present Director, Video Description Research and Development Center, OSEP H327J110005, The Smith-Kettlewell Eye Research Institute.

2011-present Associate Director for Technology Research and Development, Rehabilitation Engineering Research Center on Low Vision & Blindness, The Smith-Kettlewell Eye Research Institute.

2014-present Scientist, The Smith-Kettlewell Eye Research Institute.

Honors and Awards:

2000-2002 Rachel C. Atkinson Fellowship Award, Smith-Kettlewell Eye Research Institute: Various projects related to auditory/tactile access to spatial information (development of the architecture of a PDA screen reader, auditory methods of displaying multi-dimensional data sets, creation of software tools for automated production of tactile maps, designing auditory orientation feedback for blind wheelchair users, development of a system for real-time narration of Goalball (a team sport for blind players), and more.

2008 Award for Excellence, The City of San Francisco Mayor's Disability Council,
For excellent service to the City by supporting accessibility research and development for destination-based elevator systems.

2011 Dr. Margaret R. Pfanstiehl Achievement Award in Research and Development Awarded by The American Council of the Blind's Audio Description Project. For innovation in audio-description technology.

2014 FCC Chairman's Award for Advancement in Accessibility, recognizing

YouDescribe and the Descriptive Video Exchange as significant contributions to video-description technologies

Affiliations:

2008-present W3c WAI Steering Committee. Member of the World-Wide Web Coalition's Web Accessibility Initiative's Steering Committee, contributing to the long-term accessibility and standardization of web-based information.

2008-2015 CaptionMax Advisory Board: serve as a scientific and technical advisor to one of the largest providers of accessible educational video materials in the U.S.

2010-present Benetech's Digital Image and Graphic Resources for Accessible Materials (DIAGRAM) Various Working Groups: provide expertise on cutting-edge accessible technologies and best practices related to audio/tactile graphics, video description, Nemeth and UEB codes, and other tools and technologies for STEM accessibility

2011-2015 President, San Francisco LightHouse for the Blind and Visually Impaired Board of Directors

2016 President Emeritus, San Francisco LightHouse for the Blind and Visually Impaired Board of Directors

Peer-Reviewed Publications :

Hafter E.R, Valenzuela MN, Stecker GC, Miele JA, Crum, PAC. (1999) Informational Dominance in the Auditory Scene. In: *XIIth International Symposium on Hearing* (Houtsma A, ed.), Academic Press, Maastricht NL: Shaker Pub. BV.

Miele J.A, Hafter ER. (2002) Trajectory Perception in the Free Field. *The Journal of the Acoustical Society of America*, **111**(5): 2356.

Miele J.A. (2003) Human Auditory Perception of Trajectories of Motion In a Simulated Open-Field Environment. (Doctoral Dissertation) University of California at Berkeley.

Miele J.A. (2003) Smith-Kettlewell Display Tools: A Project Description. *Proceedings Ninth International Conference on Auditory Displays*, July, Boston: 288-91.

Miele J.A, Landau S, Gilden D. (2006) Talking TMAP: Automated Generation of Audio-Tactile Maps Using Smith-Kettlewell's TMAP Software. *British Journal of Visual Impairment*; **24**(2): 93-100.

Seelman KD, Palmer CV, Ortmann A, Mormer E, Guthrie O, Miele JA, Brabyn J.A. (2008) Quality-of-life Technology for Vision and Hearing Loss. IEEE Engineering Medicine/Biology; **27**(2): 40-55.

Morash VS, Pensky AE, Miele JA. (2013)Effects of Using Multiple Hands and Fingers on Haptic Performance. *Perception*; **42**(7): 759-77. PMID: 24344552

Morash, V., Connell Pensky, A., Tseng, S., & Miele, J. (2014). Effects of Using Multiple Hands and Fingers on Haptic Performance in Individuals who Are Blind. *Perception*; **43**(6): 569-588.

Packer J, Viznor K, Miele, JA. (2015) An Overview of Video Description: History, Benefits, and Guidelines. *Journal of Visual Impairment and Blindness*, March-April

2015, Vol. 109, No. 2.

Conferences and Presentations:

Miele J.A. (1992-1996) Auditory attention, cognition and interface design as applied to GUI screen readers. CSUN Conference on Technology and Persons with Disabilities, Annual updates.

Miele J.A. (1999) The influence of the Doppler effect on perceived auditory velocity. "Berkeley-Stanford Talks," University of California, Berkeley.

Miele J.A. (2000) Methods of sonification and tactile representation of quantitative data for blind and visually impaired engineers, scientists & students. Department of Education, National Institute on Disability and Rehabilitation Research, Washington, DC.

Miele J.A, Hafter ER. (2001) Human perception of velocity of auditory motion. Association of Research in Odolaringology Annual Conference.

Miele J.A. (2003) Human Auditory Perception of Trajectories of Motion In a Simulated Open-Field Environment. The Smith-Kettlewell Eye Research Institute.

Miele JA. (2003) Designing Accessible Information Technology: Social, Political, and Economic Considerations. Ninth Intl. Conf. on Auditory Displays (ICAD), Pre-Conference Session on Auditory Displays and Computer Accessibility, Boston, MA.

Miele J.A. (2003) Automated Production of Tactile Street Maps. Wayfinding Meeting of the Sendero Group, Volcano, CA.

Miele J.A. (2004) Access to Graphical Information. Future Directions in Blindness and Low Vision Conference. Smith-Kettlewell Rehabilitation Engineering Research Center, San Francisco, CA.

Miele J.A. (2004) Tactile Map Automated Production (TMAP): Using GIS Data to Generate Braille Maps. International Conference on Technology and Persons with Disabilities, California State University Northridge, Los Angeles, CA.

Miele J.A, Marston JR. (2005) Tactile Map Automated Production (TMAP): Project Update And Research Summary. CSUN 20th Annual International Conference on Technology and Persons with Disabilities, Los Angeles, CA.

Miele JA. (2005) Non-Visual User Interface: The Afterthought at the End of the Project. Computer Vision and Pattern Recognition Conference, San Diego, CA.

Miele J.A. (2005) Tactile Map Automated Production (TMAP): Technical Description and Research Objectives. American Association of Geographers, Denver, CO.

Miele J.A, Landau S. (2006) Implementing Audio-Tactile Maps using SVG. Proceedings, Applied Voice Input/Output Society-Speech Tech '06 Conference, San Francisco, CA.

Miele J.A, Landau S. (2006) Automated production of audio/tactile maps using TMAP. CSUN 21st Annual International Conference on Technology and Persons with Disabilities, Los Angeles, CA.

Miele J.A. (2006) Tactile Maps Automated Production (TMAP). Google Tech Talks, Google headquarters, Mountain View, CA. http://video.google.com/videoplay?docid=-2670253306002234955

Landau S, Miele J.A, Gilden D. (2007) TMAPReader and TMAPEnhancer: Annotation and Modification of Audiotactile Streetmaps Using the TTT. CSUN 22nd Annual Intern. Conference on Technology and Persons with Disabilities, Los Angeles, CA.

Miele JA. (2007) DAISY: Tactile and Audio/Tactile Graphics in Digital Talking Books. CSUN 22nd Annual International Conference on Technology and Persons with Disabilities, Los Angeles, CA.

Marston J, Miele J.A, Smith E. (2007) Large Print Map Automated Production (LPMAP). International Cartographic Conference, Moscow, Russia.

Miele J.A. (2007) Automated creation and detailed annotation of audio/tactile maps using Scalable Vector Graphics (SVG). International Cartographic Conference, Moscow, Russia.

Miele J.A. (2007) The Live Scribe Smartpen: A revolutionary new platform for audio/tactile graphics. International Cartographic Conference, Moscow, Russia.

Miele J.A, Van Schaack A. (2008) Audiotactile Graphics using Mainstream Smartpen Technology: A New Approach with Enormous Potential. CSUN 23rd Annual Intern. Conference on Technology and Persons with Disabilities, Los Angeles, CA.

Miele J.A, Van Schaack A. (2009) Innovations in STEM Education for Blind Undergraduates Using Digital Pen-Based Audio/Tactile Graphics. NSF Joint Annual Meeting, Washington, D.C.

Edwards OR, Miele JA. (2010) WearaBraille: Development of a Wireless, Virtual, Braille Keyboard. CSUN 25th Annual International Conference on Technology and Persons with Disabilities, San Diego, CA.

Miele J.A, Landau, S. (2010) Audio-Tactile Interactive Computing with the Livescribe Pulse Pen 2. CSUN 25th Annual International Conference on Technology and Persons with Disabilities, San Diego, CA.

Kehret G, Miele J.A, Edwards OR. (2011) Development of Smartpen-Based Audio/Tactile Transit Station Maps for Travel Planning and Wayfinding. CSUN 26th Annual Intern. Conference on Technology and Persons with Disabilities, San Diego, CA.

Edwards OR, Miele J.A. (2011) WearaBraille Update: Using Smith-Kettlewell's Prototype, Virtual, Wireless, Braille Keyboard with Smartphones. CSUN 26th Annual Intern. Conference on Technology and Persons with Disabilities, San Diego, CA.

Miele J.A, Williams K. (2012) The Descriptive Video Exchange: The Technology and Implications of Crowd-Sourced Description. CSUN 27th Annual Intern. Conference on Technology and Persons with Disabilities, San Diego, CA.

Miele JA, Lawrence, M, & Crandall, W. (2013) S-K Smartphone Based Virtual Audible Signage. CSUN 28th Annual Intern. Conference on Technology and Persons with Disabilities, San Diego, CA.

Miele, J; Siu, Y; Hasty, L; Morash, V. (2014) A Template-Guided System for Improving Quality of Textbook Description. CSUN 29th Annual Intern. Conference on Technology and Persons with Disabilities, San Diego, CA.

May, M, Miele JA. (2014) Crowdsourcing: A New Era of Information Accessibility. CSUN 29th Annual Intern. Conference on Technology and Persons with Disabilities, San Diego, CA.

Richert M, Miele JA. (2014) Third-Party Video Description: Innovative Technologies & Copyright Policies. CSUN 29th Annual Intern. Conference on Technology and Persons with Disabilities, San Diego, CA.

Morash V, Siu Y, Miele JA, Hasty L, Landau S. (2015) How Inexperienced Webworkers Can Author Quality Image Description. CSUN 30th Annual Intern. Conference on Technology and Persons with Disabilities, San Diego, CA.

Rosensweig H, Miele JA. (2015) Remote Sighted Assistance: Creating a New Service for the Blind Community. CSUN 30th Annual Intern. Conference on Technology and Persons with Disabilities, San Diego, CA.

Summers E, Miele JA. (2015) ChartML: A File Format for Presentation-Agnostic Representation of Charts. CSUN 30th Annual Intern. Conference on Technology and Persons with Disabilities, San Diego, CA.

Miele JA. (2016) Virtual Talking Signs: A Classic Wayfinding System Made Modern. CSUN 31st Annual Intern. Conference on Technology and Persons with Disabilities, San Diego, CA.

Invited Presentations and Addresses:

National Federation of the Blind (2012) Invited Presentation to General Session. The Descriptive Video Exchange.

American Council of the Blind (2012) Invited Presentation to General Session. The Descriptive Video Exchange.

Getting In Touch With Literacy Conference (2013) Invited Showcase Session. Literacy, Technology, and Vision.

American Printing House for the Blind Annual Meeting (2014) Keynote Address. A View From the Wheelhouse – A Long View of Accessibility.

Lawrence Hall of Science STEM Career Showcase for Students with Disabilities (2015) Keynote Address. Working with Disability in STEM.

San Francisco State University, Longmore Institute on Disability Studies, (2016) Annual Longmore Lecture. How Access Really Happens: Disability, Technology and Design Thinking.

National Library Service for the Blind and Physically Handicapped Biennial Conference (2016) Conference Address. The Future of Description – An Ancient Art in a Modern World.

Stanford University Artificial Intelligence Group, AI Salon (2016) Invited Presentation. The Role of AI in Ensuring a More Accessible World.