

Abigale Stangl

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I am an interdisciplinary researcher working at the intersection of Design, Human-Computer Interaction and Information Science, Disability Studies, and Education. I conduct research aimed at elucidating and reducing the social and technical factors that exclude people with disabilities from gaining media and information (MIL) competencies. Through this research, I engage in conducting and publishing on ethnographic investigations, the design and implementation of social and educational interventions, qualitative user studies, the design of material artifacts, and the development of sociotechnical information systems.

Education

PhD, Technology, Media, and Society, Expected graduation May 2019

University of Colorado-Boulder, Alliance for Technology Learning and Society; Advised by Dr. Tom Yeh, Department of Computer Science

- Dissertation Title: "Inclusive Tactile Media Creation".
- Broadening participation and inclusion in media creation media and information literacy.
- Accessible media/assistive technology design and evaluation.

Master of Science, Information Communication Technology for Development, 2013

University of Colorado-Boulder, Alliance for Technology, Learning, and Society (G.P.A. 4.0/4.0)

- Human-centered design, user-experience and interface design.
- International development, monitoring and evaluation, gender equity.

Graduate Diploma in Landscape Studies, 2011

Lincoln University, Canterbury, New Zealand, School of Landscape Architecture

- Coursework in sustainability design, value-added cooperatives, phenomenology, landscape theory, and qualitative research methods.

Bachelor of Environmental Design, Major in Planning, 2008

University of Colorado-Boulder, College of Architecture and Planning (G.P.A. 3.7/4.0)

- Emphasis on landscape design, and social and environmental justice.

Awards

2017-2018 Chancellor's Award for Excellence in STEM Education, University of Colorado

An award in support of my work on "Critical Making for Accessible Media Information Literacy In The Age Of STEM Education".

2016-2017 Chancellor's Award for Excellence in STEM Education, University of Colorado

An award in support of my work on "3D Printed Tactile Picture Books as a Pathway into STEM".

Boulder Rotary Humanitarian Award. Boulder, Colorado (2015)

An acknowledgment of my leadership in co-founding the Visionaria Peru Project and advisor role in the Visionaria Network.

Rotary International Temple Buell Ambassadorial Scholar (2009-2010)

A prestigious award in support of my graduate studies and commitment “international understanding and friendly relations among people of different countries and geographical areas.”

Professional Experience

Research Assistant, Sikuli Lab, University of Colorado, Dept. of Computer Science, 2013 to Present

- Lead human-factors/education researcher on the Tactile Picture Book project.
- Co-researcher on the Build a Better Book Project.
- High school, undergraduate and graduate mentorship.
- Co-Author, National Science Foundation, Innovative Technology Experiences for Teachers and Students Award, Abstract #1615247 “Designing Tactile Picture Books: Critical Making in Libraries to Broaden Participation in STEM Education and Careers (2016-2019).”

Research Contractor, National Federation of the Blind, 2016 to Present

- Tactile Art and Graphics Symposium researcher.
- 2017 Youth Slam Instructor.

Impact Director, The Visionaria Network- Peru Program, 2012-2015

- Development and implementation of a leadership institute for young Peruvian women in the Andean mountains.
- Community needs assessment and program monitoring and evaluation.

Installation Design and Fabrication Associate, Jen Lewin Studio (2009-2012). Boulder, Colorado, USA

- Creative design and technical sculpture development.
- Space and materials research and adaptation.
- Web design and assets management.
- Mechanical and electrical component assembly.

Program Coordinator, School of Critical Engagement (2011). Copenhagen, Denmark

- Liaison between students, community, city renewal board, and private practices in an urban renewal and service design project.
- Ethnographic-based design research and sculpture installation.

Design Coordinator, University of Virginia’s College at Wise, OSM/AmeriCorps* VISTA (2005-2006) . Wise, Virginia

- Improvement of an abandoned mine land reclamation site/educational facility.
- Fundraising, strategic planning, and community planning meetings.
- Community partnership development between K-12 schools, universities, citizen and student groups, and local and federal governmental agencies.
- Coordinated a 250 person academic conference, “UVA- Wise Landscapes as Our Legacy Conference” to support the utilization of local resources and place-based models of teaching.
- Led environmental education-based field trips for up to 200 students.

Publications and Presentations

Journal Articles

- [J.1] Profita, H. P., Stangl, A., Matuszewska, L., Sky, S., Kushalnagar, R., & Kane, S. K. (2018). "Wear It Loud": How and Why Hearing Aid and Cochlear Implant Users Customize Their Devices. *ACM Transactions on Accessible Computing (TACCESS)*, 11(3), 13.

Refereed Conference Papers

- [C.8] **Stangl, A. J.**, Kothari, E., Jain, S. D., Yeh, T., Grauman, K., & Gurari, D. (2018, October). BrowseWithMe: An Online Clothes Shopping Assistant for People with Visual Impairments. In *Proceedings of the 20th International ACM SIGACCESS Conference on Computers and Accessibility* (pp. 107-118). ACM.
- [C.7] Gurari, D., Li, Q., **Stangl, A. J.**, Guo, A., Lin, C., Grauman, K., ... & Bigham, J. P. (2018). VizWiz Grand Challenge: Answering Visual Questions from Blind People. arXiv preprint arXiv:1802.08218.
- [C.6] Suzuki, R., **Stangl, A.**, Gross, M. D., & Yeh, T. (2017, October). FluxMarker: Enhancing Tactile Graphics with Dynamic Tactile Markers. In *Proceedings of the 19th International ACM SIGACCESS Conference on Computers and Accessibility* (pp. 190-199). ACM.
- [C.5] **Stangl, A.**, Weidler-Lewis, J., Lauff, C., Price, E., & Faule, E. (2017, June). The SEL Transition Wheel: Designing for Early Childhood Social Emotional Learning. In *Proceedings of the 2017 Conference on Interaction Design and Children* (pp. 334-339). ACM.
- [C.4] Boyd, L. E., Rector, K., Profita, H., **Stangl, A. J.**, Zolyomi, A., Kane, S. K., & Hayes, G. R. (2017, May). Understanding the Role Fluidity of Stakeholders During Assistive Technology Research In the Wild. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems* (pp. 6147-6158). ACM.
- [C.3] Profita, H. P., **Stangl, A.**, Matuszewska, L., Sky, S., & Kane, S. K. (2016, October). Nothing to Hide: Aesthetic Customization of Hearing Aids and Cochlear Implants in an Online Community. In *Proceedings of the 18th International ACM SIGACCESS Conference on Computers and Accessibility* (pp. 219-227). ACM.
- [C.2] **Stangl, A.**, Hsu, C. L., & Yeh, T. (2015, October). Transcribing across the senses: community efforts to create 3D printable accessible tactile pictures for young children with visual impairments. In *Proceedings of the 17th International ACM SIGACCESS Conference on Computers & Accessibility* (pp. 127-137). ACM.
- [C.1] Grace, K., Maher, M. L., Preece, J., Yeh, T., **Stangl, A.**, & Boston, C. (2015). A process model for crowdsourcing design: A case study in citizen science. In *Design Computing and Cognition'14* (pp. 245-262). Springer, Cham.

Refereed Posters and Extended Abstracts

- [P.9] **Stangl, A.**, Johnson, j., Budiani, Arum Putri., & Yeh, T. 2016. Co-Design of Accessible 3D Printed Tactile Picture Books in Indonesia. Fabrication and Learning Europe. Preston, UK.
- [P.8] **Stangl, A.**, Penzkover, K., Gonzales-Aguilar, J., Gopar-Martinez, K., Reta, J., & Vovan, V. 2016. Building A Tactile Picture Book: A Multimodal Design Task for High School Students. Fabrication and Learning. Stanford, CA, USA.
- [P.7] **Stangl, A.**, Jernigan, B., & Yeh, T. 2015. Write, Design, and 3D Print Tactile Stories for Visually Impaired: Critical Making in a Middle School Classroom. FabLearn, 2015. Stanford, California.
- [P.6] **Stangl, A.**, Kim, J., & Yeh, T. 2014. 3D Printed Tactile Picture Books for Children with Visual Impairments: A Design Probe. Interaction Design and Children. Aarhus, Denmark.
- [P.5] **Stangl, A.**, Kim, J., & Yeh, T. 2014. Technology to Support Emergent Literacy Skills in Young Children with Visual Impairments, Human Factors in Computing Systems. Toronto, ON, Canada.
- [P.4] Kim, J., **Stangl, A.**, Eisenberg, A., & Yeh, T. 2014. Tactile Picture Books for Young Children with Visual Impairment. Tangible, Embedded, and Embodied Interaction. Munich, Germany.
- [P.3] Kim, J., **Stangl, A.**, Yeh, T. 2014. Using LEGO to Model 3D Tactile Picture Books by Sighted Children for Blind Children, Spatial User Interaction. Honolulu, HI.
- [P.2] Maher, M.L., Preece, J., & Yeh, T., Boston, C., Grace, K., Pasupuleti, A., & **Stangl, A.** 2014. NatureNet: a model for crowdsourcing the design of citizen science systems. Computer Supported Cooperative Work & Social Computing. ACM, New York, NY, USA.
- [P.1] **Stangl, A.**, Wepman, J., & White, D. 2012. Moodcasting: home as shared emotional space. Human Factors in Computing Systems. ACM, New York, NY, USA.

Workshop Papers

- [W.3] Hamidi, F., Müller, C., Baljko, M., Schorch, M., Lewkowicz, M., & **Stangl, A.** 2016. Engaging with Users and Stakeholders: The Emotional and the Personal. In Proceedings of the 19th International Conference on Supporting Group Work (pp. 453-456). ACM.
- [W.2] **Stangl, A.**, 2016. The Tactile Picture Book Project: A Multidisciplinary Learning Activity for Secondary Students & Educators. Fabrication and Learning Europe. Preston, UK.
- [W.1] Kim, J., **Stangl, A.**, Eisenberg, A., & Yeh, T. 2014. Evaluating Tactile User Experiences with Tactile Picture Books for Children with Visual Impairment, "Touch Me" Workshop. Human Factors in Computing Systems. Toronto, ON, Canada.

Invited Presentations, Non-Refereed

- [IP.12] **Stangl, A.**, & Cunningham, A. October 2018. National Federation of the Blind Tactile Art and Tactile Graphics Symposia Report. Tactile Graphics in Education and Careers Symposium, National Federation of the Blind, Baltimore Maryland.
- [IP.11] **Stangl, A.**, Cunningham, A. & Yeh, T. October 2018. Dissertation Research Presentation: Inclusive Tactile Media Creation. Tactile Graphics in Education and Careers Symposium, National Federation of the Blind, Baltimore Maryland.
- [IP.10] Welte, K., Rosenberg, N., BJ, Epstein. Cunningham, A., & **Stangl, A.** October 2018. Dissertation Research Presentation: Inclusive Tactile Media Creation. Tactile Graphics in Education and Careers Symposium, National Federation of the Blind, Baltimore Maryland.
- [IP.9] **Stangl, A.** October 2017. Inclusive Media Production. Department of Learning Sciences, Northwestern University, Lecture Series.
- [IP.8] **Stangl, A.** July 2017. Critical Making Accessible Learning Media. 9th Annual STEM Symposium through the Center for STEM Learning, University of Colorado Boulder.
- [IP.7] **Stangl, A.** Multimodal Design of Accessible Materials. May 2017. National Federation of the Blind, Tactile Art and Graphics Symposium, Enchanted Hills, CA.
- [IP.6] **Stangl, A.**, & Cunningham, A. April 2017. The Tactile Picture Book Project- Opportunities for Design, Customization, and Access to Tactile Picture Books Through Digital Fabrication and Broad Scale Community Engagement. Tactile Reading Conference. Stockholm, Sweden.
- [IP.5] **Stangl, A.**, & Cunningham, A. April 2017. Inclusive Design of Tactile Story Graphics and Objects: Engaging Blind People to Write their Own Story, and Design Their Own Tactile Graphics. Tactile Reading Conference. Stockholm, Sweden.
- [IP.4] **Stangl, A.** Multimodal Design of Accessible Materials. December 2016. National Federation of the Blind, Tactile Art and Graphics Symposium, Baltimore, MD.
- [IP.3] **Stangl, A.** July 2016. Inclusive Media Creation. 8th Annual STEM Symposium through the Center for STEM Learning, University of Colorado Boulder.
- [IP.2] **Stangl, A.** October 2015. Disruptive Technologies for Accessible Design. Conference on Library Services for the Blind in Multiethnic Regions. Bashkir Regional Library for the Blind, Ufa, Russia.
- [IP.1] **Stangl, A.** October 2015. 3D Printing Accessible Learning Media. Department of Computer Science, University of Moscow. October 2015.

Teaching/Instructional Design

University of Colorado: Build a Better Book, Librarian Training. 2016-2018.

Four, two-day workshops for regional librarians focused on developing programming for library patrons, focused on multimodal design and digital fabrication.

University of Colorado: Build a Better Book, Library Workshops. 2016-2018.

Fifteen, 2-4 hour workshops for middle and high school students focused multimodal design and digital fabrication of accessible learning media.

Museum of Boulder: Seeing through Touch Design Experience. 2017-2018.

A five-month design course that met bi-weekly, for 12 middle school students focused on the design of accessible museum exhibits; in partnership with a local museum.

Boulder Public Library Building 61: Wonders of Wetlands. July 2017.

A weeklong design internship for 12 high school students focused on the design of accessible scientific data representations; in partnership with a local library makerspace.

National Federation of the Blind, Youth Slam: Wonders of Wetlands. July 2017.

A weeklong art course for 5 blind high school students focused on the design of accessible scientific data representations; in partnership with the National Federation of the Blind.

Colorado Center for the Blind: Art Classroom: Multimodal Composition. April-July 2016.

A four-month art class that met once a week, for 5 blind adults focused on the creation of a multimodal representation of a narrative; in partnership with the Colorado Center for the Blind.

York International: Build a Better Book, Design and Technology Course. 2016.

A four-month design and technology class that met once a week, for 5 blind adults focused on the creation of a multimodal representation of a narrative; in partnership with Science Discovery.

National Science Foundation (NSF) Emerging Frontiers in Research and Innovation Research, Research and Mentoring Program. 2016.

A three-month design internship for 4 high school students focused on the design of accessible scientific data representations.

Service

ATLAS Institute Faculty Search Committee. 2016-2017

ATLAS Institute Graduate Student Group. 2016-2017

Paper Reviewer: 2014-2018

- ACM Conference on Human Factors in Computing Systems
- ACM Conference on Interaction Design and Children
- ACM Fabrication and Learning
- ACM Conference on Accessible Computing