

1 CURRICULUM VITAE

SEAN AHLQUIST

Assistant Professor of Architecture
University of Michigan, Taubman College of Architecture
ahlquist@umich.edu

1.1 GENERAL INFORMATION

1.1.1 Education

(2010-present). *Doctor of Engineering (Dr. Ing.)*, expected 2019. Stuttgart, Germany: University of Stuttgart, Faculty of Architecture, Institute for Computational Design.

(2009). *Masters in Architecture (M. Arch.)*. London, UK: Architectural Association, Emergent Technologies and Design Programme.

(1994). *Bachelor of Arts with major in Architecture (B.A. Arch.)*. St. Louis, MO: Washington University.

1.1.2 Academic Experience

(2012-present). *Assistant Professor of Architecture*, Cluster for Computational Media and Interactive Systems. Ann Arbor, Michigan: University of Michigan, Taubman College of Architecture and Urban Planning.

(2009-2012). *Adjunct Professor and Doctoral Candidate*. Stuttgart, Germany: University of Stuttgart, Faculty of Architecture, Institute for Computational Design.

(2006-2007). *Senior Lecturer*. San Francisco, California: California College of the Arts.

(2005-2006). *Lecturer*. Berkeley, California: University of California – Berkeley, College of Environmental Design.

(2004-2005). *Thesis Advisor and Instructor*. San Francisco, California: Academy of Art University.

1.1.3 Professional Experience

(2009-2012). *Research Associate*. Stuttgart, Germany: University of Stuttgart, Institute for Computational Design.

(2008-2011). *Founder, Design and Advanced Geometry Consultant*. Stuttgart, Germany and London, UK: MORSE.

(1997-2007). *Founder, Architectural Designer and Advanced Geometry Consultant*. San Francisco, California: Proce2.

(1996-1997). *Architectural Technician*. San Francisco, CA: Hellmuth, Obata + Kassabaum.

(1995-1996). *Junior Designer*. St. Louis, Missouri: Hellmuth, Obata + Kassabaum.

(1994-1995). *Project Designer*. St. Louis, Missouri: Schwetye Architects, Inc.

1.2 SCHOLARLY WORK

1.2.1 Honors and Awards

2018 Ahlquist, S. (2018) Social Sensory Architectures: Sensorially-responsive environments designed to address challenges facing children with autism spectrum disorder. *ARCHITECT Magazine R&D Awards – Honorable Mention*.

2016 Ahlquist, S. (2016) Social Sensory Architectures. *SXSW Eco – Place by Design, Winner in Speculative and Prototyping Category*. Austin, Texas.

1.2.2 Books and Book Chapters

2018 Ahlquist, S. (2018). Sensorial Architectures: Prototypes of socio-spatial concepts for engaging children with autism spectrum disorder. In G. Pastorutti & I. Péborde (eds.), *SKIN - The Body, the Mind and the City, 1st edition*. (awaiting print publication).

Ahlquist, S. (2018). Sensorial Playscape. In P. Yuan, N. Leach & A. Menges (eds.), *Digital Fabrication* (197-210) Tongji: Tongji University Press.

2016 Ahlquist, S. and Menges, A. (2016) Materiality & Computational Design: Emerging Material Systems & the Role of Design Computation and Digital Fabrication. In M. Kanaani & D. Kopec (eds.), *The Routledge Companion for Architecture Design and Practice: Established and Emerging Trends*, (149-168) New York: Routledge.

2016 Ahlquist, S. (2016). Social Sensorial Responsivity in Material Architectures. In R. V. Gomez & A. Brakke (eds.) *Digital Reveal – Arquitectura de la era Post-Digital*, Bogota, August 2016, pp. 66-75.

2011 Menges, A. & Ahlquist, S. (eds.) (2011). *Computational Design Thinking*. London: John Wiley and Sons.

1.2.3 Peer-reviewed Journal Papers

2017 Ahlquist, S., Ketcheson, L., & Colombi, C. (2017). Multisensory Architecture: The Dynamic Interplay of Environment, Movement and Social Function. *Architectural Design Special Issue: Design for Health*, 87(2), 90-99.

2016 Ahlquist, S. (2016). Sensory material architectures: Concepts and methodologies for spatial tectonics and tactile responsivity in knitted textile hybrid structures. *International Journal of Architectural Computing*, 14(1), 63-82.

Ahlquist, S. (2016). Textile Environments and Tactile Interfaces: Responsive Multi-Sensory Architectures for Children with Autism Spectrum Disorder, *AIA Academy of Architecture for Health Journal*, 18, 4-15.

2015 Ahlquist, S., Erb, D. & Menges, A. (2015). Evolutionary structural and spatial adaptation of topologically differentiated tensile systems in architectural design, *Artificial Intelligence for Engineering Design, Analysis and Manufacturing Journal*, 29 (04), 393-415.

Ahlquist, S. (2015) Membrane Morphologies - Heterogeneous Forces and Articulated Material Form, *Architectural Design Special Issue: Fusing the Physical and the Computational*, 85(5), 80-85.

2014 Ahlquist, S., Kampowski, T., Oliyan, O., Menges, A. & Speck, T. (2014). Development of a digital framework for the computation of complex material and morphological behavior of biological and technological systems, *Computer-Aided Design Special Issue: Material Ecology*, 60, 84–104.

2012 Ahlquist, S., & Menges, A. (2012). Physical Drivers: Synthesis of Evolutionary Developments and Force-Driven Design, *Architectural Design Special Issue: Material Computation*, 82 (2), 60-67.

2009 Ahlquist, S., & Fleischmann, M. (2009). Computational Spring Systems: Open Design Processes for Complex Structural Systems, *Architectural Design Special Issue: Closing the Gap*, 79 (2), 130-133.

2008 Ahlquist, S., & Fleischmann, M. (2008). Elemental Methods for Integrated Architectures, *International Journal for Architectural Computing*, 6 (4), 453-475.

1.2.4 Professional Journal Articles

2013 Ahlquist, S. & Lienhard, J. (2013) Textile Hybrid M1. *Tensinews*, 24(April), 6-9.

1.2.5 Peer-reviewed Conference Papers

2018 Park, G., Adams, L., Ahlquist, S. & Nanda, U. (2018). Sensory Wellbeing for Adolescents with Developmental Disorders: Creating (and testing) a Sensory Wellbeing Hub. In *ANFA 2018: Shared Behavioral Outcomes [Conference for the Academy of Neuroscience for Architecture]*, La Jolla, September 2018, (awaiting print publication).

2017 Ahlquist, S., McGee, W. & Sharmin, S. (2017). Pneumaknit: Actuated Architectures Through Wale- and Course-Wise Tubular Knit-Constrained Pneumatic Systems. In T. Nagakura & S. Tibbits (eds.), *ACADIA 17: Disciplines & Disruptions [Proceedings of the 37th Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA)]*, Boston, November 2017, pp. 39-51.

Ahlquist, S. (2017). Sensorial Playscape: Advanced structural, material and responsive capacities of textile hybrid architectures as therapeutic environments for social play. In A. Menges, B. Sheil, R. Glynn, & M. Skavara (eds.), *Fabricate: Rethinking Design and Construction*, Stuttgart, April 2017, pp. 234- 241.

Zhuang, L.Y., Luntz, J. Brei, D., Ahlquist, S. & Alexander, P. (2017). Behavior Characterization of Machine-Knit SMA. In A. Güemes, A. Benjeddou, & J. Leng (eds.), *VIII ECCOMAS Thematic Conference on Smart Structures and Materials SMART 2017 Conference Proceedings*, Madrid, June 2017, pp. 943-956.

2016 Sharmin, S. & Ahlquist, S. (2016). Knit Architecture: Exploration of Hybrid Textile Composites Through the Activation of Integrated Material Behavior. In K. Velikov, S. Ahlquist, & M. del Campo (eds.), *ACADIA 16: Posthuman Frontiers [Proceedings of the 36th Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA)]*, Ann Arbor, October 2016, pp. 254-259.

Wang, A. & Ahlquist, S. (2016). Pneumatic Textile System. In K. Velikov, S. Ahlquist & M. del Campo (eds.), *ACADIA 16: Posthuman Frontiers [Proceedings of the 36th Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA)]*, Ann Arbor, October 2016, pp. 290-297.

Ahlquist, S. & Lienhard, J. (2016). Extending Geometric and Structural Capacities for Textile Hybrid Structures with CNC Knitting. In K. Kawaguchi,

- 2016 M. Ohsaki & T. Takeuchi (eds.), *IASS 2016 Tokyo Symposium: Spatial Structures in the 21st Century, Tokyo, September 2016*. pp. 1-10.
- 2015 Ahlquist, S. (2016). Integrating Differentiated Knit Logics and Pre-Stress in Textile Hybrid Structures. In M. Thomsen, M. Tamke, C. Gengnagel, B. Faircloth & F. Scheurer (eds.), *Modelling Behaviour: Proceedings of the Design Modelling Symposium, Copenhagen, September 2015*, pp. 1-14.
- Ahlquist, S. (2015). Social Sensory Architectures: Articulating Textile Hybrid Structures for Multi-sensory Responsiveness and Collaborative Play. In L. Combs & C. Perry (eds.), *ACADIA 15: Computational Ecologies [Proceedings of the 35th Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA)], Cincinnati, October 2015*, pp. 262-273.
- Ahlquist, S., Newell, C., Thun, G. & Velikov, K. (2015). Towards a Pedagogy of Material Systems Research. In K. Bieg (ed.), *TxA Interactive Conference Proceedings, Fort Worth, November 2013*, pp. 22-33.
- 2014 Ahlquist, S. (2014). Post-forming Composite Morphologies: Materialization and design methods for inducing form through textile material behavior. In D. Gerber, A. Huang & J. Sanchez (eds.), *ACADIA 14: Design Agency [Proceedings of the 34th Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA)], Los Angeles, October, 2014*, pp. 267-276.
- 2013 Ahlquist, S. & Menges, A. (2013). Frameworks for Computational Design of Textile Micro-Architectures and Material Behavior in Forming Complex Force-Active Structures. In P. Beasley, O. Khan & M. Stacey (eds.), *ACADIA 13: Adaptive Architecture [Proceedings of the 33rd Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA)], Cambridge, October 2013*, pp. 281-292.
- Ahlquist, S., Lienhard, J., Knippers, J. & Menges, A. (2013). Physical and Numerical Prototyping for Integrated Bending and Form-Active Textile Hybrid Structures. In C. Gengnagel, A. Kilian, J. Nembrini & F. Scheurer (eds.), *Rethinking Prototyping: Proceeding of the Design Modelling Symposium, Berlin, October 2013*, pp. 1-14.
- Ahlquist, S., Lienhard, J., Knippers, J. & Menges, A. (2013). Exploring Materials Reciprocities for Textile-Hybrid Systems as Spatial Structures. In M. Stacey (ed.), *Prototyping Architecture: The Conference Papers, London, March 2013*, pp. 187-210.
- Lienhard, J., Ahlquist, S., Menges, A. & Knippers, J. (2013). Extending the Functional and Formal vocabulary of tensile membrane structures through the interaction with bending-active elements. In F. Dansik, M. Sahin, M. Devecioglu, E. Pusat, A. Kaymak & E. Corne *TensiNet symposium [RE] THINKING lightweight structures, Istanbul, May 2013*.
- 2011 Ahlquist, S. & Menges, A. (2011). Articulated Behavior: Computational Methods for the Generation and Materialization of Complex Force-Active Textile Morphologies. In L. Hallnäs (ed.), *Proceedings of AMBIENCE 2011 Conference, Boras, November 2011*.
- Ahlquist, S. & Menges, A. (2011). Behavior-based Computational Design Methodologies: Integrative Processes for Force Defined Material Structures. In B. Kolarevic (ed.), *ACADIA 11: Integration through Computation [Proceedings of the 31st Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA)], Banff (Alberta), October 2011*, pp. 82-89.
- Ahlquist, S. & Menges, A. (2011). Integration of Behaviour-based Computational and Physical Models Design Computation and Materialisation of Morphologically Complex Tension-Active Systems. In C. Gengnagel, A. Kilian, N. Palz & F. Scheurer (eds.) *Computational Design Modeling: Proceedings of Design Modeling Symposium 2011*, Berlin, November 2011, pp. 71-78
- Ahlquist, S. & Menges, A. (2011). Methodological Approach for the Integration of Material Information and Performance in the Design Computation for Tension-Active Architectural Systems. In T. Zupancic & P. Gabrijelcic (eds.), *eCAADe 29th Proceedings: Respecting Fragile Places, Ljubljana, September 2011*, pp. 800-807.
- 2010 Ahlquist, S. & Menges, A. (2010). Realizing Formal and Functional Complexity for Structurally Dynamic Systems in Rapid Computational Means. In C. Ceccato, L. Hesselgren, M. Pauly, H. Pottmann, & J. Wallner (eds.), *Proceedings of Advances in Architectural Geometry Conference 2010, Vienna, September 2010*, pp. 205-220.
- 2009 Ahlquist, S. & Fleischmann, M. (2009). Cylindrical Mesh Morphologies: Study on Computational Meshes Based on Parameters of Force, Material, and Space for the Design of Tension-Active Structures, In G. Çagdas & B. Çolakoglu (eds.) *Computation: The New Realm of Architectural Design, Proceedings of the 27th Conference on Education and Research in Computer Aided Architectural Design in Europe (eCAADe), Istanbul, September 2009*, pp. 39-46. (ISBN: 978-0-9541183-8-9)
- Fleischmann, M., Ahlquist, S. & Menges, A. (2009). Articulating Boundaries of Computational Meshes. In C. Gengnagel (eds.) *Proceedings of Design Modeling Symposium, Berlin, October 2009*, pp. 197-203. (ISBN: 978-3-89462-177-3)
- 2008 Ahlquist, S. & Fleischmann, M. (2008). Material & Space: Synthesis Strategies based on Evolutionary Developmental Biology. In A. Kudless, N. Oxman & M. Swackhamer (eds.) *Silicon + Skin: Biological Processes and Computation, [Proceedings of the 28th Annual Conference of the Association for Computer Aided Design in Architecture (ACADIA)], Minneapolis, October 2008*, pp. 66-71 (ISBN: 9780978946340)

1.2.6 Invited Lectures

- 2018 Ahlquist, S. (2018, April 19). SensoryPlayscapes. Presented at *Intersection of the Arts and Autism Symposium – Big Umbrella Festival*. New York: Lincoln Center.
- Ahlquist, S. (2018, April 3). Tactile Interface for Socio-spatial Architectures. Presented at *Spring Symposium for the Material Research Society (MRS)*. Phoenix: Material Research Society.
- Ahlquist, S. (2018, February 19). Sensorial Architectures. Presented at *Carnegie Mellon University, School of Architecture Public Lecture Series*. Pittsburgh: Carnegie Mellon University.
- 2017 Ahlquist, S. (2017, February 14). Sensorial Architectures. Presented at College Art Association (CAA) Conference – *Textile Technologies Session*. New York: College Art Association.
- 2016 Ahlquist, S. (2016, September 2). Sensorial Architectures. Presented at *Digital Reveal Symposium - Architecture in the Post-Digital Age*. Bogota (Colombia): Universidad Piloto de Colombia.
- Ahlquist, S. (2016, July 27). Membrane Technologies: Lightweight Structures, Experiential Environments and Composites Research. Presented at *Mercedes Benz – Advanced Design Group*. Stuttgart: Mercedes Benz.
- Ahlquist, S. (2016, July 14). Sensorial Architectures: Exploration of Textile Structures and Environments for Children with Autism. Presented at *Architectural Association Visiting School (AAVS) Dubai*. Dubai: AAVS.
- Ahlquist, S. (2016, April 8). Sensorial Architectures: Exploration of textile structures and environments for Children with Autism. Presented at *HOPES22: Response Conference*. Eugene: University of Oregon.
- Ahlquist, S. (2016, March 28). Sensorial Architectures – Exploration of Textile Structures, Responsivity and Tactile Environments. Presentation at *Southern Illinois University – Carbondale, Public Lecture Series*. Carbondale: Southern Illinois University.
- Ahlquist, S. (2016, February 28). Sensorial Architectures – Exploration of Textile Structures, Responsivity and Tactile Environments. Presentation at *ArclnTEX (ETN) – Activating the Surface Symposium*. Berlin: UdK.
- 2015 Ahlquist, S. (2015, November 13). Transdisciplinary Design for Technology-embedded Tactile Environments. Presented at *American Institutes for Architecture – San Francisco (AIASF) Next Conference*. San Francisco: AIASF.
- Ahlquist, S. (2015, November 12). Sensory Architectures: Exploration of Textile Structures, Responsivity and Tactile Environments. Presented at *Digital Crafting Lab Lecture Series*. San Francisco: California College of the Arts (CCA).
- Ahlquist, S. (2015, August 14). Material Computation – Intelligent Morphology and Responsivity in Textile Architectures. Presented at *Architectural Association Visiting School (AAVS) – New York City*. New York: AAVS.
- Ahlquist, S. (2015, April 9). Differentiating Fiber Structures in Knitted Textiles for the Generation of Deformable Material Systems and Architectural Skins. Presented at *Material Research Society Symposium, Session NN – Adaptive Architecture and Programmable Matter, Next Generation Building Skins and Systems from Nano to Macro*. San Francisco: Material Research Society (MRS).
- 2014 Ahlquist, S. (2014, October 13). Social Sensory Environment: Collaborative Research in Textile-based Technologies for Children with Autism Spectrum Disorder. Presented at *MTalks*. Ann Arbor: University of Michigan.
- Ahlquist, S. (2014, August). Computational Design Thinking: Research in Material Computation. Presented at *California College of the Arts*. San Francisco: CCA.
- Ahlquist, S. (2014, February). Forming Textile Morphologies: Anthology of research in expanding topological complexity and material behavior. Presented at *TexFab5 Symposium*. Austin: University of Texas – Austin.
- Ahlquist, S. (2014, March). Material Computation: Architectural Research in Complex Fibrous Structures. Presented at *Center for the Study of Complex Systems*. Ann Arbor: University of Michigan.
- 2013 Ahlquist, S. (2013, February). Exploration and fidelity in material computation: Evolutionary means for the articulation of textile morphologies. Presented at *Encoding Architecture Conference*. Pittsburgh: Carnegie Mellon University.
- 2012 Ahlquist, S. (2012, September). Material Equilibria. Presented at *University of Arkansas – School of Architecture, Open Lecture*. Fayetteville: University of Arkansas.
- Ahlquist, S. (2012, May). Physical Drivers. Presented at *Launch for Architectural Design, Special Issue: Material Computation*. Frankfurt: German Architecture Museum.

- 2011 Ahlquist, S. (2011, June). Form: Systems of Spatial and Material Behavior. Presented at *Staedelschule Architecture Lecture Series*. Frankfurt: Staedelschule.
- Ahlquist, S. (2011, April). Computational Design: The generation and articulation of material behavior. Presented at *Woods Bagot Architecture Office*. San Francisco: Woods Bagot.
- Ahlquist, S. (2011, February). Computing Material Operations. Presented at *UN Studio Architecture Office*. Rotterdam: UNStudio.
- 2010 Ahlquist, S. (2010, December). Computation in the Design of Material Behaviors: Research in the specification of computational methods for the generation and articulation of tension-active systems. Presented at *Digital Crafting Symposium 1: Computation and Craft*. Copenhagen: CITA
- Ahlquist, S. (2010, September). Material Operations: Computing Behavior. Presented at *University of Technology-Sydney Public Lecture Series*. Sydney: University of Technology – Sydney.
- Ahlquist, S. (2010, March). Membrane Systems. Presented at *SmartGeometry – Shop Talk Lectures*. Barcelona: IAAC.
- 2009 Ahlquist, S. (2009, February). Computational Cable Nets. Presented at *SmartGeometry*. San Francisco: SmartGeometry.
- 1.2.7 Exhibited Work**
- 2017 Ahlquist, S. (2017, September – 2018 January). 3D SensoryPLAYSCAPE [v2.1]. In *Exhibition of Faculty Work*. Ann Arbor: TCAUP New Wing Gallery. Interactive environment.
- Ahlquist, S. (2017, April – 2018 January). Touch > Push > Sensate Play. In R. Gose (curator), *Exhibition for children of the THINKERY science and technology museum*. Austin: THINKERY. Solo exhibition of interactive environment.
- Ahlquist, S., McGee, W. & Sodano, H. (2017, March – 2017, April). Morphable Architectures. In *Projects from the Research through Making Grant 2016-17*. Ann Arbor: Liberty Research Annex Gallery. Mixed media.
- Ahlquist, S. (2017, March). Social Sensory Architectures. In J. Yost (curator), *Exhibition of technology at SXSWedu and SXSWinteractive*. Austin: SXSW. Solo exhibition of interactive environment.
- 2016 Ahlquist, S. & Payne, A. (2016, November). Computational Design Pavilion. In *Exhibition of generative design and advanced manufacturing*. Las Vegas: Venetian Hotel – Autodesk University. Textile installation.
- Ahlquist, S. (2016, October). Social Sensory Architectures – 3D SensoryPlayscape. In G. Thun (curator), *ACADIA 2016 Exhibition*. Ann Arbor: Liberty Research Annex Gallery. Interactive environment.
- Ahlquist, S. & Popadich, O. (2016, October). Social Sensory Architecture – 2D SensorySurface. In M. Maynard (curator), *University of Michigan, Office of Technology Transfer – Celebrate Invention Event*. Ann Arbor: Michigan League. Interactive media.
- Ahlquist, S. (2016, September). Social Sensory Architecture – 3D SensoryPlayscape. In M. Anderson (curator), *Detroit Design Festival*. Detroit: Detroit Center for Design and Technology Gallery. Solo exhibition of interactive environment.
- Ahlquist, S. (2016, March) Social Innovation: Textile Technology for Children with Autism. In *University of Michigan booth at SXSWinteractive Technology Exhibition*. Austin: Austin Conference Center. Interactive media.
- Ahlquist, S. (2016, April – 2016, June). Multi-sensory Architectures. In P. Smith (curator), *Work in Material Systems by Sean Ahlquist*. Carbondale: Southern Illinois University – School of Architecture Gallery. Solo exhibition of mixed media and interactive installation.
- 2015 Ahlquist, S., O'Modhrain, S. & Chesney, D. (2015, March – 2015, April). Social Sensory Surfaces. In *Projects from the Research through Making Grant 2014-15*. Ann Arbor: Liberty Research Annex Gallery. Mixed media and interactive environment.
- 2013 Ahlquist, S. (2013, January). Textile Morphologies. In A. Menges (curator), *Textiles Research for the Institute for Computational Design by Sean Ahlquist*. Stuttgart: University of Stuttgart – Faculty of Architecture Gallery. Solo exhibition of multiple textile installations.
- 2012 Ahlquist, S. (2012, August – 2012, October). Material Equilibria. In A. Tabatabai (curator), *Works by Sean Ahlquist*. Copenhagen: ggggallery. Solo exhibition of textile installation.
- 2011 Ahlquist, S. (2011, October). Integration of Behaviour-based Computational and Physical Models Design Computation and Materialisation of Morphologically Complex Tension-Active Systems. In C. Gengnagel (curator), *Exhibition for the Design Modeling Symposium 2011*. Berlin: UdK Gallery. Mixed media.
- 2009 Ahlquist, S. (2009, October). Articulating Computational Meshes. In C. Gengnagel (curator), *Exhibition for the Design Modeling Symposium 2009*. Berlin: UdK Gallery. Mixed media.

- 2008 Ahlquist, S. & Fleischmann, M. (2008, April). Spatial and Material System. In A. Menges (curator), *Exhibition of work from the Architectural Association*. Beijing: Architecture Biennial. Print media.
- Ahlquist, S. & Fleischmann, M. (2008, June). Emergence, Material Experiments and Computation. In M. Weinstock (curator), *Exhibition of work from the Emergent Design and Technologies Programme*. London: Architecture Association. Cable-net installation.
- 2007 Iwamoto, L., Scott, C. & Ahlquist, S. (2007, March – 2007, August). Jellyfish House. In J. Rosa (curator), *CCA at 100: Innovation by Design*. San Francisco: San Francisco Museum of Modern Art. Physical model.
- Faulders, T. & Ahlquist, S. (2007, March – 2007, August). Airspace Tokyo. In J. Rosa (curator), *CCA at 100: Innovation by Design*. San Francisco: San Francisco Museum of Modern Art. Physical model.
- Iwamoto, L., Scott, C. & Ahlquist, S. (2007, March – 2007, July). Jellyfish House. In Vitra Design Museum and Arts Center College of Design (curators), *Open House: Design for Intelligent Living*. Pasadena: Arts Center College of Design Gallery. Mixed media.
- 2006 Iwamoto, L., Scott, C. & Ahlquist, S. (2006, August – 2006, December). Jellyfish House. In Vitra Design Museum and Arts Center College of Design (curators), *Open House: Design for Intelligent Living*. Essen (Germany): Galleries at Zeche Zollverein. Mixed media.
- 1.2.8 Publication of Work, Written by Others**
- 2018 Lau, W. & Risen, C. (2018). Social Sensory Architectures. *ARCHITECT Magazine*, Vol. 107 (7), 122-123.
- Glass, T. (2018). Social Sensory Architectures: Playscape that provides sensory feedback and encourages social interaction. *Prompt: Socially Engaging Objects and Environments*, (152-155), Basel: Birkhauser Architecture. (ISBN: 978-3035611939)
- Vasudeva, C. (2018). Sean Ahlquist CNC-Knits Multi-Sensory Environments for Children with Autism. *Carnegie Mellon – School of Architecture*, April 3. Retrieved from <https://soa.cmu.edu/news-archive/2018/4/3/sean-ahlquist-cnc-knits-multi-sensory-environments-for-children-with-autism>.
- 2017 Minassian, K. (2017). This dad created an interactive playground for his daughter, who has autism. *GE Reports – The Future is Now*, Aug 8. Retrieved from <https://www.facebook.com/MicMedia/videos/1277499499026746/>
- Budds, D. (2017). An Architect Designed This Soft, Immersive Jungle Gym for His Autistic Daughter. *Fastcodesign*, March 16. Retrieved from <https://www.fastcodesign.com/3068958/an-architect-designed-this-soft-immersive-jungle-gym-for-his-autistic-daughter>
- Canty, C. (2017). Radio Interview: New technology helps create sensory experiences for children with autism. *Michigan Radio – The Next Idea Program*, July 7. Retrieved from <http://michiganradio.org/post/new-technology-helps-create-sensory-experiences-children-autism>
- 2016 Mortice, Z. (2016). Architecture for Autism Could Be a Breakthrough for Kids with ASD. *Autodesk – Redshift*, December 6. Retrieved from <https://redshift.autodesk.com/architecture-for-autism/>
- Brownell, B. (2016). Materials Research with a Social Focus. *ARCHITECT Magazine – Technology, Mind & Matter*, April 20. Retrieved from http://www.architectmagazine.com/technology/materials-research-with-a-social-focus_0
- Piazza, A. (2016). Bikes and Colors. *Michigan Research*, April 19. Retrieved from <http://research.umich.edu/news-issues/michigan-research/bikes-and-colors>
- 2015 O'Connell, K.A. (2015). Flexing Forms: AIA Upjohn Project. *ARCHITECT Magazine*, June Issue, 42-44.
- Newman, E. (2015). Radio Interview: University of Michigan Develops 'Social Sensory Surfaces' for Autism Therapy. *NPR Detroit*, August 12. Retrieved from <http://wdet.org/posts/2015/08/12/81212-university-of-michigan-develops-social-sensory-surfaces-for-autism-therapy-video/>
- Culvahouse, T. (2015). NEXT!: AIA San Francisco at the Cutting Edge. *AIA California Council*, December 14. Retrieved from <http://www.aiacc.org/2015/12/14/next-aia-san-francisco-at-the-cutting-edge/>
- Hawkins, S. (2015). A touch of color: Engaging children with autism; other exhibits at SXSW. *Michigan News*, February 22. Retrieved from <https://news.umich.edu/a-touch-of-color-engaging-children-with-autism-other-exhibits-at-sxsw/>
- 2012 Thomsen, M.R., Tamke, M. & Pederson, C.P. (2012). Research 2009-2011 - Digital Crafting: A Network on Computation and Craft in Architecture, Engineering and Design. *CITA – Royal Danish Academy of Fine Arts*, January.
- 2008 Kolarevic, B. & Klinger, K. (2008). Manufacturing / Material / Effects. In B. Kolarevic & K. Klinger (eds.), *Manufacturing Material Effects: Rethinking Design and Making in Architecture*, New York: Routledge, 5-24.
- Housing Block with Studios in Tokyo. (2008). *Detail – Facades Issue*, Vol. 6 (10/2008), 1114-1118.

- 2008 Airspace Tokyo. (2008) *Architecture & Detail*, No. 04 (05/2008).
 Zeiger, M. (2008). Drawn Together. *Azure*, March/April 2008.
 Nuijsink, C. (2008). Artificial Shrubbery: Airspace Tokyo. *MARK*, Issue 11(12/2007-01/2008).
- 2007 Superficial Artifice. (2007). *Praxis*, Issue 9(Nov).
 Airspace Tokyo. (2007, Nov 10). *Wallpaper**, Retrieved from <https://www.wallpaper.com/gallery/architecture/airspace-tokyo>
 Inside's Blueprint for the Future. (2007, May 1). *Wired Magazine*, Retrieved from <https://www.wired.com/2007/05/inside-s-blueprint-for-the-future/>
- 2005 Brownell, B. (2005). Body Index Chair. *Transmaterial: A Catalog of Materials That Redefine our Physical Environment*.

1.2.9 Grants

- 2018 Ahlquist, S. (2018/9 – 2019/12). Sensorial Accessibility: Manners of architectural intervention engendering civic engagement for a neurodiverse population. *Exhibit Columbus University Design Research Fellowship* (\$10,000).
 Ahlquist, S. & O'Dell, D. (2018/7 – 2019/8). Inclusive Socio-Sensory Theater: Combing sensorial engagement and participatory theater as means to model social behavior for children with autism spectrum disorder in complex sensory-toxic environments. *University of Michigan – Taubman College of Architecture and Urban Planning* (\$20,000).
 Ahlquist, S. (2018/4 – 2018/8). Tensile fabrics and CNC fabrication. *Autodesk, Inc.* (\$10,000).
 Ahlquist, S. (2018/08 – 2021/12). Bailment of Stoll CMS 830 ADF-24 W 7.2ADF to University of Michigan. *General Motors LLC* (\$213,000).
 Ahlquist, S. (2018/01 – 2021/12). Structural Knits for Automotive Seating – Amendment to 'Establishment of Multifunctional Vehicle Systems Division in General Motors Institute at the University of Michigan.' *General Motors LLC* (\$705,000).
- 2017 Ahlquist, S. & Colombi, C. (2017/8 - 2018/9). Kinesthetic Environment for Sensory Regulation, Engaged Learning and Social Interaction. *Michigan, State of, Economic Development Corporation - Mi-Kickstart Life Sciences Grant* (\$20,000)
 Nanda, U., Adams, L. & Ahlquist, S. (2017/6 – 2018/12). Sensory Wellbeing for Adolescents with Developmental Disorders: Creating (and testing) a Sensory Wellbeing Hub with a 'Sensthetic' approach. *American Society of Interior Designers (ASID) Transform Grant* (\$70,000).
 Ahlquist, S., McGee, W. & Sodano, H. (2017/6 – 2017/3). Morphable Architectures: Explorations from fiber structure to material behavior and architectural system. *University of Michigan – Taubman College of Architecture and Urban Planning, Research through Making Grant* (\$20,000).
 Brei, D., Ahlquist, S. & Shaw, J. (2017/1 – 2021/12). Establishment of Multifunctional Vehicle Systems Division in General Motors Institute at the University of Michigan. *General Motors LLC* (\$6,000,000).
- 2016 Ahlquist, S., McGee, W. & Sodano, H. (2016/8 – 2017/7). Generating seamless and structurally differentiated composite materials with CNC knitting technology. *Michigan, State of, Economic Development Corporation, MTRAC Advanced Transportation* (\$70,000).
 Ahlquist, S. (2016/11 – 2017/6) CNC Knitted Tensile Fabric Structures. *Autodesk, Inc.* (\$15,000).
 Ahlquist, S., Sharmin, S. & Finch, D. (2016/6 – 2017/6). Manufacturing of seamless and structurally differentiated carbon fiber. *National Science Foundation (NSF) I-CORPS* (\$50,000).
 Ahlquist, S. (2016/1 – 2016/2). 3D-knitted Multi-Functional Textiles and Fiber-reinforced Composites. *Regional Initial Customer Discovery Program (ICD) at Lake Superior State University* (\$500).
- 2015 Ahlquist, S., Colombi, C., Ketcheson, L. & Ulrich, D. (2015/11 – 2017/12). Tactile interfaces and environments for children with autism. University of Michigan, *MCubed Program* (\$15,000).
 Ahlquist, S. & Chesney, D. (2015/8 – 2016/12). Tactile Technologies for Play and Learning: Framework for engaged transdisciplinary teaching and development of technologies for children with Autism Spectrum Disorder. *University of Michigan, Center for Research on Learning and Teaching (CRLT), Transforming Learning for the Third Century Grant* (\$50,000).
 Ahlquist, S. (2015/1 – 2016/1). Integrated Conductivity in Textiles for Sensing Degrees of Touch and Displacement. *University of Michigan Office of Research (UMOR), Small Projects Grant* (\$8,100).
 Ahlquist, S. (2015/1 – 2016/5). Morphable Surfaces: Knitted Seamless Textile-Composite Material Systems with Variable Deformability, and Integrated Sensing and Actuation. *American Institute of Architects (AIA) Upjohn Research Grant* (\$40,000).

- 2014 Ahlquist, S. (2014/9 – 2015/6). Autism Spectrum Disorder, Sensory Processing and Tactile Interfaces. *University of Michigan Faculty Scholars Program in Integrative Medicine* (\$1,500).
- Ahlquist, S., O’Modhrain, S. & Chesney, D. (2014/6 – 2015/3). Social Sensory Surfaces: Physical Computing, Tactile (Textile) Interfaces and Collaborative Tools for Children with Autism Spectrum Disorder. *University of Michigan – Taubman College of Architecture and Urban Planning, Research Through Making Grant* (\$20,000).
- Ahlquist, S. & Waas, A. (2014/1 – 2014/12). Flat-bed Knitting Machine and Related Resources for University of Michigan. *Co-sponsored by U-M Taubman College of Architecture and Urban Planning, U-M College of Engineering – Department of Aerospace Engineering and U-M OVPR Shared Equipment Fund* (\$158,000).
- 2013 Ahlquist, S. & McGee, W. (2013/6 – 2014/3). Knit Architectures. *University of Michigan – Taubman College of Architecture and Urban Planning, Research Through Making* (\$20,000).
- Ahlquist, S. (2013/6 – 2014/8). Innovations in the Design of Robust Lightweight Materials Through Exploration of the Structural Principles of Banana Plants. *University of Michigan Office for Research (UMOR)* (\$15,000).
- Ahlquist, S. (2013/1 – 2013/2). Workshop and Installation for Research and Learning in Material Computation at the University of Stuttgart. *University of Michigan, International Institute, Experiential Learning Fund* (\$15,800).
- Ahlquist, S., Essl, G. & Waas, T. (2013/12 – 2014/12). Mechanical Properties and Computational Methods for Composites Formed of Pre-stressed Knitted Textiles of Varying Fibrous Structures. *University of Michigan, MCubed Program* (\$60,000).

1.2.10 Patents

- 2018 Ahlquist, S. and McGee, W. (2018/2/19) Method for Mass-customization and multi-axial motion with a knit-constrained actuator, U.S. Provisional Application, No. 62/632,032
- 2017 Ahlquist, S. and Wang, W.C. (2017/1/9) A method of actuation using knit-constrained pneumatics, U.S. Provisional Application, No. 62/443,938
- 2015 Waas, A., Ahlquist, S. and McGee, W. (2015/9/15) Method to increase structural performance, strength and durability of fabric reinforced composites materials by pre-stressing, U.S. Patent Application, No. 14/854,175

1.3 TEACHING

1.3.1 Courses Taught

University of Michigan

(2018, winter). ARCH 738/ARCH 739: Capstone for Master of Science in Digital Technologies and Material Systems (MSDT/MSMS)

(2017, fall). ARCH 708: Processes in Material Computation.

(2017, fall). ARCH 409/ARCH 509: ENGAGE – Tactile Architectures.

(2016, fall). ARCH 708: Processes in Material Computation.

(2016, fall). ARCH 409/ARCH 509: ENGAGE – Tactile Architectures.

(2016, winter). ARCH 739: Capstone for Master of Science in Material Systems.

(2016, winter). ARCH 409/ARCH 509: ENGAGE – Tactile Architectures.

(2015, fall). WORKSHOP: Mindfulness for Autism.

(2015, fall). WORKSHOP: Introduction to Machine Knitting.

(2015, fall). ARCH 409/ARCH509: STRETCH – Technology embedded playscapes – Collaborative course with EECS 481.

(2015, fall). ARCH 708: Processes in Material Computation

(2015, winter). WORKSHOP: Introduction to Machine Knitting.

(2015, winter). ARCH 409/ARCH 509: TOUCH – Textile Interfaces and Sensory Feedback. Collaborative course with PAT 498/598.

(2015, winter). ARCH 591: Generative Design Computing.

(2014, fall). *ARCH 509: Lightweighting*.

(2014, fall). *ARCH 409: STRETCH – Technology embedded playscapes – Collaborative course with EECS 481*.

(2014, winter). *ARCH 700: Practicum for Master of Science in Material Systems*.

(2014, spring). *ARCH 739: Capstone for Master of Science in Material Systems*.

(2013, fall). *ARCH 672: Propositions Studio – Textile Morphologies*.

(2013, fall). *WORKSHOP: Collaboration with Experts in Machine Knitting*.

(2013, winter). *ARCH 700: Practicum for Material of Science in Material Systems*.

(2012, fall). *ARCH 708: Processes in Material Computation*.

University of Stuttgart

(2012, spring/summer). *CAAD/CAM II 2.2.6: Seminar – Deep Surface Building Project*.

(2012, spring/summer). *CAAD/CAM II 2.2.2: Studio – Deep Surface Morphologies*.

(2011, fall/winter). *CAAD/CAM II 2.2.2: Studio – Spatial Intensifiers*.

(2011, spring/summer). *CAAD/CAM II 2.2.6: Seminar – Generative Design*.

(2010, fall/winter). *CAAD/CAM II 2.2.6: Seminar – Membrane Morphologies*.

(2010, fall/winter). *CAAD/CAM II 2.2.6: Seminar – Deep Surface Prototypes*.

1.3.2 Studio and Workshops at other institutions

(2018, winter). *FashionTech Hackathon. Kent State University*.

(2016, fall). *Workshop at ACADIA Conference – Smart Textiles. University of Michigan*.

(2016, summer). *Architectural Association Visiting School – Dubai: Articulate Performance*.

(2014, summer). *333 Design Studio – Textile Morphologies. California College of the Arts (CCA)*.

(2014, winter). *Workshop at TexFab5 Symposium – Textile Morphologies. University of Texas – Austin*.

(2012, fall). *Programming Particle Systems in Processing. University of Arkansas*.

(2011, summer). *Digital Crafting Workshop – Textiles as Material: How to Brace. CITA – Royal Academy of Fine Arts, School of Architecture & Design School, Kolding*.

(2010, fall). *Masterclass workshop – Tensioned Morphologies. University of Technology Sydney*.

(2010, spring). *Workshop at Smartgeometry Conference – Deep Surfaces. Institute for Advanced Architecture of Catalonia – Barcelona*.

1.3.3 Dissertation Committees

(Current). *Ph.D. Dissertation Committee – University of Michigan, Aerospace. David Singer*.

(Current). *Ph.D. Dissertation Committee – University of Michigan, Design Science. Koray Benli*

(Current). *Ph.D. Dissertation Committee – Technical University – Darmstadt (Germany). Anton Savov*.

(2017). *Ph.D. Dissertation Committee – University of Michigan, Aerospace. Cyrus Kosztowny*.

1.4 SERVICE

1.4.1 Committees

College

(2018-present). *Committee DEI Advanced Degree Program (representative for Master of Science in Digital Material Technologies). University of Michigan: Taubman College of Architecture and Urban Planning*.

(2017-2018). *Architecture Fellowship Search Committee*. University of Michigan: Taubman College of Architecture and Urban Planning.

(2017-2018). *Post-doc and Dual Career Hire Committee*. University of Michigan: Taubman College of Architecture and Urban Planning.

(2015-2016). *Technical Committee and Planning for ACADIA 2016 Conference at U-M*. University of Michigan: Taubman College of Architecture and Urban Planning.

Program

(2014-2015). *Master of Architecture Admissions Committee*. University of Michigan: Taubman College of Architecture and Urban Planning.

(2012-present). *Master of Science in Material Systems Admissions Committee*. University of Michigan: Taubman College of Architecture and Urban Planning.

(2012-present). *Master of Science in Material Systems, curriculum development, marketing and outreach*. University of Michigan: Taubman College of Architecture and Urban Planning.

University

(2018). *Executive committee for the Sensory Science Initiative Inaugural Symposium (representative for Architecture)*. University of Michigan.

(2016-present). *Sensory Science Initiative Committee*. University of Michigan.

(2012-2016). *Undergraduate Research Opportunity Program (UROP) Supervisor*. University of Michigan: College of Literature, Science and the Arts.

(2012-present). *Integrative Systems + Design (via participation Design Science Program)*. University of Michigan: College of Engineering.

1.4.2 Service Organizations

Academic/Professional Organizations

(2018). *Panel for Small Business Innovation Research (SBIR) - Composites & Specialized Functional Materials*, National Science Foundation (NSF): Division of Industrial Innovation and Partnerships.

(2017). *Panel for Structural and Architectural Engineering and Materials (SAEM)*. National Science Foundation (NSF): Division of Civil, Mechanical and Manufacturing Innovation.

(2016). *Advisory Panel for Peer-review Process*. Association for Computer-Aided Design in Architecture (ACADIA).

(2015-2016). *Scientific Committee (peer-review for conference papers)*. Digital Modeling Symposium – Copenhagen (DMSC).

(2014-2018). *Scientific Committee (peer-review for conference papers)*. TxA Interactive Conference.

(2014-2017). *Scientific Committee (peer-review for journal papers)*. Artificial Intelligence for Engineering Design, Analysis and Manufacturing (AIEDAM).

(2014-2016). *Scientific Committee (peer-review for conference papers)*. Robotic Fabrication in Architecture, Art, and Design (RobArch).

(2014-2015). *Scientific Committee (peer-review for journal papers)*. Computer-Aided Design (CAD).

(2014-2015). *Scientific Committee (peer-review for conference papers)*. Association of Collegiate Schools of Architecture (ACSA).

(2012-2018). *Scientific Committee (peer-review for conference papers)*. Association for Computer-Aided Design in Architecture (ACADIA).

(2012-2015). *Board of Directors (member)*. Association for Computer-Aided Design in Architecture (ACADIA).