

# Wes McGee

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## Education

*Master of Industrial Design*, Georgia Institute of Technology, 2005.

*Bachelor of Science in Mechanical Engineering*, Georgia Institute of Technology, 2001.

*Certificate in Composites Engineering*, Georgia Institute of Technology, 2001.

## Academic Appointments

*Associate Professor w/ Tenure*, University of Michigan, Taubman College of Architecture and Urban Planning, 2019 - present.

*Associate Professor*, University of Michigan, Department of Civil and Environmental Engineering, 2020 - present.

*Assistant Professor*, University of Michigan, Taubman College of Architecture and Urban Planning, 2013 - 2019.

*Director of Fabrication Lab*, University of Michigan, Taubman College of Architecture and Urban Planning, 2008 - present.

*Faculty Affiliate*, University of Michigan Robotics Institute, 2015 - present.

*Lecturer*, University of Michigan, Taubman College of Architecture and Urban Planning, 2008 - 2013.

*Velux Visiting Professor*, Aarhus School of Architecture, 2015.

*Visiting Lecturer, MATr project*, Kent State University, 2013.

*FABLab Coordinator*, Harvard Graduate School of Design, 2007 - 2008.

*Instructor*, Harvard Graduate School of Design, 2008.

## Professional Experience

*Partner*, Matter Design, 2008 - present.

*Partner*, Thingfarm, LLC, 2005 - 2008.

*Production Manager*, Dex Studios, Inc., 2005 - 2007.

## Honors and Awards for Research, Practice, or Scholarship

2023 Liang, Ci-Jyun, McGee, Wes, Menassa, Carol and Vineet Kamat. ASCE John O. Bickel Award for the paper, "Trajectory-Based Skill Learning for Overhead Construction Robots Using Generalized Cylinders with Orientation". *Journal of Computing in Civil Engineering*. Vol. 36 Issue 2. 2023.

- 2022 Newell, Cathlyn, Wes McGee, and Zachary Belanger. "Long Range Glass." Merit Award, R+D Awards, Architect Magazine, 2022.
- Ng, Tsz Yan, Wes McGee, SOM Chicago. "SPLAM." AIA National Small Project Awards 2022.
- Ng, Tsz Yan, Wes McGee, SOM Chicago. "SPLAM." Best Special Structure, Excellence in Structural Engineering Awards, Structural Engineers Association of Illinois. 2022.
- Ng, Tsz Yan, Wes McGee, SOM Chicago. "SPLAM." Finalist for Fast Company's 2022 World Changing Ideas Awards, architecture category.
- Ng, Tsz Yan, Wes McGee, SOM Chicago. "SPLAM." Finalist for Fast Company's 2022 Innovation by Design Awards, Sustainability category.
- 2021 Clifford, Brandon, Wesley McGee, and Johanna Lobdell, et al. "Aqui Aqui." Honor Award Winner, Unbuilt Architecture & Design, Boston Society of Architects. 2021.
- 2020 McGee, Wesley and Tsz Yan Ng. "Robotic Needle Felting." Shortlist, Dezeen Awards.
- 2019 Clifford, Brandon, Wesley McGee, and Johanna Lobdell. "Cannibal's Bath." Finalist, PS1 Young Architect's Program, MoMA, 2019.
- Ng, Tsz Yan, and Asa Peller, Wesley McGee. "Robotic Needle Felting." *Honorable Mention, Faculty Design Award*, Association of Collegiate Schools of Architecture, 2019.
- 2018 Clifford, Brandon and Wesley McGee. "Cyclopean Cannibalism". *A|N Best of Design Award Winner | New Materials*, The Architect's Newspaper, 2018.
- McGee, Wesley and Tsz Yan Ng, Asa Peller. "Hard + Soft: Robotic Needle Felting for Nonwoven Textiles." *Best Paper, Runner-up, Robotic Fabrication in Art, Architecture, and Design*, 2018.
- Ng, Tsz Yan and Wesley McGee, Asa Peller. "Hard + Soft: Robotic Felting." *Finalist Juried and Popular Vote, A+ Awards*, Architizer, 2018.
- Ng, Tsz Yan and Wesley McGee, Asa Peller. "Hard + Soft: Robotic Felting." *Merit Award, R+D Awards*, Architect Magazine, 2018.
- 2017 McGee, Wesley. *Award for Innovative Research*, ACADIA, 2017.
- Clifford, Brandon and Wesley McGee. "Microtherme." *Winner, AZ Awards*, Azure Magazine, 2017.
- Clifford, Brandon and Wesley McGee. "Microtherme." *People's Choice, AZ Awards*, Azure Magazine, 2017.
- 2016 McGee, Wesley and Geoff Thun, Kathy Velikov, Daniel Tish. "Infundibuliforms." *Honorable Mention, R+D Awards*, Architect Magazine, 2016.
- McGee, Wesley and David Pigram, Iain Maxwell, David Jenny, Luka Pistoric. *Best Workshop Runner-Up*, Robots in Architecture, Art, and Design, 2016.

- 2014 Feng, Chen and Yong Xiao, Aaron Willette, Wesley McGee, Vineet R. Kamat. "Towards Autonomous Robotic In-Situ Assembly on Unstructured Construction Sites Using Monocular Vision." *Best Paper*, The International Symposium for Automation and Robotics in Construction, 2014.
- 2013 Clifford, Brandon and Wesley McGee. "Matter Design." *Boston Design Biennial*, Boston Society of Architects, 2013.
- Clifford, Brandon and Wesley McGee. "Matter Design." *Architectural League Prize for Young Designers*, Architectural League of New York, 2013.
- Thun, Geoff and Kathy Velikov, Colin Ripley, Lisa Sauve, Wesley McGee. "Resonant Chamber." *Juried and Popular Vote, A+ Awards*, Architizer, 2013.
- 2011 Clifford, Brandon and Wesley McGee. "PlyShelf." *Juried Award and Popular Vote, AZ Awards*, Azure Magazine, 2011.
- 2010 Clifford, Brandon and Wesley McGee. "PlyShelf." *Product of the Year*. Architectural Record, 2010.
- Clifford, Brandon and Wesley McGee. "Periscope Tower." *First Place, 10Up! Architecture Competition*. AIA/AIAS Atlanta, 2010.

## Books, Edited

McGee, Wesley and Monica Ponce de Leon. *Robotic Fabrication in Architecture, Art, and Design*. Springer Engineering, 2014.

## Books, Self-Published

Clifford, Brandon and Wesley McGee. *Range: Matter Design*. ODDI Printing, 2013.

## Book Chapters

- 2019 Clifford, Brandon and Wes McGee. "Cyclopean Cannibalism," In *Robotic Building: Architecture in the Age of Automation*, Edition Detail: London, 2019: 32-33.
- 2018 McGee, Wesley and Geoff Thun, Kathy Velikov, Dan Tish. "Prologue for a Robotic Architecture: Bridging design Environments, robotic additive manufacture, and systemic controls for kinetic information." *Towards a Robotic Architecture*, edited by Mahesh Daas and Andrew Witt, ORO Editions, 2018, pp. 190-203.
- 2016 Pigram, David and Iain Maxwell, Wesley McGee. "Towards Real-Time adaptive Fabrication-Aware Form Finding." *Robots in Architecture, Art and Design 2016*, edited by Dagmar Reinhardt and Rob Saunders, Jane Burry, Springer Engineering, 2016, pp. 426-437.
- 2015 Clifford, Brandon and Wesley McGee. "La Voûte de LeFevre." *Robotic Futures*, edited by Philip F. Yuan and Achim Menges, Neil Leach, Tongji University Press, 2015, pp. 96-105.
- 2014 Clifford, Brandon and Wesley McGee. "Matter Design". *Young Architects 15: Range*, edited by The Architectural League of New York, Princeton University Press, 2014, pp. 46-71.
- 2013 Clifford, Brandon and Wesley McGee. "La Voute de LeFevre." *[En]coding Architecture: The Book*, edited by Liss C Werner, Carnegie Mellon University, School of Architecture, 2013, pp. 121-125.

- 2012 Feringa, Jelle and Wesley McGee, Asbjorn Sondergaard. "Robotic Hotwire Cutting: Processes for an Architecture of Volume." *Robots in Architecture, Art, and Design*, edited by Sigrid Brell-Cokcan and Johannes Braumann, Springer Wien, 2012, pp. 62-71.
- Clifford, Brandon and Wesley McGee, David Pigram. "Against Drawing." *Scripting the Future*, edited by Philip Yuan and Neil Leach, Tongji University Press, 2012.
- Clifford, Brandon and Wesley McGee. "Stereotomic Robotics." *Fabricating the Future*, edited by Philip Yuan and Neil Leach, Tongji University Press, 2012, pp. 73-78.
- 2011 McGee, Wesley and David Pigram. "Matter and Making." *Fabricate: Making Digital Architecture*, edited by Ruari Glynn and Bob Sheil, Riverside Architectural Press, 2011, pp. 74-79.
- 2010 Clifford, Brandon and Wesley McGee. "Foam Advocates: From Surface to Volume." *Pidgin Magazine vol. 8*, edited by Philip Tidwell, et al., Princeton University Press, 2010, pp. 149-151.

## Peer Reviewed Journal Articles

- 2023 Yu, H., Kamat, V. R., Menassa, C. C., McGee, W., Guo, Y., & Lee, H. (2023). Mutual physical state-aware object handover in full-contact collaborative human-robot construction work. *Automation in Construction*, 150, 104829. doi:10.1016/j.autcon.2023.104829
- 2022 Newell, C., Belanger, Z. & McGee, W. Shaping Glass for Acoustic Performance. *Glass Structures & Engineering* 7, 253–265 (2022). <https://doi.org/10.1007/s40940-022-00187-9>
- Zhou, W., McGee, W., Zhu, H., Gökçe, H. S., & Li, V. C. Time-dependent fresh properties characterization of 3D printing engineered cementitious composites (3DP-ECC): On the evaluation of buildability. *Cement and Concrete Composites*, 133, 104704.
- Liang, Ci-Jyun, Mcgee, Wes, Menassa, Carol and Vineet Kamat. Real-time state synchronization between physical construction robots and process-level digital twins. *Constr Robot*. <https://doi.org/10.1007/s41693-022-00068-1>
- Liang, Ci-Jyun, Mcgee, Wes, Menassa, Carol and Vineet Kamat. Trajectory-Based Skill Learning for Overhead Construction Robots Using Generalized Cylinders with Orientation. *Journal of Computing in Civil Engineering*. Vol. 36 Issue 2. 2022.
- 2021 Kequan Yu, Wes McGee, Tsz Yan Ng, He Zhu, Victor C. Li. 3D-printable engineered cementitious composites (3DP-ECC): Fresh and hardened properties. *Cement and Concrete Research*, 143, 2021.
- Zhu, He, Kequan Yu, Wes McGee, Tsz Yan Ng, Victor C. Li. Development of 3D-Printable ECC using Limestone Calcined Clay Cement. *Journal of the American Concrete Institute*, 2021.
- 2020 Li, Victor C., Freek Bos, Kequan Yu, Wes McGee, Tsz Yan Ng, Stephan Chavez Figueiredo, et al. On the emergence of 3D printable Engineered, Strain Hardening Cementitious Composites (ECC/SHCC). *Cement and Concrete Research*, 132, 2020.
- Liang, C.J., Wes McGee, Carol Menassa and Vineet Kamat. Online Digital Twins for Construction and Digital Fabrication Robots. ISARC 2020.
- McGee, Wes, Tsz Yan Ng, Victor C. Li and Kequan Yu. Extrusion Nozzle Shaping as an Approach for Improved 3DP of Engineered Cementitious Composites (ECC/SHCC). In *Digital Concrete 2020*. Springer.

- 2019 Liang, Ci-Jyun, Kurt Lundeen, Wes McGee, Carol Menassa, Sanghyun Lee, and Vineet Kamat. "A vision-based marker-less pose estimation system for articulated construction robots." *Automation in Construction*, vol. 104, 2019, pp. 80-94.
- Lundeen, Kurt, Vineet Kamat, Carol Menassa, and Wes McGee. "Autonomous motion planning and task execution in geometrically adaptive robotized construction work." *Automation in Construction*, vol. 100, 2019, pp. 24-45.
- Tish, Dan and Wesley McGee, Tim Schork, Geoffrey Thun, Kathy Velikov. "Case Studies in Topological Design and Optimization of Additively Manufactured Cable-Nets." *Structures*, vol 18, pp. 83-90.
- 2018 Clifford, Brandon, Wesley McGee, and Mackenzie Muhonun. "Recovering Cannibalism in Architecture with a Return to Cyclopean Masonry." *Nexus Network Journal*, vol. 20, issue 3 2018.
- 2017 McGee, Wesley. Review of *Prototyping for Architects: Real Building for the Next Generation of Digital Designers*, by Jane Burry and Mark Burry, *TAD journal*, vol. 1, no. 2, 2017, pp. 247–248.
- Lundeen, Kurt and Vineet Kamat, Carol Menassa, Wesley McGee. "Scene Understanding for Adaptive Manipulation in Robotized Construction Work," *Automation in Construction*, vol. 82C, 2017, pp. 16-30.
- 2015 Feng, Chen and Yong Xiao, Aaron Willette, Wesley McGee, Vineet R. Kamat, "Vision Guided Autonomous Robotic In-Situ Assembly and As-built 3D Scan." *Automation in Construction*, vol. 59, 2015, pp. 128-138.
- 2012 Thun, Geoff and Kathy Velikov, Lisa Sauve, Colin Ripley, Wesley McGee. "Soundspheres: Resonant Chamber." *Leonardo: The Journal of the International Society of the Arts, Sciences and Technology*. Vol. 45.4, 2012, pp. 348-357.

## Academic Conference Papers

- 2022 Aghaei Meibodi, Mania, McGee, Wes and Alireza Bayramvand. Robotic 3D Printing Multilayer Building Envelope. ACADIA 2022.
- Ng, Tsz Yan and Wes McGee. Topology + timber. ARCC 2022: RESILIENT CITY: Physical, Social, and Economic Perspectives. 2022.
- Klemmt, Christoph, Aghaei Meibodi, Mania, Beaucage, Gregory and Wes McGee. Large-scale Robotic 3D Printing of Plant Fibre and Bioplastic Composites. Co-creating the Future: Inclusion in and through Design - Proceedings of the 40th Conference on Education and Research in Computer Aided Architectural Design in Europe (eCAADe 2022) - Volume 1, Ghent, 13-16 September 2022, pp. 9–18
- 2021 Meibodi, Mania, Craney, Ryan, and Wes McGee. Robotic Pellet Extrusion 3D Printing and Integral Computational Design. ACADIA 2021.
- 2020 Liang, C.J., Wes McGee, Carol Menassa and Vineet Kamat. Bi-Directional Communication Bridge for State Synchronization between Digital Twin Simulations and Physical Construction Robots. ISARC 2020. 2020.
- McGee, Wes, Tsz Yan Ng, Victor C. Li and Kequan Yu. Extrusion Nozzle Shaping as an Approach for Improved 3DP of Engineered Cementitious Composites (ECC/SHCC). In *Digital Concrete 2020*. Springer
- Bruce Mackenzie, Gabrielle Clune, Wes McGee, Tsz Yan Ng, et al. Form[less]: Robotically Thermoformed Molds for Concrete Casting. ACADIA 2020: Distributed Proximities. 2020.
- Newell, Cathlyn, Zackery Belanger, Wes McGee, and Misri Patel. Unknowing. ACADIA 2020: Distributed Proximities. 2020.

- 2019 He, Jinhui, X. Cao, Tsz Yan Ng, & Wes McGee. Precarious Stand. *Project Proceedings*, ACADIA, 2019 (pp. 362–363)
- Liang, C.J., Kurt M. Lundeen, Wes McGee, Carol Menassa, Sanghyun Lee and Vineet Kamat. Fast Dataset Collection Approach for Articulated Equipment Pose Estimation. In *Computing in Civil Engineering 2019*.
- Ng, Tsz Yan, Wes McGee, and Asa Peller. "Robotic Needle Felting." ACSA 2019, *Black Box: Articulating Architecture's Core in the Post-Digital Era*, *Project Proceedings*, Pittsburgh, 2019.
- 2018 Belanger, Zackery, and Catie Newell, Wesley McGee. "Slumped Glass: Acoustics and Auxetics." *Recalibration: On Imprecision and Infidelity*, *Paper Proceedings*, ACADIA, 2018, Mexico City, Mexico.
- Ng, Tsz Yan and Wesley McGee, Asa Peller. "Hard + Soft: Robotic Needle Felting for Nonwoven Textiles." *Recalibration: On Imprecision and Infidelity*, *Project Proceedings*, ACADIA, 2018, Mexico City, Mexico, pp. 186-191
- Ng, Tsz Yan and Wesley McGee, "Public Domesticity - Digital Fabrication and Design-Build in Detroit." ACSA 2018, *New Instrumentalities*
- Peller, Asa and Wesley McGee. "Elemental | Ornamental." *Recalibration: On Imprecision and Infidelity*, *Project Proceedings*, ACADIA, 2018, Mexico City, Mexico, pp. 198-203.
- McGee, Wesley and Tsz Yan Ng, Asa Peller. "Hard + Soft, Robotic Needle Felting for Nonwoven Textiles." *ROB|ARCH 2018, Radical Cross-disciplinarity*, Zurich, CH, 2018, in *Robotic Fabrication in Architecture, Art and Design 2018*, edited by Jan Willmann, Philippe Block, Marco Hutter, Kendra Byrne, and Tim Schork. Cham, Switzerland: Springer, 2018, 192-204.
- Clifford, Brandon and Wes McGee, Mackenzie Muhonen. "Cyclopean Cannibalism: A Method for Recycling Rubble." *Recalibration: On Imprecision and Infidelity*, *Paper Proceedings*, ACADIA, 2018, Mexico City, Mexico, pp. 404-413
- Tish, Dan and Wesley McGee, Tim Shork, Geoffrey Thun, Kathy Velikov. "Robotic Additive Manufacturing of Topologically Optimized and Functionally Graded Cable Nets." *Recalibration: On Imprecision and Infidelity*, *Paper Proceedings*, ACADIA, 2018, Mexico City, Mexico.
- Lundeen, Kurt and Vineet Kamat, Carol Menassa, Wesley McGee. "Workpiece Modeling for Adaptive Robotized Construction Work." *Proceedings of the Construction Research Congress (CRC)*, ASCE, 2018, New Orleans, Louisiana, pp. 1-11.
- Lundeen, Kurt and Vineet Kamat, Carol Menassa, Wesley McGee. "Adaptive Perception and Modeling for Robotized Construction Joint Filling." *The Future of Building Things, Proceedings of the 35th International Symposium on Automation and Robotics in Construction and Mining (ISARC)*, International Association for Automation and Robotics in Construction (IAARC), 2018, Berlin, Germany.
- Tish, Dan and Wes McGee, Tim Shork, Geoffrey Thun, Kathy Velikov. "Topological Design and Optimization of Robotic Additively Manufactured Cable-Nets." *Creativity in Structural Design, Proceeding of IASS Symposium*, International Association for Shell and Spatial Structures (IASS), 2018, Cambridge, Massachusetts.
- 2017 Clifford, Brandon and Wesley McGee. "Microtherme: Examining Contradictory Concepts of Spatial and Thermal Comfort." *TxA Emerging Design + Technology*, Texas Society of Architects, 2017, Austin, Texas.
- Zayas, Luisel and Dustin Brugmann, Brandon Clifford, Wesley McGee, James Durham. "Quarra Cairn: Incremental Stability Through Shifting and Removal of Mass *TxA Emerging Design + Technology*, Texas Society of Architects, 2017, Austin, Texas.

- Zayas, Luisel and Dustin Brugmann, Brandon Clifford, Wesley McGee, James Durham. "Quarra Cairn: Incremental Stability Through Shifting and Removal of Mass." *Disciplines & Disruptions, Paper Proceedings*, ACADIA, 2017, Cambridge, Massachusetts, pp. 650-659.
- Ng, Tsz Yan and Wesley McGee. "Thermoplastic Concrete." *TxA Emerging Design + Technology*, Texas Society of Architects, 2017, Austin, Texas.
- Ng, Tsz Yan and Wesley McGee. "Thermoplastic Concrete." *Disciplines & Disruptions, Paper Proceedings*, ACADIA, 2017, Cambridge, Massachusetts, pp. 210-215.
- Ng, Tsz Yan and Wesley McGee. "Thermoplastic Concrete." *Disciplines & Disruptions, Project Proceedings*, ACADIA, 2017, Boston, Massachusetts.
- Ahlquist, Sean and Wesley McGee. "PneumaKnit: Actuated Architectures through Wale- and Course-Wise Tubular Knit-constrained Pneumatic Systems." *Disciplines & Disruptions, Paper Proceedings*, ACADIA, 2017, Cambridge, Massachusetts, pp. 38-51.
- Ariza, Ines and Timothy Sutherland, Jim Durham, Caitlin Mueller, Wesley McGee, Brandon Clifford. "Robotic fabrication of stone assembly details." *Rethinking Design and Construction*, Fabricate, 2017, Stuttgart, Germany, pp. 106-113.
- McGee, Wesley and Geoff Thun, Kathy Velikov, Dan Tish. "Infundibuliforms: Kinetic Systems, Additive Manufacturing for Cable Nets, and Tensile Surface Control". *Rethinking Design and Construction*, Fabricate, 2017, Stuttgart, Germany, pp.84-91.
- 2016 Clifford, Brandon and Wesley McGee. "MicroTherme." *Posthuman Frontiers: Data, Designers, and Cognitive Machines*, ACADIA, 2016, Ann Arbor, Michigan, pp.110-115.
- Clifford, Brandon and Wesley McGee. "RoundRoom." *Posthuman Frontiers: Data, Designers, and Cognitive Machines*, ACADIA, 2016, Ann Arbor, Michigan, pp.190-195.
- 2015 Clifford, Brandon and Wesley McGee. "Digital Inca: An Assembly Method for Free-Form Geometries." *Modeling Behavior, Proceedings of the 2015 Design Modeling Symposium*, 2015, Copenhagen, Denmark, pp. 173-186.
- Seyedahmadian, Ali and Omid Torghabehi, Wesley McGee. "Developing a computational approach towards a performance based design and robotic fabrication of fibrous skin structures." *Future Visions, Proceedings of IASS Symposium*, International Association for Shell and Spatial Structures (IASS), 2015, Amsterdam, Netherlands.
- 2014 Feng, Chen and Yong Xiao, Aaron Willette, Wesley McGee, Vineet R. Kamat. "Towards Autonomous Robotic In-Situ Assembly on Unstructured Construction Sites Using Monocular Vision." *International Symposium on Automation and Robotics in Construction and Mining*, ISARC, 2014, Sydney, Australia.
- Kalo, Amar and Jake Newsum, Wesley McGee. "Performing: Exploring Low-Cost Architectural Variable Geometry with Robotic Incremental Sheet Metal Forming." *Negotiating Design and Making*, Fabricate, 2014, Zurich, Switzerland, pp. 166-173.
- Clifford, Brandon and Wesley McGee. "La Voûte de LeFevre: a Variable-Volume Compression-Only Vault." *Negotiating Design and Making*, Fabricate, 2014, Zurich, Switzerland, pp. 146-153, 306-315.
- 2013 Pigram, David and Iain Maxwell, Wesley McGee. "Novel Stones of Venice." *Adaptive Architecture, Paper Proceedings*, ACADIA, 2013, Waterloo, Ontario, pp. 311-318.

- Del Campo, Matias and Adam Fure, Wesley McGee, Arthur Flexer, Sandra Manniger. "Autonomous Tectonics: A Research into Emergent Robotic Construction Processes." *Rethinking Prototyping, Proceedings of the Design Modeling Symposium*, 2013, Berlin, Germany.
- Del Campo, Matias and Adam Fure, Wesley McGee, Arthur Flexer, Sandra Manniger. "Autonomous Tectonics: A Research into Emergent Robotic Construction Processes." *Digital Infiltration*, Digital Architecture Design Association, 2013, Beijing, China.
- 2012 Pigram, David and Iain Maxwell, Wesley McGee, Ben Hagenhofer-Daniel, Lauren Vasey. "Protocols, Pathways, and Production." *Proceedings of ROB|Arch*, Robots in Architecture, Art, and Design, Robots in Architecture, Art, and Design, 2012, Vienna, Austria, pp. 142-147.
- Newell, Catie and Wesley McGee, Aaron Willette. "GlassCast: A Reconfigurable Tooling System for Free-Form Glass Manufacturing." *Synthetic Digital Ecologies*, ACADIA, 2012, San Francisco, California, pp. 286-294.
- Thun, Geoff and Kathy Velikov, Lisa Sauve, Wesley McGee. "Design Ecologies for Responsive Environment Systems: Resonant Chamber, an Acoustic Performative Model." *Synthetic Digital Ecologies*, ACADIA, 2012, San Francisco, California, pp. 373-382.
- McGee, Wesley and David Pigram, Maciej Kaczynski. "Robotic Reticulations: A method for the integration of multi-axis fabrication processes with algorithmic form-finding techniques." *Beyond Codes and Pixels*, Association for Computer-Aided Architectural Design Research in Asia (CAADRIA), 2012, Chennai, India, pp. 296-304.
- 2011 McGee, Wesley and David Pigram. "Formation Embedded Design: A Method for the Integration of Fabrication Constraints into Architectural Design." *Integration Through Computation*, ACADIA, 2011, Banff, Canada, pp. 122-131.
- Kaczynski, Maciej and Wesley McGee, David Pigram. "Robotically Fabricated Thin-Shell Vaulting: A Method for the Integration of Multi-Axis Fabrication Techniques with Algorithmic Form-Finding Techniques." *Integration Through Computation*, ACADIA, 2011, Banff, Canada, pp. 114-121.
- Clifford, Brandon and Wesley McGee. "Periscope: Foam Tower." *Making Digital Architecture*, Fabricate, 2011, London, United Kingdom, pp. 76-79.
- Clifford, Brandon and Wesley McGee. "Periscope: Foam Tower." *Proceedings of the International Technology, Education and Development Conference (INTED)*, 2011, Valencia, Spain.

## Invited Lectures

- 2020 Clifford, Brandon and Wesley McGee. "Matter Design: Performing Architecture." Cornell University AAP, 2020.
- 2019 McGee, Wesley. "Matter Design." Institute for Advanced Architecture Catalonia, 2019, Barcelona, Spain.
- 2018 McGee, Wesley. "Matter Design." Prairie View A&M University, 2018, Prairie View, Texas.
- 2017 McGee, Wesley. "ACADIA Innovative Research Award." *Disciplines & Disruptions*, Massachusetts Institute of Technology, 2017, Cambridge, Massachusetts.
- McGee, Wesley. "Cannibalistic Architecture." *Designing Material Innovation*, 2017, California College of the Arts, San Francisco, California.
- McGee, Wesley. "Matter Design." University of Illinois Urbana-Champaign, 2017, Champaign, Illinois.



- McGee, Wesley. "Matter Design." *Matter Design Computation*, Cornell University, 2017, Ithaca, New York.
- McGee, Wesley. "Matter Design." *Doctoral Robotics Symposium*, University of Technology Sydney, 2017, Sydney, Australia.
- 2016 McGee, Wesley. "Matter Design." *ACSA Administrators Conference*, ACSA, 2016, Chicago, Illinois.
- 2015 McGee, Wesley. "Matter Design." *Architectural Robotics Symposium*, ETH Institute for Technology in Architecture, 2015, Zurich, Switzerland.
- 2014 Clifford, Brandon and Wesley McGee. "Stereotomic Robotics." Georgia Tech College of Architecture, 2014, Atlanta, Georgia.
- McGee, Wesley. "Matter and Making." Louisiana State University, 2014, Baton Rouge, LA.
- McGee, Wesley. "Forming Machines." *Fabricate*, ETH Institute for Technology in Architecture, 2014, Zurich, Switzerland.
- 2013 McGee, Wesley. "Robotic Fabrication." Massachusetts Institute of Technology, 2013, Cambridge, Massachusetts.
- Clifford, Brandon and Wesley McGee. "Range." *Architectural League Prize*, Parsons School of Design, 2013, New York, New York.
- McGee, Wesley. "Matter and Making." Kent State University, 2013, Kent, Ohio.
- McGee, Wesley. "Matter and Making." *[En]Coding Architecture*, Carnegie Mellon University, 2013, Pittsburgh, Pennsylvania.
- 2012 McGee Wesley. "Robotic Fabrication." *Digital Provocations Symposium*, University of Minnesota, 2012, Minneapolis, Minnesota.
- McGee, Wesley. "Matter and Making." Massachusetts Institute of Technology, 2012, Cambridge, Massachusetts.
- McGee, Wesley. "Robotic Fabrication." TU Delft Hyperbody Lab, 2012, Rotterdam, Netherlands.
- 2011 McGee, Wesley. "Robotic Constructs." Harvard Graduate School of Design, 2011, Cambridge, Massachusetts.
- Clifford, Brandon and Wesley McGee. "Periscope." *Input:Output Symposium*, Temple University, 2011, Philadelphia, Pennsylvania.

## Exhibitions, Solo

Meibodi, Mania and Wesley McGee, *Plastic Architecture*, The Cooper Union, New York, New York, October – November, 2021.

Clifford, Brandon and Wesley McGee. *RoundRoom*, Keller Gallery, Massachusetts Institute of Technology, Boston, Massachusetts, 2014, installation.

Clifford, Brandon and Wesley McGee. *La Voute de LeFevre*, Banvard Gallery, Columbus, Ohio, 2013, installation.

Clifford, Brandon and Wesley McGee. "Periscope." Georgia Institute of Technology, Atlanta, Georgia. 2010, installation.

Clifford, Brandon and Wesley McGee. "Periscope." *Atlanta Modern Design Week*, Atlanta, Georgia, 2010, installation.

## Performances

Clifford, Brandon and Wesley McGee, Johanna Lobdell. "Hive Rise". In collaboration with composer Ashley Fure, Éclat, Stuttgart, February 9, 2020, performance.

Clifford, Brandon and Wesley McGee, Johanna Lobdell. "Hive Rise". In collaboration with composer Ashley Fure, CTM, Berlin, January 28, 2020, performance.

Clifford, Brandon and Wesley McGee, Johanna Lobdell. "Filament". In collaboration with composer Ashley Fure, New York Philharmonic, New York, 2018, performance.

Clifford, Brandon and Wesley McGee, Johanna Lobdell. "Filament Fragment 1+2". In collaboration with composer Ashley Fure, *Mikromusik*, DAAD, Berlin, Germany, 2018, performance.

Clifford, Brandon and Wesley McGee, Johanna Lobdell. "Echolocator". In collaboration with composer Ashley Fure, *P-E-O-P-L-E Festival*, Berlin, Germany, 2018, performance.

Clifford, Brandon and Wesley McGee, Johanna Lobdell. "Filament Fragment 1+2". In collaboration with composer Ashley Fure, American Academy in Rome, Rome, Italy, 2018, performance.

## Exhibited Work

2022 Newell, Catie, McGee, Wesley, and Zachary Belanger. (2022, September). Long Range. Next in Glass, Glass Technology Live, Glasstec 2022, Düsseldorf, Germany.

2021 McGee, Wesley and Tsz Yan Ng with SOM. (2021, September-). SPLAM. Chicago Architecture Biennale. Chicago, Illinois.

2019 McGee, Wes, Tsz Yan Ng and Victor Li. (2019, November–December). De:Molding: Concrete 3D Printing for High Performance Building Envelopes & Print Tilt Lift\_Concrete 3D Printing for Precast Assemblies. From Lab to Site: Innovation in Concrete. Ann Arbor: Taubman College, Liberty Research Annex.

He, Jinhui, X. Cao, Tsz Yan Ng, & Wes McGee. (2019, October). Precarious Stand. ACADIA 2019, Ubiquity and Autonomy. University of Texas at Austin: ACADIA, Association of Computer-Aided Design in Architecture.

2018 McGee, Wesley and Asa Peller, Tsz Yan Ng. "Hard + Soft: Additive Manufacturing of Nonwoven Textiles." *Research Through Making Exhibition*, Liberty Research Annex, University of Michigan, Ann Arbor, Michigan, 2018, installation.

McGee, Wesley and Asa Peller. "Elemental | Ornamental." *Research Through Making Exhibition*, Liberty Research Annex, University of Michigan, Ann Arbor, Michigan, 2018, installation.

2017 Clifford, Brandon and Wesley McGee. "Cannibalistic Architecture." *Seoul Architecture Biennale*, curated by Alejandro Zara Polo, GALLERY, Seoul, Korea, 2017, installation.

McGee, Wesley and Tsz Yan Ng. "Thermoplastic Concrete." *ACADIA Projects*, MIT Media Lab, Cambridge, Massachusetts, 2017, poster.

- McGee, Wesley and Tsz Yan Ng. "Thermoplastic Concrete." *Research Through Making Exhibition*, Liberty Research Annex, University of Michigan, Ann Arbor, Michigan, 2017, installation.
- McGee, Wesley and Sean Ahlquist, Henry Sodano. "Morphable Architectures." *Research Through Making Exhibition*, Liberty Research Annex, University of Michigan, Ann Arbor, Michigan, 2017, interactive prototype.
- 2016 Newell, Catie and Wesley McGee, Aaron Willette. "Avilae." *ACADIA Exhibition*, curated by Sandra Manninger, Liberty Research Annex, University of Michigan, Ann Arbor, Michigan, 2016, installation.
- Clifford, Brandon and Wesley McGee. "Microtherme." *ACADIA Exhibition*, curated by Sandra Manninger, Liberty Research Annex, University of Michigan, Ann Arbor, Michigan, 2016, poster.
- Clifford, Brandon and Wesley McGee. "RoundRoom." *ACADIA Exhibition*, curated by Sandra Manninger, Liberty Research Annex, University of Michigan, Ann Arbor, Michigan, 2016, poster.
- McGee, Wesley and Geoff Thun, Kathy Velikov. "Infundibuliforms." *ACADIA Exhibition*, curated by Sandra Manninger, Liberty Research Annex, University of Michigan, Ann Arbor, Michigan, 2016, interactive installation.
- 2015 Clifford, Brandon and Wesley McGee. "Matter Design: Selected Works." *1965-2015 – 50<sup>th</sup> Anniversary Exhibition: Engaging Through Architecture*, The Exhibition Building, AAA, Aarhus, Denmark, 2015, images and drawings
- Clifford, Brandon and Wesley McGee. "Matter Design." *Emerging Practices: Material Matters*, curated by Illa Berman, Idea Exchange, Cambridge, Ontario, 2015, models and images.
- Clifford, Brandon and Wesley McGee. "Microtherme." *Bigger than a Breadbox*, curated by Aaron Willette, Boston Society of Architects Gallery, Boston, Massachusetts, 2015, installation.
- Newell, Catie and Wesley McGee, Aaron Willette. "Avilae." *Lille3000. Renaissance*, Gare Saint Sauveur, Lyon, France, 2015, installation.
- 2014 Clifford, Brandon and Wesley McGee. "Stereotomic Design." *Marmomacc Exhibition*, curated by Giuseppe Falacara, Verona, Italy, 2014, poster.
- Ahlquist, Sean and Wesley McGee. "Knitted Architectures." *Research Through Making Exhibition*, Liberty Research Annex, University of Michigan, Ann Arbor, Michigan, 2014, installation.
- Newell, Catie and Wesley McGee. "In Reflection." *Research Through Making Exhibition*, Liberty Research Annex, University of Michigan, Ann Arbor, Michigan, 2014, installation.
- 2013 Clifford, Brandon and Wesley McGee. "Helix." *Boston Society of Architects Design Biennale*, curated by Chris Grimley, Michael Kubo, and Mark Pasnik, Boston Society of Architects Gallery, Boston, Massachusetts, 2013, installation and models.
- Clifford, Brandon and Wesley McGee. "La Voute de Lefevre." *EnCoding Architecture*, curated by Liss C. Werner, Carnegie Mellon School of Architecture, Pittsburgh, Pennsylvania, 2013, poster.
- 2012 Pigram, David and Iain Maxwell, Wesley McGee. "Clouds of Venice." *Taubman Faculty at the Venice Architectural Biennale*, Taubman College Gallery, University of Michigan, Ann Arbor, Michigan, 2012, images.
- Pigram, David and Iain Maxwell, Wesley McGee. "Clouds of Venice." *Venice Architecture Biennale*, curated by Anthony Burke and Gerard Reinmuth, Australian Pavilion, Venice, Italy, 2012, installation.

- Newell, Catie and Wesley McGee, Aaron Willette. "Specimen." *Art Prize*, curated by SiteLab, Grand Rapids, Michigan, 2012, installation.
- 2011 Clifford, Brandon and Wesley McGee. "Matter and Making." *After Hours*, Princeton School of Architecture, Princeton, New Jersey, 2011, images.
- Clifford, Brandon and Wesley McGee. "Foam Advocates." *Digital Futures*, curated by Neil Leach, Tongji University, Shanghai, China, 2011, images.
- Clifford, Brandon and Wesley McGee. "PlyShelf." *AZ Awards Exhibition*, Toronto, CA. 2011, images.
- 2010 Clifford, Brandon and Wesley McGee. "Matter Design Selected Works." *Machinic Processes*, Beijing Architecture Biennale, curated by Neil Leach and Xu Wei-Guo, Beijing, China, 2010, images.
- McGee, Wesley and David Pigram, Brandon Clifford. "Supermatter, Periscope." *Alumni and Faculty Show*, Pratt Institute Gallery, New York, New York, 2010, images and prototypes.
- Clifford, Brandon and Wesley McGee. "Periscope, Drawn Dress." *Input Output Symposium*, Temple University, Philadelphia, Pennsylvania, 2010, images.
- Clifford, Brandon and Wesley McGee. "Persicope." Georgia Institute of Technology, Atlanta, Georgia. 2010, installation.
- Clifford, Brandon and Wesley McGee. "Persicope." *Atlanta Modern Design Week*, Atlanta, Georgia, 2010, installation.
- 2009 McGee, Wesley and David Pigram. "SuperMatter." *Digital Primitives*, Experimental Design Expo, Lisbon, Portugal, 2009, prototype.
- McGee, Wesley and David Pigram. "SuperMatter." Lot Gallery, Lexington, Kentucky, 2009, prototype.
- McGee, Wesley and David Pigram. "SuperMatter." *Compotech*, Turin, Italy, 2009, prototype.
- McGee, Wesley and David Pigram. "SuperMatter." *Rouse*, 555 Gallery, Detroit, Michigan, 2009, prototype.
- McGee, Wesley and David Pigram. "SuperMatter." *Wild Child*, Bridge Gallery, New York, New York, 2009, prototype.
- 2008 McGee, Wesley and Monica Ponce de Leon, Martin Bechthold. "Surfacing Stone." *(Im)material Processes: New Digital Techniques for Architecture*, Beijing Architecture Biennale, curated by Neil Leach, Xu Wei-Guo, 2008, images.
- 2005 McGee, Wesley. "Eightfold I/II." *Cultivate*, Gallery MC, Atlanta, Georgia, 2005, prototypes.
- McGee, Wesley. "Eightfold I/II." *Convergence*, Furniture Society of America, San Diego State University, San Diego, California, 2005, prototypes.
- McGee, Wesley. "Eightfold I/II." *Behind the Green Button*, Atlanta Museum of Design, Atlanta, Georgia, 2005, prototypes.

## Patents

Ahlquist, Sean and Wesley McGee, Tony Waas. "Methods to Increase Structural Performance, Strength, and Durability of Fabric-Reinforced Composite Materials by Pre-Stressing." Patent US 11,260,566 B2. Mar. 1<sup>st</sup> 2022.

McGee, Wesley and Asa Peller. "Extrusion Die and Nozzle Cooling System for Large Scale Additive Manufacturing." Patent 10,807,292 B2. October 20, 2020.

Ahlquist, Sean and Wesley McGee. "Method for Mass-Customization and Multi-Axial Motion with a Knit Constrained Actuator." Provisional patent. 2018.

## Citations and Publication of Design Work

### *Book Chapters*

- 2020 Gelpi, Nick. "Matter Design." *The Architecture of Full-Scale Mock-Ups: From Representation to Reality*, Routledge Publishers, 2020.
- 2017 Beorkem, Christopher. "Microtherme – Matter Design." *Material Strategies in Digital Fabrication (Second Edition)*, Routledge Publishers, 2017.
- 2016 Berman, Ila and Douglas Burnham. "Matter Design." *Expanded + Field: Installation Architecture Beyond Art*, Applied Research + Design Publishing, 2016, pp. 160-167.
- 2015 Openshaw, Jonathan. *PostDigital Artisans: Craftsmanship with a New Aesthetic in Fashion, Art, Design and Architecture*, Frame Publishers, 2015, pp. 270-273.
- 2013 Ng, Rashida and Sneha Patel. *Performative Materials in Architecture and Design*, Intellect Ltd., 2013, pp. 145-154.
- Kottas, Dimitrios. *Digital Architecture: A Radical Future*, Links International, 2013.
- "Matter Design." *Archive: Design Biennale Boston*, edited by Chris Grimley, Michael Kubo, and Mark Pasnik, Pinkcomma Books, 2013, pp. 22-27, 138-145.
- 2012 Beorkem, Christopher. "Periscope: Foam Tower – Matter Design." *Material Strategies in Digital Fabrication, 1st Edition*, Routledge Publishers, 2012, pp. 7, 45, 148, 167-171.
- Fallacara, Giuseppe. *Stereotomy: Stone Architecture and New Research*, Presses des Ponts, 2012.
- Dunn, Nick. *Digital Fabrication in Architecture*, Lawrence King Publishers, 2012.
- 2011 Shroepfer, Thomas. "The Alternative Approach: Observation, Speculation, Experimentation." *Material Design: Informing Architecture by Materiality*, edited by Thomas Shroepfer, Birkhauser, 2011, pp. 24.
- 2010 Kottas, Dimitrios. "SuperMatter." *Contemporary Digital Architecture: Design and Technique*, 2010, pp. 212-217.
- Clifford, Brandon. "The Drawn Dress: Fashioning Digital Fabrication." *Pidgin Magazine*, Princeton University Press, 2010, pp. 32-43.
- 2005 "Eightfold I/II". *Furniture Studio 3: Furniture Makers Exploring Digital Technologies*, edited by John Kelsey, Cambium Press, 2005, pp. 29.

## *Periodicals*

- 2019 "Sing It Loud," Hinge Magazine Vol. 269, 2019: 4.
- 2018 Joshua Barone, "Philharmonic Opens with Two Young Voices," New York Times, September 20, 2018: C6
- Mahesh Daas & Andrew John Wit (eds.) "Robotic Production in Architecture (Periscope: Foam Tower)," Towards a Robotic Architecture Applied Research + Design Publishers: New York, February 05, 2018: 48-49.
- Zaha Hadid Architects (guest editor), "Microtherme: A Condensed Concrete Spa," Building Giants January, 2018: 53-59.
- 2017 "Cyclopean Cannibalism," Seoul Biennale of Architecture and Urbanism: Imminent Commons Mediabus: Seoul, August 30, 2017: 62-63.
- "Concrete Comfort: Matter Design questions the notion of comfort through an unconventional spa experience." *Frame*, no. 108, January/February 2016, pp. 6.
- 2016 "Concrete Comfort: Matter Design questions the notion of comfort through an unconventional spa experience." *Frame*, no. 108, January/February 2016, pp. 6.
- "Hot Stuff: Spruce Sauna." *Clad Magazine*, no. 1, 2016, pp. 126.
- "Microtherme: A Condensed Concrete Spa." *Artpower Creative Space*, no. 13, May 2016, pp. 26-29.
- 2015 Clifford, Brandon and Wesley McGee. "Matter Design's: Best of Commercial Robotic Fabrication Innovation," Uncube Magazine, Uncanny Valley No. 36, 2015.
- "Matter Design." *Seasons Magazine*, no. 29, October 2015, pp. 41.
- "Think Outside the Breadbox." *The Improper Bostonian*, edited by Sarah Hagman, July 1-21 2015, pp. 196.
- Nilsson, Lena. "Bostonstudion Matter Design skapar nytt med gamla metode." *Cementa*, no. 3, 2015, pp. 15.
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- "Depth: Matter Design." *EvoLo: Digital and Parametric Architecture*, edited by Carlo Aiello, no. 06, 2014, pp. 147-159.
- McCown, James. "More Than Just Speculating: Three Boston Architectural Firms Are Change-Makers," *Art New England*, Jan-Feb 2014, pp. 10-11.
- 2013 Shulman, Ken. "Ready to Build: The two partners at Matter Design excel at converting their avant-garde ideas into reality." *Metropolis Magazine*, July-Aug 2013, pp. 26-28.
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- 2012 "it's volumetric / matter design." *Monitor Magazine*, no. 68, 2012, pp. 40-43.
- 2011 "The Hippest Joints," *Azure Magazine*, AZ Awards Issue, 2011, pp. 65.
- 2010 "Product Reports > Furnishings," *Architectural Record*, Product Reports Issue, 2010, pp. 111.
- Web*
- 2021 Jeff Link, "Mass Timber on a Diet at the Chicago Architecture Biennial," [https://www.architectmagazine.com/technology/mass-timber-on-a-diet-at-the-chicago-architecture-biennial\\_o](https://www.architectmagazine.com/technology/mass-timber-on-a-diet-at-the-chicago-architecture-biennial_o). November 15, 2021.
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- Matt Hickman, "SOM debuts robotically fabricated timber pavilion at the 2021 Chicago Architecture Biennial," <https://www.archpaper.com/2021/09/som-debuts-robotically-fabricated-splam-2021-chicago-architecture-biennial/>. September 23, 2021.
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- Rima Sabina Aouf, "SOM weaves small wood pieces into SPLAM pavilion at Chicago Architecture Biennial," <https://www.dezeen.com/2021/10/01/som-splam-pavilion-chicago-architecture-biennial-2021/> November 10, 2021.
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- Jonathan Hilburg, "Matter Design envisions a configurable concrete gathering place at the El Paso border: Border Matters," *newyorkmetropolitan.com* January 26, 2021.
- Julio Rodríguez, "Turn a Wall into Space Through its Excision: AquíAquí by Matter Design," *metacocus.es* January 30, 2021.
- "AquíAquí," *designawards.architects.org*. January 26, 2021.
- 2020 "New Robotic Needling Process Enables Additive Manufacturing with Wool." Fabbaloo, October 17, 2019
- 2019 Carlos Zotomayor. "New Robotic Needling Process Enables Additive Manufacturing with Wool." SolidSmack, October 9, 2019.
- Greta Aldeghi. "Uni students create 3D felt sculptures with a robotic arm." Design Wanted, October 1, 2019.
- Riley Wilson. "Researchers share innovative ideas in concrete for a more sustainable future." Civil and Environmental Engineering, University of Michigan. November 18, 2019.

- Ashini K. Ekanayake. "3D Printing Meets Felt." *Adidesign*, September 16, 2019.
- Rina Abina Aouf. "3D printing meets felt in new additive manufacturing technique." *Dezeen*, September 12, 2019.
- 2018 Joshua Barone, "Megaphones Up, the Philharmonic Opens With Two Young Voices," *nytimes.com* September 18, 2018.
- Brian Taylor, "Review: New York 'Officially' Meets Jaap with Philharmonic's Season Opening," *zealnyc.com* September 21, 2018.
- Alison Stewart, "'Filament's' Philharmonic Premiere," *WNYC National Public Radio, 'All Of It'*, September 21, 2018.
- Amanda Angel, "New York Philharmonic Opens its Season With Bespoke New Works," *playbill.com* September 21, 2018.
- "Matter Design Megaphones for the New York Philharmonic," *notcot.org* September 21, 2018.
- "Matter Design Creates Custom Megaphones to Democratize the New York Philharmonic," *urdesignmag.com* September 20, 2018.
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- "Matter Design – Organically Shaped Plywood Shelves," *tevami.com* September, 2017.
- 2016 Link, Jeff. "5 Ways Architects and Postdigital Artisans Are Modernizing Craftsmanship." *ArchDaily*, 11 Feb 2016, <https://www.archdaily.com/781960/5-ways-architects-are-redefining-craftsmanship-for-a-postdigital-age>. Accessed 20 Aug 2018.
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## Grants

- 2022 McGee, Wes and Tsz Yan Ng. "Functionally Graded Construction: Performance Through Continuous Material Variation." *RCI Grant*, Taubman College of Architecture and Regional Planning, April 2022 – April 2023, \$32,000.
- 2021 Menassa, Carol, Kamat, Vineet, Chai, Joyce, McGee, Wes, and Arash Adel. "FW-HTF-R: Collaborative Research: Partnering Workers with Interactive Robot Assistants to Usher Transformation in Future Construction Work." National Science Foundation, Jan. 2022 – Dec. 2024, \$1.58 mil.
- 2020 Ergan, Semiha and Chen Feng. "FMSG: ARM4MOD: AI-powered and Robot-assisted Manufacturing for Modular Construction." National Science Foundation, January 2021 – December 2023, \$500,000. *McGee \$14,000 subcontract*.
- 2019 Meibodi, Mania, Wes McGee and Victor Li. "Additive Formwork for Lightweight Concrete." *Small Projects Grant*, University of Michigan Office of Research, Dec. 2019 – Dec. 2020, \$15,000.
- Adel, Arash and Wes McGee. "Computational Design and Robotic Manufacturing of Bespoke Timber Façade Components." *Prototyping Tomorrow*, Taubman College of Architecture and Regional Planning, June 2019 – August 2021, \$15,000.
- McGee, Wes and Arash Adel. "Computational Design and Robotic Manufacturing of Bespoke Timber Façade Components." *Small Projects Grant*, University of Michigan Office of Research, Dec. 2019 – August 2021, \$15,000.
- Ng, Tsz Yan and Wes McGee. "SOM Sponsored Thesis Studio." Skidmore, Owens and Merrill, LLC. Sept. 2019 - May 2020, \$50,000.
- 2018 Li, Victor, Vineet Kamat, and Wes McGee. "Digital Lego Construction." *Mcubed 3.0*, University of Michigan, Nov. 2018 – Nov. 2020, \$60,000.
- McGee, Wesley and Tsz Yan Ng. "3D Printing Concrete for High Performance Building Envelopes." *Prototyping Tomorrow*, Taubman College of Architecture and Urban Planning, Jun 2018 – Oct 2019, \$20,000.
- 2017 Ng, Tsz Yan and Wesley McGee. "Print, Tilt, Lift – 3d Printing Concrete." *AIA Upjohn Research Grant*, American Institute of Architects, Dec 2017 – May 2019, \$20,000.
- McGee, Wesley and Catie Newell, Zachery Belanger. "Activating Curvature," Guardian Industries, Dec. 2017 – Dec. 2019, \$90,000.

- McGee, Wesley and Asa Peller, Tsz Yan Ng. "Robotic Felting." *Research Through Making*, Taubman College of Architecture and Urban Planning, May 2017 – May 2018, \$20,000.
- McGee, Wesley and Asa Peller. "Ornamental | Elemental." *Research Through Making*, Taubman College of Architecture and Urban Planning, May 2017 – May 2018, \$20,000.
- 2016 Sodano, Henry and Sean Ahlquist, Wesley McGee. "Morphable Architectures." *Michigan Translational Research and Commercialization*, Michigan Economic Development Corporation and University of Michigan, May 2016 – May 2017, \$75,000.
- Ng, Tsz Yan and Wesley McGee. "Thermoplastic Concrete." *Research Through Making*, Taubman College of Architecture and Urban Planning, May 2016 – May 2017, \$20,000.
- Ng, Tsz Yan and Wesley McGee. "Thermoplastic Concrete." *Small Projects Grant*, University of Michigan Office of Research, May 2016 – May 2017, \$15,000.
- Ahlquist, Sean and Wesley McGee, Henry Sodano. "Morphable Architectures." *Research Through Making*, Taubman College of Architecture and Urban Planning, May 2016 – May 2017, \$20,000.
- Newell, Catie and Wesley McGee, Zachery Belanger. "Activating Curvature." *Guardian Industries Innovations in Glass*, Guardian Industries, Apr 2016 – Apr 2017, \$30,000.
- Del Campo, Matias and Sandra Manninger, Wesley McGee. "RGB: Robotic Glass Blowing." *Guardian Industries Innovations in Glass*, Guardian Industries, Apr 2016 – Apr 2017, \$30,000.
- Wilcox, Glenn and Wesley McGee, Karl Daubman. "Wilcox PCI Foundation Instruction Project." Precast Concrete Institute, Jan 2016 – Jan 2019, \$90,000.
- Taub, Alan and Jun Ni, Wesley McGee. "Freeform shapes enabled by plasticity of the lightweight metals." *MCubed 2.0*, University of Michigan, March 2016 – March 2017, \$60,000.
- 2015 McGee, Wesley and Kathy Velikov. "Kinetic Architectures." *Small Projects Grant*, University of Michigan Office of Research, Oct 2015 – May 2016, \$15,000.
- Thun, Geoff and Wesley McGee, Kathy Velikov. "Infundibuliforms." *Research Through Making*, Taubman College of Architecture and Urban Planning, May 2015 – Mar 2016, \$20,000.
- Clifford, Brandon and Wesley McGee. "Quarra Matter Fellowship". *Quarra Matter Industry Partnership*. Quarra Stone, LLC, Jun 2015 – Jun 2018.
- 2014 McGee, Wesley. "Tailored Response." *Small Projects Grant*, University of Michigan Office of Research, Oct 2014 – Aug 2015, \$5,000.
- 2013 Newell, Catie and Wesley McGee. "In Reflection." *Research Through Making*, Taubman College of Architecture and Urban Planning, May 2013 – Mar 2014, \$20,000.
- Ahlquist, Sean and Wesley McGee. "Knit Architectures." *Research Through Making*, Taubman College of Architecture and Urban Planning, May 2013 – May 2014, \$20,000.
- 2012 Kaczynski, Maciej and Wesley McGee, Doug Miller. "Cut, Fold, Pour." *Research Through Making*, Taubman College of Architecture and Urban Planning, May 2012 – May 2013, \$20,000.

- Kaczynski, Maciej and Wesley McGee, Doug Miller. "Cut, Fold, Pour." *Small Projects Grant*, University of Michigan Office of Research, Jun 2012 – May 2013, \$15,000.
- 2011 Newell, Catie and Wesley McGee. "GlassCast." *Research Through Making*, Taubman College of Architecture and Urban Planning, May 2011 – May 2012, \$20,000.
- Newell, Catie and Wesley McGee. "GlassCast." *Small Projects Grant*, University of Michigan Office of Research, Oct 2011 – May 2012, \$15,000.
- Thun, Geoff and Wesley McGee, Kathy Velikov. "Resonant Chamber." *Research Through Making*, Taubman College of Architecture and Urban Planning, May 2011 – May 2012, \$20,000.
- Thun, Geoff and Wesley McGee, Kathy Velikov. "Resonant Chamber." *Small Projects Grant*, University of Michigan Office of Research, Oct. 2011 – May 2012, \$15,000.
- McGee, Wesley. "Reciprocal Frame Architectures." *Small Projects Grant*, University of Michigan Office of Research, Feb 2011 – May 2012, \$10,000.
- 2010 McGee, Wesley and David Pigram, Maciej Kaczynski. "Re-Vault." *Research Through Making*, Taubman College of Architecture and Urban Planning, May 2010 – May 2011, \$20,000.
- Daubman, Karl and Wesley McGee. "Robotic Additive Fabrication." *Small Projects Grant*, University of Michigan Office of Research, Feb 2010 – May 2011, \$10,000.
- 2008 Ponce de Leon, Monica and Wesley McGee, Martin Bechthold. "Surfacing Stone." International Masonry Institute, Dec 2008 – Jun 2010, \$60,000.

## Courses Taught

*ARCH 571: Thesis Fabrication Seminar*, Winter 2022.

*ARCH 509: Advanced Robotic Fabrication*, Winter 2022.

*ARCH 571: Thesis Fabrication Seminar*, Winter 2021.

*ARCH 509: Advanced Robotic Fabrication*, Winter 2021.

*ARCH 571: Thesis Fabrication Seminar*, Winter 2020.

*ARCH 702: Robotic Engagement*, Fall 2019.

*ARCH 571: Thesis Fabrication Seminar*, Winter 2018.

*ARCH 702: Robotic Engagement*, Fall 2018.

*ARCH 739: MS\_DMT Capstone Studio*, Winter 2018.

*ARCH 702: Material Engagement, Fall 2017.*

*ARCH 509: Advanced Robotic Fabrication, Winter 2017.*

*ARCH 571: Thesis Fabrication Seminar, Winter 2017.*

*ARCH 702: Material Engagement, Fall 2016.*

*ARCH 509: Advanced Robotic Fabrication, Fall 2016.*

*ARCH 509: Advanced Robotic Fabrication, Winter 2016.*

*ARCH 571: Advanced Concrete Fabrication, Winter 2016.*

*ARCH 702: Material Engagement, Fall 2015.*

*ARCH 571: Advanced Digital Fabrication, Winter 2015.*

*ARCH 700: MSDT Practicum, Winter 2015.*

*ARCH 509: Advanced Robotic Fabrication, Fall 2014.*

*ARCH 702: Material Engagement, Fall 2014.*

*ARCH 700: MSDT Practicum, Winter 2014.*

*ARCH 571: Advanced Digital Fabrication, Fall 2013.*

*ARCH 700: MSDT Practicum, Winter 2013.*

*ARCH 506: Thesis Fabrication Seminar, Fall 2012.*

*ARCH 702: Material Engagement, Fall 2012.*

*ARCH 571: Advanced Digital Fabrication, Winter 2012.*

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*ARCH 571: Advanced Digital Fabrication, Fall 2009.*

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## **Invited Workshops**

McGee, Wesley. "From Design to Control" *Institute for Advanced Architecture Catalonia*, Barcelona, Spain, 2019.

McGee, Wesley and David Pigram. "Spatial Extrusions II." *ACADIA 2016*. Ann Arbor, Michigan, 2016.

McGee, Wesley and David Pigram, Iain Maxwell, David Jenny, and Luka Pistoric. "Spatial Extrusions." *ROB|Arch 2016*. Sydney, Australia, 2016.

Clifford, Brandon and Wesley McGee. "Computational Making." Aarhus School of Architecture, Aarhus, Denmark, 2015.

Newell, Catie and Wesley McGee. "Glass." College of Creative Studies, Detroit, Michigan, 2015.

McGee, Wesley and David Pigram. "SuperMatterTools." Aarhus School of Architecture, Aarhus, Denmark, 2014.

McGee, Wesley. "SuperMatterTools." Massachusetts Institute of Technology School of Architecture, Boston, Massachusetts, 2013.

Clifford, Brandon and Wesley McGee. "MATr Project." Kent State University, Kent, Ohio, 2013.

McGee, Wesley. "SuperMatterTools." *[En]Coding Architecture*. Carnegie Mellon University, Pittsburgh, Pennsylvania, 2013.

McGee, Wesley and Jelle Feringa. "Frame Automata." *ROB|Arch 2012*. TU Delft, Rotterdam, Netherlands, 2012.

McGee, Wesley and David Pigram. "Robotic Fabrication." TU Delft, Rotterdam, Netherlands, 2011.

McGee, Wesley and David Pigram. "Robotic Fabrication." American University of Sharjah, Sharjah, United Arab Emirates, 2011.

McGee, Wesley and David Pigram. "Robotic Fabrication." Carnegie Mellon University, Pittsburgh, Pennsylvania, 2011.

McGee, Wesley and David Pigram. "Robotic Fabrication." École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland, 2011.

## Recognition/Citations of Student Work

Kalo, Ammar and Jake Newsum. "An Investigation of Robotic Incremental Sheet Metal Forming as a Method for Prototyping Parametric Architectural Skins." *ROB|Arch 2014*, Robots in Architecture, Art, and Design 2014, Ann Arbor, Michigan.

Kalo, Ammar and Jake Newsum. "An Investigation of Robotic Incremental Sheet Metal Forming as a Method for Prototyping Parametric Architectural Skins." *KUKA Young Potential Award for Best Scientific Paper, ROB|Arch 2014*, Robots in Architecture, Art, and Design 2014, Ann Arbor, Michigan.

MacDowell, Parke and Diana Tomova. "Wave Pavillion." *Making Digital Architecture*, Fabricate, 2011, London, United Kingdom.

Byrne, Kendra and Nick Rebeck. "Bent." *Fabricate: Making Digital Architecture*, edited by Ruari Glynn and Bob Sheil, Riverside Architectural Press, 2011, pp. 84-84.

Sturgeon, Kyle and Chris Holzwart, Kelly RaczKawski, "Fatty Shell." *Dezeen: Book of Ideas*, edited by Marcus Fairs, Spotlight Press, 2010.

## Service

### Dissertation Committees

*Edoimioya, Nosakhare.* Mechanical Engineering, University of Michigan 2022 – present.

*Park, Somin,* Civil and Environmental Engineering, University of Michigan 2021 – present.

*Zhou, Wen,* Civil and Environmental Engineering, University of Michigan 2021 – present.

*Yu, Hongrui.* Civil and Environmental Engineering, University of Michigan 2021 – present.

*Volti, Christopher.* Taubman College of Architecture and Urban Planning, University of Michigan 2020 – present.

*Wang, Xi.* Civil and Environmental Engineering, University of Michigan 2020 – 2022.

*Liang, Ci-Jyun.* Civil and Environmental Engineering, University of Michigan 2019 – 2021.

*Lundeen, Kurt.* Civil and Environmental Engineering, University of Michigan 2017 – 2019.

### Juries

*Thesis Prize Jury,* University of North Carolina Charlotte. 2017

*Graduate Architecture Review,* The Ohio State University: Knowlton School of Architecture, 2012.

*Graduate Architecture Review,* Cranbrook Academy Department of Architecture, 2012.

*Graduate Architecture Review,* Cranbrook Academy Department of Architecture, 2011.

*10Up! Challenge,* Young Architects Forum of AIA Atlanta, 2011.

### College Committees

Chair. *Space Planning Committee.* 2022- present.

Member. *MS DMT Admissions Committee.* 2012 – present.

Chair. *Space Planning Committee.* 2017 - 2019.

Co-Chair. *Lab Safety Committee.* 2015 - present.

Member. *Technology Committee.* 2009 – 2019.

### University Committees

Member. *University CORES Assessment Committee, 2021.*

Member. *Search Committee for Director of Duderstadt, 2008.*

## **Academic Organizations**

Member(alternate). *Board of Directors, ACADIA, 2014-2015.*

## **Peer Review Committees**

Editorial Board. *Architecture Intelligence Journal, 2021 - present.*

Reviewer. *ACADIA, 2021.*

Reviewer. *ACADIA, 2020.*

Reviewer. *ACADIA, 2019.*

Reviewer. *ACADIA, 2018.*

Reviewer. *International Association for Spatial Structures, 2018.*

Reviewer. *ROB|Arch, 2018.*

Reviewer. *ACADIA, 2017.*

Reviewer, Workshop Chair. *ACADIA, 2016.*

Reviewer. *ROB|Arch, 2016.*

Reviewer. *Canadian Foundation for Innovation, 2015.*

Reviewer. *Automation in Construction, 2014.*

Reviewer. *Swiss National Science Foundation, 2014.*

Reviewer. *ACSA Toronto, 2014.*

Reviewer. *ACADIA, 2014.*

Reviewer, Chair. *ROB|Arch, 2014.*

Reviewer, Session Chair. *Fabricate 2014, 2014.*

Reviewer. *ACADIA, 2013.*

Reviewer. *CAAD Journal, 2013.*

Reviewer. ACADIA, 2012.

Reviewer. ROBJArch 2012, 2012.