

# Nick Senske

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## 1 CANDIDATE INFORMATION

(5.3.1.2)

### 1.01 education

- 2010 Ph.D, in Architecture (ABD), University of Michigan, Ann Arbor, Michigan, U.S.A.  
Title: *A Pedagogical Framework for Procedural Literacy in Architectural Education*
- 2005 Master of Science in Architectural Studies, Design and Computation Group,  
Massachusetts Institute of Technology, Cambridge, Massachusetts, U.S.A.  
Thesis: *Fear of Code: interfaces for integrating computation with architectural design*
- 2003 Bachelor of Architecture, with distinction, Iowa State University, Ames, Iowa, U.S.A.

### 1.02 academic appointments

- 2015-present **Assistant Professor of Architecture, reappointed in 2018**  
Iowa State University, Department of Architecture, Ames, IA, U.S.A.
- 2010-2015 **Assistant Professor of Architecture**, reappointed in 2013  
University of North Carolina at Charlotte, College of Arts + Architecture, Charlotte, NC, U.S.A.
- 2006-2010 **Graduate Student Instructor and Research Assistant**  
University of Michigan, Taubman College of Architecture + Urban Planning, Ann Arbor, MI
- 2004-2005 **Teaching Assistant and Research Assistant**  
Massachusetts Institute of Technology, Department of Architecture, Cambridge, MA

### 1.03 professional experience

- 2008-2010 **Co-founder and Partner**, Design Less Better, LLC, Ann Arbor, MI, U.S.A
- 2005-2008 **Lead designer**, Exmocare, LLC, Manassas, VA, U.S.A.
- 2004-2005 **Architectural designer**, MIT Food Services, Cambridge, MA, U.S.A.
- 2001-05 **Intern architect**, Chaintreuil | Jensen | Stark Architects, LLP, Rochester, NY, U.S.A.
- 1999-2001 Intern architect, Leo A. Daly Architects, Omaha, NE, U.S.A.

## 2 AREA of PRS: SCHOLARSHIP

(5.2.2.2; 5.3.1.3)

### 2.01 books

- 2013 **The Visibility of Research: Architectural Research Centers Consortium National Conference Proceedings.** (C. Jarrett, K. Kim, and N. Senske, eds.) University of North Carolina at Charlotte. Charlotte, NC. ISBN 978-0-615-78533-2.

### 2.02 curated exhibition

- 2017 **Cyborg Sessions: Women in Robotics** (Doyle, S., Forehand, L., and Senske, N.) <https://www.design.iastate.edu/news/2017/10/cyborg-sessions/>. Accessed 14 Dec 2017.

### 2.03 journal articles – peer reviewed

- 2018 **Digital Provenance and Material Metadata: attribution and co-authorship in the age of artificial intelligence in Artificial Intelligence and Robotics** (Doyle S. and Senske, N.) in *Architecture: Autonomy, agency and indeterminacy*. International Journal of Architectural Computing (IJAC) 16 (4) pp. 271-280.
- Attribution and Artificial Intelligence** (Doyle S. and Senske, N.) in May, K. (Ed.). (2018). *CLOG: Artificial Intelligence*. CLOG: Brooklyn, NY. (in-press)
- Between Design and Digital: bridging the gaps in architectural education** (Doyle S. and Senske, N.) in Brown, J. and Hufford, A. (Eds.) *Charrette* 4(1), Journal of the Association of Architectural Educators. AAE (pp. TBD) ISSN 2054-6718. pp. 101-116.

### 2.04 conference proceedings – peer reviewed

- 2018 **Cyborg Sessions: A Case Study for Gender Equity in Technology** (Doyle, S., Forehand, L., Hunt, E., Loughrey, N., Schneider, S. and Senske, N.) *Learning + Adapting: 2018 International Computer Aided Architectural Design and Research in Asia Conference*. CAADRIA.17-19 May 2018, Beijing, China. pp. 71-80.
- 2017 **Computational Feminism: Searching for Cyborgs** (Doyle, S., Forehand, L., and Senske, N.) in Nagakura, T. and Tibbits S. (Eds.) *Disciplines and Disruption: Conference Proceedings of the 36th Annual Conference of the Association for Computer Aided Design in Architecture*. ACADIA. 1-4 Nov 2017, Boston, MA. pp. 232-237.
- Identifying Inequalities: Gender, Technology, Architecture.** (Doyle, S. and Senske, N.) in *Architecture of Complexity: Proceedings of the 2017 Architectural Research Centers Consortium National Conference*. ARCC. 14-17 June 2017, Salt Lake City, UT. pp. 56-62.
- Unplugging Inequality: Computational Futures for Architecture** (Doyle, S. and Senske, N.) in Bowen, C., Carraher E., Johnson H., Leither L., Mills, J. (Eds.) *Begin w/ Why: Ethics and Values in Beginning Design: Proceedings of the 33rd National Conference of the Beginning Design Student*. NCBDS. 9-11 Mar 2017. Salt Lake City, UT. pp. 96-103.
- Evaluation and Impact of a Required Computational Thinking Course for Architecture Students.** (Senske, N.) in *Proceedings of the 2017 ACM SIGCSE Technical Symposium on Computer Science Education*. 8-11 Mar 2017. ACM. Seattle, WA. pp. 525-530.

- Five Years of Flipped Classrooms in Beginning Design Communications: Lessons Learned** (Senske, N.) in Bowen, C., Carraher E., Johnson H., Leither L., Mills, J. (Eds.) *Begin W/ Why: Ethics and Values in Beginning Design: Proceedings of the 33rd National Conference of the Beginning Design Student*. NCBDS. 9-11 Mar 2017. Salt Lake City, UT. pp. 96-103.
- Empowering Students with Design-Build** (Senske, N.) in Bowen, C., Carraher E., Johnson H., Leither L., Mills, J. (Eds.) *Begin W/ Why: Ethics and Values in Beginning Design: Proceedings of the 33rd National Conference of the Beginning Design Student*. NCBDS. 9-11 Mar 2017. Salt Lake City, UT. pp. 372-378.
- 2016 **Exploring Learning Objectives for Digital Design in Architectural Education** (Doyle, S. and Senske, N.) in da Costa, M. J. R. C., Roseta, F., Lages, J. P., & da Costa, S. C. (Eds.). *Architectural Research Addressing Societal Challenges: Proceedings of the EAAE ARCC 10th International Conference* (EAAE ARCC 2016), 15-18 June 2016, Lisbon, Portugal. CRC Press. pp. 977-982.
- Introducing Digital Soft Skills: Bridging the Gaps in Architectural Education** (Doyle, S. and Senske, N.) in da Costa, M. J. R. C., Roseta, F., Lages, J. P., & da Costa, S. C. (Eds.). *Architectural Research Addressing Societal Challenges: Proceedings of the EAAE ARCC 10th International Conference*. EAAE / ARCC. 15-18 June 2016, Lisbon, Portugal. CRC Press. pp. 1021-1027.
- Between Design and Digital: bridging the gaps in architectural education** (Doyle, S. and Senske, N.) in Weber, P., et al. (Ed.) *Research Based Education: Proceedings of the 2016 Association of Architectural Educators International Conference*. AAE. 7-9 April 2016. London, UK. pp. 192-209.
- Soft Skills for Digital Designers** (Doyle, S. and Senske, N.) in Ponitz J., Olsen C., and Trudell, C. (Eds.) *1 to 1: Proceedings of the 32nd National Conference of the Beginning Design Student*. NCBDS. 25-28 Feb 2016. San Luis Obispo, CA. pp. 475-480.
- 2015 **Beyond Tutorials: using active learning to improve computational design instruction** (Senske, N.) in *The Future of Architectural Research: Proceedings of the 2015 Architectural Research Centers Consortium National Conference*. ARCC. 6-9 April 2015, Chicago, IL. pp. 572-578.
- Learning from What Works: applying the lessons of Media Computation to help architecture students learn introductory programming.** (Senske, N.) Peer-reviewed abstract, poster, and presentation, in *Proceedings of the 2015 ACM SIGCSE Technical Symposium on Computer Science Education*. ACM. 5-7 March 2015, Kansas City, MO. p. 689.
- Building a Better Computation Course: achieving student success with active learning.** (Senske, N.) in *Proceedings of the 31st National Conference of the Beginning Design Student*. NCBDS. 26-28 Feb 2015, Houston, TX. pp. 502-509.
- The New Handout: interactive animations and foundation pedagogy** (Balmer, J., Senske, N. and Swisher, M.) in *Proceedings of the 31st National Conference of the Beginning Design Student*. NCBDS. 26-28 Feb 2015, Houston, TX. pp. 510-516.
- 2014 **Digital Minds, Materials, and Ethics: linking computational thinking and digital craft.** (Senske, N.) in *Rethinking Comprehensive Design Proceedings of the 19th International Computer Aided Architectural Design and Research in Asia Conference*. CAADRRIA. 14-17 May 2014, Kyoto, Japan. pp. 821-830.
- Confronting the Challenges of Computational Design Instruction** (Senske, N.) in *Rethinking Comprehensive Design: Proceedings of the 19th International Computer Aided Architectural Design and Research in Asia Conference*. CAADRRIA. 14-17 May 2014, Kyoto, Japan. pp. 831-842.
- The Fate of the Albertian Paradigm: a pedagogy of architectural visualization in digital media.** (Forget, T. and Senske, N.) in *Proceedings of the 30th National Conference of the Beginning Design Student*. NCBDS 11-13 April 2013. Chicago, IL. pp. 376-384.

- 2013 **Rethinking the Computer Lab: an inquiry-based methodology for teaching computational skills.** (Senske, N.) in *Proceedings of the 29<sup>th</sup> National Conference of the Beginning Design Student*. NCBDS 3-5 April 2014. Philadelphia, PA. pp. 451-460.
- Building a Computational Culture: a pedagogical study of a computer programming requirement in architectural education** (Senske, N.) in *The Future of Research: Proceedings of the 2015 Architectural Research Centers Consortium National Conference*. ARCC. Charlotte, NC. 27-30 March 2013. pp. 343-350.
- 2011 **A Curriculum for Integrating Computational Thinking** (Senske, N.) in *Parametricism SPC: Conference Proceedings of the 2011 Regional Conference of the Association for Computer Aided Design in Architecture*. ACADIA. 10-11 March 2011. Lincoln, NE. pp. 91-98.
- Teaching Computational Thinking with Processing** (N. Senske) Poster & presentation, in *Abstract book of the 99<sup>th</sup> Annual Association of Collegiate Schools of Architecture National Conference*. ACSA. 3-6 March 2011. Montreal, Canada. p 63.
- 2010 **Sketching in Code: developing procedural literacy in early architectural education** (Senske, N.) in *Proceedings of the 29<sup>th</sup> National Conference of the Beginning Design Student*. NCBDS 3-5 April 2014. Charlotte, NC. pp. 31-37.
- 2009 **Reconsidering the Ethics of Transparency** (Luce, K. and Senske, N.) in *The Value of Design: Proceedings of the 97<sup>th</sup> Association of Collegiate Schools of Architecture National Conference*. ACSA. 26-29 March 2009. Portland, OR. pp. 166-172.
- 2007 **Syntax2d: An open source software platform for Space Syntax analysis.** (Wineman, J., Turner, J., Psarra, S., Jung, S. K., & Senske, N.) in *Proceedings of New Developments in Space Syntax Software*. 12-15 June 2007. Istanbul, Turkey. pp. 23-26.

## 2.04 invited book reviews

- 2016 **A Prehistory of the Cloud.** (Senske, N.) *Journal of Architectural Education* 70 (2), pp. 330-332

## 2.05 conference presentations – peer reviewed

- 2017 **Computational Feminism: Searching for Cyborgs** (Doyle, S., Forehand, L., and Senske, N.) Full paper presented at the 36th Annual ACADIA Conference. 1-4 Nov 2017, Boston, MA.
- Identifying Inequalities: Gender, Technology, Architecture.** (Doyle, S. and Senske, N.) Full paper presented at the 2017 ARCC National Conference. 14-17 June 2017, Salt Lake City, UT.
- Evaluation and Impact of a Required Computational Thinking Course for Architecture Students.** (Senske, N.) Full paper presented at the 2017 ACM SIGCSE Conference. 8-10 March 2017, Seattle, WA.
- 2016 **Soft Skills for Digital Designers** (Doyle, S. and Senske, N.) Full paper presented at the 32nd NCBDS Conference. 25-28 Feb 2016. San Luis Obispo, CA.
- Exploring Learning Objectives for Digital Design in Architectural Education** (Doyle, S. and Senske, N.) Full paper presented at the 10<sup>th</sup> EAAE ARCC 10th International Conference. 15-18 June 2016, Lisbon, Portugal.
- Introducing Digital Soft Skills: Bridging the Gaps in Architectural Education** (Doyle, S. and Senske, N.) Full paper presented at the 10<sup>th</sup> EAAE ARCC 10th International Conference. 15-18 June 2016, Lisbon, Portugal.

- 2015 **Beyond Tutorials: using active learning to improve computational design instruction** (Senske, N.) Full paper presented at the 2015 Architectural Research Centers Consortium National Conference. ARCC. 6-9 April 2015, Chicago, IL.
- Learning from What Works: applying the lessons of Media Computation to help architecture students learn introductory programming.** (Senske, N.) Poster presented at the 2015 ACM SIGCSE Technical Symposium on Computer Science Education. ACM. 5-7 March 2015, Kansas City, MO.
- Building a Better Computation Course: achieving student success with active learning.** (Senske, N.) Full paper presented at the 31<sup>st</sup> National Conference of the Beginning Design Student. NCBDS. 26-28 Feb 2015, Houston, TX.
- The New Handout: interactive animations and foundation pedagogy** (Balmer, J., Senske, N. and Swisher, M.) Full paper presented at the 31<sup>st</sup> National Conference of the Beginning Design Student. NCBDS. 26-28 Feb 2015, Houston, TX.
- 2014 **Digital Minds, Materials, and Ethics: linking computational thinking and digital craft.** (Senske, N.) Full paper presented at the 19<sup>th</sup> International Computer Aided Architectural Design and Research in Asia Conference. CAADRIA. 14-17 May 2014, Kyoto, Japan.
- Confronting the Challenges of Computational Design Instruction** (Senske, N.) Full paper presented at the 19<sup>th</sup> International Computer Aided Architectural Design and Research in Asia Conference. CAADRIA. 14-17 May 2014, Kyoto, Japan.
- The Fate of the Albertian Paradigm: a pedagogy of architectural visualization in digital media.** (Forget, T. and Senske, N.) Full paper presented at the 30<sup>th</sup> National Conference of the Beginning Design Student. NCBDS 11-13 April 2013. Chicago, IL.
- 2013 **Rethinking the Computer Lab: an inquiry-based methodology for teaching computational skills.** (Senske, N.) Full paper presented at the 29<sup>th</sup> National Conference of the Beginning Design Student. NCBDS 3-5 April 2014. Philadelphia, PA.
- Building a Computational Culture: a pedagogical study of a computer programming requirement in architectural education** (Senske, N.) Full paper presented at the 2015 Architectural Research Centers Consortium National Conference. ARCC. Charlotte, NC. 27-30 March 2013.
- 2011 **A Curriculum for Integrating Computational Thinking** (Senske, N.) Full paper presented at the 2011 Regional Conference of the Association for Computer Aided Design in Architecture. ACADIA. 10-11 March 2011. Lincoln, NE.
- Teaching Computational Thinking with Processing** (N. Senske) Poster presented at the 99<sup>th</sup> Annual Association of Collegiate Schools of Architecture National Conference. ACSA. 3-6 March 2011. Montreal, Canada.
- 2010 **Sketching in Code: developing procedural literacy in early architectural education** (Senske, N.) Full paper presented at the 29<sup>th</sup> National Conference of the Beginning Design Student. NCBDS 3-5 April 2014. Charlotte, NC.
- 2009 **Reconsidering the Ethics of Transparency** (Luce, K. and Senske, N.) Full paper presented at the 97<sup>th</sup> ACSA National Conference. 26-29 March 2009. Portland, OR.

### 2.06.1 invited lectures and presentations - external

- 2017 **Computation as a Catalyst to Gender Parity in Architecture** (Doyle, S., Forehand, L. and Senske, N.) presented at the AIA Iowa 2017 Fall Convention: Cohesion. Selected presentation. [aiaiowa.org/resource/resmgr/Convention\\_2017/Registration\\_Brochure\\_FINAL.pdf](http://aiaiowa.org/resource/resmgr/Convention_2017/Registration_Brochure_FINAL.pdf)
- ISU Computation + Construction Lab** (Doyle, S., Forehand, L. and Senske, N.) AIA Iowa Spring Conference: Resilience. Invited presentation. [aiaiowa.org/resource/resmgr/Spring\\_Conference\\_2017/Spring\\_Conference\\_Brochure\\_F.pdf](http://aiaiowa.org/resource/resmgr/Spring_Conference_2017/Spring_Conference_Brochure_F.pdf)
- 2014 **What Computer Science Education Can Teach Us About Parametric Design Cognition.** Peer-reviewed presenter for “Parametric Design Thinking: Cognitive Models and Styles, Computational Design Processes and Digital Tools”: Workshop at the 6th International Conference on Design Computing and Cognition (DCC'14) (University College London: 2014).
- 2013 **Computational Literacy for Everyone: opening a dialogue between STEM and the digital arts and humanities.** Peer-reviewed workshop presenter at the *2013 ACM SIGCSE Technical Symposium on Computer Science Education*. 6-9 Mar 2013. ACM. Denver, CO.
- Becoming Computational.** Integrated Project Delivery (IPD) & Building Information Modeling (BIM) Symposium, AIA Charlotte, 5 Feb 2013. Invited presenter and panelist.

### 2.06.2 invited lectures and presentations – ISU

- 2018 **Computational Feminism** (Doyle, S., Forehand, L. and Senske, N.) ISU Women & Gender Studies Lecture Series. Invited by WGS director.
- ISU Computation + Construction Lab** (Doyle, S., Forehand, L. and Senske, N.) Presented in Design 102 Spring Lecture Series. Invited by DSN 102 coordinator.
- Computation as a Tool of Gender Parity** (Doyle, S., Forehand, L. and Senske, N.) Presented in ISU Women and Gender Studies Lecture Series. Invited by WGS coordinator.
- 2017 **TwoXTwo** (R. Correa and Senske, N.) Public presentation at Reiman Gardens. Invited by assistant director.
- Integrating Computational Design and Digital Fabrication Technology** (Doyle, S. and Senske, N.) Final poster presentation for Miller Faculty Fellowship Luncheon. Invited by CELT.
- ISU Computation + Construction Lab** (Doyle, S., Forehand, L. and Senske, N.) Presented in Design 102 Spring Lecture Series. Invited by DSN 102 coordinator.
- ISU Computation + Construction Lab** (Doyle, S. and Senske, N.) Department of Architecture Advisory Council. Invited by Department Chair.
- 2016 **Integrating Computational Design and Digital Fabrication Technology** (Doyle, S. and Senske, N.) Proposal presentation for Miller Faculty Fellowship Luncheon. Invited by CELT.
- ISU Computation + Construction Lab** (Doyle, S. and Senske, N.) Department of Architecture Advisory Council. Invited by Department Chair.

### 2.06.3 invited lectures and presentations – UNCC

- 2014 **Space Syntax methodologies.** Research seminar symposium. Invited by Eric Sauda.  
**Computational Pedagogy.** Design Computation seminar. Invited by Chris Beorkrem.  
**Computational Thinking.** Invited Panelist for design methods seminar. Invited by Charles Davis.
- 2013 **Primitive Parametric Symposium.** Invited panelist, College of Arts and Architecture, UNC Charlotte. Invited by Department Director.  
**Computational Craft.** Invited seminar lecture. School of Architecture, UNC Charlotte. Invited by Greg Snyder.  
**Qualitative Assessment of Problem Solving Methods.** Invited lecture for Graduate Ideas seminar, UNC Charlotte. Invited by Eric Sauda.
- 2012 **The Dynamics of Place in Higher Education.** Invited workshop panelist, Gensler Roundtable, Charlotte, NC. Invited by Department Director.
- 2011 **ROMM, SENSKE, WILLIAMS: Digital Inquiry + Practice.** Invited panelist, UNC Charlotte, Charlotte, NC. Invited by Department Director.  
**Strategic Instruction in Computational Design.** Invited presentation, Digital Arts Center Colloquium, UNC Charlotte, Charlotte, NC. Invited by center director.

### 2.06.4 invited lectures and presentations – other internal presentations

- 2009 **Sketching in Code: an introduction to Processing.** Invited graduate representation lecture, University of Michigan, Ann Arbor, MI. Invited by Malcolm McCullough.
- 2007 **An Introduction to Knowledge Representation with Processing.** Invited graduate representation lecture, University of Michigan, Ann Arbor, MI Invited by Malcolm McCullough.  
**Computational Design Research.** Invited lecture for graduate research methodologies seminar, University of Michigan, Ann Arbor, MI. Invited by Jean Wineman.
- 2005 **Open Source Collaboration.** Invited presenter, New Century Cities Conference, MIT, Cambridge, MA. Invited by conference organizers.

### 2.07 extension / outreach reports and publications

- 2017 **TILL: ISU Computation + Construction Lab** Doyle, S., Forehand, L., and Senske, N. (Eds.)

### 2.08 products in other media (Videos, Software Applications, Websites, Blogs, etc.)

- 2017- **ISU Computation & Construction Lab Instagram**  
[instagram.com/isu\\_ccl](https://www.instagram.com/isu_ccl)
- 2016- **ISU Computation & Construction Lab Website**  
[ccl.design.iastate.edu](http://ccl.design.iastate.edu)

2011- **Nick Senske - YouTube Tutorials Channel**  
youtube.com/nsenske

## 2.09 citations (alphabetical, by first author)

2018 **A Curriculum for Integrating Computational Thinking and Confronting the Challenges of Computational Design Instruction** in Papamanolis, A., & Geropanta, V. (2018). Information Technologies in Architectural Pedagogy: from " Tool" to a " Comprehensive Educational Strategy". Emerging Trends in Education, 1(1).

**A Curriculum for Integrating Computational Thinking** in Johnson, B. (2016). Design Computing: An Overview of an Emergent Field. Routledge. p 188 and paper is listed under "Suggested Reading" for Chapter 11: Pedagogy.

(4x citations) **A Curriculum for Integrating Computational Thinking, Building a Computational Culture: a pedagogical study of a computer programming requirement, Evaluation and Impact of a Required Computational Thinking Course for Architecture Students** in A. Peteinarelis and S. Yiannoudes (2018) Parametric Models and Algorithmic Thinking in Architectural Education. In Computing for a Better Tomorrow. 2018 Education and research in Computer Aided Architectural Design in Europe conference (eCAADe), Lodz, Poland.

**Evaluation and Impact of a Required Computational Thinking Course for Architecture Students in** Symeonidou, I. (2018). Epidermis: Algorithmic Design Based on Biomimetic Morphology. Nexus Network Journal, p. 1-14.

**Five Years of Flipped Classrooms: Lessons Learned** in Gimenez, M. D. C., Barbero, M. D. M., Rodriguez Perez, M., & Perez Gonzalez, M. (2018) El aula invertida vertical. Una experiencia en la ETSAM-UPM. Workshop of Educational Innovation in Architecture JIDA'18, pp. 498-507.

**Between design and digital: bridging the gaps in architectural education [with Shelby Doyle]** in Maina, J. J. (2018). Architecture Curriculum on Final Year Students' Design: Do Gender and Mode of Entry Matter?. ATBU Journal of Environmental Technology, 11(1), p. 1-25.

**A Curriculum for Integrating Computational Thinking** in Febrian, A. (2018). Senior Computer Science Students' Task and Revised Task Interpretation While Engaged in Programming Endeavor. (PhD Dissertation, Utah State University School of Engineering).

**Democratizing Access and Identifying Inequalities: Gender, Technology, Architecture education [with Shelby Doyle]** in Clark, E. (2018). Creativity Matters: Community College and the Expansion of Access to Architectural Education (Master's Thesis, University of Texas at Austin)

**Building a Computational Culture: a pedagogical study of a computer programming requirement in** Indraprastha, A. (2018). Learning to Know and Think: Computing for Architecture Course. In SHS Web of Conferences (Vol. 41, p. 05001). EDP Sciences.



**Building a Computational Culture: a pedagogical study of a computer programming requirement** in Indraprastha, A. (2018). Digital Reality and Digital Technology. In SHS Web of Conferences (Vol. 41, p. 05001). EDP Sciences.

**Fear of Code** in Mokhtar Maleki, M. (2014). Programming in the model: A new perspective on scripting in CAD systems (Doctoral dissertation, Communication, Art & Technology: School of Interactive Arts and Technology).

**Between design and digital: bridging the gaps in architectural education [with Shelby Doyle]** in Nakapan, W., & Onsuwan, S. (2017). Investigating the Arch RSU Parametric Design Studio. The 3rd RSU National and International Research Conference on Science and Technology, Social Science, and Humanities 2018. (RSUSSH 2018)

**Between design and digital: bridging the gaps in architectural education [with Shelby Doyle]** in Hu, M. (2018). BIM-Enabled Pedagogy Approach: Using BIM as an Instructional Tool in Technology Courses. Journal of Professional Issues in Engineering Education and Practice, 145(1).

**Evaluation and Impact of a Required Computational Thinking Course for Architecture Students** in Sondakh, D. E. (2018) Review of Computational Thinking Assessment in Higher Education.

**Evaluation and Impact of a Required Computational Thinking Course for Architecture Students** in Zug, M., Hoffman, H., Kobayashi, F., & Dodds, Z. (2018). CS for all academic identities. Journal of Computing Sciences in Colleges, 33(4), 130-137.

**Fear of Code** in Herrera, P. (2016). Digital Fabrication and Revival Craft in Latin America. 10th ICDHS 2016.

**Syntax2d: An open source software platform for Space Syntax analysis** in Al-Jokhadar, A., & Jabi, W. (2017). Qualitative Representation and Spatial Reasoning in A Rule-Based Computational Design Model. 5th eCAADe (Education and Research in Computer Aided Architectural Design in Europe) Regional International Symposium. Cardiff, Wales, UK: 35-44.

**A Curriculum for Integrating Computational Thinking** in Mohammad, K.S. (2012). A Discussion on the implications of parametric thinking on the Design process and the Designer. (PhD examination, University of Alexandria, Egypt)

2017 **Syntax2d: an open source software platform for space syntax analysis** (Wineman J., Turner, J., Psarra, S., Jung, S.K., and Senske, N.) Citation in: Al-Jokhadar, A. and Jabi, W. "Qualitative Representation and Spatial Reasoning in a Rule-Based Computational Design Model." Proceedings of the 5th eCAADe Regional International Symposium – The Virtual and the Physical. Cardiff University, Wales, United Kingdom. pp. 44-50.

**A Curriculum for Computational Thinking in Architectural Education** (Senske, N.) Multiple citations in: Frazier, M. "Understanding Beginning Design Education: A Survey of Current Practice." Proceedings of the 33<sup>rd</sup> National Conference of the Beginning Design Student. Salt Lake City, UT. pp. 125-135.

**Confronting the Challenges of Computational Design Instruction** (Senske, N.) Citation in: Llach, D., Bidgoli, A., and Darbari, S. "Assisted Automation: Three learning experiences in architectural robotics." *International Journal of Architectural Computing* 15, no. 1 (2017): 87-102.

**Learning from What Works** (Senske, N.) Citation in: McElfresh, S. "Using Puzzles and Chases for Student Engagement in a Course for Non-majors." *Journal of Computing Sciences in Colleges* 32, no. 3 (2017) pp. 28-35.

**Soft Skills for Digital Designers** (Doyle, S. and Senske, N.) Citation in: Plauche', R. and Gonzales, M. "Universal Vocabulary." *Proceedings of the 33<sup>rd</sup> National Conference of the Beginning Design Student*. Salt Lake City, UT. pp. 349-352.

**Digital Minds, Materials, and Ethics** (Senske, N.) and **Rethinking the Computer Lab** (Senske, N.) Citations in: Toker, U. "New Frontiers in Teaching Parametric Design and Digital Fabrication." *Proceedings of the 33<sup>rd</sup> National Conference of the Beginning Design Student*. Salt Lake City, UT. pp. 443-448.

**Exploring Learning Objectives for Digital Design in Architectural Education.** (Doyle, S. and Senske, N.) Citation in: Vaizoglu, Zeynep. "Challenges in Raising Digital Awareness in Architectural Curriculum." *Computer-Aided Architectural Design: Future Trajectories: 17th International Conference, CAAD Futures 2017, Istanbul, Turkey, July 10-14, 2017, Proceedings*. Vol. 724. Springer, 2017. pp. 136-150.

**Between Design and Digital: bridging the gaps in architectural education** (Doyle, S. and Senske, N.) Citation in: Xing, K. and Han, Y. "Tactile Experimental Parametrics." *Proceedings of the 2017 ARCC National Conference*, Salt Lake City, UT. pp. 475-482.

2016 **Syntax2d: an open source software platform for space syntax analysis** (Wineman J., Turner, J., Psarra, S., Jung, S.K., and Senske, N.) Citation in: Avetisyan Arsen H. "Architectural Problems of the Urban Areas of High Value." PhD diss., University of Architecture and Construction, Armenia.

**Building a Better Computation Course** (Senske, N.) and **Rethinking the Computer Lab** (Senske, N.) Citations in: Eddie, D. "Striking a Balance: Integrating Tool Literacy and Critical Problem Solving in Digital Media Instruction." in *Proceedings of the 32<sup>nd</sup> National Conference of the Beginning Design Student*. San Luis Obispo, CA. pp.67-74.

**Digital Minds, Materials, and Ethics** (Senske, N.) Citation in: Hahm, S., and Pantic, I. "Hybrid Design Workflows of Digital Crafting and Material Computation" in *Proceedings of the 2016 Association of Architectural Educators Conference - Research Based Education*. Bartlett: London UK. pp. 174-183.

**Digital Minds, Materials, and Ethics** (Senske, N.), **Building a Computational Culture** (Senske, N.), **A Curriculum for Computational Thinking in Architectural Education** (Senske, N.), **Fear of Code** (Senske, N.) Citations in Heitmann, I. "Digital Media in Landscape Architecture Design Process", Master's Thesis Bibliography, University of Washington.

**Digital Minds, Materials, and Ethics** (Senske, N.) Citation in: Jackson, M. & Gonzales, M. "The Potential of Drawing: Emergent Techniques." *Proceedings of the 32<sup>nd</sup> National Conference of the Beginning Design Student*. San Luis Obispo, CA. pp.111-115.

**Digital Minds, Materials, and Ethics** (Senske, N.) Citation in: Jackson, M. and Gonzales, M. "Drawing Vocabulary." *Proceedings of the 33<sup>rd</sup> National Conference of the Beginning Design Student*. Salt Lake City, UT. pp. 219-224.

**Sunlight Parametrics - YouTube video.** (Senske, N.) Citations in: Laracuenta, N. B. M. "Performance Software Approaches for Kinetic Architecture: Programmable Matter Based Simulations" Doctoral dissertation, Universitat Internacional de Catalunya.

**Confronting the Challenges of Computational Design Instruction** (Senseke, N.) Citation in: Llach, D. C., Bidgoli, A., & Darbari, S. "Of Hands and Robots: Creativity and Learning in Architectural Robotics." Citation in Proceedings of the 6<sup>th</sup> Annual Conference on Creativity and Fabrication in Education. ACM pp. 70-73.

**Syntax2d: an open source software platform for space syntax analysis** (Wineman J., Turner, J., Psarra, S., Jung, S.K., and Senseke, N.) Citation in: Park, Y. S., & Ham, S. "Spatial Analysis of Various Multiplex Cinema Types." Frontiers of Architectural Research, 5(1), pp. 63-73.

**Syntax2d: an open source software platform for space syntax analysis** (Wineman J., Turner, J., Psarra, S., Jung, S.K., and Senseke, N.) Citation in: Sadek, A. H., & Shepley, M. M. "Space Syntax Analysis: Tools for Augmenting the Precision of Healthcare Facility Spatial Analysis." HERD: Health Environments Research & Design Journal, 10(1). pp. 114-129.

**Digital Minds, Materials, and Ethics** (Senseke, N.) Citation in: Spaeth, A. B., Dounas, T., & Kieferle, J. "Complexity and Simplicity: Tensions in teaching computation to large numbers of architecture students." Proceedings of Education and research in Computer Aided Architectural Design in Europe (eCAADe) 34, pp. 229-236.

2015 **A Curriculum for Computational Thinking in Architectural Education** (Senseke, N.) Citation in: Ruiz, M. A. J. "A Case Study of Introductory Programming with MOOCS." PhD Dissertation, Purdue University.

2014 **Fear of Code** (Senseke, N.) Citation in: Maleki, M., Woodbury, R., and Neustaedter, C. "Liveness, Localization and Lookahead: Interaction elements for parametric design." in Proceedings of the Designing Interactive Systems Conference, DIS 14, June 2014, Vancouver, Canada. pp.

**Syntax2d: an open source software platform for space syntax analysis** (Wineman J., Turner, J., Psarra, S., Jung, S.K., and Senseke, N.) Citation in: Kim, J., Jung, S.K. "Distance-weighted isovist area: An isovist index representing spatial proximity." in Automation in Construction, Vol 43, July 2014, p. 92-97.

**Syntax2d: an open source software platform for space syntax analysis** (Wineman J., Turner, J., Psarra, S., Jung, S.K., and Senseke, N.) Citation in: Vogt, R. "Human Mobility and Location Privacy in Wireless Sensor Networks." PhD diss., University of Alberta, 2014.

2012 **Syntax2d: an open source software platform for space syntax analysis** (Wineman J., Turner, J., Psarra, S., Jung, S.K., and Senseke, N.) Citation in: Doherty, B., Rumery, D., Barnes, B. and Zhou., B. "A spatial query & analysis tool for architects." in Proceedings of the 2012 Symposium on Simulation for Architecture and Urban Design (SimAUD '12). Society for Computer Simulation International, San Diego, CA, USA, p 1-8.

**A Curriculum for Computational Thinking in Architectural Education** (Senseke, N.) Citation in: Lee, D. "Computational Design Methods" in M. Goulthorpe and A. Murphy, ed. Digital Aptitudes: Proceedings of the 2012 ACSA National Conference. Boston, MA. pp. 170-177.

**A Curriculum for Computational Thinking in Architectural Education** (Senseke, N.) Citation in: Mohammad, K. "A Discussion on the Implications of Parametric Thinking on the Design Process and the Designer." PhD proposal, University of Alexandria, Egypt.

**Syntax2d: an open source software platform for space syntax analysis** (Wineman J., Turner, J., Psarra, S., Jung, S.K., and Senseke, N.) Citation in: Vogt, R., Nikolaidis, I., & Gburzynski, P. A realistic outdoor urban pedestrian mobility model. Simulation Modeling Practice and Theory, 26, (Elsevier, 2012) pp. 113-134.

## 2.08 broad scope publications (selected)

2017 The 10 Best YouTube Channels for LA Students, **Landscape Architecture Network**, May 9, 2017. (<http://www.land8.com/the-10-best-youtube-channels-for-landscape-architecture-students/>)

- 2016 TwoXTwo – “Architecture students draw inspiration from Dunescape” **Iowa State Daily**. Feb 10, 2016
- TwoXTwo– “Labor of Lumber” **Inside Iowa State**. Feb 25, 2016
- TwoXTwo – “Students create installation for College of Design atrium” **Ames Tribune**. Feb 27, 2016  
(<http://www.amestrib.com/entertainment/students-create-installation-college-design-atrium>)
- TwoXTwo – “Architecture students' Dunescape-inspired design-build project transforms Iowa State University College of Design atrium” **Archinect**. Mar 4, 2016  
(<http://archinect.com/news/article/149576637/architecture-students-dunescape-inspired-design-build-project-transforms-iowa-state-university-college-of-design-atrium>)
- Top 12 YouTube Channels for Architects, **ArchDaily**, July 14, 2016. (<https://www.archdaily.com/791306/the-top-12-architecture-channels-on-youtube>)
- 2015 The Best Software Tutorials on the Web, **ArchDaily**, June 22, 2015.  
(<https://www.archdaily.com/645270/architecture-software-tutorials-part-2-what-we-heard-from-you>)
- 2014 “Faculty Members Studying Teaching and Learning, SOTL Grant Period Open” **Inside UNC Charlotte**. Oct. 21, 2014. <http://inside.uncc.edu/news-features/2014-10-21/faculty-members-studying-teaching-and-learning-sotl-grant-period-open>
- White, T. “Kennedy Renovations Make Way for Active Learning Classrooms” **Niner Times**. Sept. 24, 2014.  
<http://ninertimes.com/2014/09/kennedy-renovations-make-way-for-active-learning-classrooms/>
- 2005 Humphries, Courtney. “Food for Thought”. **MIT Technology Review**: Vol. 5, Issue 7. 2005.
- Horowitz, J. “Following the Food: Where Students Eat”. **Journal of Higher Education**: March 25, 2005.
- Berdik, C. “The Open Source Café”. **Boston Globe**: July 31, 2005.

## 2.09 awards and honors

- 2017 **Exemplary Paper Award**. 2017 ACM SIGCSE Conference. 8-10 March 2017, Seattle, WA. Awarded by peer-reviewers, top 15 papers of 370 submissions. ~30% acceptance rate.
- 2014 **Best Paper, runner-up**. "Digital minds, materials, and ethics", CAADRIA. 14-17 May 2014, Kyoto, Japan. Selected by jury of conference organizers and moderators. #2 paper out of 88 accepted papers. ~33% acceptance rate.

## 3 AREA of PRS: TEACHING

(5.2.2.3; 5.3.1.4.1)

### 3.01.01 courses developed and taught, Architecture Department, College of Design, Iowa State University

#### Design Studios

Fa' 2018 ARCH 201 Architectural Design I, 6 cr, 18

*Required 2nd Year BArch course that introduces students to architectural design. Field trip to Chicago. Projects included a precedent study and an infill observatory in downtown Ames.*

**Sp' 2018 ARCH 202** Architectural Design II, 6 cr, 18

*Required 2nd Year BArch course that continues to explore fundamentals of architectural design. Projects included a public design-build at Reiman Gardens, Ames, IA.*

**Fa' 2017 ARCH 201** Architectural Design I, 6 cr, 18

*Required 2nd Year BArch course that introduces students to architectural design. Field trip to Chicago. Projects included a precedent study and pavilion, bird observatory competition and an infill observatory in downtown Ames.*

**Sp' 2017 ARCH 202** Architectural Design II, 6 cr, 17

*Required 2nd Year BArch course that continues to explore fundamentals of architectural design. Field trip to Minneapolis. Projects included an urban food hub and a public design-build at Reliable St. in Ames.*

**Fa' 2016 ARCH 201** Architectural Design I, 6 cr, 18

*Required 2nd Year BArch course that introduces students to architectural design. Field trip to Kansas City. Projects included a Precedent study and pavilion, spatial sequence study, and an infill apartment in downtown Ames.*

**Sp' 2016 ARCH 202** Architectural Design II, 6 cr, 15

*Required 2nd Year BArch course that continues to explore fundamentals of architectural design. Field trip to Minneapolis. Projects included an urban food hub and a public design-build at the College of Design and Reiman Gardens in Ames.*

**Fa' 2015 ARCH 201** Architectural Design I, 6 cr, 17

*Required 2nd Year BArch course that introduces students to architectural design. Field trip to Kansas City. Projects included a precedent study and pavilion, spatial sequence study, and an infill apartment in downtown Ames.*

## **Digital Media & Computational Design**

**Sp' 2018 ARCH 330X** Advanced Design Representation, 3 cr, 25

*Experimental course that introduces students to fundamentals of computational design.*

**Fa' 2017 ARCH 230** Design Communications I, 3 cr, 82

*Required BArch course that introduces students to fundamental representational conventions and digital / hybrid media methods.*

**Fa' 2016 ARCH 230** Design Communications I, 3 cr, 92

*Required BArch course that introduces students to fundamental representational conventions and digital / hybrid media methods.*

**Fa' 2015 ARCH 230** Design Communications I, 3 cr, 82

*Required BArch course that introduces students to fundamental representational conventions and digital / hybrid media methods.*

## Computational Theory

### Sp' 2017 ARCH 439X/539X Computational Design Theory, 3cr, 15

*Elective seminar course developed to explore critical issues in computational design, digital fabrication, and artificial intelligence. Digital media minor credit.*

### Sp' 2016 ARCH 528A Computational Design Theory, 3cr, 13

*Elective seminar course developed to explore critical issues in computational design, digital fabrication, and artificial intelligence.*

## Other Seminars

### Fa' 2016 HON 321M Plus Design (with Shelby Doyle and Leslie Forehand), 1 cr, 14

*Elective honors seminar presenting designs value at a university of Science + Technology (+ Design)*

## 3.01.02 courses developed and taught, School of Architecture, College of Art + Architecture, University of North Carolina at Charlotte

## Design Studios

### Sp' 2015 ARCH 2102 Architectural Design Studio II, 5 cr, 18

*Required 2nd Year BArch course that introduces students to advanced digital representation and architectural design within an urban context. Projects included a design-build workshop reviewed by Bernard Tschumi, a tea room, and a mixed-use retail tower in uptown Charlotte, NC.*

### Fa' 2014 ARCH 2101 Architectural Design Studio I, 5 cr, 16

*Required 2nd Year BArch course that introduces students to representational fundamentals and architectural design at a local scale. Field trip to Davidson, NC and Chicago. Projects included a land art precedent study, Post Office monument, and digital fabrication makerspace in Chicago.*

### Sp' 2014 ARCH 2102 Architectural Design Studio II, 5 cr, 15

*Required 2nd Year BArch course that introduces students to advanced digital representation and architectural design within an urban context. Field trip to New York City. Projects included a Mario Botta workshop / precedent study and pavilion, speculative space in New York City, and mixed-use museum / tower on the High Line.*

### Fa' 2013 ARCH 2101 Architectural Design Studio I, 5 cr 15

*Required 2nd Year BArch course that introduces students to representational fundamentals and architectural design at a local scale. Field trip to Charleston, SC. Projects included a land art precedent study, urban park in Charlotte, NC, and building arts gallery and storefront in Charleston.*

### Sp' 2013 ARCH 2102 Architectural Design Studio II, 5 cr, 16

*Required 2nd Year BArch course that introduces students to advanced digital representation and architectural design within an urban context. Field trip to New York City. Projects included a dance motion study and pavilion, artists residence, and mixed use tower in Brooklyn, NY.*

**Fa' 2012 ARCH 2101** Architectural Design Studio I, 5 cr, 15

*Required 2nd Year BArch course that introduces students to representational fundamentals and architectural design at a local scale. Field trip to Davidson, NC.*

**Sp' 2012 ARCH 2102** Architectural Design Studio II, 5 cr, 15

*Required 2nd Year BArch course that explores advanced digital representation and architectural design within an urban context. Field trips to Davidson, NC, New York City, and New Haven, CT. Projects included urban corner analysis, Khan precedent study, yoga studio / bookstore in Davidson, NC, and bicycle co-op in New Haven.*

**Fa' 2011 ARCH 2101** Architectural Design Studio I, 5 cr, 15

*Required 2nd Year BArch course that introduces students to representational fundamentals and architectural design at a local scale. Field trip to Charleston, SC. Projects included a land art precedent study, masonry meditation space, thermal bath in Iceland, and a design-build wall study.*

**Sp' 2011 ARCH 2102** Architectural Design Studio II, 5 cr, 14

*Required 2nd Year BArch course that explores advanced digital representation and architectural design within an urban context. Field trip to Chicago. Projects included a news kiosk and bicycle co-op in Chicago.*

**Fa' 2010 ARCH 2101** Architectural Design Studio I, 5 cr, 18

*Required 2nd Year BArch course that introduces students to representational fundamentals and architectural design at a local scale. Projects included a land art precedent study, masonry meditation space, and natatorium.*

## **Digital Media & Computational Design Seminars**

**Sp' 2015 ARCH 5605** Scripting, 3 cr, 7

*Required MSc / elective course developed to teach introductory computer programming and study computational systems in design.*

**Fa' 2014 ARCH 4604/5604** Computational Methods, 3 cr, 50

*Required BArch and MArch skills and theory course developed to introduce students to the fundamentals of computational design.*

**Sp' 2014 ARCH 5605** Scripting, 3 cr, 6

*Required MSc / elective course developed to teach introductory computer programming and study computational systems in design.*

**Fa' 2013 ARCH 4604/5604** Computational Methods, 3 cr, 74

*Required BArch and MArch skills and theory course developed to introduce students to the fundamentals of computational design.*

**Sp' 2013 ARCH 4050/6050** Advanced Digital Methods, 3 cr, 13

*Elective course developed to for students to explore advanced, independent work with an emphasis on computation, simulation, and digital fabrication.*

**Fa' 2012 ARCH 4604/5604** Computational Methods, 3 cr, 68

*Required BArch and MArch skills and theory course developed to introduce students to the fundamentals of computational design.*

**Sp 2012 ARCH 6603** Representation II: Digital Fundamentals, 3 cr, 11

*Required MArch skills and theory course developed to introduce digital media in the graduate sequence.*

**Sp' 2011 ARCH 230** Computational Methods, 3 cr, 39

*Required BArch and MArch skills and theory course developed to introduce students to the fundamentals of computational design.*

### **3.01.03 courses developed and taught, School of Architecture, Taubman College of Architecture + Urban Planning, University of Michigan**

#### **Digital Media & Computational Design Seminars**

**W' 2010 ARCH 211** Digital Drawing, 3 cr, 25

*Required BArch skills course developed to introduce students to the fundamentals of representation and digital media.*

**W' 2009 ARCH 421** Geometric Modeling, 3 cr, 28

*Required BArch skills course developed to explore basic and advanced digital media with an emphasis on 3D design.*

**F' 2009 ARCH 506** Procedural Media Fundamentals, 3 cr, 12

*Elective seminar course developed to introduce students to procedural design and computational concepts.*

**W' 2008 ARCH 421** Geometric Modeling, 3 cr, 27

*Required BArch skills course developed to explore basic and advanced digital media with an emphasis on 3D design.*

**W' 2007 ARCH 421** Geometric Modeling, 3 cr, 21

*Required BArch skills course developed to explore basic and advanced digital media with an emphasis on 3D design.*

**F' 2010 ARCH 611** Fundamentals of Procedural Design, 3 cr, 4

*Elective seminar course developed to introduce students to procedural design and computational concepts.*

**W' 2010 ARCH 611** 3D CAD Programming: Software Development Seminar, 3cr, 11

*Elective seminar course that teaches computer programming and CAD software development.*



### **3.02.01 Students' evaluation of teaching, Architecture Department, College of Design, Iowa State University**

see Student Teaching Evaluation Summary Chart and Student Course Evaluations in Appendix I

### **3.02.02 Students' evaluation of teaching, School of Architecture, College of Art + Architecture, University of North Carolina at Charlotte**

see Student Course Evaluations in Appendix I

### **3.03 undergraduate advising**

2016- Advising 3 second-year and 15 third-year architecture students

### **3.04 student awards**

2013 **Excellence in Digital Design Award**, graduate level. Carson Russell. UNCC. Thesis advisor.

2012 **Best Architecture Thesis**. Wynn Buzzell, UNCC. Thesis advisor.

2011 **Excellence in Digital Design Award**, graduate level. Dan Corte. UNCC. Thesis advisor.

2011 **Excellence in Digital Design Award**, graduate level. Jeff Scott. UNCC. Thesis advisor.

2010 **Best Architecture Thesis**. Elizabeth Unruh. UNCC. Thesis advisor.

### **3.05 curricular development**

2018 **Advanced Design Representation** - ARCH 330X; 3 credits  
New representation seminar with advanced focus on computation. Prototype for potential required course. Open to undergraduate architecture majors. Digital Media Minor credit.

2017 **Proposal for an additional required communications course in architecture curriculum**, Department of Architecture. Presentations for Communications SA, curriculum committee, architecture faculty. Added to BArch curriculum in Fall 2018.

2016 **Computational Design Theory** - ARCH 439X/539X; 3 credits  
New history / theory / criticism seminar on topics related to computation, artificial intelligence, etc. Open to all majors, undergraduate and graduate. HTC credit. Digital Media Minor credit.

2015 **Design Communications I** - ARCH 230; 3 credits  
Re-developed communications seminar. New flipped classroom format; taught in studios with online tutorial support. Course is required for architecture majors. Open to all College of Design majors. Digital Media Minor credit.

**Architectural Design II** - ARCH 202; 6 credits

Developed a design-build studio component for studio with a focus on outreach and engagement in Iowa with the use of new tools and technologies. Course is required for architecture majors.

- 2014 **Scripting** – ARCH 5606/6306/4050/6050; 3 credits  
Developed new course in scripting / programming for design applications. Course is required for MSc DesComp architecture majors at UNCC
- 2012 **Representation II: Digital Fundamentals** – ARCH 6603; 3 credits  
Developed new digital skills course for Graduate architecture curriculum. Course is required for graduate architecture majors at UNCC
- 2011 **Computational Methods** – ARCH 4604/5604; 3 credits  
Developed new course in beginning computational design. Course is required for undergraduate and graduate architecture majors at UNCC

### 3.06 service related to teaching

- 2017- **Chair**, Communications substantive area, Department of Architecture, ISU.
- 2017- **Coordinator**, second-year architecture program, Department of Architecture, ISU.
- 2016- **Coordinator**, second-year design studios, Department of Architecture, ISU.
- 2016- **Member**, undergraduate coordination committee, Department of Architecture, ISU.
- 2015- **Member**, substitute chair (2016), Communications substantive area, Department of Architecture, ISU.
- 2015- **Member**, Communications substantive area, Department of Architecture, ISU.
- 2015- **Member**, Digital Media Minor committee, ISU.
- 2014-2015 **Chair**, School of Architecture curriculum committee, UNCC.
- 2014-2015 **Member**, College of Arts + Architecture curriculum committee, UNCC.
- 2013-2015 **Coordinator**, second-year design studios, School of Architecture, UNCC.
- 2012-2015 **Member**, MSc / CS dual degree in Design Computation, development committee, UNCC.
- 2011-2013 **Member**, University undergraduate curriculum committee, UNCC
- 2010-2012 **Member**, School of Architecture curriculum committee, UNCC.
- 2010- Regularly provide reference letters for grants, scholarships, graduate school applications, and job positions

### 3.07 grants in support of teaching

- 2018 **Integration of Creative and Collaborative Architectural Robotics.** (with S. Doyle) Computation Advisory Committee (CAC) Grant; internal competitive grant. (\$50,000)
- 2017 **High-Definition Screens for Architecture Studios – Phase II.** (with S. Doyle and L. Forehand) Computation Advisory Committee (CAC) Grant; internal competitive grant. (\$35,000)
- 2016 **High-Definition Screens for Architecture Studios – Phase I.** (with S. Doyle and L. Forehand) Computation Advisory Committee (CAC) Grant; internal competitive grant. (\$3,815)

2015 **Computational Design + Digital Fabrication Technology Integration.** (with S. Doyle)  
Miller Faculty Fellowship. internal competitive grant. (\$12,380)

### 3.07 recognition for teaching

2014 **Active Learning Fellow.** Center for Teaching and Learning (CTL), UNC Charlotte.

## 4 AREA of PRS: RESEARCH / CREATIVE ACTIVITIES

(5.2.2.4;5.3.1.4.2)

### 4.01 grants awarded for research / creative activities

2018 **Polycasting: multi-material 3D printed formwork for reinforced concrete** (with S. Doyle)  
AIA Upjohn Research Initiative Grant (\$14,300)  
ARCC Research Incentive Award (\$5,000)

2016 **ISU Vice Provost for Research Grant**  
ISU Startup Package (\$27,000)

#### **ISU Foreign Travel Grant**

EAAE/ARCC Conference Lisbon, Portugal (\$1,318.50)

2015 **Building Black Utopias: Architectural Modernism and African American Writers, 1965-1975**, UNCC Research and Interdisciplinary Research Grant (\$7,500) Charles Davis, Jeffrey Leak, Nick Senske, principal investigators.

2012 **Developing online content for foundation design instruction**, UNCC Scholarship of Teaching and Learning Grant (\$9,500) Nick Senske, Jeff Balmer and Michael Swisher co-PI's.

2010 **D+Arts Cart**, UNC Charlotte School of Architecture (\$3,500) Sam Buell and Nick Senske, co-PI's.

2007 **Syntax2D**, University of Michigan Rackham Research Grant (\$1,000) James Turner and Jean Wineman, principal investigators, Nick Senske co-PI.

### 4.2 service related to research / creative activities

2018 **Conference panel organizer, The Next Digital Turn: Identifying Inequalities.** ACSA Annual Meeting 15-17 March 2018. Denver, CO. (with Shelby Doyle)

**Paper reviewer**, Design Research Society Conference

**Paper reviewer**, ACSA, Computation in the Core

**Paper reviewer**, ARCC

**Book reviewer - Foundations of Architectural Thinking.** Routledge.

- 2017 **Colloquium organizer, Computational Foundations Colloquium.** 17-19 April 2017. Ames, IA. (with Shelby Doyle)
- Paper reviewer,** TxA (TexFAB) Conference
- Paper reviewer,** EAEE / ARCC International Conference
- Grant reviewer - Research Through Making.** University of Oklahoma.
- Book reviewer - Computational Drawing.** Routledge.
- 2016 **Paper reviewer,** NCBDS National Conference
- Paper reviewer,** ARCC National Conference
- 2015 **Paper reviewer,** Design Research Society 50th Anniversary Conference
- Paper reviewer and moderator,** NCBDS National Conference
- Paper reviewer,** EAEE / ARCC International Conference
- Moderator,** Technology panel, NCBDS National Conference
- 2014 **Book reviewer, Design Computing.** Routledge.
- Paper reviewer and website consultant,** ARCC/EAEE International Conference
- Paper reviewer,** "Reflective Practices in a Global Age; or Is Boyer Still Meaningful?", ACSA National Conference
- 2013 **Co-chair, conference organizer, moderator, and webmaster,** ARCC National Conference
- Book reviewer - Iterations: Digital Exercises for the Beginning Design Student.** Routledge.
- Article reviewer,** ARCC Journal "Enquiry"
- Conference web designer,** SESA 2013
- 2012 **Conference panel organizer, Becoming Computational.** ACSA National Conference
- Moderator,** Technology Roundtable, AIAS Southeast Quad Conference
- 2011 **Paper Reviewer,** "Subverting Methods of Digital Design", ACSA National Conference

#### **4.06 recognitions for research / creative activities**

- 2018 **Joan B. Calambokidis Innovation in Masonry Competition – Mashroybia 2.0.** (with Shelby Doyle, Erin Hunt, and Leslie Forehand) International Masonry Institute (\$10,000)
- 2016 **Best Student Design Build Projects Worldwide.** TwoXTwo. ArchDaily.
- 2008 **Honorable mention.** Work/Play design competition. University of Michigan.

## 5 AREA of PRS: EXTENSION / PROFESSIONAL PRACTICE / ENGAGEMENT

(5.2.2.5;5.3.1.4.3)

### 5.01 projects

- 2018 **PRISMA** 1500 SF structure for Reiman Gardens (\$20,000 budget) – with Roman Chinkerinets, Reinaldo Correa, Leslie Forehand, and Ayo Inayalu
- 2017 **\_SHIFT** 500 SF temporary structure for Reliable St. (\$6,000 budget) – with Roman Chinkerinets, Reinaldo Correa, Bosuk Hur, and Andrea Wheeler
- 2016 **TwoXTwo** 450 SF temporary structure for Reiman Gardens (\$4,700 budget) – with Reinaldo Correa, Bosuk Hur, Gregory Palermo, and Andrea Wheeler
- 2016 **Mirrors** 120 SF temporary playhouse structure for Daniel Stowe Botanical Gardens, Charlotte, (\$5,000 budget)
- 2016 **Threads** Design and construction documentation for unconstructed 400 SF temporary playhouse structure for Daniel Stowe Botanical Gardens, Charlotte, NC

### 5.02 educational outreach

- 2018 **4H Summer Camp teacher**, Architectural Design. Ames, IA.
- 2016 **Teacher / presenter**, 3D printing workshop for OPTAG students. Ames, IA.
- Tutorial developer**, Grasshopper workshop. Cambodia. (with Shelby Doyle)

### 5.03 grants, contracts and fees for extension / professional practice / engagement

- 2017 **Cyborg Sessions: Women in Robotics Workshop**  
ISU Women and Diversity Grant (now ISU Inclusion Initiatives Grant Program) (\$5,000) – with Shelby Doyle and Leslie Forehand
- 2017 **ISU Fieldstead Outreach Studio Grant**  
ARCH 202: Installation for Reliable St. (\$4,500) – with Roman Chinkerinets, Reinaldo Correa, Bosuk Hur, and Andrea Wheeler

### 5.04 professional memberships

- 2017 Member, ACADIA
- 2013- Member, ACM SIGSCE
- 2013- Member, ARCC
- 2009 Member, ACSA

## 5.05 service related to extension / professional practice / engagement

- 2018 **Volunteer**, ISU booth at Iowa State Fair, IMRU\_2
- 2014 **Designer, Friendship Trays community service, Charlotte, NC**
- 2011 **Invited juror**, Critical MASS, UNC Charlotte
- 2009 **Invited juror**, Collaborative media studio final reviews, University of Michigan
- 2008 **Invited juror**, First-year final reviews, Lawrence Technological University
- Invited juror**, Wallenberg competition final reviews, University of Michigan
- 2007 **Invited juror**, MArch II final reviews, University of Michigan

## 6 AREA of PRS: INSTITUTIONAL SERVICE

(5.2.2.6; 5.3.1.4.4)

### 6.01 university service, committees

- 2017- **Member**, ISU Student Innovation Center (SIC) Information Technology Subcommittee, ISU. (invited)
- 2016 **Member**, Student Innovation Center advisory committee, ISU. (invited)
- 2014-15 **College of Arts + Architecture representative**, University Faculty Information Technology Services Advisory Committee, UNCC. (elected)
- 2011-2013 **College of Arts + Architecture representative**, University Undergraduate Curriculum Committee, UNCC. (elected)

### 6.02.1 college service, committees

- 2018 **Chair**, College of Design Liaison Council, ISU (elected)
- 2017-2018 **Architecture representative**, College of Design Liaison Council, ISU (appointed)
- 2017-2018 **Liaison Council representative**, Lectures and Exhibitions Committee, ISU (appointed)
- 2015- **Co-founder**, ISU Computation & Construction Lab (founded)
- 2015- **Member**, College of Design Digital Media Minor committee, ISU. (volunteered)
- 2014-2015 **Member**, College of Arts + Architecture curriculum committee, UNCC. (elected)

### 6.02.2 college service, other

- 2017 **Representative**, Department of Architecture for Cyclone Weekend, ISU.
- 2016- **Coordinator**, second-year student work and volunteers for Program Night, ISU.

2015                    **Submitter**, second-year NAAB materials for accreditation, UNCC.

### **6.03.1 departmental service, committees**

2017-                    **Chair**, Communications Substantive Area, Department of Architecture, ISU. (elected)

2017-                    **Coordinator**, second-year architecture program, Department of Architecture, ISU. (appointed)

2016-2018              **Member**, undergraduate coordination committee, Department of Architecture, ISU. (appointed)

2016-2018              **Coordinator**, second-year architecture design studios, Department of Architecture, ISU. (appointed)

2015-                    **Member** / substitute chair (2016), Communications Substantive Area, Department of Architecture, ISU. (volunteered)

2015-                    **Member**, Design Substantive Area, Department of Architecture, ISU. (volunteered)

2014-2015              **Chair**, School of Architecture curriculum committee, UNCC. (elected)

2014-2015              **Member**, College of Arts + Architecture curriculum committee, UNCC. (elected)

2012-2015              **Member**, MSc / CS dual degree in Design Computation, development committee, UNCC. (volunteered)

2010-2012              **Member**, School of Architecture curriculum committee, UNCC. (volunteered)

### **6.03.2 departmental service, other**

2017-2018              **Committee member**, Tenure Track position in Innovative Materials and Building Technology, ISU.

2016                    **Committee member**, Tenure Track position in Design & Material Practice, ISU.

2016-                    **Portfolio reviewer**, CORE program, ISU.

2015-                    **Coordinator and presenter**, Grad student Summer bootcamp, ISU.

2015-                    **Developer**, Department of Architecture laptop requirements / specifications (yearly), ISU.

2011                    **Committee member**, Tenure Track position in Beginning Design / LBST, UNCC.

2010                    **Organizer**, Digital Arts Center colloquium, UNCC.

2010-2015              **Member**, School of Architecture first-year admissions committee, UNCC.