
Educational Background

1992 Master of Architecture University of California, Berkeley
1991 Master of Science University of California, Berkeley (Structural Engineering & Mechanics of Materials)
1989 Bachelor of Science University of Colorado, Boulder (Architectural Engineering)

Academic Appointments

2020-present Professor
2020-2022 Chair Department of Architecture
2014-2020 Associate Professor University of Washington Department of Architecture
2012-present Mithun-Russell Family Foundation Endowed Professor of Sustainability
2010-present Founding Director The Carbon Leadership Forum
2009-2014 Assistant Professor University of Washington Department of Architecture
2000-2009 Technology Curriculum Coordinator California College of the Arts
2000-2009 Associate Professor California College of the Arts Department of Architecture
1995-2000 Adjunct Lecturer California College of the Arts Department of Architecture

Professional Practice

2000-2011 Simonen Design dba Operation Architecture, San Francisco, CA
1997-2000 Project Architect: EHDD Architects, San Francisco, CA
1995-1997 Project Engineer: Tipping Mar Structural Engineers, Berkeley, CA
1992-1995 Engineer: DASSE Design, San Francisco, CA
1985-1991 (summers) Engineer/Drafter: Various firms in San Francisco, New York, and Helsinki

Licensure

Architect California C27675, 2000-present
Structural Engineer California SE4201, 1997-present
Washington SE, 2001-2002 & 2009-present
Civil Engineer California C052801, 1994-present
Certificate Leadership in Energy and Environmental Design Certified LEED-AP 5/2009

Books and Book Chapters

2018 *Initiatives to Report and Reduce Embodied Carbon in Buildings in North America*
De Wolf, C., **Simonen, K.**, Ochsendorf, J.
Chapter in *Embodied Carbon in Buildings: Measurement, Management, and Mitigation* edited by De Wolf, C.
Pomponi, F., Moncaster, A. Springer.

2017 *Counting Carbon: What We Know and How We Know It*
De Wolf, C., Rodriguez, B.X., **Simonen, K.**
Chapter for *The New Carbon Architecture: Building to Cool the Climate* edited by Bruce King. New Society
Press, Vancouver, CA.

2014 *Life Cycle Assessment: Pocket Architecture Technical Design Series*
Simonen, K.
Routledge, London, UK.

Peer-Reviewed Publications (published and under review)

- 2020 *Embodied carbon in building materials: A framework for quantifying EPD data quality*
Waldman, B., Huang, M., **Simonen, K.**
Buildings and Cities, <https://journal-buildingscities.org/articles/10.5334/bc.31/>
- 2020 *Mechanical, Electrical, Plumbing and Tenant Improvements Over the Building Lifetime: Estimating Material Quantities and Embodied Carbon for Climate Change Mitigation*
Rodriguez, B.X., Huang, M., Lee, H.W., **Simonen, K.**, Ditto, J.
Energy and Buildings
- 2020 *Life-cycle cost and carbon footprint analysis for light-framed residential buildings subjected to tornado hazard*
Adhikari, P., Mahmoud, H., Xie, A., Simonen, K., Ellingwood, B.
Journal of Building Engineering
- 2020 *Residential Building Lifespan and Community Turnover*
Ianchenko, A., **Simonen, K.**, Barnes, C.
Journal of Architectural Engineering.
- 2020 *Comparative environmental analysis of seismic damage in buildings*
Huang, M., **Simonen, K.**
Journal of Structural Engineering, accepted, Volume 146, Issue 2 (February 2020).
[https://doi.org/10.1061/\(ASCE\)ST.1943-541X.0002481](https://doi.org/10.1061/(ASCE)ST.1943-541X.0002481)
- 2019 *Environmental benefits of using hybrid CLT structure in midrise non-residential construction: An LCA based comparative case study in the US PNW*
Ganguly, I., Pierobon, F., Huang, M., **Simonen, K.**
Journal of Building Engineering, Volume 26, November 2019, p. 100862.
<https://doi.org/10.1016/j.jobe.2019.100862>
- A Taxonomy for Whole Building Life Cycle Assessment (WBLCA)*
Rodriguez, B.X., **Simonen, K.**, Huang, M., De Wolf, C.
Smart and Sustainable Built Environments, Volume 8, No. 3, pp. 190-205.
<https://doi.org/10.1108/SASBE-06-2018-0034>
- 2018 *Embodied Carbon as a Proxy for the Environmental Impact of Earthquake Damage Repair*
Simonen, K., Huang, M., Aicher, C., Morris, P.
Energy and Buildings, Volume 164, 1 April 2018, pp. 131-139
<https://10.1016/j.enbuild.2017.12.065>
- 2017 *Benchmarking the Embodied Carbon of Buildings*
Simonen, K., Rodriguez, B.X., De Wolf, C.
Technology | Architecture + Design, 1(2).
- 2014 *Iterating Structures: Teaching Engineering as Design*
Simonen, K.
Journal of Architectural Engineering, 10.1060/(ASCE).1943-5568.0000152,05014003.
- 2012 *Status of North American Life Cycle Inventory Data*
Cooper, J., Fava, J., **Simonen, K.**, Boyd, S., Baer, S.

Journal of Industrial Ecology, 16(3), 287-289.

Peer-Reviewed Conference Publications

- 2020 *Life-Cycle Cost and Carbon Footprint Analysis for Light-Framed Residential Buildings Subjected to Tornado Hazard*
Adhikari, P., Mahmoud, H., Xie, A., **Simonen, K.**, Ellingwood, B.
5th Residential Building Design and Construction Conference March 4-6, 2020 State College, PA.
- 2019 *Embodied and Operational Carbon of Typical Heating, Ventilation and Air Conditioning (HVAC) Systems in Office Buildings in Washington State: A study of buildings registered under LEED v3 2009*
Rodriguez, B.X., Amany, L., **Simonen, K.**
Sustainable Built Environment Conference, August 6-7 (accepted), Tokyo, Japan
- 2018 *Embodied Carbon in MEP Systems: A Simplified Life Cycle Assessment (LCA) Method for MEP systems in Standard Commercial Office Buildings of the Pacific Northwest*
Rodriguez, B.X., **Simonen, K.**, Lee, H.W., Huang, M.
3rd International Graduate Student Symposium of the PhD Program IIT College of Architecture, November 16-18, 2018, Chicago, IL.
- Residential Building Lifespan and Community Resilience*
Ianchenko, A., Wang, Y., **Simonen, K.**, Wang, N.
[4th Residential Building Design and Construction Conference](#), February 28 – March 1, 2018, State College, PA.
- 2017 *Predicting Tornado Damage and Recovery Through Coarse Modeling of Physical-Socio-Economic Interactions at the Community Level*
Masoomi, H., van de Lindt, J., Peek, L., Tobin-Gurley, J., **Simonen, K.**
Architectural Engineering Institute (AEI) Conference 2017, April 11-13, Oklahoma City, OK.
- 2015 *Integrating Environmental Impacts as Another Measure of Earthquake Performance for Tall Buildings in High Seismic Zones*
Simonen, K., Almufti, I., Merrifield, S., Strobel, K., Tipler, J.
ASCE 2015 Structures Congress, April 23-25, 2015, Portland, OR.
- Testing Whole Building LCA: Research and Practice*
Simonen, K.
AIA/ACSA Intersections Conference, May 13, 2015 Atlanta, GA.
- 2014 *Life Cycle Assessment Challenges and Structural Materials*
Simonen, K.
Sustainable Structures Symposium, April 17-18, 2014, Portland, OR.
- 2013 *Iteration for Integration: Techniques for integrating building technology and design*
Simonen, K., Dossick, C.
Building Technology Educators Symposium, July 12-13, 2013, Bristol, RI.
- 2012 *Environmental Product Declarations for Building Materials and Products: U.S. Policy and Market Drivers*
Simonen, K., Haselbach, L.
International Symposium on Life Cycle Assessment and Construction, July 10-12, Nantes, France.
- Linking Next-Generation Performance-Based Seismic Design Criteria to Environmental Performance*
Court, A., **Simonen, K.**, Webster, M., Trusty, W., Morris, P.

ASCE SEI 2012 Structures Congress, March 29-31, Chicago, IL.

Reaching for Sustainability Using Technology and Teamwork: Testing Integrated Project Delivery in Multi-Disciplinary Studio Teaching

Simonen, K., Dossick, C., Peña, R.

Association of Collegiate Schools of Architecture, 100th Annual Meeting, March 1-4, Boston, MA.

2011 *Teaching Building Life Cycle Assessment: LCA in Architecture and Engineering Education*

Simonen, K., Moore, E., Cooper, J., Sianchuk, R.

Building Technology Educators Society Conference, August 4-7, Toronto, ON.

Steel Detailing Practices: Using Global Variation to Envision Innovation

Simonen, K.

ASCI SEI 2011 Structures Congress, April 14-16, Las Vegas, NV.

2010 *Engineering Culture and Collaboration: a Global Perspective*

Simonen, K.

International Conference on Structures in Architecture, July 21-23, Guimaraes, Portugal.

2004 *Systems-Built Housing: Current trends and potential for architectural innovation/digital prefabrication for wood panelized construction*

Simonen, K.

Association for Computer Aided Design in Architecture (ACADIA) Conference, November 8-13, Toronto, ON.

Design Publications

2014 "Prefabrication a la Carta." Publication of completed built work: Marin Street Residence. *Arquitectura y Diseno*, March, Issue 157, Spain.

2013 "Family Heirloom." Publication of completed built work: Marin Street Residence. *Dwell Magazine*, Dec/Jan 2013.

Professional Reports (recent)

2022 *Developing an Embodied Carbon Policy Reduction Calculator*

Benke, B., Lewis, M., Huang, M., Simonen, K. <https://carbonleadershipforum.org/policy-reduction-calculator/>

Buy Clean California Limits: A Proposed Methodology for Setting Industry-Average GWP Limits for Steel, Mineral Wool, and Flat Glass.

Carlisle, S., Waldman, B., DeRousseau, M., Miller, L., Ciavola, B., Lewis, M., and Simonen, K. (2022). Carbon Leadership Forum, University of Washington. Seattle, WA.

<https://carbonleadershipforum.org/buy-clean-california-limits/>

2021 *AIA-CLF Embodied Carbon Toolkit for Architects*

Lewis, M., Huang, M., Carlisle, S. Simonen, K. (2021) Carbon Leadership Forum and AIA National. Three publications and website resource. <https://carbonleadershipforum.org/clf-architect-toolkit/>

Embodied Carbon Toolkit for Building Owners

Lewis, M., Huang, M., Simonen, K. (2021) Website resource. <https://carbonleadershipforum.org/clf-owner-toolkit/>

2021 Carbon Leadership Forum Material Baseline Report, (version 2)

- Carlisle, S., Waldman, B., Lewis, M., and Simonen, K. (2021). Carbon Leadership Forum, University of Washington. Seattle, WA. July 2021. <https://digital.lib.washington.edu/researchworks/handle/1773/47141>
- 2020 *Embodied Carbon Policy Toolkit*
Lewis, M., Huang, M., Simonen, K. (2020) Website resource and five publications.
<https://carbonleadershipforum.org/clf-carbon-policy-toolkit/>
- 2019 *Embodied Carbon in Construction Calculator Methodology*
Report prepared by the Carbon Leadership Forum in support of the EC3 tool
Available at: <http://carbonleadershipforum.org/projects/ec3/>
- Life Cycle Assessment of Katerra's Cross-Laminated Timber (CLT) and Catalyst Building*
Simonen, K. Huang, M., Ganguly, I., Pierobon, F., Chen, C.X.
Report Prepared for Katerra
Available at: <http://carbonleadershipforum.org/projects/katerra/>
- Life Cycle Assessment of a Commercial Tenant Improvement Project*
Simonen, K., Huang, M., Rodriguez, B.X.
Report prepared for WeWork
Available at: <http://carbonleadershipforum.org/projects/wework/>
- Buy Clean Washington Study*
Simonen, K., Dilegge, T., Huang, M., Ditto, J.
Report prepared by the Carbon Leadership Forum for the State of Washington
Available at: <http://carbonleadershipforum.org/buy-clean-washington/>
- Life Cycle Assessment of Tenant Improvement in Commercial Office Buildings*
Huang, M., **Simonen, K.**, Ditto, J.
Available at: <http://carbonleadershipforum.org/projects/lca-of-mep-and-ti/>
- Life Cycle Assessment of Mechanical, Electrical, and Plumbing in Commercial Office Buildings*
Rodriguez, B.X., Lee H.W., **Simonen, K.**, Huang, M.
Available at: <http://carbonleadershipforum.org/projects/lca-of-mep-and-ti/>
- Concrete Product Category Rule: NSF V1. Technical Edits 2019*
Simonen, K. (committee chair and lead author)
Available at: https://www.nrmca.org/sustainability/EPDProgram/Downloads/NSF_PCR_CONCRETE2019.pdf
- 2018 *Methodology for Environmental Impact Assessment: FEMA P-58 Background Document, Section 3.7.20*
Simonen, K., Morris, P., Huang, M.
Available at: <http://femap58.atcouncil.org/supporting-materials>
- Life Cycle Assessment and Buildings: A Practice Guide*
Simonen, K., Huang, M., Rodriguez, B.X., Todaro, L.
Available at <http://carbonleadershipforum.org/lca-practice-guide/>
- Prototype Mass Timber Office Building Models: Material Quantities & Preliminary Life Cycle Assessment*
Simonen, K., Strobel, K., Huang, M., Rodriguez, B.X.
Developed in support of USDA funded project: Market and Environmental Assessment of CLT Production in the Olympic Peninsula: Mid-Rise Non-Residential Construction Application
Available at <http://carbonleadershipforum.org/projects/mass-timber-optimization/>

- 2017 *Embodied Carbon Benchmark Study: LCA for Low Carbon Construction*
Simonen, K., Rodriguez, B.X., McDade, E., Strain, L.
Report prepared in support of grant managed by The Charles Pankow Foundation
Available at <http://hdl.handle.net/1773/38017>
- CLF Embodied Carbon Benchmark Database*
Simonen, K., Rodriguez, B.X., Barrera, S., Huang, M.
Database in support of *Embodied Carbon Benchmark Study: LCA for Low Carbon Construction*
Available at <http://hdl.handle.net/1773/38017>
- CLF Embodied Carbon Benchmark Data Visualization*
Simonen, K., Rodriguez, B.X., Li, S.
Online data visualization in support of *Embodied Carbon Benchmark Study: LCA for Low Carbon Construction*
Available at www.carbonleadershipforum.org/data-visualization/
- 2013 *Seismic Performance Assessment of Buildings - Methodology for Assessing Environmental Impacts*
Court, A., Morris, P., **Simonen, K.**, Trusty, W., Webster, M., Heintz, J.
Report prepared in consultation for the Applied Technology Council for FEMA.
Available at <https://www.atcouncil.org/docman/fema/19-fema-p-58-4-volume-4/file>
- Development of a Manual for Sustainability, Resilience and Disaster Resistance for Commercial Buildings.
Unpublished white paper for FEMA. Primary author as consultant to URS Group
- Modular Prefabricated Residential Construction Constraints and Opportunities
Azari, R., Javanifard, R., Markert, D., Strobel, K., Yap, J., Dossick, C., El-Anwar, O., **Simonen, K.**
Available at: <http://cm.be.uw.edu/resource/modular-prefab-in-seattle/>
- 2012 *Product Category Rules (PCR) for ISO 14025 Type III Environmental Product Declarations (EPDs) of Concrete*
Simonen, K. (lead author)
ISO peer review completed and published November 2012.
Available at <http://carbonleadershipforum.org/projects/concrete-product-category-rule/>
- Life Cycle Assessment (LCA) and Buildings Research for Washington State*
Simonen, K., Haselbach, L., Oneil, E., Cooper, J.
- Structure and carbon - how materials affect the climate*
Webster, M., Meryman, H., Slivers, A., Rodriguez-Nikl, T., Lemay, L., **Simonen, K.**
- 2011 *Motivating Low-Carbon Construction: Opportunities and Challenges: A road map for rapid and significant impact (white paper)*
Simonen, K.
- Peer Reviewed/Juried Conference Presentations [estimated number of attendees]**
- 2020 *Towards Zero Carbon: Strategies to Reduce Embodied Carbon* [150]
Greenbuild, November, Online
- 2019 *Stop Shying Away from WBLCA!* [100]
Greenbuild, November, Atlanta, GA.
- Embodied Carbon: Comparing & Connecting* [50]
Living Products Expo, October, Nashville, TN.

- Stop Shying Away from WBLCA!* [50]
Canada Green Building Conference, May 29, Vancouver, B.C.
- Embodied Carbon Policy* [50]
Washington-Oregon Higher Education Sustainability Conference, Feb 27, Seattle, WA.
- 2018 *Achieving the Promise of Mass Timber* [200]
Greenbuild, November 16, Chicago, IL
- 2017 *Kicking Carbon for Credits: LEED v4 WholeBuilding LCA* [300]
Greenbuild, November 8, Boston, MA
- Getting to Zero: Reducing the Carbon Footprint of Building Construction* [20]
(session with McDade, E. and Smedley, S.)
CERC Applied Research Conference, March 16, 2018
- 2016 *The Time Value of Carbon, Getting to Zero by 2050* (session with McDade, E., Strain, L. & Smedley, S.)
Living Products Expo, September 14, Pittsburgh, PA.
- Comparing Concrete EPDs: Motivation, Challenges and Next Steps*
Concrete Sustainability Conference, May 16, Washington DC.
- 2015 *Materials Matter: Materials and Carbon Emissions*
AIA National Convention, May 15, Atlanta, GA.
- Testing Whole Building LCA: Research and Practice*
AIA/ACSA Intersections Conference, May 13, Atlanta, GA.
- Integrating Environmental Impacts as another Measure of Earthquake Performance for Tall Buildings in High Seismic Zones*
ASCE SEI Structures Congress, April 23-25, Portland, OR.
- 2014 *LCA Methodology and PCR development challenges for structural building materials*
American Center for Life Cycle Assessment Conference, LCAXIV, October 7, San Francisco, CA.
- Life Cycle Assessment Challenges and Structural Materials*
Sustainable Structures Symposium, April 17, Portland, OR.
- 2013 *Iteration for Integration: Techniques for integrating building technology and design* (with Dossick, C.)
Building Technology Educators Society, July 12th 2013, Bristol, RI.
- 2012 *Concrete Product Category Rules: The Intersection of Science, Policy and Practice*
American Center for Life Cycle Assessment Conference, LCAXII, September 26, Tacoma, WA.
- Life Cycle Assessment and Buildings Research for Washington State* (with Haselbach, L.)
American Center for Life Cycle Assessment Conference, LCAXII. September 26, Tacoma, WA.
- Environmental Product Declarations: U.S. Policy Drivers and Implications for the Concrete Industry* (with Haselbach, L.)
International Concrete Sustainability Conference, May 2012, Seattle, WA.

Concrete Product Category Rules: Technical Details and Industry Implementation
International Concrete Sustainability Conference, May, 2012, Seattle, WA.

Environmental Product Declarations for Building Materials and Products: U.S. Policy and Market Drivers (with Haselbach, L.)
International Symposium on Life Cycle Assessment and Construction, July, Nantes, France.

Reaching for Sustainability Using Technology and Teamwork: Testing Integrated Project Delivery in Multi-Disciplinary Studio Teaching (with Dossick, C. & Peña, R.)
Association of Collegiate Schools of Architecture, 100th Annual Meeting, March 2012, Boston, MA.

2011 *Teaching Building Life Cycle Assessment: LCA in Architecture & Engineering Education* (with Moore, E., Cooper, J., Sianchuk, R.)
Building Technology Educators Society Conference, August 2011, Toronto, ON.

Life Cycle Assessment in Building Design Process
International Society for Industrial Ecology Conference, June, Berkeley, CA.

Steel Detailing Practices: Using Global Variation to Envision Innovation
ASCE SEI Structures Congress, April, Las Vegas, NV.

2010 *Engineering Culture and Collaboration: a Global Perspective*
International Conference on Structures in Architecture 2010, July, Guimaraes, Portugal.

2006 *Design Build: at a VERY small scale*
Building Technology Educators Symposium, June, Baltimore, MD.

Digital Technology is Now Building Technology: Pedagogical Implications
Building Technology Educators Symposium, June, Baltimore, MD.

2004 *Systems-Built Housing: current trends and potential for architectural innovation/Digital Prefabrication for wood panelized construction*
Association for Computer Aided Design in Architecture conference (ACADIA), November, Toronto, ON.

Event Organization [number of attendees]

2020 *Embodied Carbon Network Webinar Series*, Monthly webinars organized by the Carbon Leadership Forum and posted online. [Attendance typically between 100-200]

Wood Carbon Seminars, eight-week educational series hosted by the Carbon Leadership Forum, online, April 23-June 11, 2020, [250]

2019 Decarbonization Workshop-Construction Materials at Greenbuild 2019, Session organizer. Sold out pre-conference workshop, November 19, Atlanta, GA. [250]

Embodied Carbon Strategy: NGO Workshop, Hosted workshop for international green building NGOs to align methods and strategies. Resulted in formation of NGO Roundtable-meeting quarterly.

2018 *Carbon Smart Building Day*, Official Affiliate Event of Global Climate Action Summit.
www.carbonsmartbuilding.org. Event convener and organizing committee, September 11, San Francisco. [300+]

Build Positive: A Call to Action, full-day session aligned with AIA '18, June 20, 2018, New York, NY. [50]

CLF Meeting and NGO Workshop, half-day session, June 19, 2018, New York, NY. [30]

- 2017 *Whole Building LCA Practice Guide Workshop*, November 9, 2017, Boston, MA. [47]
CLF Low Carbon Summit, November 9, 2017, Boston, MA. [51]

Selected Invited Presentation [estimated number of attendees]

- 2022 *Keynote: Building the Future: Engineering Climate Action*
SEI Structures Congress, April 22, 2022 Atlanta, GA, [300]

Special Session Embodied Carbon and the Coming Revolution in Structural Engineering Practice: What You Need to Know, SEI Structures Congress, April 22, 2022, Atlanta, GA [50]

Life Cycle Assessments for Building Industry Climate Solutions
Department of Energy IMPEL+ Carbon Tools Webinar, March 14, 2022, online, [125]

- 2021 *IEPR Commissioner Workshop on Building Decarbonization: Embodied Carbon and Refrigerants*, California Energy Commission (online) August 27, 2021 [90]

Embodied Carbon and Life Cycle Assessment, AIA Minnesota Materials Matter, (online) April 21, 2021 [60]

Designing out Waste in the Built Economy / Building Materials (panelist), Harvard Circular Economy Symposium, (online) April 15, 2021 [100]

Building as a Climate Solution, ARPA-E Carbon Negative Buildings Workshop, (online) April 23, 2021, [120]

Net Positive Embodied Carbon, Marvin Lecture Series University of Minnesota, (online) February 24, 2021, [40]

Building Decarbonization, Washington Climate Assembly, (online), January 30, 2021, [200]

Measuring and Reducing Embodied Carbon, ASCE Metropolitan NY Section, (online) January 13, 2020 [200]

- 2020 *Climate Risk and the Housing Market*, Financial Innovations Roundtable, Federal Reserve Bank of San Francisco, (online) November 16. [75]

Your Next Construction Project Could Drawdown Carbon, Verge 20, (online) October 30, 2020 [200]

Overview of life cycle impacts of buildings, US Department of Energy Webinar, (online) October 16, 2020, [200]

Creating Carbon Footprint Baselines, International Living Futures Institute Zero Carbon 2020, (online) October 8, [75].

Carbon and Design AIA-ACSA Intersections Conference, Opening Keynote: (online) September 30, 2020 [100]

Carbon Optimization ASCE V-Tech, Closing Keynote, (online) September 9, 2020. [300]

Embodied Carbon: The New Frontier: AIA Seattle Action Now: Accelerating Pathways to Decarbonization., (online) April 21, 2020, Panel organizer/moderator [300]

- Embodied Carbon and California Buy Clean*, USGBC-LA Webinar Series, (online) April 9, 2020, [80]
- Embodied Carbon Impact and Opportunities*, University of California Facilitates Webinar, online, March 31, 2020, [150].
- Network for Change: The Global Embodied Carbon Movement*, Carbon Positive '20 Keynote, March 2, 2020, Los Angeles, CA. [400]
- 2019 *Building Innovation*, Renewable Energy Buyers Alliance Webinar, December 10, 2019 [50]
- Innovation in Concrete Construction: Considering Embodied Carbon*, ACI University Webinar, December 4, 2019 [30]
- Getting Mass Timber Right*, Carbon Friendly Forestry Conference, November 12, 2019, SeaTac WA, [200]
- Exploring Comparability of Environmental Product Declarations*, LCA XIX Conference, September 24, 2019. Tucson, AZ. [50]
- Deep Dive on Embodied Carbon Panel*, Buy Clean America Summit: Harnessing Government Purchasing Power to Close the Carbon Loophole, October 23rd, 2019, Washington DC. [150]
- Am I accounting for embedded carbon?* Renewable Energy Buyers Association Conference, October 22, 2019, Oakland, CA. [50]
- MATERIAL STRATEGIES: What are the new building blocks of sustainability?* Metropolis Perspective: Sustainability Seattle Symposium, September 13, 2019, Seattle, WA. [200]
- Transparency is the New Green in Product Selection and Specification: Using EPDs to create actionable information about embodied carbon in construction*, September 10, 2019, [150]
- Balancing operating and embodied carbon in facade design*, Façade Tectonic's Material Matters: Emerging Strategies and Design Practices for Facade Systems, Buildings and Urban Habitat, July 16, 2019 Seattle, WA. [75]
- Embodied Carbon 101*
Boston Society of Architects Embodied Carbon in Buildings Conference, May 31, 2019 Boston, MA. [200]
- Scaling Embodied Carbon Reductions: Inspire, Inform and Empower*
Summit for a Carbon-Free Future at Living Future, April 30, 2019, Seattle WA. [100]
- Scaling Embodied Carbon Reductions: Inspire, Inform and Empower*
Carbon Neutral Cities Alliance Embodied Carbon Workshop, April 23-25, 2019, Pocantico, NY. [30]
- Carbon Emissions, Manufacturing and Building*
Blue-Green Alliance April meeting, April 19, 2019, Seattle, WA. [15]
- Concrete Carbon: Concrete Performance*
Concrete Institute Strategic Development Council, February 14, 2019, La Jolla, CA. [75]
- Buy Clean Washington Study*

Presentation to the State of Washington Capitol Budget Committee, February 5, 2019, Olympia, WA.

<https://www.twv.org/watch/?eventID=2019021054>

Embodied Carbon and Architecture: Upcoming Legislative Potential

AIA Seattle, January 30, 2019, Seattle, WA. [50]

2018 *Net Zero Carbon Buildings Commitment Strategy, Tactics, Tools, and Partnerships*
Global Climate Action Summit, Plenary Panel Moderator, September 11, 2018, San Francisco, CA. [500]

Sustainable Materials Management (SMM) Web Academy Webinar: Sustainability in the Built Environment: Why Materials Matter

U.S. Environmental Protection Agency, August 23, 2018, webinar. [560]

<https://www.epa.gov/smm/sustainable-materials-management-smm-web-academy-webinar-sustainability-built-environment-why>

Sustainability is Not Sustainable (panel moderator)

Design Intelligence Workshop, August 2, 2018, Seattle, WA.

Regional Priorities: Mass Timber (panel member)

Seattle AIA COTE, July 26, 2018, Seattle, WA.

LCA Research and Data

EPA Headquarters and Regions Built Environment Workgroup, July 24, 2018, online.

Carbon Leadership Forum Research Mass Timber Updates

Mithun, Seminar, July 10, 2018, Seattle, WA. [20]

Interior Architecture Knowledge Community Open Forum (panelist)

AIA Conference of Architecture, June 22, 2018, New York, NY. [200]

Buy Clean Procurement Policies and the use of PCRs and EPDs

Federal Highway Administration: Sustainable Pavements Technical Working Group Meeting, May 9, 2018, Seattle WA. [50]

IEA Experts' Dialogue on Materials Trends in Buildings Construction (moderator)

International Energy Agency Meeting, March 9, 2018, Paris, France. [50]

Understanding Your Resources: Internal and External

Technology Architecture + Design Webinar Series (presenter), 2018, <http://tadjournal.org/research-webinars/>

2017 *Built Environment and Embodied Carbon Emissions*
EPA West Coast Climate and Materials Management Forum Webinar, October 12, 2017, online.

Getting to Zero: Reducing the Carbon Footprint of Building Construction

New Frontiers in Construction Conference, March 16, 2017, Seattle, WA. [25]

Are Tall Wood Buildings in our Future? (panelist)

Seattle GoGreen Conference, March 16, 2017, Seattle, WA. [200]

Life Cycle Assessment (LCA) in the Building Industry

Seattle Chapter of the Construction Specifications Institute, January 10, 2017 Seattle, WA. [25]

- 2016 *LCA Tools and Implementation*
AIA Seattle Materials Matter Education Sessions, December 2, 2016, Seattle, WA. [100]
- Prioritizing Environmental Impacts*
AIA Seattle Materials Matter Education Sessions, October 14, 2016, Seattle, WA. [100]
- Optimizing Mass Timber: Structural and Environmental Performance*
Mass Timber Conference, March 23, 2016, Portland, OR. [300]
- Mass Timber: Design, Fabrication, Education*
ACSA 2016 Conference Special Focus Session, March 20, 2016, Seattle, WA. [30]
- Embodied Carbon: Reducing eCO₂e in Buildings and Materials*
BuildWell 2016, February 11, 2016, San Francisco, CA. [200]
- 2015 *Leading to Low Carbon Structures*
Presentation to Thornton Tomasetti leadership team, October 8, 2015 video conference to New York, NY. [25]
- Testing Whole Building LCA: Research and Practice*
Webinar for the Society of American Military Engineers, September 17, 2015, online.
- Life Cycle Assessment Fundamentals*
CLF Low Carbon Building Summit, September 10, 2015, Seattle, WA. [100]
- Whole Building LCA and Green Building Rating Systems*
CLF Low Carbon Building Summit, September 10, 2015, Seattle, WA. [50]
- Whole Building LCA and Building Structures*
Structural Engineers Association of California Sustainability Committee, September 9, 2015, Bellevue, WA. [25]
- The Impact of Building Facades on Whole Building LCA*
Seattle Building Enclosures Symposium, May, 2015 Seattle, WA. [300]
- 2014 *Whole Building LCA Tools and Implementation*
USGBC GreenBuild Materials and Health Summit, October 21, New Orleans, LA.
- 2013 *Zero Carbon Building: Opportunities and Challenges*
Denman Forestry Issues Symposium, November 26, 2013, Seattle WA.
<http://uwtv.org/series/denman-forestry-issues/watch/0Yc6weNsYks/> [200]
- PCRs and EPD: Reporting Product Life Cycle Assessment Data*
AIA/SEAONC Committee on the Environment, August 13, 2013, San Francisco, CA. [100]
- 2012 *LCA for WA: Life Cycle Assessment and Buildings Research for Washington State*
Washington State Code Council, Technical Advisory Group (TAG), October 15, 2012, Olympia, WA.

Podcasts/Radio

- 2021 *Lowering Embodied Carbon: Full Speed Ahead*, Commercial Property Executive Sustainability Street, February 26, 2021

2020 That's Debatable: Washington State can decarbonize in a decade, KUOW debate, Seattle public radio, March 11, 2020.

How the World of Building Materials is Responding to Climate Change, Science Friday WNYC national public radio, March 28, 2020, <https://www.sciencefriday.com/person/kate-simonen/>

2019 *Built on Sand*, 99% Invisible: Episode 361, Interviewed by Roman Mars, July 9, 2019
<https://99percentinvisible.org/episode/built-on-sand/>

Leveraging the Life Cycle Assessment for Useful Carbon Accounting with Professor Kate Simonen, The Reversing Climate Change Podcast with Nori: Episode 61, Interviewed by Ross Kenyon and Christophe Jospe, February 19, 2019.
<https://nori.com/podcast/61-leveraging-the-life-cycle-assessment-for-useful-carbon-accounting-with-professor-kate-simonen>

Conference Posters

2017 *Structurally Optimized Mass Timber Buildings: Material Efficiency*
Huang, M., Strobel, K., Rodriguez, B.X., **Simonen, K.**
Mass Timber Conference, March 28-29, 2017 Portland, OR.

Embodied Carbon Benchmarks of Mass Timber Buildings
Rodriguez, B.X., **Simonen, K.**
Mass Timber Conference, March 28-29, 2017, Portland, OR.

2011 *Structural Engineers and Carbon Accounting: Process, Practice and Potential*
ASCE SEI Structures Congress, April 2011, Las Vegas, NV.

2010 The Carbon Leadership Forum: Industry-academic collaboration to advance LCA practice
Poster at LCAX Conference, November, Portland, OR.

Research Grants

Proposed Pending

2022 *Compiling and Benchmarking Embodied Carbon Data*, Alfred P Sloan Foundation (\$200,000)

Awarded: Active

2022 *POD | LCA*, ARAP-E Hestia (\$3,700,000) [under negotiation]
Carlisle, S, Ganguly, I., Meek, C., Mendez Echenagucia, T., Simonen, K.

2021 Buy Clean Pilot Renewal, Sea Change Foundation (\$150,000)

2021 *WA Buy Clean Pilot and Database*
State of Washington (\$275,000)

Re-Made
NREL (\$100,000)

- 2020- *Buy Clean Two State Pilot*
Sea Change Foundation (\$150,000)
- 2019- *Capacity Building for the Carbon Leadership Forum's Embodied Carbon Network*
Naito Foundation (\$150,000)
- 2010- *Carbon Leadership Forum: Industry Research Sponsorship*
Adrian Smith + Gordon Gill, American Institute of Architects, Arkin Tilt, Arup, Carbon Cure, Central Concrete, Ceratech, Climate Earth, Coughlin Porter Lundeen, Degenkolb, Eagle Aggregate, Interface, Katerra, Kieren Timberlake, LMN Architects, LeMesurier, Loisos + Ubbelohde, Lund Upsol, Magnusson Klemencic Associates, National Ready Mixed Concrete Association, National Ready Mixed Concrete Company, Owens Corning, Sellen, SGH, SHKS, Siegel & Strain, Stopwaste, Thinkstep, Thornton Tomasetti, Tipping Mar, Urban Fabrick, Walter P Moore, Webcor, WeWork, WRNS Studio. (Donations total over \$550,000)
K. Simonen (PI/Carbon Leadership Forum Director)

Awarded: Complete

- 2018-20 *Embodied Carbon in Construction Calculator*
Charles Pankow Foundation, (\$751,000 funded by over 50 organizations)
Simonen, K., Northcott, P.
- 2019-20 *Carbon Smart Buildings Carbon Smart Forestry*
Bullitt Foundation, (\$20,000)
- 2018-19 *Buy Clean Washington Pilot*
State of Washington ESSP 6095.PL Section 1030 (\$100,000)
Simonen, K., Motter, C., Plugge, W.
- 2016-19 *Life Cycle Assessment Guide for Low Carbon Construction*
Pankow Foundation, Skanska, Oregon DEQ (\$149,000)
K. Simonen (PI) w/ Industry Advisory Board
- 2016- *Engineering Communication in Data Rich Environments: How do we support innovation in interdisciplinary teams?*
University of Washington Innovation Grants (\$135,000)
Dossick, C., Neff, G., **Simonen, K.** (Co-PI)
- 2015-18 *ATC 58-2: Incorporating Environmental Impacts in PACT*
Applied Technology Council/FEMA (\$54,000)
Morris, P., **Simonen, K.** (Co-PIs)
- 2015-17 *Market Assessment and Environmental Implications of Cross Laminated Timber Production on the Olympic Peninsula*
USDA McIntire-Stennis Grant (\$98,846)
Ganguly, I. (PI), Eastin, I., Puettmann, M., **Simonen, K.** (Co-PIs)
- 2015-19 *Collaborative Research RSB: A Risk-Informed Decision Framework to Achieve Resilient and Sustainable Buildings that Meet Community Objectives*
National Science Foundation (\$1,200,000 total, \$120,000 awarded to UW/Simonen)
van de Lindt, J. (PI), Cerato, A., Wang, N., Ellingwood, B., Peek, L., **Simonen, K.** (Co-PI)

- 2016-17 *Materials Matter: Developing curriculum integrating material impacts to design decision-making*
American Institute of Architects: National and Seattle Chapter (\$40,000)
Burpee, H. (PI), Todd, J., **Simonen, K.** (Co-PI)
- 2014-15 *Whole Building Life Cycle Assessment: Application in Building Codes and Green Rating Systems*
University of Washington Royalty Research Fund (\$29,897)
Simonen, K. (PI)
- 2011-12 *Senate Bill 5485: Maximizing the Use of Our State's Natural Resources (LCA for WA)*
State of Washington (\$88,000)
Simonen, K. (PI), Oneil, E., Cooper, J. (UW), Haselbach, L. (WSU)
- 2010-15 *Towards zero-energy buildings based on electrochromatic windows (ECWs) and energy harvesting ECWs*
National Science Foundation: Emerging Frontiers in Research and Innovation, EFRI-SEED (approx. \$500,000)
Taya, M. (PI), Cooper, J., Kuga, Y., Luscome, C., Meek, C., (Co-PI's), Loveland, J., Peña, R., **Simonen, K.**
(senior personnel)
- 2009-11 *Disaster Response: Resilient Systems for Health*
College of Built Environments, University of Washington BE Lab (\$30,000)
Corser, R. (PI), Burpee, H., Dossick, C., **Simonen, K.**
- 2008-09 *Center for Sustainable Urban Built Systems*
National Science Foundation I/U CRC Planning Grant (\$10,000 per institution)
Santa Clara University, San Jose State University, California College of the Arts
Gonzolas, J. (PI), Aschier, M., Bornstein, B., **Simonen, K.**
- 2008-09 *DOE Solar Decathlon 2009*
Department of Energy (\$50,000) Industry Sponsors (over \$500,000)
Institutions: Santa Clara University & California College of the Arts
Height, T., Ascheim, M., Reits, F., **Simonen, K.**, Jenkins, O., Anderson, P.

Press and Web References (selected recent)

- Bleasby, John, [Inside Innovation: Embodied carbon — Construction industry's 'blind spot'](#), Daily Commercial News, June 18, 2020.
- Schlanger, Zoe, "[Construction Causes Major Pollution. Here's How We Can Build Better.](#)" Huffington Post, April 25, 2020.
- Dezeen Staff, "[Life Cycle Analysis report highlights the sustainable impact of CLT](#)", Dezeen. April 2, 2020.
- RadShah, Reena, "[Can the Concrete Jungle Sink CO₂?](#)", The American Prospect, February 13, 2020.
- Various, "[The Carbon Issue](#)", (Full issue focused on embodied carbon with multiple references to the Carbon Leadership Forum) April 27, 2020.
- Post, Nadine M., "[Kate Simonen: Climate Activist Rallied Industry to Reduce Embodied Carbon](#)" Engineering News Record, January 24, 2020.
- Davies, Donald, "[How the new EC3 tool raises the bar on collective action](#)", Building Design + Construction, January 10, 2020.

- Gray, Audrey, "[A Great Carbon Reckoning Comes to Architecture](#)," Metropolis, December 9, 2019.
- Post, Nadine, "[More Tools, Green Product Picks and Goals from Greenbuild](#)," Engineering News-Record, December 3, 2019.
- Fabris, Peter, "[New tool allows users to learn how to reduce embodied carbon](#)," Building Design + Construction, December 2, 2019.
- Staff writer (name not available), "[Marin County, Calif., Enacts First Low-Carbon Concrete Code in US](#)," Engineering News-Record, November 27, 2019.
- Staff writer (name not available), "[SF Bay Area county approves premier low-carbon concrete code](#)," Concrete Products, November 22, 2019.
- Gonchar, Joann, "[Embodied Carbon Tool Launches at Greenbuild 2019](#)," Architectural Record, November 22, 2019.
- Melton, Paula, "[EC3 Links Whole-Building Life-Cycle Assessment to Products](#)," BuildingGreen, November 21, 2019.
- Monika Henn, Marta Schantz, and Kate Hinsche, "[Halfway There: After Making Progress in Operational Efficiency, Buildings Must Now Consider Embodied Carbon](#)," Urban Land Institute, November 15, 2019.
- Khashimova Long, Katherine, "[New apps help builders reduce carbon footprint](#)," The Seattle Times, November 15, 2019.
- Post, Nadine, "[Climate Activists Maneuver To Reduce Embodied Carbon in Buildings](#)," Engineering News-Record (cover), November 6, 2019.
- Melton, Paula, "[Structural Engineers Unite Against Climate Change](#)," BuildingGreen, November 4, 2019.
- Staff writer (name not available), "[El Carbon Leadership Forum crea la calculadora de carbono incorporado en la construcción, EC3](#)," Construable.es, October 7, 2019.
- Brightmore, Daniel, "[Skanska reveals embodied carbon calculator reduces emissions by 30%](#)," Construction Global, October 2, 2019.
- Staff, "[The Architect's Guide to Climate Week NYC](#)," Architectural Record, September 25, 2019.
- Architect Staff, "[Carbon leadership Forum Launches Calculator to Measure Carbon Footprint](#)," Architect Magazine online, September 24, 2019.
- Long, Katherine, "[Tall buildings out of timber? In the face of climate change, Seattle encourages it](#)," Seattle Times, September 22, 2019.
- Scruggs, Gregory, "[For Sustainable Building Products and Materials, It Can't be Business as Usual](#)," Metropolis online, September 17, 2019.
- John, Rhea, "[Understanding embodied carbon, a key solution in sustainable architecture](#)," UW Daily, August 2, 2019.
- Post, Nadine, "[Help Available for Estimating Embodied Carbon in Building Systems](#)," *Engineering News Record*, May 28, 2019.

- Trenga, Bret, "[Importance of Reducing Embodied Energy in the Built Environment](#)," *Buildings.com*, April 22, 2019.
- Edelstein, Kent, "[5 green building trends: Lifecycle carbon assessment takes big step forward](#)," The Kendeda Fund, March 14, 2019.
- Duncan, Jake, "[Should I Stay or Should I Go: The Embodied Carbon of Buildings](#)," *The Institute for Market Transformation*, January 25, 2019.
- Kelly, Peter, "[Carbon accountability': UW architecture professor Kate Simonen sees progress in work to reduce embodied carbon in construction materials](#)," *UW News*, December 3, 2018.
- Malin, Nadav, "[Embodied Carbon on a Roll](#)," *Building Green*, October 9, 2018.
- Fortmeyer, Russell, "[Climate Summit Highlights States' Commitment to Combating Global Warming](#)," *Architectural Record*, September 20, 2018.
- Post, Nadine, "[Reducing Embodied Carbon and Operational Emissions in Buildings](#)," *Engineering News Record*, September 18, 2018.
- Napolitano, Janet and Johnson, Kristina, "[Universities should lead efforts to slow climate change, if the federal government won't](#)," *The Washington Post*, September 17, 2018.
- Melton, Paula, "[The Urgency of Embodied Carbon and What You Can Do about It](#)," *Building Green*, September 10, 2018.
- ENR, "[Primer Debuts on Life-Cycle Assessment of Embodied Carbon in Buildings](#)," *Engineering News Record*, July 17, 2018.
- Miller, Stephen, "[How Seattle's Appetite for Construction Is Creating a Growing Waste Problem](#)," *Real Estate Weekly*, May 22, 2018.
- Campbell, Kyle, "[New buildings, same old carbon as materials drive greenhouse gas emissions](#)," *Seattle Magazine*, June 27, 2018
- Enlow, Clair, "[In a concrete jungle, one architect pushes for 'plywood for giants](#)," *Crosscut*, April 13, 2018.
- Smedley, Stacy, "[Skanska: emissions goals cannot be achieved without tracking embodied carbon](#)," *Construction Climate Challenge*, February 11, 2018.
- Norfleet, Nicole, "[In heart of North Loop, a new office building becomes architectural attraction](#)," *Star Tribune*, January 21, 2017.
- Ehrlich, Brent, "[Wood, Concrete, and Steel—And Their Incomparable EPDs](#)," *Environmental Building News*, August 3, 2015.
- Sanjay Bhatt, "[Innovative project would be Seattle's second-tallest building](#)," *Seattle Times*, July 8, 2015.
- Concrete News, "[Forum revises EPD-underpinning Product Category Rules for Concrete](#)," *Concrete Products*, Thursday January 16, 2014.
- Sustainable Industries, "[EPDs, what's new, what's now, what's next? A roundtable discussion convened by the Carbon Leadership Forum](#)," *Sustainable Industries Weekly Digest*, October 9, 2013,

- Henderson, Tom, "Researchers make 'concrete' contribution to environment," *Daily Journal of Commerce-Oregon*, April 25, 2013.
- Kelley, Peter, "[A greener concrete? UW-led coalition seeks to reduce concrete's carbon footprint](#)," *UW Today*, April 23, 2013.
- Marsh, Don, "[Forum releases environmental standards for concrete mixes](#)," *Concrete Products*, December 2012. Vol 115, No 12, pg 15.
- Anderson, Lamar, "New Concrete Rules," *Snap, The Magazine of Sweets*, Vol 1, No. 1, pg 9.
http://www.nxtbook.com/nxtbooks/mh/snap_20130203/#/10
- Malin, Nadav, "Setting Carbon Footprint Rules for Concrete," *Environmental Building News*, November 1, 2012.
Accessed November 12, 2012 from
<http://www.buildinggreen.com/auth/article.cfm/2012/10/26/Setting-Carbon-Footprint-Rules-for-Concrete/>.
- Wilson, Alex, Malin, Nadav, & Ehrlich, Brent. "What you Need to Know about Concrete and Green Building: Reducing Carbon Emissions, Exposure to Heavy Metals, and Water Pollution-While Getting the Best Performance for Your Projects," Published by BuildingGreen Inc as a Special Report, 2012. pp 15-17, K. Simonen quoted and Carbon Leadership Forum Product Category Rule discussed.
- Charlson, Andrea, Friedberg, Adam, and Yang, Frances, "In Pursuit of a Building's Embodied 'Baseline'," *Environmental Design and Construction*, March 2012 Vol 13, No. 3, p 38-39.
- Marsh, Don, "Comment period opens on standards for measuring environmental footprint of concrete," *Concrete Products*, news feed posting 20 February 2012.
<http://www.concreteproducts.com/index.php/news/13030-comment-period-opens-on-standards-for-measuring-environmental-footprint-of-concrete.html>.
- Marsh, Don, "EF Equal to 2030 Challenge for Products," *Concrete Products*, April 2011, Vol 114, No. 4, p.8.
- Gluck, Robert, "Green Building Leaders Press Industry to Half CO2 of Building Materials: Advocates are challenging the global building sector to cut the carbon footprint of concrete and other products by 30% by 2014 and 50% by 2030," *Solve Climate News*.
<http://solveclimatenews.com/news/20110330/green-building-leaders-industry-materials-energy-efficiency-concrete>. March 31, 2011. (quoted in article and Carbon Leadership Forum identified)
- O'Donnell, Catherine. "Carbon Leadership Forum will devise standards to limit carbon footprints in building products." *UW Today*, April 14, 2011 <http://www.washington.edu/news/articles/carbon-leadership-forum-provides>
- 2030 Challenge, "2030 Challenge for Products Unveiled," February 14, 2011, Accessed July 15, 2013 from http://www.architecture2030.org/enews/printerfriendly/news_021411.pdf (quoted and referenced in 'e-news article')

Selected Built Work (Professional)

Marin Street Residence, 2010 Berkeley, CA	New 1,500 sf freestanding single family residence pavilion. Integrated PV roof, other low-impact/high-performing systems. Completed May 2011. <i>Architect in collaboration with Ben Parco and Philip Kaefer</i>
San Francisco City College, 2008 Chinatown, San Francisco, CA	Design assistance and technical consultation for curtain wall system with multi-layered façade and sunshade system. <i>Consulting to EHDD/Barcelon and Jang Architects</i>
Speer Residence, 2006 Oakland, CA	Conversion and expansion of existing barn to create new single-family residence. Utilized passive cooling strategies. <i>Architect and structural engineer</i>
Cobb Residence, 2002 Kentfield, CA	Extensive residential remodel and expansion to hillside residence. Includes new foundation and 1,500 sf expansion and 2,000 sf renovation. <i>Architect and structural engineer</i>
Landis Designs, 2001 San Francisco, CA	Seismic upgrade and interior design for 3,000 sf graphic design office. Included new skylight and extensive interior reconfiguration. <i>Architect and structural engineer</i>
Vacation Residence, 2001 San Juan Island, WA	Wood frame residence with exposed timber construction and articulated connection details. Structure integral to architectural expression. <i>Structural engineer, Simonen Design for KWJA</i>
Defenestration, 1997 San Francisco, CA	Structural design of anthropomorphic furniture pieces and anchorage to existing building in San Francisco. <i>Structural engineer with Gregory Wallace, SE</i>
Middle School Learning Center, 1999 Kentfield, CA	New library and computer lab for middle school. 4,500 sf building with new entry plaza. <i>Project architect with EHDD/Peter Dodge</i>
Wurster Hall Seismic Upgrade, 1997 Berkeley, CA	Seismic upgrade of reinforced concrete structure. Interior construction modified as required to accommodate architectural work. \$29M project. <i>Project architect with EHDD</i>
Bluxome Street Live Work Lofts, 1996 San Francisco, CA	105 units, four-story wood frame apartment complex over post-tensioned concrete parking garage. <i>Project Engineer with STA for Mark Horton Architecture</i>
Bank of America Tower Seismic Retrofit San Francisco, CA, 1996	200 ft tall signage tower and four-story office building. Strengthening of existing steel braced frames and connections. <i>Project engineer with Steven Tipping & Associates for Studios Arch</i>
Thoreau Center, 1996 San Francisco, CA	Historic renovation and seismic upgrade of three hospital wards for re-use as office space requiring integration of structural and historic requirements. <i>Project engineer with Steven Tipping & Associates for TLMS Architects</i>
Goodby Silverstein Office Stair, 1996 San Francisco, CA	New multi-level exposed structural steel staircase connecting three floors within an existing structure. <i>Project engineer with Steven Tipping & Associates for TLMS Architects</i>
Boyd Lighting Company, 1995 San Francisco, CA	Seismic retrofit of existing 6,000 sf concrete and steel building for conversion to a lighting showroom and office. <i>Project engineer with STA for Brayton and Hughes</i>
St. Joseph's Medical Center, 1993 Stockton, CA	Structural design and construction of new steel framed hospital building and concrete parking garage <i>Engineer with DASSE Design for Anshen and Allen</i>

Courses Taught**Required Structures Curriculum**

Arch 320	Structures I (undergrad)	2017 F 2016 F 2015 F 2014 F
	(co-taught first 1/3 of quarter only)	
Arch 321	Structures II (undergrad)	2020 W 2015 W
Arch 322	Structures III (undergrad)	2020 S 2019 S 2018 S 2014 S 2013 S 2012 S
Arch 321	Structures I (grad)	2012 W 2011 W 2009 F
Arch 322	Structures II (grad)	2012 S 2011 S 2009 W
Arch 598G	Design Technology IV (co-taught)	2018 F
Arch 521	Structural Systems (grad) (new 323 grad)	2017 F 2016 F 2016 W 2014 F 2013 F 2012 F 2011 F 2010 F
Arch 323	Structures III (grad)	2010 S
Seminars		
Arch 592	Research Methods	2019 F
Arch 425/525	Life Cycle Assessment and Architecture	2020 S 2018 S 2015 S
	(aka 498/598 Life Cycle Assessment)	2014 S 2013 S
Arch 498/598	Structuring Efficiency	2011 F

2011 S
2010 S

Studios/Integrated seminars

BE 405/505	BE Studio: Mid2Mod co-taught	2018 F
Arch/CM 404	Integrated AEC Studio (co-taught) ¹	2016 W 2015 W 2014 W 2013 W 2011 W
Arch 498/598	Integrated AEC Seminar-Linked to Arch 404 Studio ²	
	Structures	2018 W
	Structures	2016 W
	Sustainability	2016 W
	Structures	2015 W
Arch 400	Rome	2015 F

California College of the Arts

California College of the Arts (graduate and undergraduate integrated u.o.n.)

2008	Interdisciplinary Seminar, Solar Decathlon leadership and communication
2008	Advanced Studies in Architecture Technology, integrated practice seminar
2002, 2005	Comprehensive Design Studio
2004	Advanced Studies in Architectural Technology, digital manufacturing seminar
2001 - 2003	Integrated Building Systems, faculty lead, +/-70 students, 2 faculty
2000	Advanced Studies in Architectural Technology, architectural detailing seminar
1996 - 2006	Structures II, faculty lead, grew to +/-70 students 3 faculty
1995 - 2005	Structures I, faculty lead, grew to +/-70 students 2 faculty

University of California, Berkeley - Graduate Student Instructor

1991 - 1992	Environmental Control Systems. Architecture: teaching assistant for E. Arens, G. Brager and C. Benton. Led section, developed assignments, and graded.
1990 - 1991	Statics and Strength of Materials and Structural Design for Architects. Teaching assistant in Department of Structural Engineering and Mechanics of Materials.

¹ Required studio for dual degree (architecture/construction management) students team taught to integrate disciplinary expertise into collaborative team studio projects.

² Three credit seminar for engineering students with customized to enable technical content integrated with studio.

Ph.D. Committee Member

- 2022- Demi Lin Fang, Massachusetts Institute of Technology.
- 2021- Mahboobeh Hemmati Gourabi, Fay Jones School of Architecture, University of Arkansas
- 2012-19 Tait Bowers, School of Forest Resources, College of the Environment, *The Next Generation of Residential Construction: Adoption of Green Building Programs, Environmentally Certified Wood Products and the Transparency of Environmental Friendliness*
- 2016-19 Barbara X. Rodriguez Droguett, College of Built Environment, University of Washington
Embodied Carbon of Heating, Ventilation, Air Conditioning and Refrigerants (HVAC+R) Systems
- 2015-19 Cindy X. Chen, School of Forest Resources, College of the Environment, University of Washington,
Environmental Assessment of the Production and End-of-Life of Cross-Laminated Timber in Western Washington
- 2016-19 Yingjun Wang, School of Civil Engineering and Environmental Science, University of Oklahoma, *A Decision-Framework for Building Portfolios Towards Enhanced Resilience and Sustainability of Communities Under Natural Hazards.*
- 2016-17 Catherine De Wolf, *Low Carbon Pathways for Structural Design: Embodied Life Cycle Impacts of Building Structures.* PhD Architecture: Building Technology, Massachusetts Institute of Technology. Chair John Ochsendorf

M.S. Thesis

- 2019 Laleh Amany, *A Comparative Analysis of LCA Tools: Studying the Façade of a Campus Lab Building*

M.Arch Thesis

- 2018 Matthew Franz, "Reworking Wenatchee: High Performance in a New & Existing Building"
- 2018 Mariel Dougoud, "Mycelium Infrastructures for Impermanent Futures"
- 2018 Lauren Patnoe, "Flyshare 2020"
- 2016 Kristen Strobel (chair), "(Mass) Timber: Structurally Optimized Timber Buildings"
- 2015 Mariam Hovhannisyan (chair), "Wood Cityscapes: Mass Timber Office Building"
- 2012 David Fish (chair), "(by)Metrics (by) Design: Building for Endurance"
- 2013 Laura Poulin, "Redefining 'All-Inclusive:' Integrated Tourism in the Dominican Republic"

Undergraduate Honors Thesis

- 2015 Ezekiel Jones (chair), "Mass Timber in the Pacific Northwest"

Recognition

- 2022 Honorary Fellow of the Institute of Structural Engineers (UK)
- 2021 AIA Seattle, Community Service Award
American Society of Civil Engineers, Charles Pankow Award
- 2020 Technology | Architecture + Design (TAD) Research Contribution Award for "Benchmarking the Embodied Carbon of Buildings."

University of Washington Husky Green Award.
Engineering News Record [2019 Top 25 Newsmaker Award](#)

- 2019 University of Washington Distinguished Teaching Award nominee
- 2006 NCARB Prize for Integration of Practice and the Academy. Contributor of work in comprehensive design studios highlighted in submission. \$7,000 awarded to CCA.
- 2004 NCARB Prize for Integration of Practice and the Academy. Principal faculty and responsible for curriculum development and prize application. \$7,000 awarded to CCA.
- 2003 Teacher of the Year - CCA Architecture Faculty. Initiated and selected by students.

College Service

Committees - University of Washington

- 2018-20 CoMotion Innovation Committee
- 2013-20 Curriculum Committee
- 2019 EarthLab Innovation Grant Judge
- 2016-18 Faculty Senate Task Force to Examine Admissions to the UW Seattle Campus and to Competitive Majors
- 2017 Interdisciplinary Group for Real Estate
- 2017-18 Tenure Promotions and Merit Review Committee
- 2016 Faculty Senator
- 2015 Dean's advisory committee for Architecture Chair Search
- 2014-15 Department of Civil Engineering Faculty Search Committee
- 2014-16 Interdisciplinary Group for the Master of Science in Real Estate
- 2009 Sustainability Committee
- 2014 Center for Integrated Design: Director Search Committee
- 2012-13 Structures Search Committee (Chair)
- 2010-11 Tenure Promotions and Merit Review Committee
- 2010 Thesis Award Committee
- 2009-12 Curriculum Committee

Committees - California College of the Arts

- 2008 Faculty Search Committee Member, *Department of Furniture*
- 2006 Chair Search Committee Member, *Department of Architecture*
- 2005 Presentation to NAAB (National Architecture Accrediting Board),
Successfully overturned (with Lisa Findley) probationary accreditation ruling.
- 2005 Faculty Search Committee Member, *Department of Architecture*
- 2004 CCA Appointments/Promotion/Tenure Committee, *Peer Review*
- 2003-05 CA/IDP College Representative, *Liaison for the California Intern Development Program*
- 2003-05 CCA Curriculum Committee Member, *college-wide committee*
- 2000-03 Academic Advisor, *Department of Architecture*
- 2002 Chair Search Committee Member, *Department of Architecture*
- 2000-05 Liaison with Humanities & Sciences to develop math and physics curriculum for architecture

Academic Service

Editorial Board Member

2010-13 *Journal of Architectural Education*
National Journal of the Association of Collegiate Schools of Architecture.

Memberships in Academic Organizations

2007- Building Technology Educators Society

Peer Review

2019 The Journal of Technology | Architecture and Design
2018 Energy and Buildings
Engineering Structures
2017 Energy and Buildings
University of Utah Internal Research Grants
California Polytechnic University Internal Research Grants
Building Technology Educators Society Annual Conference
Engineering Structures
International Journal of Building Pathology and Adoption
Journal of Architectural Engineering
2016 Journal of Architectural Education
Building Technology Educators Society Conference
The Journal of Technology | Architecture and Design
Journal of Architectural Engineering
Building and Environment
Ecological Indicators
2015 ACSA Conference
Journal of Architectural Engineering
Journal of Cleaner Production
2014 Progress in Industrial Ecology, An International Journal
ACSA International Conference: OPEN CITIES
2013 Journal of Professional Issues in Engineering Education and Practice
Building Technology Educators Society Conference
2011-12 Journal of Architecture Education
2012 ACSA Fall 2012 Conference: OFF SITE: Theory and Practice of Architectural Production.
IFSTTAR LCA & Construction Conference
2011 MIT Research Report: Methods, Impacts, and Opportunities in the Concrete Building Life Cycle.
2009 Building Technology Educators Society Conference, Spring 2009.

Competition Jury/ Grant Review

2021 AIA COTE Student Award Jury
2019 DOE Advanced Building Construction with Energy Efficient Technologies & Practices (ABC), DE-FOA-0002099
Austin Green Building Awards
Advisor to the California State Mass Timber Wood Building Prize Competition
2014 Advisor to the Department of Agriculture judging of Tall Wood Building Prize Competition

Professional Service

Leadership / Committees

- 2020- ASHRAE 90.2 Committee Member
- 2017-19 Thornton Tomasetti Sustainable Advisors Forum
- 2017-19 AIA National Materials Knowledge Working Group: Advisory member
- 2016- Embodied Carbon Network: co-founder and co-chair (now Carbon Leadership Forum Network)
- 2015-19 US Green Building Council: Subject Matter Expert for the Materials & Resources Technical Advisory Group
Whole Building Life Cycle Assessment Subgroup
- 2018-19 Wood Product Category Rule Technical Committee
- 2014-17 US Green Building Council: EPD Partnership Technical Advisory Panel
- 2012-14 ASTM E60 - Sustainability Committee member
- 2014 *Sustainable Structures Symposium*, Portland, OR. Scientific committee
- 2011-13 ACLCA Product Category Rule Committee
- 2010-13 Structural Engineers Institute, Sustainability Committee member
- 2012 *International Conference of LCA and Construction*, Nantes, France. Scientific committee
- 2010 Organized public lecture on Life Cycle Assessment/Carbon Accounting for professional community.
- 2010 Structural Engineers Association of Washington (SEAW): Sustainability Committee, member.
- 2004-05 Leadership San Francisco.

Memberships in professional organizations

- 2014- American Institute of Architects (and 2000-2005)
- 2012-14 ASTM (International Standards Organization)
- 2011-14 American Center for Life Cycle Assessment
- 2010-14 Structural Engineers Association of Washington
- 2010-14 American Society of Civil Engineers - Structural Engineers Institute
- 2009-11 Cascadia Green Building Council
- 2007-09 United States Green Building Council
- 1992-09 Structural Engineers Association of Northern California