ALESSIO MIATTO

Curriculum Vitae

January 2025

CSIRO Environment
2 Clunies Ross St
Acton, ACT 2601, Australia

Email: alessio.miatto@csiro.au

EDUCATION

2017 **Ph.D. in Environmental Engineering**
Nagoya University, Nagoya, Japan

2012 **M.Eng. in Architectural Engineering**
Università degli Studi di Padova, Padova, Italy

2011 **Post-Baccalaureate Degree in Sustainable Urban Planning**
Università degli Studi di Padova, Padova, Italy

2010 **B.Eng in Architectural Engineering**
Università degli Studi di Padova, Padova, Italy

PROFESSIONAL APPOINTMENTS

2023 – Current **Senior Research Scientist**
Environment, CSIRO
Acton, ACT, Australia

2022 – 2023 **Associate Research Scientist**
School of the Environment, Yale University
New Haven, CT, United States

2021 – 2023 **Lecturer**
School of the Environment, Yale University
New Haven, CT, United States

2018 – 2022 **Postdoctoral Associate**
School of the Environment, Yale University
New Haven, CT, United States

2017 – 2018 **Postdoctoral Researcher**
Graduate School of Environmental Studies, Nagoya University
Nagoya, Aichi, Japan

2017 **Visiting Researcher**
Institute for Social Ecology (IFF)
Vienna, Austria

2015 – 2018 **Visiting Researcher**
Commonwealth Scientific and Industrial Research Organisation (CSIRO)
Canberra, ACT, Australia

2013 – 2014 **Junior Engineer**
Ingemar S.R.L.
Casale sul Sile, Treviso, Italy

2012 – 2013 **Research Assistant**
Università degli Studi di Padova
Padova, Italy

PUBLICATIONS

Refereed Journal Articles

1. Schandl, H., Marcos-Martinez, R., West, J., **Miatto, A.**, Lutter, S., Lieber, M., Giljum, S., Lenzen, M., Li, M., Wang, H. and Tanikawa, H., **2024**. Global material flows and resource productivity: The 2024 update. *Journal of Industrial Ecology*, 28(6), pp.2012-2031. https://doi.org/10.1111/jiec.13593

2. Emami, N., **Miatto, A.**, Gheewala, S., Soonsawad, N., Nguyen, T.C., Chiu, A.S., Gue, I.H., Martinico-Perez, M.F., Vilaysouk, X. and Schandl, H., **2024**. Measuring progress toward a circular economy of the ASEAN Community. *Journal of Industrial Ecology*. https://doi.org/10.1111/jiec.13597

3. Lee, T., Yao, Y., Graedel, T.E. and **Miatto, A.**, **2024**. Critical material requirements and recycling opportunities for US wind and solar power generation. *Journal of Industrial Ecology*. https://doi.org/10.1111/jiec.13479

4. Liu, T., Cao, J. and **Miatto, A.**, **2024**. Impacts of a municipal solid waste classification policy on carbon emissions: case study of Beijing, China. *Journal of Material Cycles and Waste Management*, pp.1-13. https://doi.org/10.1007/s10163-024-01985-9

5. Nguyen, T.C., **Miatto, A.**, and Kim, J., **2024**. Material services in an emerging economy: Tracking resource utilization in Vietnam's shelter, thermal comfort, and road transportation. *Ecological Economics* 220, p. 108165. https://doi.org/10.1016/j.ecolecon.2024.108165

6. Nicholson, V. and **Miatto, A.**, **2024**. Architects as catalysts of reuse in construction. *Nature Cities*, 1(3), pp.179-181. https://doi.org/10.1038/s44284-024-00042-8

7. **Miatto, A.**, Emami, N., Goodwin, K., West, J., Taskhiri, M. S., Wiedmann, T., and Schandl, H., **2024**. Australia's circular economy metrics and indicators. *Journal of Industrial Ecology*. https://doi.org/https://doi.org/10.1111/jiec.13458

8. **Miatto, A.**, Fasanella, Y., Mainardi, M. and Borin, P., **2023**. Correlation between building size and material intensity in residential buildings. *Resources, Conservation and Recycling*, 197, p.107093. https://doi.org/10.1016/j.resconrec.2023.107093

9. Graedel, T.E. and **Miatto, A.**, **2023**. Vanadium: A US Perspective on an Understudied Metal. *Environmental Science & Technology*, 57(24), pp. 8933–8942. https://doi.org/10.1021/acs.est.3c01009

10. Nguyen, T.C., **Miatto, A.**, Fishman, T., and Kim, J., **2023**. The stock-service productivity of the European road transport infrastructure. *Resources, Conservation and Recycling* 193, p.106961. https://doi.org/10.1016/j.resconrec.2023.106961

11. **Miatto, A.** and Graedel, T.E., **2023**. US cobalt scenario analysis to mid-century: import dependency or marketable commodity? *Resources, Conservation & Recycling Advances*, p.200134. https://doi.org/10.1016/j.rcradv.2023.200134

12. Wuyts, W., **Miatto, A.**, Khumvongsa, K., Guo, J., Aalto, P. and Huang, L., **2022**. How Can Material Stock Studies Assist the Implementation of the Circular Economy in Cities? *Environmental Science & Technology*, 56(24), pp.17523-17530. https://doi.org/10.1021/acs.est.2c05275

13. Graedel, T.E. and **Miatto, A.**, **2022**. Alloy Profusion, Spice Metals, and Resource Loss by Design. *Sustainability*, 14(13), p.7535. https://doi.org/10.3390/su14137535

14. Graedel, T.E. and **Miatto, A.**, **2022**. US Cobalt: A Cycle of Diverse and Important Uses. *Resources, Conservation and Recycling*, 184, p.106441. https://doi.org/10.1016/j.resconrec.2022.106441

15. Di, J., Wen, Z., Jiang, M. and **Miatto, A.**, **2022**. Patterns and features of embodied environmental flow networks in the international trade of metal resources: A study of aluminum. *Resources Policy*, 77, p.102767. https://doi.org/10.1016/j.resourpol.2022.102767

16. Graedel, T.E.; Reck, B.K.; **Miatto, A.**, **2022**. Alloy Information Helps Prioritize Material Criticality Lists. *Nature Communications,* 13 (150). https://doi.org/10.1038/s41467-021-27829-w

17. **Miatto, A.**, Wolfram, P., Reck, B.K., Graedel, T.E, **2021**. The uncertain future of U.S. lithium: a prospective until 2050. *Environmental Science & Technology*. https://doi.org/10.1021/acs.est.1c03562

18. **Miatto, A.**, Sartori, C., Bianchi, M., Borin, P., Giordano, A., Saxe, S., Graedel, T.E., **2021**. Tracking the Italian brick cycle with the aid of building information modeling. *Journal of Industrial Ecology*. https://doi.org/10.1111/jiec.13208

19. **Miatto, A.**, Dawson, D., Nguyen, P.D., Kanaoka, K.S. and Tanikawa, H., **2021**. The urbanisation-environment conflict: Insights from material stock and productivity of transport infrastructure in Hanoi, Vietnam. *Journal of Environmental Management*, 294, p.113007. https://doi.org/10.1016/j.jenvman.2021.113007

20. Wiedenhofer, D.; Fishman, T.; Plank, B.; **Miatto, A.**; Lauk, C.; Haas, W.; Haberl, H.; Krausmann, F., **2021**. Prospects for a saturation of humanity's resource use? An analysis of material stocks and flows in nine world regions from 1900 to 2035. *Global Environmental Change*, 71, p.102410. https://doi.org/10.1016/j.gloenvcha.2021.102410

21. Vilaysouk, X., Islam, K., **Miatto, A.**, Schandl, H., Murakami, S. and Hashimoto, S., **2021**. Estimating the total in-use stock of Laos using dynamic material flow analysis and nighttime light. *Resources, Conservation and Recycling*, 170, p.105608. https://doi.org/10.1016/j.resconrec.2021.105608

22. Di, J., Reck, B.K., **Miatto, A.** and Graedel, T.E., **2021**. United States plastics: Large flows, short lifetimes, and negligible recycling. *Resources, Conservation and Recycling*, 167, p.105440. https://doi.org/10.1016/j.resconrec.2021.105440

23. Tanikawa, H., Fishman, T., Hashimoto, S., Daigo, I., Oguchi, M., **Miatto, A.**, Takagi, S., Yamashita, N. and Schandl, H., **2021**. A framework of indicators for associating material stocks and flows to service provisioning: Application for Japan 1990–2015. *Journal of Cleaner Production*, 285, p.125450. https://doi.org/10.1016/j.jclepro.2020.125450

24. Guo, J., Fishman, T., Wang, Y., **Miatto, A.**, Wuyts, W., Zheng, L., Wang, H., Tanikawa, H., **2021**. Urban development and sustainability challenges chronicled by a century of construction material flows and stocks in Tiexi, China. *Journal of Industrial Ecology* 25(1), 162-175. https://doi.org/10.1111/jiec.13054

25. **Miatto, A.**, Reck, B.K., West, J., Graedel, T.E., **2020**. The rise and fall of American lithium. *Resources, Conservation and Recycling* 162, 105034. https://doi.org/10.1016/j.resconrec.2020.105034.

26. Schandl, H., Marcos-Martinez, R., Baynes, T., Yu, Z., **Miatto, A.**, Tanikawa, H., **2020**. A spatiotemporal urban metabolism model for the Canberra suburb of Braddon in Australia. *Journal of Cleaner Production* 265, 121770. https://doi.org/10.1016/j.jclepro.2020.121770

27. Merschroth, S., **Miatto, A.**, Weyand, S., Tanikawa, H., Schebek, L., **2020**. Lost Material Stock in Buildings due to Sea Level Rise from Global Warming: The Case of Fiji Islands. *Sustainability* 12(3), 834. https://doi.org/10.3390/su12030834

28. Yoshida, K., Okuoka, K., **Miatto, A.**, Schebek, L., Tanikawa, H., **2019**. Estimation of Mining and Landfilling Activities with Associated Overburden through Satellite Data: Germany 2000–2010. *Resources* 8(3), 126. https://doi.org/10.3390/resources8030126

29. Wuyts, W., **Miatto, A.**, Sedlitzky, R., Tanikawa, H., **2019**. Extending or ending the life of residential buildings in Japan: A social circular economy approach to the problem of short-lived constructions. *Journal of Cleaner Production* 231, 660-670. https://doi.org/10.1016/j.jclepro.2019.05.258

30. Schiller, G., **Miatto, A.**, Gruhler, K., Ortlepp, R., Deilmann, C., Tanikawa, H., **2019**. Transferability of Material Composition Indicators for Residential Buildings: A Conceptual Approach Based on a German-Japanese Comparison. *Journal of Industrial Ecology* 23(4), 796-807. https://doi.org/10.1111/jiec.12817

31. Schandl, H., **Miatto, A.**, **2019**. Data on the domestic processed output, balancing items, and solid waste potential for five major world economies. *Data in Brief* 22, 662-675. https://doi.org/10.1016/j.dib.2018.12.072

32. Noll, D., Wiedenhofer, D., **Miatto, A.**, Singh, S.J., **2019**. The expansion of the built environment, waste generation and EU recycling targets on Samothraki, Greece: An island's dilemma. *Resources, Conservation and Recycling* 150, 104405. https://doi.org/10.1016/j.resconrec.2019.104405

33. Nguyen, T.C., Fishman, T., **Miatto, A.**, Tanikawa, H., **2019**. Estimating the Material Stock of Roads: The Vietnamese Case Study. *Journal of Industrial Ecology* 23(3), 663-673. https://doi.org/10.1111/jiec.12773

34. **Miatto, A.**, Schandl, H., Forlin, L., Ronzani, F., Borin, P., Giordano, A., Tanikawa, H., **2019**. A spatial analysis of material stock accumulation and demolition waste potential of buildings: A case study of Padua. *Resources, Conservation and Recycling* 142, 245-256. https://doi.org/10.1016/j.resconrec.2018.12.011

35. Guo, J., **Miatto, A.**, Shi, F., Tanikawa, H., **2019**. Spatially explicit material stock analysis of buildings in Eastern China metropoles. *Resources, Conservation and Recycling* 146, 45-54. https://doi.org/10.1016/j.resconrec.2019.03.031

36. Schandl, H., **Miatto, A.**, **2018**. On the importance of linking inputs and outputs in material flow accounts. The Weight of Nations report revisited. *Journal of Cleaner Production* 204, 334-343. https://doi.org/10.1016/j.jclepro.2018.08.333

37. Schandl, H., Fischer-Kowalski, M., West, J., Giljum, S., Dittrich, M., Eisenmenger, N., Geschke, A., Lieber, M., Wieland, H., Schaffartzik, A., Krausmann, F., Gierlinger, S., Hosking, K., Lenzen, M., Tanikawa, H., **Miatto, A.**, Fishman, T., **2018**. Global Material Flows and Resource Productivity: Forty Years of Evidence. *Journal of Industrial Ecology* 22(4), 827-838. https://doi.org/10.1111/jiec.12626

38. **Miatto, A.**, Schandl, H., Wiedenhofer, D., Krausmann, F., Tanikawa, H., **2017**. Modeling material flows and stocks of the road network in the United States 1905–2015. *Resources, Conservation and Recycling* 127, 168-178. https://doi.org/10.1016/j.resconrec.2017.08.024

39. **Miatto, A.**, Schandl, H., Tanikawa, H., **2017**. How important are realistic building lifespan assumptions for material stock and demolition waste accounts? *Resources, Conservation and Recycling* 122, 143-154. https://doi.org/10.1016/j.resconrec.2017.01.015

40. **Miatto, A.**, Schandl, H., Fishman, T., Tanikawa, H., **2017**. Global Patterns and Trends for Non-Metallic Minerals used for Construction. *Journal of Industrial Ecology* 21(4), 924-937. https://doi.org/10.1111/jiec.12471

41. Krausmann, F., Wiedenhofer, D., Lauk, C., Haas, W., Tanikawa, H., Fishman, T., **Miatto, A.**, Schandl, H., Haberl, H., **2017**. Global socioeconomic material stocks rise 23-fold over the 20th century and require half of annual resource use. *Proceedings of the National Academy of Science* 114(8), 1880-1885. https://doi.org/10.1073/pnas.1613773114

Reports and manuals

1. Schandl H, Marcos-Martinez R, West J, Lu Y, **Miatto A**, Lutter S, Giljum S, Lenzen M, Li M, Cabernard L, Fischer-Kowalski M (**2024**). Drivers, pressures, and natural resource use trends. In: Global Resources Outlook 2024: Bend the trend – Pathways to a liveable planet as resource use spikes. *International Resource Panel*. Nairobi, Kenya. https://wedocs.unep.org/20.500.11822/44902

2. Heinrich K, Schandl H, Antoine P, Grant T, Rawson M, Bailey M, De Garis L, and **Miatto A**. (**2024**). Populating circularity metrics. *Rawtec*, Australia.

3. **Miatto A**, Emami N, Goodwin K, West J, Taskhiri S, Wiedmann T, and Schandl H (**2024**) A comprehensive material flow account for the Australian economy to support the assessment of Australia's progress towards a circular economy. *CSIRO*, Australia.
4. Schandl, H; West, J.; Lutter, S.; Eisenmenger, N.; **Miatto, A.**; Linster, M., **2021**. The use of natural resources in the economy: A Global Manual on Economy Wide Material Flow Accounting. *United Nations Environment Programme*, Nairobi, Kenya. https://seea.un.org/content/use-natural-resources-economy-global-manual-economy-wide-material-flow-accounting
5. Oberle, B.; Bringezu, S.; Hatfield-Dodds, S.; Hellweg, S.; Schandl, H.; Clement, J.; Cabernard, L.; Che, N.; Chen, D.; Droz-Georget, H.; Ekins, P.; Fischer-Kowalski, M.; Flörke, M.; Frank, S.; Froemelt, A.; Geschke, A.; Haupt, M.; Havlik, P.; Hüfner, R.; Lenzen, M.; Lieber, M.; Liu, B.; Lu, Y.; Lutter, S.; Mehr , J.; **Miatto, A.**; Newth, D.; Oberschelp, C.; Obersteiner, M.; Pfister, S.; Piccoli, E.; Schaldach, R.; Schüngel, J.; Sonderegger, T.; Sudheshwar, A.; Tanikawa, H.; van der Voet, E.; Walker, C.; West, J.; Wang, Z.; Zhu, B. Global Resources Outlook 2019: Natural Resources for the Future We Want; *International Resource Panel*: Nairobi, Kenya, **2019**; p 158.
6. Bringezu, S.; Ramaswami, A.; Schandl, H.; O'Brien, M.; Pelton, R.; Acquatella, J.; Ayuk, E. T.; Chiu, A. S. F.; Flanegin, R.; Fry, J.; Giljum, S.; Hashimoto, S.; Hellweg, S.; Hosking, K.; Hu, Y.; Lenzen, M.; Lieber, M.; Lutter, S.; **Miatto, A.**; Nagpure, A. S.; Obersteiner, M.; van Oers, L.; Pfister, S.; Pichler, P.-P.; Russell, A.; Spini, L.; Tanikawa, H.; van der Voet, E.; Weisz, H.; West, J.; Wiijkman, A.; Zhu, B.; Zivy, R. Assessing Global Resource Use: A System Approach to Resource Efficiency and Pollution Reduction; ISBN 978-92-807-3677-9, DTI/2141/PA; *International Resource Panel*: Nairobi, Kenya, **2017**; p 102.
7. Schandl, H.; Fischer-Kowalski, M.; West, J.; Giljum, S.; Dittrich, M.; Eisenmenger, N.; Geschke, A.; Lieber, M.; Wieland, H.; Schaffartzik, A.; Krausmann, F.; Gierlinger, S.; Hosking, K.; Lenzen, M.; Tanikawa, H.; **Miatto, A.**; Fishman, T. *Global material flows and resource productivity*; ISBN 978-92-807-3554-3; International Resource Panel: Paris, France, **2016**; p 200.

GRANTS AND AWARDS

Grants

2024 Grant to hire a postdoctoral fellow through the CSIRO Early Research Career Postdoctoral and Engineering Fellowships program.
2022 Gordon Research Conference. Sponsorship to participate to the Gordon Research Conference and Gordon Research Seminar in Industrial Ecology in Newry, ME, USA.
2019 International Society for Industrial Ecology. Scholarship for young professionals.
2017 National Science Foundation. Funding to organize The Fifth Symposium on Industrial Ecology for Young Professionals (SIEYP V), Chicago, IL, USA.
2014 Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) Scholarship Program. Ph.D. sponsor.
2011 The University of Padua, International Dissertation Program. "Safe demolition of steel structures using finite element modeling and dynamic analysis".

Awards

2022 Excellence in Review Award. *Resources, Conservation & Recycling.*
2021 Best Poster Prize (3rd place). *International Society for Industrial Ecology.*
2017 Excellence in Review Award. *Resources, Conservation & Recycling.*

CONFERENCE ACTIVITY/PARTICIPATION

Conferences/Symposia Organized

2022 Gordon Research Seminar in Industrial Ecology. June 11-12. Newry, ME, United States.

2018 Gordon Research Seminar in Industrial Ecology. May 19-20. Les Diablerets, Switzerland.
2017 The Fifth Symposium on Industrial Ecology for Young Professionals (SIEYP V). June 24-25. Chicago, IL, United States.
2016 The International Society for Industrial Ecology joint 12th Socio-Economic Metabolism section conference and 5th Asia-Pacific 2016 conference. (ISIE SEM-AP 2016). September 28-30 Nagoya, Aichi, Japan.

Panels Organized

2019 Buildings a research community for the built environment's material stocks and flows. *The 10th International Conference on Industrial Ecology*. July 7-11. Beijing, China.
2018 Energy, resource, and policy. *Gordon Research Seminar (GRS) on Industrial Ecology*. May 19-20. Les Diablerets, Switzerland.

Presentations

2024 Assessing Circularity through the Integration of Waste Data into Material Flow Accounts. *ENVIRO 2024 conference*. June 25-27. Brisbane, QLD, Australia.
2023 Critical metals for the U.S. energy transition? *Southern Illinois University*. February 9. Carbondale, IL, United States.
2022 What future for U.S. cobalt? *Gordon Research Conference (GRC) on Industrial Ecology*. June 19-24. Newry, ME, United States.
2022 Sustainable Material Management Extreme Events Reconnaissance (SUMMEER) symposium. January 13-14. Tallahassee, FL, United States.
2021 Vanadium: A U.S. Perspective on an Understudied Metal. *Critical Materials Institute Annual Meeting*. September 15. Online format.
2021 The uncertain future of the U.S. lithium needs. *International Industrial Ecology Day*. June 21. Online format.
2020 Scenario analysis of future lithium use in the United States. *Critical Materials Institute Annual Meeting*. November 5. Online format.
2020 Representation of waste in material flow analysis: a review. *AIChE Sustainable Waste Management Conference*. September 15. Online format.
2019 Evolution of lithium uses in the United States: 1910-2016. *Critical Materials Institute Annual Meeting*. September 9-11. Idaho Falls, ID, United States.
2019 A material flow analysis of lithium in the US: 1910-2015. *The 10th biennial conference of the International Society for Industrial Ecology (ISIE 2019)*. July 7-11. Beijing, China.
2018 Material stock and flows of long-lived buildings: the case of Padua (Italy). *The International Society for Industrial Ecology 6th Asia-Pacific 2018 conference (ISIE AP 2018)*. September 11-14. Qingdao, China.
2018 The weight of nations revisited: of the importance of linking inputs and outputs of national material flow accounts. *Gordon Research Conference (GRC) on Industrial Ecology*. May 20-25. Les Diablerets, Switzerland.
2017 Composing long term time-series of nonmetallic minerals used for construction: inflows, stock, and outflows. *The 9th biennial conference of the International Society for Industrial Ecology and the 25th annual conference of the International Symposium on Sustainable Systems and Technology (ISIE ISSST 2017)*. June 25-29. Chicago, IL, United States.
2016 Lifespan modelling uncovers urban stock accumulation and outflow forecast behavior. *Gordon Research Conference (GRC) on Industrial Ecology*. June 19-24. Stowe, VT, United States.
2015 Intensity assessment and global accounting for non-metallic minerals used for construction. *World Resources Forum (WRF) 2015*. October 12-14. Davos, Switzerland.
2015 Improving the global knowledge base of construction material stock and flows. *The 8th Biennial Conference of the International Society for Industrial Ecology (ISIE 2015)*. July 7-10. Surrey, United Kingdom.
2015 Aggregate consumption and economic development: a cross-country comparison. *The 11th International Conference of the European Society for Ecological Economics (ESEE 2015)*. June 30 – July 3. Leeds, United Kingdom.

TEACHING EXPERIENCE

Yale University (United States)

Lecturer

Material Flow Accounting for the Circular Economy. School of the Environment; spring 2023.
Waste in the Urban Environment: Technology, Policy, and Management. School of the Environment; spring 2021, spring 2022.

Guest lecturer

Industrial Ecology. School of the Environment; fall 2021, fall 2022.
Advanced Water Management: Rural to Urban Linkage. School of the Environment; fall 2022.
Introduction to Connected Cities & Urban Ecosystems. School of Management; spring 2021.
Sustainable Development Goals and Implementation. School of Forestry & Environmental Studies; spring 2019.

Nagoya University (Japan)

Guest lecturer

Low Carbon Cities. Graduate School of Environmental Studies; spring 2016, spring 2017, spring 2018.

Teaching Assistant

Low Carbon Cities. Graduate School of Environmental Studies; spring 2016, spring 2017.
Environmental System Analysis. Graduate School of Environmental Studies; fall 2015, fall 2016, fall 2017.
Sustainability and Environmental Studies. Graduate School of Environmental Studies; spring 2015
Climate Change Policies. Graduate School of Environmental Studies; fall 2015.

Inha University (South Korea)

Guest lecturer

Industrial ecology. College of Engineering. Fall 2022.

Università degli Studi di Padova (Italy)

Teaching Assistant

Advanced Architectural Drawing. Department of Civil, Environmental, and Architectural Engineering; spring 2012, fall 2013.

SERVICE TO PROFESSION

Review activity

In parenthesis the number of refereed/reviewed works.

Resources, Conservation and Recycling. *Elsevier*. (70x)
Journal of Industrial Ecology. *Wiley*. (62x)
Environmental Science & Technology. *American Chemical Society*. (19x)
Journal of Cleaner Production. *Elsevier*. (11x)
Ecological Economics. *Elsevier*. (9x)
Journal of Architectural Engineering. *American Society of Civil Engineers*. (5x)
Nature Communications. *Nature Publishing Group*. (5x)
Sustainability. *MDPI*. (4x)
Journal of Environmental Management. *Elsevier*. (3x)
One Earth. *Cell Press*. (3x)
Resources, Conservation and Recycling Advances. *Elsevier*. (3x)
Sustainable Cities and Society. *Elsevier*. (3x)
ACS Sustainable Chemistry & Engineering. *American Chemical Society*. (2x)
Built Environment Project and Asset Management. *Emerald Publishing*. (2x)
Change and Adaptation in Socio-Ecological Systems. *De Gruyter*. (2x)
Energies. *MDPI*. (2x)
Npj Materials Sustainability. *Nature Publishing Group*. (2x)
RSC Sustainability. *Royal Society of Chemistry*. (2x)

Scientific Data. *Nature Publishing Group*. (2x)
Scientific Reports. *Nature Publishing Group*. (2x)
Sustainability Science. *Springer*. (2x)
Buildings and Cities. *Ubiquity Press*. (x1)
Case Studies in Chemical and Environmental Engineering. *Elsevier*. (1x)
Cleaner and Responsible Consumption. *Elsevier*. (1x)
Environmental Science & Policy. *Elsevier*. (1x)
Geoforum. *Elsevier*. (1x)
International Journal of Digital Earth. *Taylor & Francis*. (1x)
Journal of Sustainability Science and Management. *University Malaysia Terengganu*. (1x)
Nature. *Nature Publishing Group*. (1x)
Process Safety and Environmental Protection. *Elsevier*. (1x)
Renewable Energy. *Elsevier*. (1x)
Resources, Environment and Sustainability. *Elsevier*. (1x)
Science of the Total Environment. *Elsevier*. (1x)
Sustainable Development. *Wiley*. (1x)
Waste Management & Research. *SAGE Publishing*. (1x)

Service work

President, International Society for Industrial Ecology Student Chapter. 2016 – 2017.
Board member, International Society for Industrial Ecology Student Chapter. 2015 – 2016.

STUDENT SUPERVISION

Master's students

2023 Veronica Nicholson, Yale University, New Haven, CT, USA.
Independent research project: Reuse of construction and demolition waste in the Yale West Campus.

2022 Giulia Bortolotto, Sara Gaio, and Luca Giacomo Invidiato, Università degli Studi di Padova, Padova, Italy.
Dissertation: Life cycle assessment of Italian residential building archetypes.

2022 Ygor Fasanella and Marta Mainardi, Università degli Studi di Padova, Padova, Italy.
Dissertation: Variance of material intensity in buildings using building information modeling.

2021 Maximillian Schubert, Yale University, New Haven, CT, USA.
Summer research internship: Qualification of waste in material flow analysis studies.

2020 Shoshana Micon, Yale University, New Haven, CT, USA.
Capstone project: Preparedness of municipal recovery facilities to changes in waste composition.

2020 Martina Bianchi**,** Università degli Studi di Padova, Padova, Italy.
Dissertation: Building information modelling to estimate the use of clay bricks in buildings in Italy.

2020 Claudia Sartori**,** Università degli Studi di Padova, Padova, Italy.
Dissertation: Material flow analysis of clay bricks in Italy.

2017 Fabio Ronzani**,** Università degli Studi di Padova, Padova, Italy.
Dissertation: Study of the evolution of building typologies and construction techniques in the city of Padua from the XIX to the XXI century.

2016 Luigi Forlin, Università degli Studi di Padova, Padova, Italy.
Dissertation: Analysis of the evolution of Padua (Italy) through the comparison of historical maps.

RELATED PROFESSIONAL SKILLS

Software

Python
OpenLCA

Illustrator (Adobe)
Photoshop (Adobe)
AutoCAD (Autodesk)
Revit (Autodesk)
e!Sankey (IFU)
Office software suite (Microsoft)

LANGUAGES

English	Full professional proficiency. TOEFL 114/120; IELTS 8.5.
Italian	Native speaker.
Japanese	Limited professional proficiency. Certificate level: N3 (intermediate).

PROFESSIONAL MEMBERSHIPS

2015 – Current The International Society for Industrial Ecology.