

# Lauren Cook, Ph.D, EIT

## *Curriculum Vitae*



Überlandstrasse 133, 8600 Dübendorf  
+41 (0) 79 278 0589  
lauren.cook@eawag.ch  
<https://tinyurl.com/Lcookeawag>  
<https://scholar.google.com/cooklaur>  
[orcid.org/0000-0001-7790-1294](https://orcid.org/0000-0001-7790-1294)  
<https://www.linkedin.com/in/lauren-cook>

## EDUCATION

- 2014 - 2018 **Doctor of Philosophy**  
ADVISORS: CONSTANTINE SAMARAS, JEANNE M. VANBRIESEN  
Civil & Environmental Engineering  
*Carnegie Mellon University*
- 2011 - 2012 **Master of Industrial Engineering**  
Energy and Economics Program  
*Institute Français du Pétrole (IFP School)*
- 2006 - 2010 **Bachelor of Science**  
Civil & Environmental Eng., Water Resources  
*University of Maryland*

## EMPLOYMENT HISTORY

CURRENT, SINCE APRIL 2021 (DUEBENDORF, SWITZERLAND)

Dept of Urban Water Management  
Swiss Federal Instit. of Aquatic Science & Tech. (Eawag)  
**Group Leader**

On-going **interdisciplinary collaborations** with ecologists, biologists, landscape architects, and social scientists to improve multifunctionality of green stormwater infrastructure

JAN 2019–MAR 2021 (DUEBENDORF, SWITZERLAND)

Dept of Urban Water Management, Eawag  
**Post-doctoral Fellow**

**Transdisciplinary collaboration** with ETH Zürich and industry specialists to gain expertise for experimental design on solar panels, green roof vegetation, energy balance modelling

AUG 2014–DEC 2018 (PITTSBURGH, USA)

Dept of Civil & Environmental Eng., Carnegie Mellon Univ.  
**Doctoral Researcher**

**Visiting researcher** at the National Center for Atmospheric Science  
**Interdisciplinary collaboration** with the RAND corporation

AUG 2012–AUG 2014 (NEWARK, DE, USA)

Air Liquide Industrial Gases, Research & Development  
**Research Associate**

Oral and written communication results of supply chain optimization model to a non-expert and international audience

MAY 2010–AUG 2010 (COLLEGE PARK, MD, USA)

Dept of Civil & Environmental Eng., Univ. of Maryland  
**Water Resources Research Assistant**

Supervisor: Professor Emeritus Richard McCuen

## MAIN RESEARCH AREAS

**Blue-green stormwater infrastructure; Climate resilience; Urban sustainability; Performance based design; Multifunctionality**

## AWARDED FUNDING AS PI

- 2022 **SNSF Synergia Funding, 411,095 CHF**  
**No. CRSII5 213584**  
*PAPPUS: Plants and People in Urban Systems*  
Primary Investigator
- 2021 **SNSF Project Funding, 583'864 CHF**  
**No. 20002\_204790**  
*BETTER: Blending design and decision-making for multi-functional blue-green infrastructure*  
Primary Investigator
- 2021 **Blue-Green Biodiversity (BGB), 520'000 CHF**  
**Joint Eawag-WSL Funding Initiative**  
*Blue-Green Stormwater Infrastructure Meets Biodiversity in the City [Benefit]*  
Primary Investigator
- 2019 **Eawag Postdoctoral Fellowship, 2-year funding**  
*Quantifying the co-benefits of distributed stormwater and energy infrastructure*  
Post-doctoral researcher

## FELLOWSHIPS & AWARDS

- 2018 **Postdoctoral Fellowship Recipient**  
*Swiss Fed. Instit. Aquatic Science & Tech. (Eawag)*
- 2018 **3rd Place Student Presentation**  
*Universities Council on Water Resources Conference*
- 2016 **Best Student Poster Award**  
*8th Annual Sustainability Conference, Pittsburgh*
- 2016 **Outstanding Teaching Assistant Award**  
*Carnegie Mellon Civil & Environ. Eng.*
- 2016 - 2017 **John and Claire Bertucci Fellowship**  
*Carnegie Mellon Civil & Environ. Eng.*
- 2014 **Carnegie Mellon Deans Fellowship**  
*Carnegie Mellon Civil & Environ. Eng.*
- 2012 - 2013 **Tuck Foundation Scholarship**  
*Institute Français du Pétrole (IFP School)*

## COMPUTER & COMMUNICATION SKILLS

LANGUAGES	English (Native), French (Bilingual), German (Level B2), Spanish (Limited Working Proficiency), Mandarin (Basic)	SOFTWARE	SWMM, AutoCAD, Microstation, ArcGIS, Tableau, HECRAS, Microsoft Office, L <sup>A</sup> T <sub>E</sub> X
COMPUTER LANGUAGES	Python, MATLAB, Visual Basic GAMS, LINGO, Command Line	MODELLING EXPERTISE	Hydrologic simulation, Linear programming, Statistics & uncertainty

## STUDENT SUPERVISION

Year	PhDs	Post-docs	MSc	Other staff	Total
2019	-	-	Giovan Battista Cavadini	-	1
2020	-	-	Giovan Battista Cavadini, Ines Malot	-	2
2021	Mayra Rodriguez, Kilian Perrelet	Andreas Dietzel	Bettina Maurer, Dawar Qureshi	Patrick Stettler	6
2022	Mayra Rodriguez, Kilian Perrelet, Giovan Battista Cavadini	Andreas Dietzel, Mayra Rodriguez, Trang Nguyen	Bettina Maurer, Dawar Qureshi, Taiqi Lian	Patrick Stettler, Noemi Buri, Ramun Bar	11
2023	Kilian Perrelet, Giovan Battista Cavadini, Yuxin Yin	Andreas Dietzel, Mayra Rodriguez, Trang Nguyen	Ruixin Lu, Lina Hassoun, Marvin Trottmann	Noemi Buri, Ramon Luedi, Louise Gogibu, Simon Sennhauser	13
2024	Kilian Perrelet, Giovan Battista Cavadini, Yuxin Yin	Andreas Dietzel, Trang Nguyen	Ruixin Lu	Noemi Buri	7

## PEER REVIEW PUBLICATIONS

**Total: 13, citations: 331, h-index: 9**

- Maurer, B., Lienert, J., and **L. Cook** (2023). Comparing PV-green and PV-cool roofs to diverse rooftop options using decision analysis. *Building and Environment*. doi:10.1016/j.buildenv.2023.110922
- Rodriguez, M., Fu, G., Butler, D., Yuan, Z., and **L. Cook** (2023). Global Resilience Analysis of Combined Sewer Systems Under Continuous Hydrologic Simulation. *J. Environmental Management*. 344, 118607 (11 pp.) doi:10.1016/j.jenvman.2023.118607
- Tan, T., Kong, F., Yin, H., **Cook, L.**, Middel, A., and S. Yang (2023) Carbon dioxide reduction from green roofs: A comprehensive review of processes, factors, and quantitative methods. *Renewable and Sustainable Energy Reviews* 182. doi.10.1016/j.rser.2023.113412
- Probst, N., Bach, P.M., **Cook, L.**, Maurer, M., and J. P. Leitao (2022) Blue Green Systems for urban heat mitigation: mechanisms, effectiveness and research directions. *Blue-Green Systems* 4 (2): 348–376. doi.10.2166/bgs.2022.028
- Cavadini, G.B. and **L. Cook** (2021) Green and cool roof choices integrated into rooftop solar energy modelling. *Applied Energy* 296. doi.10.1016/j.apenergy.2021.117082
- Cook, L.** and T. Larsen (2020) Towards a performance-based approach for multifunctional green roofs: An interdisciplinary review. *Building and Environment* 107489. doi.10.1016/j.buildenv.2020.107489
- Cook, L.**, McGinnis, S., and C. Samaras (2020) The Effect of Modelling Choices on Updating Intensity Duration Frequency Curves and Stormwater Infrastructure Designs for Climate Change. *Climatic Change* doi.10.1007/s10584-019-02649-6
- Cook, L.**, Samaras, C., and J.M. VanBriesen (2019) Using Rainfall Measures to Evaluate Hydrologic Performance of Green Infrastructure Systems under Climate Change. *Sustainable and Resilient Infrastructure* doi.10.1080/23789689.2019.1681819
- Cook, L.**, Samaras, C., and J.M. VanBriesen (2018) A Mathematical Model to Plan for Long-Term Effects of Water Conservation Choices on Dry Weather Wastewater Flows and Concentrations. *J. Environmental Management*. 206C, 684 - 697. doi.10.1016/j.jenvman.2017.10.013
- Cook, L.**, Anderson, C.J., and C. Samaras (2017) A Framework for Incorporating Downscaled Climate Output into Existing Engineering Methods: Application to Precipitation Frequency Curves. *J. Infrastructure Systems*. 23 (4). doi.10.1061/(ASCE)IS.1943-555X.0000382