

MIRIAM HACKER, PHD

Curriculum Vitae

EDUCATION

Ph.D., Civil & Environmental Engineering

University of Washington - Seattle, WA

Specialization: Construction, Energy and Sustainable Infrastructure

Completed: December 2018

Research interests: regulation, rapid population displacement, organizational legitimacy, humanitarian aid, government coordination.

M.S., Civil & Environmental Engineering

University of Washington - Seattle, WA

Specialization: Drinking Water Quality and Sanitation

Completed: June 2014

B.S, Civil & Environmental Engineering

University of Washington - Seattle, WA

Completed: June 2011

HONORS & AWARDS

2018 EPOC Best Paper Award	6/2018
2018 UW Three Minute Thesis Competition Participant	4/2018
2018 Graduate School Medal Nominee, Civil Engineering Department	4/2018
WAPA Scholarship Recipient	2/2016
International Water Engineering Scholarship	9/2013

RESEARCH EXPERIENCE

Postdoctoral Researcher, Eawag (Swiss Federal Institute for Aquatic Science & Technology) - Switzerland **3/2019 – Present**

Supervisor: Dr. Christian Binz

Funding: Eawag Internal Funding

- Coordinating transnational project to identify institutional barriers for innovative urban water management technology
- Organizing and conducting expert interviews in the following locations: San Francisco, USA; Paris, France; Durban, South Africa; Bangalore, India

USAID/OFDA and HFHI Humanitarian Shelter and Settlement Research Fellow – Lebanon **6/2018 – 12/2018**

Supervisors: Dr. Jessica Kaminsky and Dr. Kasey Faust

Funding Source: USAID/HFHI Humanitarian Shelter and Settlement Fellowship

- Coordinating survey and interviews with Lebanese government officials and humanitarian actors regarding regulations and impacts to the built environment from accommodations for refugees in urban areas.

Research Assistant, University of Washington – Sweden **10/2016 – 7/2017**

Supervisors: Dr. Jessica Kaminsky and Dr. Sebastien Rauch

Funding Source: Valle Scholarship and Scandinavian Exchange Program

- Coordinated 32 interviews with employees in government agencies and nonprofit organizations to understand the impact of the European refugee crisis on city infrastructure and regulations

Research Assistant, University of Washington - Germany **6/2016 – 9/2016**
Disaster Migration and Civil Infrastructure: The Impacts of Sudden Population Influxes on Water and Sanitation Infrastructure
Supervisors: Dr. Jessica Kaminsky and Dr. Kasey Faust
Funding Source: NSF Grant #1624417

- Coordinated 54 interviews in Berlin, Leipzig, Dresden and Munich, Germany with employees in water utilities, government agencies, nonprofit organizations, and private companies to understand the impact of the European refugee crisis on city infrastructure and regulations
- Qualitative analysis using social network analysis and Dedoose software

Research Assistant, University of Washington - Seattle, WA **9/2015 – 6/2016**
Hofstede at the Head: Fuzzy sets, cultural dimensions & sanitation infrastructure
Supervisor: Dr. Jessica Kaminsky
Funding Source: University of Washington Royalty Research Fund

- Analyzed causal relationships of national sanitation outcomes understand cultural preferences regarding sanitation infrastructure using fuzzy-set qualitative comparative analysis

Graduate student, University of Washington - Seattle, WA **4/2014 – 6/2014**
Independent Study: Water Supply and Cultural Indicators
Supervisor: Dr. Jessica Kaminsky
Funding Source: not applicable

- Compiled information regarding current and on-going water and sanitation hygiene programs through various organizations.

PROFESSIONAL EXPERIENCE

Intern, Strategic Planning, Evaluation and Guidance Section (SPEGS) **7/2017 – 9/2017**
UN Office for the Coordination of Humanitarian Affairs – New York, NY

- Provided administrative support for the Section Chief, Evaluation and Oversight units
- Assisted in coordinating meetings for the inter-agency humanitarian evaluation steering group
- Managed feedback for the agency’s 2018-2021 Strategic Plan
- Coordinated bilateral consultations with other sections for updates to oversight recommendations from audits, evaluations, reviews and assessments

Youth Shelter Associate **2/2016 - 5/2016**
Union Gospel Mission & New Horizons Ministries – Seattle, WA

- Managed a sleeping area for 15-25 young adults ages 18-24 in the Seattle area
- Completed registration and met with guests to make sure they were aware of available resources for case management, employment and transitional housing
- De-escalated high stress situations and kept a safe environment for guests and staff

Engineer II, Drainage Review **6/2014 – 9/2015**
Snohomish County Planning & Development Services - Everett, WA

- Reviewed drainage for land disturbing activity permits for single family residences in Snohomish County in compliance with federal and county regulations
- Utilized Western Washington Hydrology Model (WWHM4) to assess runoff from project sites

Drainage Maintenance Intern

6/2012 – 6/2014

Snohomish County Surface Water Management - Everett, WA

- Updated inventory of drainage facilities maintained by Snohomish County in compliance with US Department of Ecology National Pollutant Discharge Elimination System (NDPES) permit
- Coordinated efforts to inventory drainage facilities throughout the county
- Input facility points into ArcGIS and worked with transitioning asset management systems

Agricultural Survey Intern

6/2013 – 9/2013

Snohomish County Department of Agriculture - Everett, WA

- Worked with the agriculture coordinator of Snohomish County to complete an agricultural crop survey for Washington State Department of Agriculture
- Completed site assessments and input results into ArcGIS to understand the gain or loss of land used for agricultural purposes

TEACHING EXPERIENCE

Teaching Assistant

3/2018-6/2018

CEE 420: Engineering in Developing Communities, University of Washington*Supervisor: Dr. Jessica Kaminsky*

- Class goal: introduce students to technologies, theories, and challenges involved in engineering with developing communities
- Served as a resource for students in class assignments and projects

Teaching Assistant

9/2017-12/2017

CEE 317: Surveying, University of Washington*Supervisor: Dr. Kamal Ahmed*

- Managed weekly labs: three-wire leveling, traverse adjustment, resection leveling, horizontal curve, and vertical curve
- Developed lab tutorials for drone software and ArcGIS and facilitated subsequent lab sections

Teaching Assistant

9/2015-12/2015

CEE 307: Construction Engineering, University of Washington*Supervisor: Dr. Jessica Kaminsky*

- Primary point of contact for design project of highway section
- Developed and facilitated lab sections for MS Project and Bid2Win tutorials

PUBLICATIONS

Journal Publications:

- (1) **Hacker, Miriam E.**, and Jessica A. Kaminsky. 2017. "Cultural Preferences for the Methods and Motivation of Sanitation Infrastructure Development." *Journal of Water Sanitation and Hygiene for Development* 7 (3):407. <https://doi.org/10.2166/washdev.2017.188>.
- (2) **Hacker, Miriam E.**, Jessica Kaminsky, and Kasey M. Faust. 2019. "Legitimizing Involvement in Emergency Accommodations: Water and Wastewater Utility Perspectives." *Journal of Construction Engineering and Management* 145 (4): 04019013. [https://doi.org/10.1061/\(ASCE\)CO.1943-7862.0001622](https://doi.org/10.1061/(ASCE)CO.1943-7862.0001622).
- (3) **Hacker, Miriam E.**, Jessica Kaminsky, Kasey M. Faust, Sebastien Rauch. (ACCEPTED). "Regulatory Enforcement Approaches for Mass Population Displacement." *Journal of Construction Engineering and Management*.

Conference Publications

- (1) **Hacker, Miriam E.** & Kaminsky, Jessica A., (2016). "Relating Hofstede's Cultural Dimensions & National Sanitation Infrastructure Using Fuzzy Sets." *EPOC 2016 - Building Resilience*, 28-30 June 2016, Cle Elum, Washington, USA.
- (2) **Hacker, Miriam E.;** Kaminsky, Jessica; Faust, Kasey, (2017). "Government Coordination in Providing Emergency Accommodation for Displaced Persons in an Urban Context." *6th CSCE/CRC International Construction Specialty Conference*, 31 May- 3 June, 2017, Vancouver, B.C., Canada.
- (3) **Hacker, Miriam E.;** Kaminsky, Jessica; Faust, Kasey, (2017). "Legitimization of Water and Wastewater Utilities' Role in Urban Emergency Response for Displaced Persons." *EPOC-MW 2017 – Managing Complex Adaptive Systems*, 5-7 June 2017, Lake Tahoe, California, USA.
- (4) **Hacker, Miriam E.;** Kaminsky, Jessica; Faust, Kasey. "Housing Regulations in Temporary Accommodations for Displaced Persons: A German Case Study." *Construction Research Congress 2018 – Building Community Partnerships*, 2-4 April 2018, New Orleans, Louisiana, USA.
- (5) **Hacker, Miriam E.;** Kaminsky, Jessica; Faust, Kasey. "Mapping Regulatory-Related Interactions of Stakeholders for Temporary Accommodations: a German Case Study." *EPOC 2018 - (Re)Organizing in an Uncertain Climate*, 25-27 June 2018, Brijuni, Croatia.
- (6) Bakchan, Amal; **Hacker, Miriam;** Faust, Kasey; Kaminsky, Jessica. "Humanitarian-Development Nexus regarding Water and Wastewater Service Provision: Learning from Lebanon's Protracted Population Displacement." *Construction Research Congress 2020 - Construction Research and Innovation to Transform Society*, 8-10 March 2020, Tempe, Arizona, USA.

CONFERENCE PROCEEDINGS

2018 Construction Research Congress, 2-5 April 2018, New Orleans, Louisiana, USA.

- **Presenter:** Housing Regulations in Temporary Accommodations for Displaced Persons: A German Case Study.

6th CSCE/CRC International Construction Specialty Conference, 31 May- 3 June 2017, Vancouver, B.C., Canada

- **Presenter:** Coordination in Providing Emergency Accommodation for Displaced Persons in an Urban Context.

Engineering Project Organization Conference – Megaprojects Workshop 2017 – 5-7 June 2017, Lake Tahoe, California, USA.

- **Moderator:** June 6 and 7.
- **Presenter:** Legitimization of Water and Wastewater Utilities' Role in Urban Emergency Response for Displaced Persons.
- **Presenter:** Rapid Population Increase and Urban Housing Systems: Legitimization of centralized emergency accommodations for displaced persons, authored by Julie Faure, UT-Austin.

CERTIFICATIONS AND MEMBERSHIPS

Member, American Association of University Women	7/2019 – Present
Student Member, Engineering Project Organization Society	3/2018 - Present
Student Member, American Society of Civil Engineers	10/2017 – Present
Student Member, International Water Association	7/2017 – Present
Engineer in Training, NCEES	9/2010 - Present

TRAINING COMPLETED

Introduction to Sexual Exploitation and Abuse, InterAction	7/2018
Introduction to Water and Sanitation Hygiene (WASH), UNICEF	5/2018
USAID/OFDA Shelter and Settlements Training Course	5/2018
M&E Fundamentals, Global Health eLearning Center	5/2014
Washington Stormwater LID (Low Impact Development) Training Program:	
Advanced Topics in LID Design: Bioretention Media and Compost Amended Soils	4/2015
Advanced Topics for Long-term LID Operations: Bioretention	11/2014
Intermediate LID Design: Site Assessment, Planning and Layout	10/2014
Intermediate LID Design: Permeable Pavement	10/2014
Advanced Topics for Long-Term LID Design: Bioretention	10/2014

EXTRACURRICULAR AND VOLUNTEER EXPERIENCE

Officer, Leadership Committee **10/2017 – Present**

UW Graduate Society of Women Engineers (GradSWE) – Seattle, WA

Network with industry professionals, faculty members and other STEM-related organizations for professional development events catered to graduate women in STEM fields. Organized a networking event in January 2018 and two professional panel sessions for the UW Women in Science and Engineering Conference in March 2018 focusing on research in industry and work-life balance.

Street Team & Text Outreach Coordinator **6/2013 – 4/2016**

Real Escape from the Sex Trade (REST) - Seattle, WA

Organized volunteers to meet with and offer resources such as counseling and case management to women in the sex industry 2-3 times per month. Conducted interviews and facilitated the on-boarding process for new volunteers. Coordinated with other local organizations to facilitate collaboration and partnerships.