

## 2017 Urine Diversion Summit Participants Biographies and Contact information

**Mina Aghababaei** *PhD student of Civil Engineering, University of New Hampshire*  
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Mina is currently a PhD student at the University of New Hampshire. This past year, she studied life cycle environmental and economic performances of urine diversion practices under the supervision of Dr. Weiwei Mo. Now she will be working on sustainability through enhanced nutrient recovery and community engagement in Durham, NH. The project goal is promoting “close-loop” nutrient management, which includes a broad scale nitrogen balance analysis to evaluate the maximum possible amount of nitrogen that could be theoretically recovered, a cost-benefit assessment to identify the optimal scale of buildings to implement source separation technologies, and a local resident survey to evaluate local willingness to adopt source separation technologies.

**Hideaki Ariizumi, AIA** *Partner, studio a/b architects*  
[hideaki@studioabarchitects.com](mailto:hideaki@studioabarchitects.com)

Hideaki, born in Japan, worked as a principal architect for Kazuo Shinohara at the Tokyo Institute of Technology. Since coming to the U.S.A, he worked for Steven Holl Architects before starting his own firm. Many of his projects have received awards for design excellence.

**Earle Barnhart** *The Green Center*  
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Hilde Maingay and I started the Cape Cod Eco-Toilet Center when our town started to plan \$600 million of sewers. We also manage the non-profit Green Center of ecological design information of the New Alchemy Institute.

**Ellena Baum** *Grow Food Northampton*  
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Ellena graduated from Smith College in 2014 with a degree in Engineering and Environmental Science, and has since worked with regenerative land based projects, often involving ecological sanitation. She is returning to the Pioneer Valley after spending last year as a teaching assistant with a regenerative agriculture project in the Peruvian Amazon, where she was building soil using indigenous-based composting practices. This coming year she will be working as the Land Stewardship Coordinator for Grow Food Northampton and hopes to continue pursuing ecological design and integrating nutrient cycling into human landscapes.

**Glynis Berry**, AIA, LEED AP Director, Peconic Green Growth, Inc., Partner, studio a/b architects  
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Glynis has been working on planning for enhanced wastewater treatment to protect environmental health. She is also designing pilot installations of alternative onsite wastewater treatment systems in Suffolk County, NY. Glynis is an architect and planner and started NYC’s pedestrian and traffic-calming program.

**Lauren Bomeisl** *University of Vermont*  
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Lauren is currently finishing her Master's thesis in Water Resources Engineering at Oregon State University where her work has been focused on identifying dominant pathways of nutrient loss from agricultural fields in the Ecuadorian Andes. Upon starting her PhD in Natural Resources with Eric Roy at UVM, she is now shifting her focus toward developing an integrated decision support system to help guide implementation of sustainable nutrient recovery technology.

**Ed Brands** *University of Minnesota Morris*

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Ed teaches broadly in the areas of environmental science and policy, systems thinking, and geographic information systems. His more recent research has focused on understanding and reducing sanitation and agriculture sustainability challenges and related policy and management issues. Ed is currently Associate Professor of Environmental Studies, on sabbatical and building a house equipped with both flush and non-flush toilets.

**Catherine Bryars** *Bennington County Regional Commission*

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As a student of Regional Planning, Catherine completed a Master's thesis on US-based pilot projects in urine diversion and community-scale ecological sanitation schemes. This past year she studied similar campaigns in Oaxaca, Mexico with the support of a Fulbright scholarship. Now she will be working as a planner in Vermont with the idea to coordinate state-wide support for UD and ecosan practices.

**David Cedarholm** *Tighe & Bond*

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I am a consulting engineer focused on water resources and have been actively involved in a number of urine diversion projects as an approach to reduce nitrogen inputs to the Great Bay Estuary of New Hampshire. My most recent effort involves an agricultural fertilizer pilot project with the University of New Hampshire and Strafford County Conservation District based on a volunteer home urine collection program.

**Parker Cornbrooks** - *University of Vermont*

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Parker graduated in the spring of 2017 from the University of Vermont with a degree in Mechanical Engineering and minor in Environmental Studies. His work with Dr. Eric Roy began in his final semester looking at nutrient recapture from human waste, specifically accounting for the magnitudes of nitrogen and phosphorus that flow through waste treatment plants versus onsite systems in New England.

**Carl Etnier**

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Carl Etnier was one of the organizers for the three of the first international conferences on ecological engineering for wastewater treatment, in Sweden, Switzerland, and Norway. He organized Sweden's first exhibit of urine-diverting toilets while he worked at an environmental center at Stensund Folk College, and he pursued Ph.D. studies at the Agricultural University of Norway in sustainable wastewater treatment. When he returned to the U.S. in 2001, he began working through E.P.A.-funded projects to introduce human nutrient recycling into the array of accepted tools for wastewater treatment. He looks forward to returning to wastewater work after an absence, opening his hayfields for a urine demonstration.

**Heather Goetsch** *University of Michigan*

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Heather is a PhD student at the University of Michigan interested in assessing risks of using urine-derived fertilizers to inform future regulations.

**Ben Goldberg** *Phoenix Composting Toilets*

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Ben has been working with composting toilet systems since the 1970's, as a resource person and educator for Helios Habitat, an experimental alternative architecture and technology community based in Alberta, Canada. After receiving his B.A. in Human Ecology from College Of The Atlantic, and his M.S. in Environmental Education from Audubon Expedition

Institute, he became even more interested in natural resource conservation, especially soil and water. Ben manufactures worm-composting bins and keeps worms as pets in his woodworking shop in western Massachusetts.

**Phoebe Gooding** *Rich Earth Institute*  
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Phoebe is a Master's candidate in Conservation Biology at Antioch University New England. Her interests in water quality and conservation led her to Mexico where she did her master's project with a local non-profit helping to improve their water quality monitoring program. She is currently the administrative assistant for Rich Earth Institute. Phoebe is also passionate about racial justice and climate change activism. She co-created a 350Vermont node in Brattleboro and also works for 350VT as a workshop facilitator and organizer.

**Barry Gutwein** Ph.D., P.E. *Managing Partner, GreenC LLC.*  
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Barry has degrees in Agricultural Engineering from Purdue and Colorado State University. During his career he has been a drainage and irrigation contractor, teacher, researcher, farmer, consulting engineer, and project manager. He has worked for many years in resource poor regions of the USA and internationally including humanitarian aid and agricultural development projects. His interest in urine came about as a convergence of his work as a water and sanitation engineer with Medecins Sans Frontieres and a long term interest in nutrient reuse. Barry is currently a German resident, adjunct professor at Purdue University, and working on a bio-char pilot project in Indiana.

**John Hatton** *Berkley and Veller Greenwood Country Realtors*  
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John is a Realtor and Sales Manager at Berkley & Veller in Vermont. John has been in sales and customer service for his working career, now in real estate, before in the natural foods industry. John serves now and has served on a number of Boards of Directors, and brings his interest in visioning and governance to the Rich Earth Institute. He lives with his wife, Kate, and their two wonderful young adults, Tyler and Guthrie, on a small farm in Westminster, and tries to find enough free time to ride his road bike.

**Melissa Hays** *Rich Earth Institute*  
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Melissa has worked in education as an ESL (English as a Second Language) teacher, in the health field as a massage therapist, and in social services as a volunteer coordinator at Brattleboro Area Hospice. She has enthusiastically participated in the activities of the Rich Earth Institute from its early days. Previous to joining the board in 2016, she was involved with the field work (planting, fertilizing, harvesting), served on several committees, and helped organize community events. Melissa is currently the keeper of the Rich Earth Institute archives, but her main focus is on strengthening ties within the community of urine donors—those dedicated folks who make this work possible.

**Stephen Hilton** *University of Michigan*  
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After graduating from Texas A&M with a degree in Environmental Geosciences and a minor in Geographic Information Science and Technology, Stephen has joined the University of Michigan's Sustainable System program to focus on water systems. He is currently working to compare the life cycle of urine diverting wastewater treatment systems with conventional methods.

**Lowell Ben Howard** *NuWave San - Restoring Renewable Resources*  
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Lowell "Ben" Howard completed a capstone research project through the Master of Public Administration at The Ohio State University reviewing the practice and regulations of land application of septage as a pathway for ecological sanitation to expand. Ben is wrapping up the Social Enterprise Accelerator program in Columbus, OH on 8/23/2017 with

the hope of securing funding to launch a community scale source separation sanitation enterprise (NuWaveSan.com).

**Karleen Kos** *Portable Sanitation Association International*

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Karleen has spent her career in leadership positions with various not-for-profit organizations. Though she is relatively new to the sanitation and urine reclamation space, Karleen is enthusiastic about finding solutions to the global sanitation crisis. In her day job, Karleen works on improving the image of the portable sanitation industry, enhancing the experience of using a portable restroom, and raising sanitation standards globally.

**Conor Lally** *Nutrient Networks*

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Conor is an Ecological Sanitation Planner with a background in watershed science and ecological design. He graduated from BU with a Master's in Energy and Environmental Analysis, where his studies focused on the technical and social feasibility of composting toilets and urine diversion systems. He earned a B.S. in Watershed Science from SUNY College of Environmental Science and Forestry where he studied watershed science, ecological engineering, and emerging building programs. He has previously served as Project Manager for John Todd Ecological Design, and is a co-founder of Nutrient Networks. Conor is a member of the Rich Earth Institute's Board of Directors.

**Tove Larsen** *EAWAG (Swiss federal Institute of Water Science and Technology)*

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Tove Larsen is a chemical engineer with a PhD in process engineering from the Technical University of Denmark, DTU. She came to Eawag in 1999 as a group leader in the Department of Urban Water Management in order to set up and lead the cross-cutting project Novaquatis on urine source separation. Since then, she has worked on resource-efficient urban water management, with an emphasis on source separation. In 2014, Tove joined the Eawag directorate and in 2017, she became an adjunct professor at DTU.

**Nancy Love** *University of Michigan*

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Nancy has worked on technologies to convert urine to safe (low contaminant level) fertilizer product with Rich Earth Institute, University at Buffalo, and Hampton Roads Sanitation District. Have collaboration evolving to deploy in East Africa. PI of INFEWS proposal that includes advancing education and positive attitudes about UDF.

**Amelia Luna** *Sherwood Design Engineers*

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Amelia is an environmental engineer and project manager at Sherwood Design Engineers in San Francisco where she specializes in decentralized water resource recovery systems for urban developments and corporate campuses. Her project experience includes wastewater process design, permitting and compliance with onsite water reuse regulations. After she earned her Master's of Science in Civil & Environmental Engineering from University of California at Davis, she spent two years as a staff researcher working with the Department of Transportation (Caltrans) to operate an onsite wastewater treatment and reuse pilot plant for closed loop blackwater recycling. Work products from this study included a data report and a design manual, which also considered urine diversion for nutrient management. Prior to joining Sherwood, Amelia was part of the HDR Inc. wastewater process engineering group, where she worked with large-scale water and wastewater treatment plants including, the City of Las Vegas, the City of San Mateo, the Santa Clara Valley Water District Expedited Potable Reuse Program, and the BACWA Nutrient Study.

**Nadav Malin** *BuildingGreen, Inc.*

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Nadav is a green building consultant and workshop facilitator who is passionate about the potential for urine diversion to reduce the load on wastewater treatment systems (where they exist) and reduce eutrophication where wastewater treatment is inadequate. Nadav is a long-serving former member of the national LEED Faculty, he is an experienced trainer and facilitator, convening the network of architecture firm Sustainable Design Leaders and teaching diverse groups about LEED and green building. As president and CEO of BuildingGreen, he oversees the company's industry-leading information and community-building websites BuildingGreen.com and LEEDuser.

**Dan Marks** *Hoyle, Tanner and Associates, Inc.*

Dan has a B.S. in Civil Engineering from Northeastern University and an M.S. in Environmental Engineering from Columbia University, where he was part of the Water Resources Group and interned at the Earth Institute. During his time at Columbia, he began working on water and sanitation in Haiti, where he realized the need to understand and combine social and technical perspectives surrounding water and sanitation initiatives. Dan currently works as a project engineer in the wastewater treatment industry.

**Kim Nace** *Rich Earth Institute*  
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Kim holds an M.A. in International Administration from World Learning and an M.A. in Educational Leadership from Keene State College. She was a Peace Corps volunteer in Botswana and has taught children of all ages. She coordinated research funded by the MacArthur Foundation and later served as an Elementary School Principal in rural Vermont and in Chennai, India. She created an educational video about composting toilets for her 1989 master's thesis project. Kim and her family use a urine diverting composting toilet.

**Abraham Noe-Hays** *Rich Earth Institute*  
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Abraham has been working with dry sanitation systems since 1990. He holds a B.A. in Human Ecology with concentrations in agroecology and compost science from the College of the Atlantic, where his interest in recycling human manure led to an internship at Woods End Research Laboratory and his thesis project, "[An Experiment in Thermophilic Composting](#)." He has operated [Full Circle Compost Consulting](#) since 2001, providing complete design, manufacture, and maintenance services to individuals and institutions with dry toilet systems. He is also the eco-sanitation expert for [Sustainable Harvest International](#), which he has helped to initiate urine-diversion projects in Nicaragua, Honduras, Panama, and Belize. In addition to hands-on dry sanitation work, Abraham gives lectures and leads workshops at conferences and schools, and writes articles on the topic.

**Rosi Olivan** *The Putney School*  
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Born and raised in Cuernavaca, Mexico, Rosi holds a Chemical Engineer degree from Instituto Tecnológico de Zacatepec in Mexico. She is motivated by the idea of saving water and grant easy access to sanitation. After taking a permaculture workshop in Mexico, Rosi implemented a small urine recycling system at home to fertilize fruit trees. Currently living in Vermont, she is teaching Math and Science at The Putney School and she is looking for ways to implement urine diversion projects with high school students.

**Neil Patel** *Rich Earth Institute*  
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Neil holds a B.S. in Animal Biology from the University of Massachusetts Amherst and aspires to study veterinary medicine. He joined the Rich Earth Institute in 2014 as a three month Intern and has stayed ever since. Since joining, Neil has provided crucial support in conducting field research, and has become an advocate for nutrient reclamation and eco-sanitation. Neil is the Director of the Rich Earth's Urine Nutrient Reclamation Project.

**Audrey Pallmeyer** *University of Michigan School for Environment and Sustainability*  
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Audrey is a graduate of the University of Michigan's School of Social Work, and a Master of Science Candidate at the School for Environment and Sustainability. She is interested in climate change mitigation and adaptation, as well as the relationship between environmental injustice and mental health. Previously a Case Manager with adults experiencing homelessness, Audrey is currently a Graduate Research Assistant on the University of Michigan INFEWS team, studying attitudes toward Urine Derived Fertilizer.

**Hannah Ray** *Arizona State University*  
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I was involved in researching urine diversion for two years at the University of Florida. I specifically worked with waterless urinals and urea hydrolysis inhibition. I'm currently enrolled in a PhD program at for Arizona State University.

**Dylan Raye-Leonard** *University of Michigan*  
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Dylan is an undergraduate student in Environmental Engineering at the University of Michigan, working under professors Nancy Love and Krista Wigginton on the NSF INFEWS-funded urine diversion research project taking place there. His interests lie at the intersection of sustainable agriculture and environmental engineering.

**Enrique Rodriguez** *Graduate Student Research Assistant*  
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Enrique is an environmental engineering master's student at the University of Michigan. This past year he helped construct and operate a urine-diversion treatment room. He is currently developing a tool that will aide in the design of other urine-diversion treatment trains. Enrique will soon begin research on the effects plasma oxidation has on the nutrients, pharmaceuticals, and pathogens in source-separated urine.

**Eric Roy** *University of Vermont*  
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Eric is an Assistant Professor in Environmental Sciences focused on Ecological Design in the Rubenstein School of Environment and Natural Resources at the University of Vermont. Academic degrees in engineering and ecology, with expertise in nutrient cycling and management. Past and current research focused on ecological engineering, water quality, food systems, and sanitation.

**Daniella Sietta** *Arizona State University*  
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Daniella is a PhD student at Arizona State University under the guidance of Trevor Boyer. She has been researching urine diversion technologies since July 2014.

**Malavika Sahai** *Graduate Student Researcher, University of Michigan SEAS*  
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As a student of Environmental Policy and Planning and Environmental Justice, Malavika is involved with the University of Michigan research team working to understand the social feasibility of urine derived fertilizer use in New England and the Midwest. She is entering her second semester of involvement in the work and is involved with talking to key stakeholders about the idea of urine source separation and using urine as a fertilizer.

**Konrad Scheltema** *Rich Earth Institute*

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Konrad holds an M.S. in Geology from the University of Massachusetts where he received a Eugene M. Isenberg award for studies in engineering, management and natural science and a B.S. in Geology from Hampshire College where he received a Jerome Lemelson award for Entrepreneurship. He completed the Outdoor Leadership Program at Greenfield Community College. Eclectic research interests have taken him from the bedrock of New England to the North Atlantic and Antarctica. He has worked in green building, focusing on sustainable construction and design and energy retrofitting of existing homes. His hobbies include music, gardening, woodworking and watercolor painting. He is a relentless tinkerer and inventor.

**Tatiana Schreiber** *Rich Earth Institute*  
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Tatiana received her B.S. in Rural Sociology and Nutrition from Cornell University, her M.A. in Mass Communications from Emerson College and her Ph.D in Environmental Studies from Antioch University Graduate School. Her graduate work examined economic, ecological and cultural sustainability and resilience among coffee and cacao growers in Chiapas, Mexico. She has worked as a public radio journalist and free lances for various print media as well as teaches at area colleges. Her on-going scholarly and activist focus is on ways that agriculture and food can be a means to improve the ecological health of communities. She also operates a small farmstead, Sowing Peace Farm, in Westminster West, Vermont.

**Shawn Shafner** *The POOP Project*  
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Shawn is an artist, educator and activist. Creator of The People's Own Organic Power Project ([www.thePOOPproject.org](http://www.thePOOPproject.org)), he has catalyzed conversation about sustainable sanitation from the top of NYC's largest wastewater treatment plant to the floor of the United Nations. Major works include: *An Inconvenient Poop*, *Flush: The Documentary*, family musical *Innie / Outie*, and ongoing monthly episodes of *SHHH: The Poopcast (aka Sh\*t and Shame with Shawn)*.

**Bruce Southerland** *Ejo Heza*  
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Bruce is a New Hampshire Yankee who promotes ecological sanitation in the remote Rwandan village of Gasarabwayi. Two years ago Bruce introduced a container-based household sanitation system to village leaders. They formed a cooperative business which they named Ejo Heza (A Better Tomorrow). The Ejo Heza system produces urine-inoculated biochar fertilizer and charcoal briquettes for cooking. Bruce's simplified UDDT is odor free and allows pathogen kill-off before emptying the solid waste container. Sixteen test families have been using Ejo Heza toilets for over a year. Another twenty toilets have been built and are ready for Ejo Heza's first paying customers. Besides English, Bruce is fluent in both Biochar and Ecosan dialects.

**Eamon Twohig** *Vermont Department of Environmental Conservation*  
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Eamon is currently the program manager of the Residuals Waste & Emerging Contaminants Program of the Vermont Department of Environmental Conservation, having previously served in the Wastewater Management Program and the Drinking Water & Groundwater Protection Division of VT DEC. Prior to State Government, he conducted research at the University of Vermont (UVM) focused on reducing non-point source and point-source nutrient (primarily phosphorus) and pathogen loading to surface waters via innovative, low cost technologies, such as constructed wetlands and phosphorus sorbing materials, while earning a Master's degree in Plant and Soil Science from UVM in 2012.

**Ngai Yin Yip** *Earth and Environmental Engineering, Columbia University*  
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Dr. Yip is an Assistant Professor at Columbia University, specializing in technologies for the sustainable production of water and energy. The current research focus of his group is on novel desalination techniques to treat hypersaline brine and other challenging streams, and physico-chemical systems that can autonomously recover nutrients from diverted urine in a cost-effective manner.