

*Engineers for a Sustainable World*

**ANNUAL REPORT 2017-2018**



## Our Vision

A sustainable world supported by a network of passionate engineers.

## Our Mission

To empower engineers to tackle sustainability challenges.

## Our Goals

Design and implement hands-on sustainability projects across the globe. Educate students and practicing engineers on sustainability best practices. Unite people who are passionate about sustainability to create a global network.



Engineers for a  
Sustainable  
World



Brittany Bennett, Executive Director

Thank you so much for being a part of Engineers for a Sustainable World's global community. Together, we have made huge advancements in our mission to build a more sustainable world. With our biggest Leadership Team yet at ESW-Headquarters combined with the highest ESW membership at 1,750+ members, we witnessed some impressive achievements this past year.

I want to share a few of my favorites:

- Continued innovation from our members, as exemplified through our Resilient Community Design Challenge winners.
- Impacted 500+ people in two communities through our newest program, Build Day.
- Raised the most funding for the Annual Conference in its 14-year history.
- Received our first grants, opening up doors to grow our programs to new heights

If you are as excited as I am about the upcoming year, I hope you will join us at our Annual Conference in El Paso, TX. As we look to expand our conference globally, our conference will focus on "Borderless Sustainability." I look forward to meeting you in El Paso in April 2019. In the meantime, we will continue to build more sustainable communities across the world.

Brittany Bennett

Nearly 15 years ago, ESW was founded as a network of collegiate chapters dedicated to preparing the next generation of engineers for the challenges of building a more sustainable world. 5 years ago, we relaunched ESW as a newly independent nonprofit that recognized the desire of both students and professionals to implement hands-on sustainability projects in their communities and around the globe. In that short time, our growing membership, chapters, completed projects, corporate and nonprofit partners, and national programs reflect the partial fulfillment of this need.

But we're not done yet.

As we plan out the next 5 years of designing, educating and uniting for a more sustainable world, our programs will be bigger, our network larger and more connected, but our commitment to our members and the world will remain the same. We will bring all of the passion, knowledge and love that engineers have for their communities and our environment face to face with some of the toughest sustainability challenges humanity is experiencing.

Whether you are an engineer or simply value how technical problem solving can help us build a society that is more resilient, just and beautiful, I invite you to join us.

Kyle Gracey

Kyle Gracey, Board Chair



Biofuels Lab Event, CSULB

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Each year, the annual conference brings together students, industry professionals, and faculty from across the country to focus on solving the world's sustainability problems. ESWcon is hosted by a different university every year in an effort to learn more about local government, regional sustainability, and the university chapter.



At the registration table, ESWcon18



This year, we hosted our 14th ESW Annual Conference at the Georgia Institute of Technology in Atlanta, GA.

For three days, 220 people engaged in conversation about the hot topic of the food-water-energy nexus. The conference theme was Building Blocks with content focused on transportation, agriculture, and more. Session tracks included food, water, energy, leadership, and professional development.

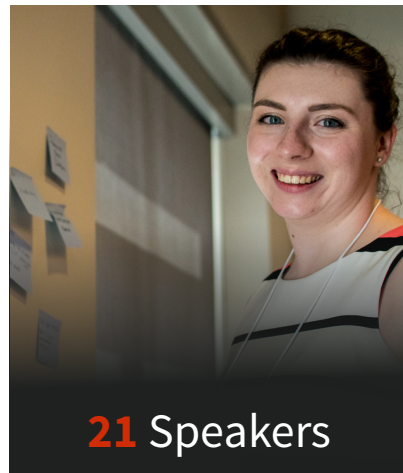
We had 21 different speakers join us from major companies such as Coca Cola and Autodesk to small, local companies like Agritecture and Environmental Entrepreneurs. We also had an increase in government related representatives with attendance from the EPA and the Resiliency Office of Atlanta. Student and professional attendees presented at 9 design reviews and showcased 17 posters. The increase in projects allowed for more discussion among chapters, leading to further inter-chapter communication.



**200+** Attendees



**18** Companies



**21** Speakers

## 2018 ESW Annual Conference at Georgia Tech

The conference had 11 generous companies and independent donors. The increase in funding allowed us to offer exclusive events for professional and student members, speakers, and more collaborative opportunities. Our 4th annual career fair boasted 18 representatives including Berkel and Company, UPS, Covestro, Niagara Bottling and more.

Our student Design Challenge dived into the current public policy debate. Students were split into randomized teams, assigned a country, and asked to draft policy based on a given main objective and the available resources within the country. To achieve these objectives, countries had to address current issues in their country while maintaining good relations with other countries. Finally, an in-depth discussion between all countries took place, similar to a model UN, and a panel of judges from ESW's Board of Directors, conference speakers and professional members facilitated discussion and helped select a winner.

Trivia Night (1), Design Challenge (2), Closing Keynote (3)



We will be hosting our 14th annual conference this year at the University of Texas in El Paso (UTEP) and we're expecting record numbers. Our conference theme at UTEP is "Borderless Sustainability". Join us on **April 4-9, 2019** as we discuss social and economic sustainability, international projects, and more!

**for more information:** [eswcon.com](http://eswcon.com)



The team realized that dried pond algae has material properties similar to cardboard. They made two small boxes with minimal processing as a proof-of-concept for the material.

#### ESW-RIT's Green Cardboard Project



#### Collecting Algae...

The team gathered algae with pitchforks from collection ponds between the hockey rink and the tennis courts. They boiled and filtered the algae to pasteurize and remove debris.

They experimented with a variety of fiber lengths and geometries. After leaving the algae out to dry for two weeks, their experiments met with mixed success, which, even so, the results matched their predictions.

#### ...to Making Cardboard

They flattened the sheets, and using an ordinary cardboard box for reference, they laser-cut the shape of a box into two sheets, choosing the least-warped ones. The algae-cardboard was easy to engrave. After wetting the creases, they folded the sheets to make boxes.

Some of the algae samples were kept for later use, and the rest were left outside to decompose.



#### Sarah East, University of Guelph

Sarah is an engineering student at the University of Guelph, and is one of our Outstanding Members this year. Despite her extremely busy schedule, she put her heart into starting up an ESW chapter at her school, and has spent the last year and a half getting ESW's name out, connecting with faculty, and applying for funding. She also took the initiative to begin their first project, an aquaponics project for their campus food bank. Her actions are truly exemplary of ESW's values and goals, to bring sustainable technology to the community while giving engineering students the opportunity to apply their knowledge on impactful projects.

Sarah East (L), Nick Phillips (R)



#### Kelly McGarland, CalPoly

Chapter President, Kelly and her VP, Tyler Dery, started a chapter at CalPoly at San Luis Obispo this year. Thanks to her constant commitment and positive attitude, the chapter started strong, gathering an active member base in the first two months and quickly gaining funding and support. Kelly really embodies the spirit of ESW, and we are lucky to have her as a part of our organization. That is why she was one of our outstanding member recipients at the ESW National Conference this year.

Raul had a busy year working to make his ESW chapter at the UC San Diego the best it can be. This year he helped implement a Research and Development program focused on organizing project ideas. The program helped add five new projects to their chapter this year, allowing more of their members to gain hands on experience in a technical setting. Additionally, the program gave members valuable leadership tools and experiences to become effective project leaders. Raul's work has improved how his chapter approaches projects. He was awarded an Outstanding Member award for his extraordinary work.

#### Raul Correa, UC San Diego



Kelly McGarland (L), Nick Phillips (M), Raul Correa (R)

## Chapter Project and Member Spotlights



#### UT Austin and Texas A&M's Camping Trip

During the Fall 2017 semester, UT Austin and Texas A&M had a joint camping trip in Bastrop State Park. A total of 25 people from both chapters attended the trip. Throughout the trip, members from both chapters met each other, discussed projects and events, and shared best practices. Activities included cooking fajitas, sitting around the campfire, and hiking.





## Buffalo, New York

During the 2017-2018 pilot stage of the Build Day program, we completed two projects in Buffalo, New York and Oakland, California. The University of Buffalo (UB) and University of California at Berkeley (UCB) ESW chapters worked with community organizations to design and build a sustainable solution to a local problem. Both projects were able to become to fruition with the support from the Awesome Foundation and Langan Engineering.

On the east cost, a team from UB partnered with the Buffalo Center. Led by project leader Austin Izzo, the team devised plans for a solar-powered garden tabletop for the center's outdoor space. The goal was to revitalize the outdoor area while showing off the power of renewable energy. After months of design and ordering, the team was able to make their tabletop come to life, thanks to a grant through the Awesome Foundation. On a rainy day in late April, the team brought all of their supplies out to the center and constructed the solar-powered tabletop garden with a rainwater capture system and wheelchair accessible benches in a single day. This project allowed disabled residents to participate in outdoor therapeutic gardening. More than 200 residents have been impacted since April 2018.



Garden bed with a solar powered self watering system

BUILD DAY

Outdoor garden and chicken coop



On the west coast, a team from UC Berkeley partnered with Hoover Elementary School, where 80% of students are on the free/reduced lunch program. Without a cost-effective solution to providing fresh food, students lacked a diet of healthy veggies and fruits. The team focused on improving the elementary school's garden for the first Build Day project. As a part of this effort, the students made trips to the garden prior to the Build Day event to interact with the children and promote healthy eating. The Berkeley team built a large chicken coop made from wood, recycled bottles, and mud. The team also made a strawberry patch and mulch garden. The day featured an outdoor lunch in the school's garden, as well as music and bike-powered smoothie carts. More than 300 students have been impacted since April 2018.

Build Day will not only provide underserved communities with much needed sustainable solutions, the program will also train the next generation of engineers who can tackle the toughest global sustainability challenges they will face. Moving into our second year, we plan to build more community projects that, by doing so, we will design and build more solutions, educate our communities, and unite sustainable and resilient communities worldwide.

## Oakland, California

# Resilient CommUnity Design Challenge Winner

**neighborhub:** A central organizing point around which the community can share information, water, and energy for improving pre- and post-disaster resilience.

Students Stephanie Koenig, Emi Webb, Adele Therias, Halina Rachelson and Leah Karlberg are participating in ESW's Resilient CommUnity Design Challenge (CommUnity) – an international program that unites college students to collaborate with local organizations on solutions to build local resilience.

The all-women team created the Neighbour Hub to empower community members to prepare for a major earthquake with their neighbors. The structure will not only disseminate resources, first aid, and information, but serve as a social meeting point for community members. The Neighbour Hub is designed to engage local residents in community water monitoring and in developing emergency preparedness plans.

The design features solar-powered LEDs for nighttime visibility, filtered water stations from collected rooftop rainfall, and bike generated power for users to charge their cell phones. Local artists will be invited to codesign the Neighbour Hub to reflect the ideas and cultural diversity of the community.

Neighbour Hub Concept Image



Design Challenge Winners

Students were inspired to take on earthquake resilience after surveying the lack of preparedness of their own community. Adele Therias states, "It is important that people prepare themselves and their families, but it will be most effective if neighbours support each other."

The Neighbour Lab is a multidisciplinary design and urban planning studio that aims to develop neighbourhood-level resilience through civic engagement and co-creation. The studio bridges the gap between City of Vancouver initiatives and community members by developing inclusive, innovative and inspiring solutions with real world implications.

CommUnity has been run for two years and has seen the development of 15 innovative solutions to build community resilience. Through the program, Adele says that she has met "inspiring community leaders and experts who have shown me the passion, energy and collaboration needed to build resilience."

**find out more:** [resilience.eswglobal.org](https://resilience.eswglobal.org)



## A Year in Review



"Education" Photo Challenge Winner, UT El Paso

**50+** Chapters  
**1,750+** Members  
**250+** Projects  
**13** Countries Served

**United** and grew our network of *students & professionals*

### Welcome, New Chapters!

University of Texas at El Paso  
University of Bridgeport  
CalPoly at San Luis Obispo  
University of Akron



**Designed** solutions and **educated** communities through our *exceptional programs*



**100+** Participants  
**570+** Volunteer Hours



**3** Teams from **3** Countries  
**ALL WOMEN** Winning Team

Keep up with us:



**Covestro**  
Platinum



**Lawrence Foundation**  
Platinum

## SPONSORS



**New Belgium**  
Gold



**Autodesk**  
Gold



**Niagara**  
Gold



**UPS**  
Gold



**CAPE Inc.**  
Silver



**Berkel and Co.**  
Silver



**Votorantim Cimentos**  
Silver



**Equifax**  
Silver



**Langan**  
Silver



**Awesome Foundation**  
Silver



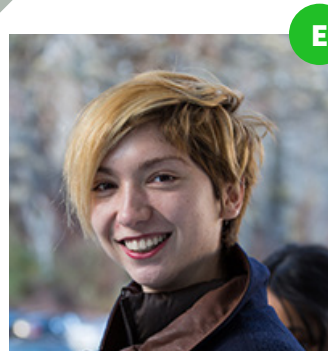
**Dayaway**  
Bronze



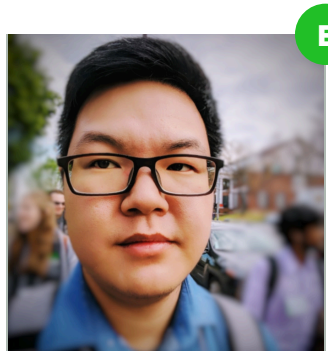
**Spencer Bristol Engineering**  
Bronze

Thank you for your support

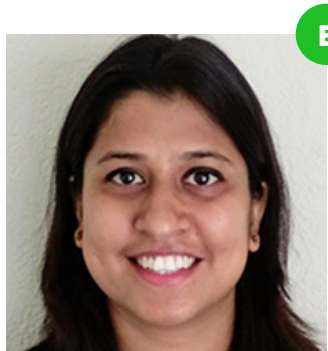




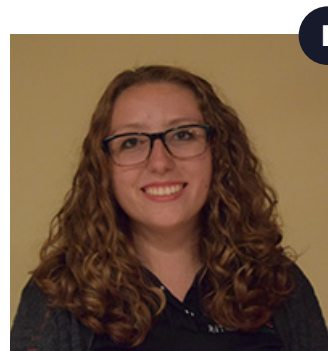
**Brittany Bennett**  
Executive Director



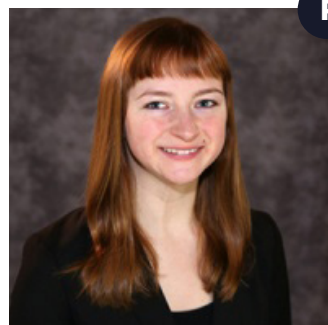
**Sohn Cook**  
Deputy Director



**Shifali Chawla**  
Treasurer



**Zoe Bottcher**  
Build Day Program Director



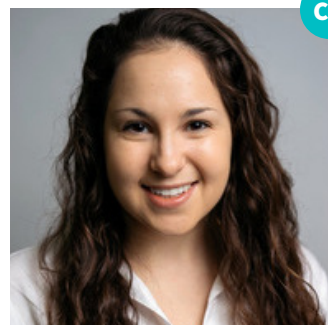
**Alexandria Julius**  
CommUnity Program Director



**Laura Lilienkamp**  
Small Projects Grant Director



**Sophie Hopps-Weber**  
Chapter Relations Director



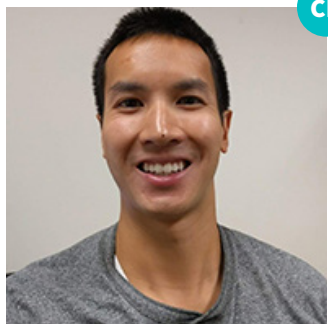
**Sarah Barr Engel**  
Chapter Relations Coordinator



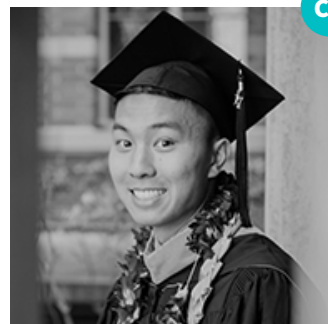
**Priya Danti**  
New Chapter Dev. Coordinator



**Blakeley Ficenec**  
Chapter Relations Coordinator



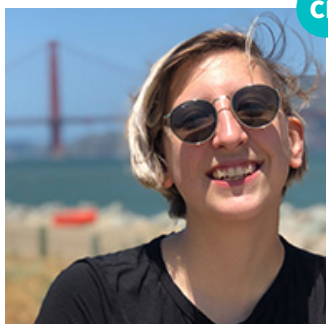
**Stephen Le**  
New Chapter Dev. Coordinator



**Jimmy Luong**  
Chapter Relations Coordinator



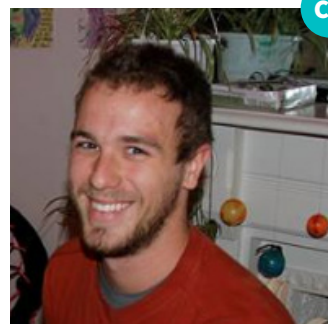
**Jorge Izar**  
Chapter Relations Coordinator



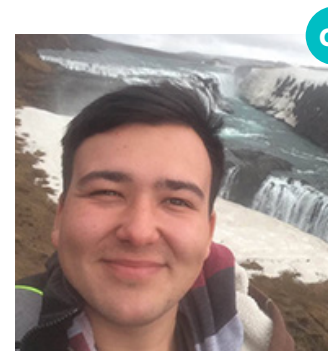
**Andrea Oaks**  
Chapter Relations Coordinator



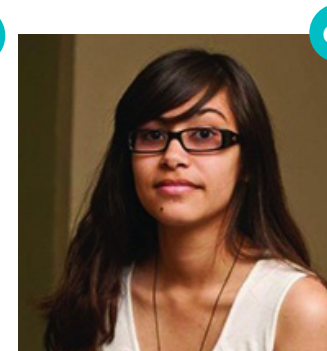
**Molly Patterson**  
Chapter Relations Coordinator



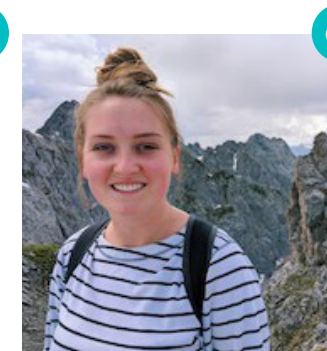
**Troy Salvatore**  
Chapter Relations Coordinator



**Sebastien Selarque**  
International Dev. Coordinator



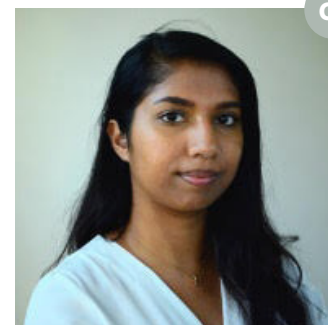
**Rachel Starr**  
Chapter Relations Coordinator



**Amelia Veitch**  
Chapter Relations Coordinator



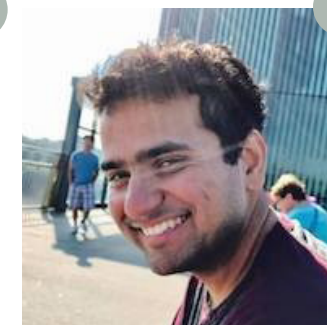
**Alyssa Recinella**  
Annual Conference Chair



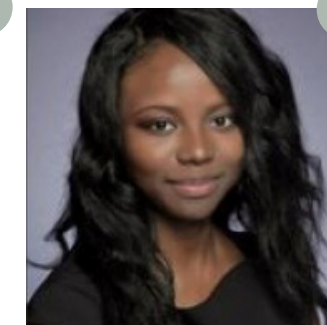
**Ananna Anu**  
Branding Coordinator



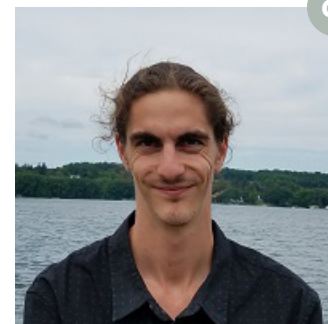
**Mariam Beg**  
Social Media Coordinator



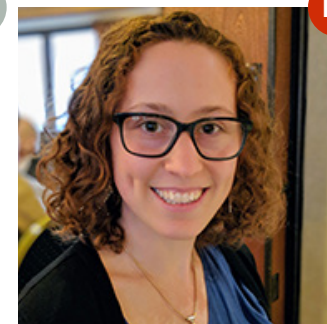
**Shushman Choudhury**  
Content Coordinator



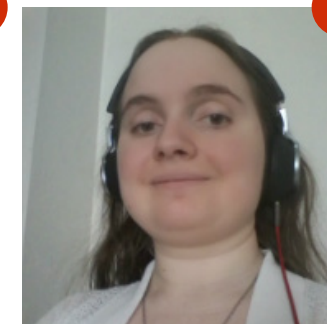
**Egoamaka Egbe**  
PR/Marketing Director



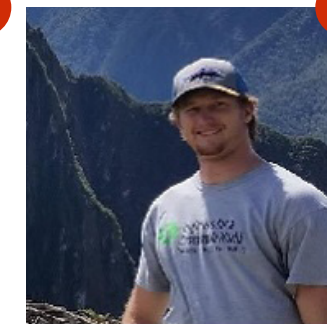
**Gabe Kramer**  
Communications Coordinator



**Yamit Lavi**  
Professional Members Director



**Crystal Andrews**  
Professional Members Coordinator



**Jackson Coleman**  
Professional Members Coordinator

## LEADERSHIP TEAM

Engineers for a Sustainable World is run by a group of dedicated volunteers distributed across the United States. The Leadership Team provides support for our global chapter network and programs.

- E** Executive
- P** Programs
- CR** Chapter Relations

- CT** Communication & Technology
- PR** Professional Relations

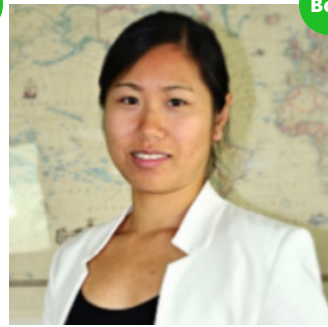


# Board of Directors



BoD

**Kyle Gracey**  
Board Chair



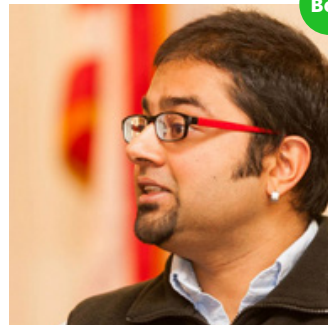
BoD

**Rena Chen**  
Executive Director, Spark Scholars



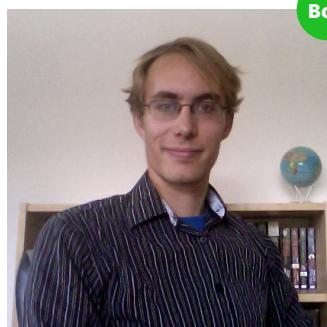
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**Paulo Lopes**  
Environmental Attorney



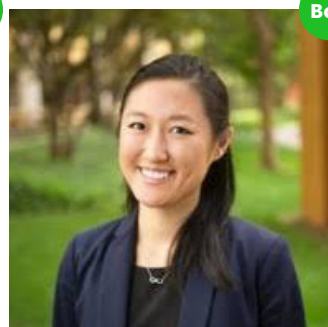
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**Abhilash Kantamneni**  
PhD Candidate, University of Guelph



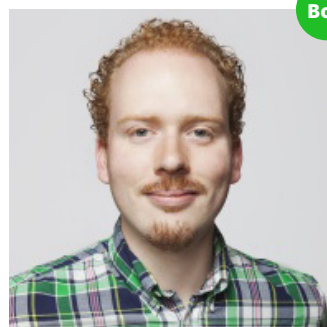
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**Alex Dale**  
Senior Officer,  
Sustainability at Solve, MIT



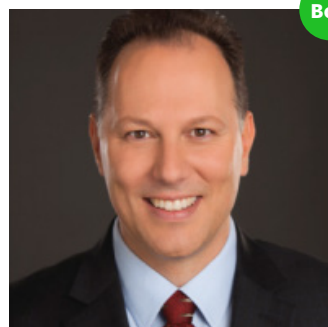
BoD

**Maple Zhang**  
Senior Strategic Planning Manager,  
Walt Disney



BoD

**Brian Lange**  
Partner + Data Scientist,  
Datascope Analytics



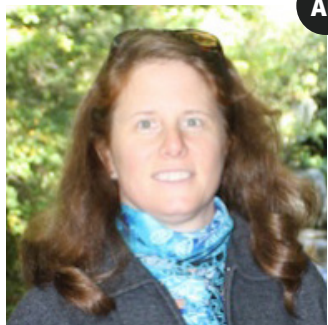
BoD

**Peter Rowan**  
Director of Financial Planning and  
Analysis, Fox Networks Group



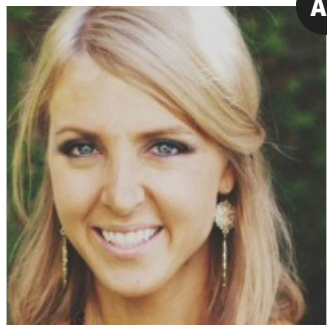
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**Illana Aldor**  
Research Scientist, Bridgestone



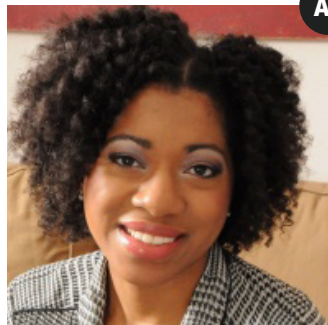
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**Karen Dykeman**  
Technology Education Teacher,  
Liverpool, NY



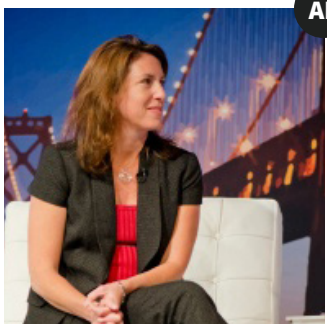
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**Kristin Kielich**  
Operational Strategic Initiatives  
Senior Business Analyst



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**Marilyn Waite**  
Author, Sustainability at Work  
(Routledge)



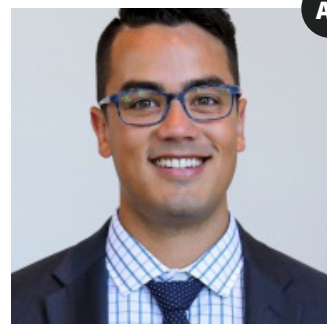
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**Melissa O'Mara**  
Founder & Chief Catalyst, i3Activate



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**Michael Frey**  
Development Officer,  
Association for Energy Affordability



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**Mike Alcazaren**  
MBA candidate,  
Simon Business School

## Advisory Board



# 2017



# 2018





