

THE ENERGY- ENVIRONMENT FUTURE

A SUMMIT EXPLORING

PACIFIC NORTHWEST OPTIONS



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Oregon Renewable Energy Center

November 1, 2019
Oregon Institute of Technology
Portland-Metro Campus | Wilsonville, Oregon

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WELCOME TO THE ENERGY-ENVIRONMENT SUMMIT!



Oregon Tech is pleased to welcome all of you to today's Energy-Environment Summit at the Oregon Institute of Technology ("Oregon Tech"). As the state's only polytechnic university, we take our role seriously as a supplier of top talent in engineering, technology, healthcare and other applied arts and sciences degrees at the bachelor's and master's levels. Besides the engagement of professionals in the fields of energy and environment, we're also excited to have our faculty and students play a role in today's program.

Today's Summit is part of Oregon Tech's role as "industry's university" to convene stakeholders from the energy field, as well as those areas of overlap with the state's and region's environmental stewardship and advocacy. You will see many of your colleagues on the stage today as speakers; but we also hope to introduce you to some new voices in the field who have unique perspectives, voices that are not always showcased at industry summits such as this.

Thank you for taking the time out of your busy professional lives to spend the day at Oregon Tech. Please let us know your comments about the day on the short evaluation in your Summit packet; or I'd love to hear from you directly at President@oit.edu.

Best wishes,

Nagi G. Naganathan, Ph.D., ASME Fellow
President
Oregon Institute of Technology



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- Legacy Emanuel Health Center
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- Oregon Tech
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SCHEDULE

8 am - 8:45 am

REGISTRATION AND CONTINENTAL BREAKFAST

8:50 am

LOGISTICS AND “HOUSEKEEPING” ANNOUNCEMENTS

Di Saunders, *Associate Vice President, Public Affairs, Oregon Institute of Technology*

WELCOME TO THE SUMMIT

Dr. Nagi Naganathan, *President, Oregon Institute of Technology*

9 am - 9:55 am

PREPARING FOR THE BIG ONE: ENERGY RESILIENCY AFTER A NATURAL DISASTER OR CYBER ATTACK

Given past and recent experiences with natural and man-made disasters as well as grid penetration by unfriendly sources, energy resiliency and restoration during and after a disaster is a major concern that must be addressed within the industry and among academics. Do Pacific NW energy providers have disaster recovery plans in place in the event of a major earthquake, tsunami, flood, wind storm or other natural disaster? And what have providers done to protect against cyber threats and crimes from terrorists or unfriendly countries or forces to ensure our electric grid is protected? What are the risks? Where are the gaps?

Moderator/Speaker: Skip Newberry, *Treasurer, Oregon Cybersecurity Advisory Council, President & CEO, Technology Association of Oregon*

Panelists: Janine Benner, *Director, Oregon Department of Energy*; Dan Orzech, *Oregon Clean Power Co-operative*; Sanman Rokade, *Manager, Transmission GridOps-Energy, PacifiCorps*

10 am - 10:55 am

KEYNOTE ADDRESS

Preparing for the state's and region's energy future through innovation, collaboration, and diversification of energy sources and solutions.

Keynote Speaker: Maria Pope, *President and CEO, Portland General Electric (PGE)*

Moderator: Michael Colgrove, *Executive Director, Energy Trust of Oregon*

Respondents: Annika Andersen-Kallstrom, *Statewide Winner, InventOR 2019, Reclaimers Team and Renewable Energy Engineering Student, Oregon Tech*; Ian Riley, *Renewable Energy Engineering Student, Oregon Tech*

11 am -11:55 am

THE CARBON LANDSCAPE: FORESTS, BIOMASS AND CARBON MITIGATION

Timber harvests, invasive woody species and wildfire risk reduction generate significant biomass waste that is typically piled and burnt. These forest residues lack a direct market value as wood or fiber products yet represent biomass that can be utilized for energy production in bioenergy plants such as torrefied wood pellets, and biochar in agriculture which increases productivity while sequestering carbon and other potential value added products. Can small ventures currently in place be up-scaled and what is their potential? Is this only feasible for rural areas in the NW, or are there broader applications?

Moderator/Speaker: Dr. Jherime Kellerman, *Associate Professor, Environmental Sciences Program Director, Oregon Tech*

Panelists: John Miedema, *Founder, Northwest Biochar Initiative, Biological LLC*; Jim Archuleta, *Soil Scientist, U.S. Forest Service*; Meagan Hartman, *Project Development Manager, Wisewood Energy*

11:55 am - 12 pm

WELCOME FROM WILSONVILLE CHAMBER OF COMMERCE

Mayor Tim Knapp, *City of Wilsonville*

Holli Thomas, *Member Success Manager, Wilsonville Area Chamber of Commerce*

12 pm - 12:45 pm

LUNCH BREAK AND ENGAGEMENT OPTIONS

Attendees can grab a boxed lunch as well as take advantage of one or more lunch time activities below:

Lunch Option A: Student Poster Competition [Room 106] Tour the poster session and learn about some innovative energy and environment related projects and inventions from Oregon Tech students and see their latest research work. Attendees can vote on their favorite student posters with a prize for the top presentations.

Lunch Option B: Tour of Oregon Tech Energy and Innovation Labs

Tours Depart from 1st floor lobby at 12:10 and 12:25 (Meet under the “big screen”)

Lunch Option C: Check out sponsors tables and information tables for Oregon Tech Student Clubs [1st Floor Lobby]



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12:55 pm -1:55 pm

NO PEOPLES LEFT BEHIND: ENVIRONMENTAL JUSTICE FOR UNDERSERVED COMMUNITIES

In the places where communities live, work, and play, environmental justice focuses on community health and well-being, peoples' connection to place, and activism and policy advocacy that addresses inequities in environmental impacts. What are organizations doing or should do to consider use, access and distribution of energy projects and programs for lower-income and under-served populations, in both urban, rural and tribal areas in Oregon and the Pacific NW? While these access issues present challenges, they also present opportunities to come together as collective environmental and energy stewards, and to promote healing in those communities that the majority population has often left behind in energy and sustainability discussions, policy and practice.

Moderator/Speaker: Jaimes Valdez, *Portland Clean Energy Fund, City of Portland Bureau of Planning & Sustainability*

Panelists: Amy Berg-Pickett, *Senior Community Engagement Manager, Cypress Creek Renewables*; Abe Fouhy, *Renewable Energy Faculty, Clackamas Community College*; Dr. H. J. Corsair, *Associate Professor, Renewable Energy Engineering, Oregon Tech*

2 pm -3 pm

POWER UP, POWER ON, POWER EVERYWHERE: ENERGY STORAGE, RECYCLING AND DISTRIBUTION APPROACHES FOR TODAY AND TOMORROW

Renewable energy is no longer an upstart alternative, but a primary source of new power generation. As more of our power comes from wind, solar and other intermittent resources, utilities will need new technologies and approaches to balance the distribution grid. What are industry, academia and government doing to support the development and deployment of battery storage and other distributed energy resources that will allow utilities to integrate more renewable energy into a smarter, more flexible grid? Energy storage and other sources of grid flexibility will be explored, with a focus on the state of the technology, policy and industry in the Pacific Northwest.

Moderator/Speaker: Dave McClelland, *Senior Program Manager for Solar, Energy Trust of Oregon*

Panelists: Eklas Hossain, *Assistant Professor, Electrical Engineering & Renewable Energy, Oregon Tech*; Angela Crowley-Koch, *Executive Director, Oregon Solar Energy Industries Association*; Kyle Jenkins, *Graduate Student, Energy Storage Initiative and Teaching Assistant, Renewable Energy Engineering, Oregon Tech*

3:10 pm - 3:55 pm

WHAT'S NEXT IN THE NORTHWEST'S ENERGY AND ENVIRONMENT FUTURE?

How can we as an energy and environment community unite and collaborate on the important conversations about the Northwest's energy future? What does the public care about? Can we move the state towards a better balance of energy sources? Who are the natural conveners? What role does climate change have in acknowledging need for change and designing our next generation energy sources and systems? How are we preparing the next-generation of our energy/environment workforce to be good stewards and innovators in the field? How do we work together to ensure a clean, healthy environment for future generations and support the diversity of the Northwest's clean energy providers?

Moderator/Speaker: Pete Danko, *Energy Industry Reporter, Portland Business Journal*

Panelists: Fred Ziari, *President of IRZ, ezWireless, and Zeco*; Mason Terry, *Executive Director, Oregon Renewable Energy Center*; Kristi Lebkowsky, *Science and Engineering Teacher, Henley High School, Klamath Falls*

4 pm - 4:10 pm

CLOSING REMARKS

Dr. Joanna Mott, *Provost, Oregon Tech*

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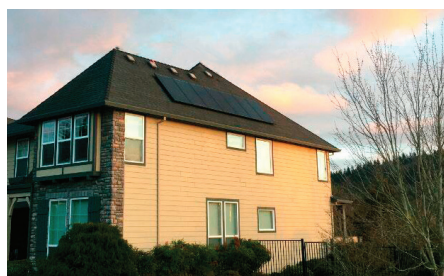
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SPEAKERS AND PANELISTS

KEYNOTE SPEAKER

MARIA POPE

PRESIDENT AND CEO, PORTLAND GENERAL ELECTRIC



Maria Pope is president and CEO of Portland General Electric (PGE), Oregon's largest electric company. Pope works with customers, community members and government officials to lead Oregon's clean energy future. Pope joined PGE in 2009 as CFO and treasurer. She also oversaw the company's power generation facilities, wholesale power marketing and long-term resource strategy as senior vice president of Power Supply, Operations and Resource Strategy. From 2006 to 2008, she was a member of PGE's board of directors. Prior to PGE, Pope was CFO of Mentor Graphics Corporation and held senior operating and finance positions within the forest products and consumer products industries. She began her career in banking with Morgan Stanley & Co. Pope serves on the Oregon Global Warming Commission as well as other boards and commissions, including the Oregon Business Council and the Electric Power Research Institute. Pope is an alumna of the Stanford Graduate School of Business and earned her bachelor's degree from Georgetown University.

ANNIKA ANDERSEN-KALLSTROM

STUDENT, RENEWABLE ENERGY ENGINEERING, ELECTRICAL ENGINEERING, OREGON TECH



Annika is studying Renewable Energy Engineering and Electrical Engineering at the Oregon Tech Klamath Falls campus. She is a hydropower enthusiast and has a keen interest in grid integration of renewable energy sources. She was a 2017 Hydro Research Foundation Merit Award winner. She interned as a student engineer at Pacific Power for nearly two years, and most recently completed a summer internship at Chelan PUD's Rocky Reach Dam on the Columbia River. For her senior project she worked with two Mechanical Engineers to develop a prototype that turned waste plastics back into crude oil. These three women won the 2019 InventOREGON collegiate entrepreneurship competition with their project. During her spare time Annika can be found reading a good book, running, catching up with friends and family, spending time with students at the Oregon Tech Christian Fellowship group, playing Frisbee with her husband or exploring creation through hiking.

JIM ARCHULETA

R6 WOOD INNOVATION COORDINATOR, USDA-FOREST SERVICE



Following graduation from Oregon State University, Archuleta began working for the Forest Service as a district soil scientist on the Umpqua National Forest in Oregon. Rising to the position of forest soil scientist in 2011 on the Umatilla NF, Jim was named Field Soil Scientist of the Year. Within the discipline of soils, Archuleta became interested in biochar as a soil amendment nearly 10 years ago. In 2017, Archuleta, began working in biomass and wood innovation, as a natural progression of the biochar work. The R6 biomass and wood innovation program work covers mass timber, bio-energy and biochar, all of which can utilize some measure of biomass as a feedstock for manufacturing.

JANINE BENNER

DIRECTOR, OREGON DEPARTMENT OF ENERGY



Janine Benner is the director of the Oregon Department of Energy (ODOE). Janine joined ODOE in 2017 as assistant director for Planning and Innovation and was confirmed by the Senate as ODOE's director in February of 2018. Janine came to ODOE from the U.S. Department of Energy (DOE), where she served as associate assistant secretary in the Office of Energy Efficiency and Renewable Energy, the largest government funder of clean energy research and development. Before that, she served as deputy assistant secretary in DOE's Office of Congressional and Intergovernmental Affairs. Janine also spent 12 years working for Congressman Earl Blumenauer (D-OR), first as an energy and environmental policy advisor and then as deputy chief of staff. She grew up in Portland, OR and has a degree in history from Princeton University.

AMY BERG-PICKETT

SENIOR COMMUNITY ENGAGEMENT MANAGER, CYPRESS CREEK RENEWABLES



Amy has a BS in Sustainability and a BA in Liberal Studies from Oregon State University that led to 5 years working in utility solar scale development. The focus of this work is in the Northwest, with a focus on Oregon. Amy is a permitting and stakeholder engagement specialist for solar farm development. She utilizes sustainable development theories to inform the development cycle of ground-mounted solar. This has been beneficial in working with neighbors, communities, and authorities having jurisdiction throughout Oregon counties. Amy has worn many hats during solar development and has a hand in project work from the ground up until the project is generating clean renewable energy. Amy has a passion for renewables and sustainable economic development.

MICHAEL COLGROVE

EXECUTIVE DIRECTOR, ENERGY TRUST OF OREGON



Michael joined Energy Trust of Oregon as executive director in 2016, after 15 years with the New York State Energy Research and Development Authority (NYSERDA) where he was both the director of the New York City office and director of Multifamily Programs. He has extensive experience in designing, developing and implementing energy-efficiency programs that help to accelerate broad market adoption of clean energy solutions. Prior to his work with NYSERDA, Michael spent nearly six years working with low-income multifamily programs throughout New York, including implementing a program to encourage the installation of electricity reduction measures, developing environmental education programs for inner-city youth and providing building energy assessments with the Weatherization Assistance Program. He is a graduate of the New York Institute of Technology's Energy Management master's program and earned his Bachelor of Science degree in Environmental Science at the University of Alaska Fairbanks.

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Contact Mason.Terry@oit.edu

DR. H.J. CORSAIR

ASSOCIATE PROFESSOR, OREGON TECH



Dr. H. J. Corsair attended Lehigh University in Bethlehem, Pennsylvania, to study engineering as an undergraduate student. She has a long-standing interest in energy and worked as a resource planning engineer and later as a consultant in economic modeling in the electric utility industry. She left industry to pursue a master's degree in Civil and Environmental Engineering from the University of Colorado in Boulder. She completed her thesis on the cost-effectiveness of PV systems while engaged as a research assistant at the National Renewable Energy Laboratory in Golden, Colorado, and was awarded her M.S. degree in 2005. She furthered her graduate studies at The Johns Hopkins University in the Department of Geography and Environmental Engineering, and completed her doctoral studies there researching the causes of success and failure of stand-alone renewable energy systems in rural Guatemala, earning a Ph.D. in 2014. In 2011 she accepted a position on the faculty of the Electrical Engineering and Renewable Energy department at Oregon Institute of Technology. She currently serves as chair of that department. Her areas of teaching and research include energy in developing world contexts, energy and climate change, and electricity markets.

ANGELA CROWLEY-KOCH

EXECUTIVE DIRECTOR, OREGON SOLAR ENERGY INDUSTRIES ASSOCIATION



Angela Crowley-Koch has spent the last two decades in public policy and advocacy. Previously the legislative director at Oregon Environmental Council, her work was instrumental in passing the Toxic-Free Kids Act, renewing the Clean Fuels Program and getting coal out of Oregon's electricity mix, among other bills. She worked for Senator Jeff Merkley as part of his Blue Wave Project in 2018, as a legislative assistant in D.C., and as the call room manager on his 2008 campaign. While in D.C. she negotiated policy for Oregon in the Food Safety Modernization Act and the MAP-21 transportation package, including closing a loophole in the Buy America rules, among other policies.

PETE DANKO

REPORTER, PORTLAND BUSINESS JOURNAL



Pete Danko has written about energy, cannabis and wine for the Portland Business Journal since 2016. Previously, he was renewable energy editor for the website BreakingEnergy.com and contributed to National Geographic's Great Energy Challenge website. Pete has a degree in economics from the University of California, Berkeley.

ABE FOUHY

RENEWABLE ENERGY FACULTY, CLACKAMAS COMMUNITY COLLEGE



Abe Fouhy is the program head and main instructor for the 2 year associate Renewable Energy Technician degree at Clackamas Community College. Abe got his start in alternative fuels, building hydrogen powered cars and fuel cells, and has worked in several renewable energy industries including solar, wind, fuel cells, and biofuels over the past 22 years. Son of a farmer who lived in the city, Abe has a unique perspective on how renewable energy helps different people and locations. His passion for renewable energy transfers to his students so that they may learn the skills for high paying rewarding careers in renewable energy.

MEAGAN L. HARTMAN

PROJECT DEVELOPMENT MANAGER, WISEWOOD ENERGY



Meagan Hartman has been with Wisewood Energy for nearly half a decade. Meagan leads advanced wood energy projects from sales generation through the preliminary engineering stage of development, ensuring client objectives are incorporated throughout the design process. Meagan holds a master's degree in Forest Ecosystems and Society from Oregon State University and a bachelor's degree in Environmental Studies from Lewis & Clark College in Portland, Oregon, and has a diverse background in fire ecology, collaborative lands governance, small private forestland resource development, and ecosystem services. When she's not working you can find Meagan with her husband on their property, busy with land projects.

DR. EKLAS HOSSAIN, PHD PE CEM REP

ASSISTANT PROFESSOR, OREGON TECH



Eklas Hossain received his PhD from the College of Engineering and Applied Science at University of Wisconsin Milwaukee. He received his MS in Mechatronics and Robotics Engineering from International Islamic University of Malaysia in 2010 and BS in Electrical & Electronic Engineering from Khulna University of Engineering and Technology, Bangladesh in 2006. Dr. Hossain has been working in the area of distributed power systems and renewable energy integration for the last ten years, publishing a number of research papers and posters in this field. He is now involved with several research projects on renewable energy and grid-tied microgrid system at Oregon Tech, as an assistant professor in the Department of Electrical Engineering and Renewable Energy since 2015. He is currently serving as an associate editor of IEEE Access. He is a registered Professional Engineer (PE) in the state of Oregon. His research interests include modeling, analysis, design, and control of power electronic devices; energy storage systems; renewable energy sources; integration of distributed generation systems; microgrid and smart grid applications; robotics, and advanced control system. He is the winner of Rising Faculty Scholar Award 2019 from Oregon Tech.

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KYLE JENKINS

GRADUATE STUDENT, ENERGY STORAGE INITIATIVE AND TEACHING ASSISTANT, RENEWABLE ENERGY ENGINEERING, OREGON TECH



Kyle is an Air Force veteran with six years experience in network administration. After separating from the military in 2015 he wanted to change his career path to something where he felt like he could make a difference in the world. To this end, he enrolled in the Renewable Energy Engineering program at Oregon Tech. Currently, he is in his first year of the MSREE program and will graduate in June of 2021. He hopes to eventually work with renewable energy technologies as a project manager or systems engineer to assist in the transition away from fossil fuels as a main energy source.

DR. JHERIME L. KELLERMAN

ASSOCIATE PROFESSOR, ENVIRONMENTAL SCIENCE, OREGON TECH



Jherime Kellerman is the current director of the Environmental Science Program at Oregon Tech. His background is in wildlife habitat ecology and conservation. His work spans broadly across sustainability, environmental change, and environmental health. His research focuses on the phenological responses of plants and animals to climate-driven environment change including the synchrony of migratory birds with their habitat and the impacts of changing snow-packs and snow melt timing on mountain ecosystems. He is also involved in sustainability issues, non-motorized recreational trail development and human and public health.

TIM KNAPP

MAYOR, CITY OF WILSONVILLE



Tim Knapp has served as the City of Wilsonville's top elected official since 2009. He leads Wilsonville's efforts in economic development, regional community relations and "smart-growth" urban-development strategies. Appointed to fill a vacancy on Wilsonville's City Council in 2003, Knapp was elected to the Council the following year. He had previously served on the city's Development Review Board, which reviews and takes quasi-judicial action on land-use applications, and was president-elect of Wilsonville's Chamber of Commerce. Since 2011, Mayor Knapp has represented Clackamas County Cities on the greater-Portland Metro regional government's transportation advisory board, Joint Policy

Advisory Committee on Transportation (JPACT). In April 2019, he was appointed to Metro's Transportation Funding Task Force to help shape a regional transportation funding measure. His career includes a decade in progressively responsible positions within the property-casualty insurance claims industry and two decades of self-employment in the automobile accessory manufacturing and distribution business. Mayor Knapp and his wife Melodee, who have three grown children, have been Wilsonville residents since 1986. They operate Old Town Village, a neo-traditional style, mixed-use commercial/industrial business center in Wilsonville.

KRISTI LEBKOWSKY

ENGINEERING AND SCIENCE TEACHER, HENLEY HIGH SCHOOL



Kristi completed her B.S. and M.S. in Chemistry from University of Oregon. She worked as an engineer in the semiconductor industry after completing her master's degree. She is an Air Force wife which has influenced her path to academia after leaving industry. After completing an MEd program she taught community college chemistry for a short time. She attended graduate school at Tulane University, completing her doctorate in chemistry. Her research was related to renewables and generating molecular hydrogen through a photo-induced reaction utilizing an inexpensive nickel catalyst to pluck hydrogen from proton donors. Her family's military-led pathway brought them to Klamath Falls where she is in her fifth year teaching in the K-12 school system. Kristi teaches 7-12 grade engineering, offering students a 4-year high school pathway that includes aerospace engineering. She oversees four clubs including a high school engineering club, a middle school engineering club, a robotics club, and the Chief Science Officer Program which includes two after school STEM programs for elementary students. She loves sharing her passion for science with her students. Additionally, Kristi also runs Klamath Falls' only competitive gymnastics program and her favorite activity is spending time with her 8-month old son.

DAVE MCCLELLAND

SR. PROGRAM MANAGER - SOLAR, ENERGY TRUST OF OREGON



Dave McClelland is senior program manager for Energy Trust of Oregon's solar incentive program. Since he joined Energy Trust in 2006, the program has supported 15,000 solar installations on Oregon homes and businesses and been nationally recognized for its innovative market development work. Energy Trust's solar team is currently focused on strategies to increase solar adoption among low- and moderate-income customers and to prepare for a market where advanced solar plus storage systems provide benefits for both customers and the grid. Dave received his Bachelor of Arts from Grinnell College and was one of the first graduates of Oregon Tech's Renewable Energy Engineering program.

JOHN MIEDEMA

CEO & FOUNDER, BIOLOGICAL CARBON, LLC



John Miedema is an internationally recognized leader, researcher, and developer of biochar technology. John is a sought-after speaker at events hosted by national and international government agencies, NGO's, trade groups and universities. He is founder and CEO at BioLogical Carbon, LLC (BLC) in Philomath, Oregon. BLC's primary mission is applied research and production of high-quality biochar products for the remediation of environmental toxins and building soil fertility. As the director of biomass energy for Thompson Timber and Starker Forests in Philomath, John built an integrated pyrolysis and gasification facility for biochar research at a log-chipping yard. At this site today, BLC produces biochars from various streams of under-utilized feedstock from the farming, livestock, and timber industries. These "designer" chars are being used in research at a number of universities, government and private industrial and agricultural projects. John is also the founder of the Pacific Northwest Biochar Initiative and has taken a leadership role in biochar advocacy and research since 2007.

DR. JOANNA MOTT

PROVOST AND VICE PRESIDENT FOR ACADEMIC AFFAIRS, OREGON TECH



Dr. Mott joined Oregon Tech as provost and vice president for Academic Affairs in the summer of 2019. Previously Dr. Mott served as dean and professor of Biological Sciences in the College of Natural Sciences and Mathematics at California State University, Sacramento. Before her deanship at Sacramento State, Dr. Mott was department head of Biology at James Madison University, and a faculty member and department chair of Life Sciences at Texas A&M University-Corpus Christi. Mott received a Ph.D. in Soil Science (Microbiology) from Texas A&M University, a M.S. in Biology from the University of Waterloo, Canada, and a B.S. in Biological Sciences from the University of Aston, Birmingham, U.K.

DR. NAGI G. NAGANATHAN

PRESIDENT, OREGON INSTITUTE OF TECHNOLOGY (OREGON TECH)



Dr. Nagi Naganathan began his tenure as the 7th President of Oregon Institute of Technology in April 2017. He focuses internally and externally to extend the reach, recognition and influence of the state's only polytechnic university. His leadership helped Oregon Tech secure capital and operating budgets, including a new engineering and technology facility for Oregon Tech. He has begun or expanded several new partnerships, including corporate and higher education collaborations such as OMIC R&D. Prior to joining Oregon Tech, Dr. Naganathan served as Dean of the College of Engineering at The University of Toledo for 15 years; was UT's interim president during 2014-15; was

founding chairperson of the Mechanical, Industrial, and Mechanical Engineering department; and was a member of the faculty beginning in 1986. As dean, UT's College of Engineering achieved historically high student enrollment, and implemented a mandatory co-operative experience program – one of only eight in the nation – to exceed 18,000 placements, in partnership with more than 2,500 employers. Dr. Naganathan earned his bachelor's degree in mechanical engineering from the National Institute of Technology at Tiruchirappalli, University of Madras; a master's degree in mechanical and industrial engineering from Clarkson University; and a Ph.D. in mechanical engineering from Oklahoma State University.

SKIP NEWBERRY

PRESIDENT AND CEO, TECHNOLOGY ASSOCIATION OF OREGON



Skip is a frequent speaker on technology trends and topics, economic development, public-private partnerships and civic innovation. Before joining the TAO, Skip served as an economic development policy advisor to Portland Mayor Sam Adams, where he helped create Portland's first comprehensive economic development strategy in 16 years, recognizing software as a key industry cluster. While at the City of Portland, Skip's projects included the adoption of the nation's first open source software procurement policy at the municipal level, an award-winning regional open data initiative and the development of resources to support entrepreneurship, like the Portland Seed Fund. Previously, Skip

was a corporate and IP attorney and entrepreneur. Skip is Chairman Emeritus of the Board of Directors of TECNA, Technology Councils of North America, which is a global network of technology and entrepreneurship associations; and he serves on the community advisory board for Wells Fargo and several community-based organizations in the Portland area. Skip is also a 2012 recipient of the Portland Business Journal's 40 Under 40 award.

DAN ORZECH

GENERAL MANAGER, OREGON CLEAN POWER COOPERATIVE



Dan Orzech is the general manager of the Oregon Clean Power Cooperative, the only state-wide renewable energy co-op in the U.S. A native Oregonian, and graduate of Reed College, he has worked in the solar industry for the last decade, developing or consulting on a total of more than 25 megawatts of solar projects across the U.S.

IAN RILEY

RENEWABLE ENERGY ENGINEERING STUDENT, OREGON TECH



Ian Riley is a Renewable Energy and Electrical Engineering student at Oregon Tech in Klamath Falls. He has worked on the Solar Aerator project on Klamath Lake which is addressing the die-off of fish on the endangered species list by pumping oxygen into the lake during periods of high algae blooms which reduce oxygen in the lake. Ian was accepted into the competitive MECOP program (formerly known as the Multiple Engineering Cooperative Program), which is focused on providing training and development for the next generation of professionals through paid internships. Ian is also assistant manager at the Oregon Renewable Energy Center in Klamath Falls.

SANMAN ROKADE

MANAGER, PACIFICORP GRID OPERATIONS-ENERGY



Mr. Rokade is an electrical engineer with emphasis on power systems and is the manager for Grid Operations-Energy at PacifiCorp control center. He is responsible for Balancing Authority and Energy Imbalance Market operations within PacifiCorp System Grid Operations. He has been part of PacifiCorp Grid Operations since 2010 and has a comprehensive level of expertise with Grid Operations Reliability Planning, Energy Management System (EMS) and SCADA protocols used to support real time transmission and generation operations. Mr. Rokade is an active participant in industry wide work groups across the Western Electricity Coordinating Council (WECC) and has participated in numerous blackout restoration drills hosted by the reliability coordinator across WECC. He is also involved in preparing emergency business recovery plans for PacifiCorp real time grid operations.

DIANE “DI” SAUNDERS

AVP COMMUNICATIONS & PUBLIC AFFAIRS, OREGON TECH



Diane “Di” Saunders joined Oregon Tech in July 2014 as associate vice president for Communications and Public Affairs. She manages the university’s external and internal marketing/communications/public affairs (MarCoPa) strategy to effectively communicate Oregon Tech’s mission, programs, brand, and new ventures. Di supports the president and leadership with executive communications, manages crisis and legislative communications, and coordinates marketing for the Oregon Manufacturing Innovation Center R&D. Prior to joining Oregon Tech, Di was director of communications for Oregon University System, was vice president for Communications and Public Affairs at the Nellie Mae Education Foundation in Boston, and held the same position at Nellie Mae student loan corporation where she also worked extensively in the area of student loan debt management and research. Di worked internationally in Botswana, Africa for six years, first as a secondary school English teacher in the Peace Corps, and later as a private consultant for the Ministries of Education and Local Government and Lands.

DR. MASON TERRY

DIRECTOR, OREGON RENEWABLE ENERGY CENTER (OREC)



Dr. Terry is the director of the Oregon Renewable Energy Center (OREC), program director for the electrical and renewable energy engineering degree at Oregon Tech, and teaching faculty with this department. He is also an alum of Oregon Tech from 1999. He obtained his MSEE from the University of Washington and PhD in photovoltaic and renewable energy engineering for the University of New South Wales, Australia. While completing his PhD he joined Innovaligh, a silicon nano-particle solar cell R&D startup in Silicon Valley where he held rolls as senior device engineer and technology lab manager. Innovalight was purchased by DuPont, where Dr. Terry held the roles of global reliability manager for photovoltaic cells and modules, and led the build of the Silicon Valley consumer electronics R&D/prototyping lab. He is a veteran of the US Navy and Army, an organic farmer, and board member of the Modoc Point Irrigation District.

HOLLI THOMAS

MEMBER SUCCESS MANAGER, WILSONVILLE AREA CHAMBER OF COMMERCE



Holli’s career started with owning her own business in Central Oregon. Having 13 years of business experience, she made the switch to Chambers of Commerce, where she could use her knowledge to help other small businesses thrive. She comes from a small town, giving her a unique perspective on the value of business and community. Holli has had the honor of working with a very diverse population, allowing her to understand different cultures through organized events, as well as business and legislative guidance. Holli has done consulting for many years to assist businesses in maneuvering through various processes and has had a successful career in tourism. Holli is the newest member of a two-person team at the Wilsonville Area Chamber of Commerce.

JAIMES VALDEZ

PORTLAND CLEAN ENERGY FUND TEAM, CITY OF PORTLAND BUREAU OF PLANNING AND SUSTAINABILITY



Jaimes leads policy development and works to strengthen community partnerships in the launch of the Portland Clean Energy Fund. He brings over 15 years of experience working to broaden opportunities for people to access the benefits of clean energy and achieve social and environmental goals. Through prior roles at regional non-profits and local government, he has helped launch a number of energy initiatives and advocated in regulatory and legislative proceedings. In 2012, Jaimes spent a year in Germany as a Robert Bosch Fellow researching the integration of renewables and development of community-based financing tools. He holds a B.A. in Physics and Environmental Studies from

Whitman College and has served on numerous non-profit boards, helping build local sustainability efforts in communities around the Pacific Northwest.

FRED ZIARI

PRESIDENT, IRZ, EZWIRELESS, AND ZECO



Fred Ziari is president of IRZ, ezWireless, and Zeco, companies that are well-known for water and energy management technologies in irrigated agriculture. He has spent the last 30 years advancing water management, irrigation technologies and efficient use of water for farms and Agri-industries. His organizations provide global consulting services in sustainable water resource management focusing on irrigated agriculture and a number of "Smart Farm Technologies," including sensor technologies, IT, and broadband wireless for a sustainable farming operation. Mr. Ziari is the past chair of Oregon Engineering Technology Industry Council (ETIC) and member of Oregon Innovation Council. He is

founder and chair of Farmers Ending Hunger and chair of Umatilla Basin Watershed Council Foundation.

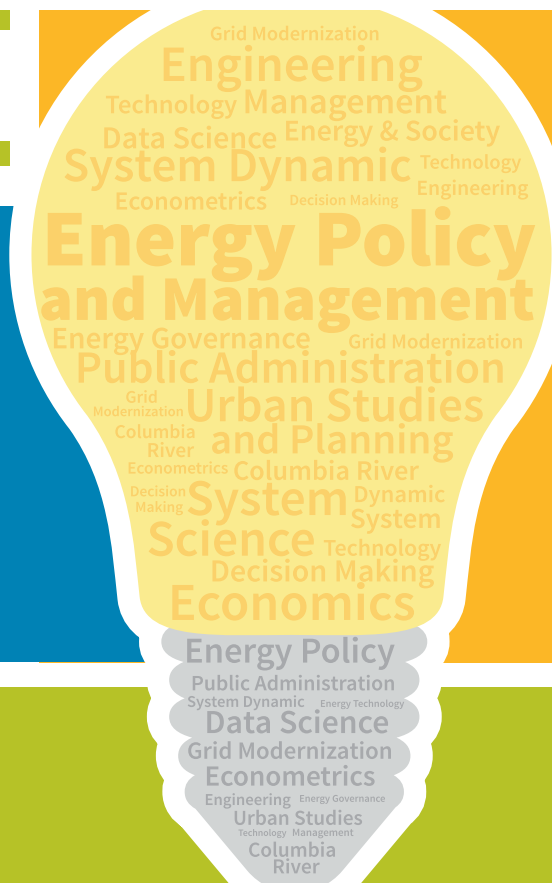
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Oregon Tech has locations throughout the Pacific Northwest. In Oregon, this includes our traditional, residential campus in Klamath Falls, the Portland-Metro campus in Wilsonville, an online campus, as well as a teaching site in Salem. In Washington, Oregon Tech offers B.S. and M.S. degrees to employees of Boeing at sites in the Puget Sound area.

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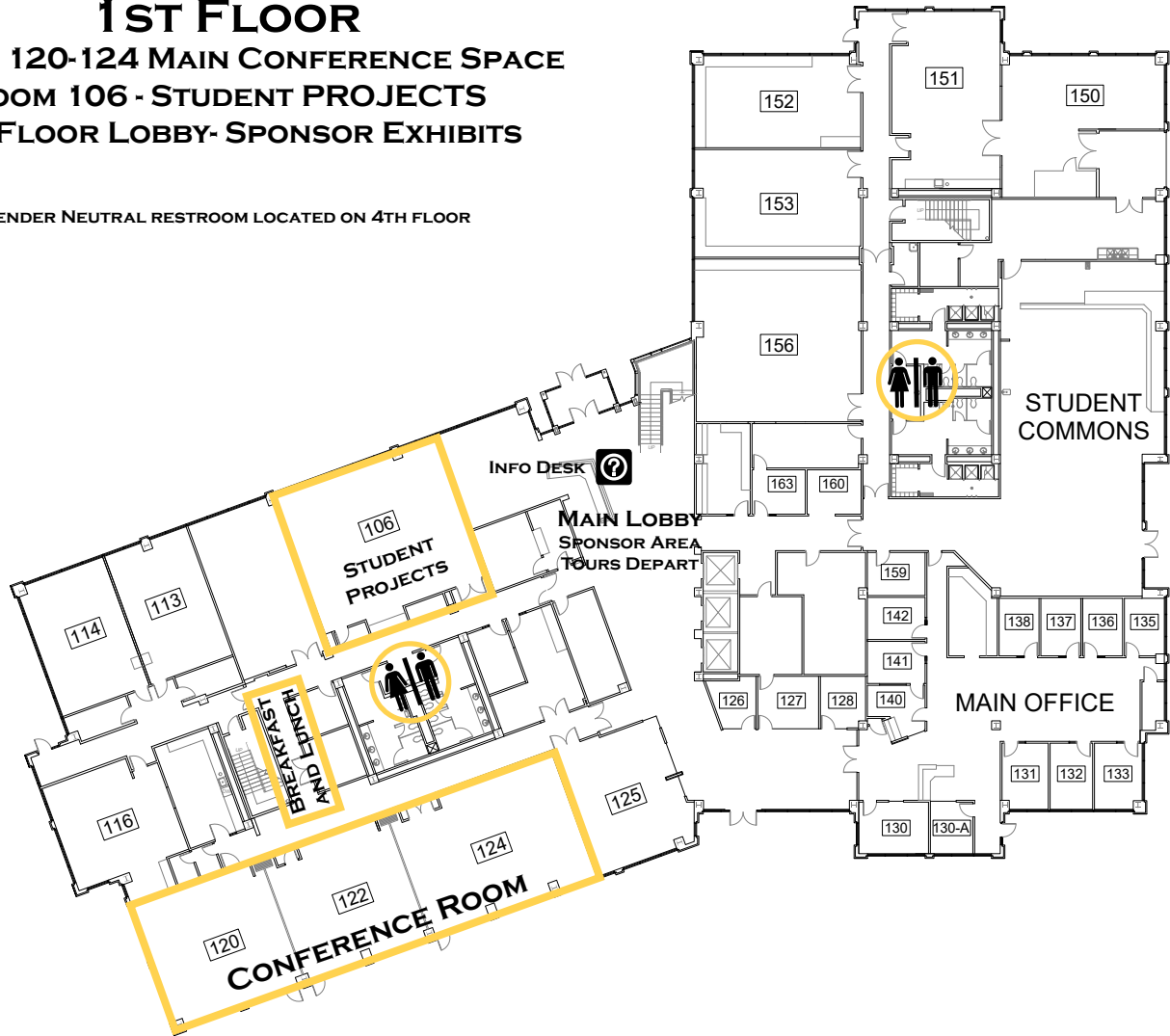
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Oregon TECH

Oregon Institute of Technology

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