

International Conference on
Algal Biomass, Biofuels & Bioproducts

16-18 June 2025 | Marriott Phoenix Resort Tempe, Arizona, USA

15th Jun 2025

08:30 - 13:00	Field trip to The Arizona Center for Algae Technology and Innovation, or AzCATI Delegates are invited to participate in a visit to AzCATI. Please book your place via the registration system
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16th Jun 2025

07:00 - 08:30	Registration Room: Kachina Foyer	
08:30 - 08:35	Welcome, Introduction and Jose Olivares Student Travel Award Ceremony Room: Kachina 4-6	
08:35 - 10:05	Plenary session 1 Room: Kachina 4-6 Chair: Olaf Kruse 08:35 - 09:05 [PLE1] Algal biotechnology and metabolic engineering in resource circularity <u>Kyle Lauersen</u> <i>King Abdullah University of Science and Technology, Thuwal, Saudi Arabia. Arizona State University Arizona Center for Algae Technology and Innovation, Mesa, AZ, USA</i> 09:05 - 09:35 [PLE2] From Competition to Cooperation: The Complex Dynamics of Algal-Bacterial Partnerships in Artificial Cultivation Systems <u>Alina Corcoran</u> <i>New Mexico State University, Las Cruces, NM, USA</i> 09:35 - 10:05 [PLE3] The algal chloroplast as a programmable platform for biotechnology <u>Saul Purton</u> <i>University College London, London, UK</i>	
10:05 - 10:35	Coffee break Room: Hopi Ballroom	INSPIRE Algae (INSPIRE: Insights and networking from Senior Professionals Involved in Research and Education) Room: Apache/Navajo Facilitated by <u>Christina Rene Steadman</u> and <u>Raul Gonzalez</u> This session is designed for early-career researchers to engage in meaningful conversations, seek advice, explore potential collaborations and expand their professional networks with established scientists. INSPIRE Algae will be structured so that participants will have the chance to: i) meet peers and experts from academia, industry and government labs, ii) connect with potential mentors and iii) seek career advice. There will be two sessions: one on Monday morning and one on Tuesday afternoon. Graduate students and postdocs are encouraged to attend!
10:35 - 12:15	Session 1A: Algal Biology – Improving Photosynthetic Growth and Biomass Productivity Room: Kachina 4-6	Session 1B: Algal Cultivation - Open Ponds and Photobioreactors Room: Kachina 1-3 Chair: Alina Corcoran

Chair: Saul Purton 10:35 - 10:55 [A.01] Physiological characterization of a microalga exhibiting high tolerance to photooxidative stress <u>Hiroki Toyoshima</u>¹, Tamaki Mitsui¹, Shinji Kawasaki² ¹<i>Department of Molecular Microbiology, Tokyo University of Agriculture, Setagaya, Japan.</i> ²<i>Department of Molecular Microbiology, Tokyo University of Agriculture, Japan</i> 10:55 - 11:15 [A.02] Algal acclimation to osmotic stress drives major changes in cellular carbon fluxes <u>Adrienne Arnold</u>¹, Sandra Rincon², Charles Holcomb¹, Jessica Wood¹, J.P. Kaffer¹, Robin Gerlach¹, Sridhar Viamajala³, Ross Carlson¹ ¹<i>Montana State University, Bozeman, MT, USA.</i> ²<i>University of Kentucky, Lexington, KY, USA.</i> ³<i>The University of Toledo, Toledo, OH, USA</i> 11:15 - 11:35 [A.03] CO₂ availability influences NAD(P)H redox state and lipid accumulation in <i>Chlamydomonas reinhardtii</i> Luca Zuliani¹, Michela Cecchin¹, Tea Miotti¹, Matteo Paloschi¹, Stephan Cuine², Stefano Cazzaniga¹, Yonghua Li-Beisson², <u>Matteo Ballottari</u>¹ ¹<i>University of Verona Department of Biotechnology, Verona, Italy.</i> ²<i>Aix-Marseille University, Marseille, France</i> 11:35 - 11:55 [A.04] Diatom growth, biomass, and carbon fixation is enhanced when cultivated with aged cement <u>Ty Samo</u>¹, Kristina Rolison¹, Jiaqi Li², John Rolison¹, Rhona Stuart¹, Keith Morrison¹, Xavier Mayali¹, Peter Weber¹ ¹<i>Lawrence Livermore National Laboratory Physical and Life Sciences Directorate, Livermore, CA, USA.</i> ²<i>University of Michigan, Ann Arbor, MI, USA</i>	10:35 - 10:55 [B.01] Cyanobacterial utilization of CO₂ transferred from the air into the culture via direct-air-capture resins with quaternary ammonium ions <u>Wim Vermaas</u>¹, Shuqin Li¹, Sunil Tiwari¹, Samantha Taylor¹, Nick Lowery¹, Amory Lowe¹, Garrett Cole², Jason Quinn², Matthew Green¹, John McGowen³, Klaus Lackner¹, Justin Flory¹ ¹<i>Arizona State University, Tempe, AZ, USA.</i> ²<i>Sustainability Sciences, LLC, USA.</i> ³<i>Arizona State University - Polytechnic Campus, Mesa, AZ, USA</i> 10:55 - 11:15 [B.02] Integration of algal biomass and ammonium sensors for automated monitoring of <i>Nannochloropsis oceanica</i> cultivations Xingfeng Huang¹, <u>Elliot Ferrell-Carretey</u>¹, Michael Ferry², Kenneth Reardon¹ ¹<i>Colorado State University, Fort Collins, CO, USA.</i> ²<i>Quantitative BioSciences, Inc, USA</i> 11:15 - 11:35 [B.03] Unlocking the optimal wavelength for different growth phases for <i>Arthrospira platensis</i> in a tubular airlift photobioreactor <u>Aswin Sasi</u>¹, Graham A Turnbull¹, Christine Edwards², Linda A Lawton², Douglas Douglas³ ¹<i>University of St Andrews, St. Andrews, UK.</i> ²<i>Robert Gordon University, Aberdeen, UK.</i> ³<i>Phyco-F, UK</i> 11:35 - 11:55 [B.04] Production of renewable biofuels with microalgae <u>John Benemann</u> <i>MicroBio Engineering Inc, San Luis Obispo, CA, USA</i> 11:55 - 12:15 [B.05] Photobioreactors as a simulation platform for pond productivity <u>Claire K. Sanders</u>¹, Erika Quezada¹, Sara Pacheco¹, Fuad Ale-Enriquez¹, Shounak Banerjee¹, Taraka Dale¹, John McGowen² ¹<i>Bioscience Division, Los Alamos National Laboratory, USA.</i> ²<i>Arizona Center for Algae Technology and Innovation (AzCATI), Arizona State University, USA</i>
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	11:55 - 12:15 [A.05] Enhanced efficiency of microalgae for biofuel productions: development of an innovative multimodal approach from the single-cell level to the high scale production <u>Sakina Bensalem</u>¹, Mélanie Pietri^{1,2} ¹Université Paris-Saclay, ENS Paris-Saclay, CNRS, LuMIn, Gif sur Yvette, France. ²Université Paris-Saclay, CNRS, ENS Paris-Saclay, LMF, France	
12:15 - 13:15	Lunch Room: Hopi Ballroom	
13:15 - 14:55	Session 2A: Algae Cultivation – Crashes and Pests Room: Kachina 4-6 Chair: Chuck Smallwood 13:15 - 13:35 [A.06] Algal pathogenesis and microbiome dynamics in <i>Picochlorum celeri</i> outdoor production ponds <u>Chuck Smallwood</u>¹, Brittany Humphrey¹, Elise Wilbourn², Jesse Cahill¹ ¹Sandia National Laboratories, Albuquerque, NM, USA. ²Sandia National Laboratories California, Livermore, CA, USA 13:35 - 13:55 [A.07] <i>Picochlorum celeri</i> associated microbiomes can lead to culture collapse, can bacterial communities also provide a rescue effect? <u>Xavier Mayali</u>¹, Chuck Smallwood², John McGowen³, Michael Huesemann⁴ ¹Lawrence Livermore National Laboratory, Livermore, CA, USA. ²Sandia National Laboratories, Albuquerque, NM, USA. ³Arizona State University, Tempe, AZ, USA. ⁴Pacific Northwest National Laboratory, Richland, WA, USA 13:55 - 14:15 [A.08] Characterization and isolation of a novel bacterial predator infecting the freshwater microalga <i>Scenedesmus obliquus</i> and its effect on algal productivity	Session 2B: Bioreactor Design, Engineering and Control Room: Kachina 1-3 Chair: John Benemann 13:15 - 13:35 [B.06] A sustainable approach to cultivating microalgae at high latitudes; introducing a novel low-cost LED-integrated photobioreactor <u>Jose Ignacio Gayo Pelaez</u>, Darren Oatley-Radcliffe, Alla Silkina Swansea University, Swansea, UK 13:35 - 13:55 [B.07] New scalable photobioreactor design with low energy usage and high-density algae production that enables automatic harvesting <u>Robert Falco</u> SolarClean Fuels, LLC, USA 13:55 - 14:15 [B.08] Physicochemical characterization of CO₂ nanobubbles in freshwater and seawater: implications for enhanced macroalgal carbon capture and growth <u>Ty Shitanaka</u>, Kyle Marcelino, Brannndon Evans, Manpreet Kaur, Surendra K.C., Samir Khanal University of Hawai'i at Mānoa, Honolulu, HI, USA 14:15 - 14:35 [B.09] Pilot outdoor cultivation of marine haptophyte <i>Isochrysis galbana</i> using an energy-saving floating oscillation photobioreactor

	<u>Michelle Tan</u>, Aaron Geels, Everett Eustance, John McGowen <i>Arizona State University Arizona Center for Algae Technology and Innovation, Mesa, AZ, USA</i> 14:15 - 14:35 [A.09] Development of a pest model with the freshwater algae <i>Monoraphidium minutum</i> and predatory bacterium <i>Bacillus safensis</i>: from infection to protection <u>Thuy M. Nguyen</u>, Alina A. Corcoran <i>New Mexico State University, Las Cruces, NM, USA</i> 14:35 - 14:55 [A.10] Application of newly developed antifungal compounds to treat algal ponds infected with aphelids <u>Elise Wilbourn</u>¹, Anne Lamsa², Cynthia Burzell², John McGowen³, Todd Lane¹ ¹<i>Sandia National Laboratories California, Livermore, CA, USA.</i> ²<i>Aequor, Inc., USA.</i> ³<i>Arizona State University, Tempe, AZ, USA</i>	<u>Masashi Fujii</u>¹, Kashu Sano¹, Yoshiki Takayama², Chiaki Tomatsu³, Farahin Abd Wahab⁴, Ashikin Afzan Mohd Rohan⁵, Razif Harun⁶, Fatimah Md. Yusoff⁵, Tatsuki Toda^{1,3,7} ¹<i>Soka University, Graduate School of Science and Engineering, Hachioji, Japan.</i> ²<i>Yokohama National University Graduate School of Environment and Information Science, Yokohama, Japan.</i> ³<i>Soka University, Institute of Plankton Eco-Engineering, Hachioji, Japan.</i> ⁴<i>PETRONAS Research Sdn Bhd, Kajang, Malaysia.</i> ⁵<i>Putra Malaysia University, Faculty of Agriculture, Department of Aquaculture, Serdang, Malaysia.</i> ⁶<i>Putra Malaysia University, Department of Chemical and Environmental Engineering, Sustainable Process Engineering Research Centre (SPERC), Serdang, Malaysia.</i> ⁷<i>University of Malaysia Terengganu, Institute of Marine Biotechnology, Kuala Terengganu, Malaysia</i> 14:35 - 14:55 [B.10] Data-driven insights for controlled production of poly(hydroxybutyrate) using <i>Synechocystis</i> sp. PCC 6803 <u>Jessica Lalonde</u>, <u>Raul Gonzalez</u> <i>Los Alamos National Laboratory, Los Alamos, NM, USA</i>
14:55 - 15:25	Algae Pest Interest Group and Symposium Meetup Room: Apache/Navajo Led by <u>Claire Sanders</u> and <u>Elise Wilbourn</u> For those with research interest in the detection, identification, impact, or control of algae pests. We will continue conversations from the Algae Pest Virtual Symposium held in May 2025, and welcome anyone with interest in this topic to join.	Coffee break Room: Hopi Ballroom
15:25 - 16:45	Session 3A: Algal Biotechnology - Engineering, Metabolism, and Regulation Room: Kachina 4-6 Chair: Jianping Yu 15:25 - 15:45 [A.11] The hidden biodiversity of algae in Saudi Arabia: The KSA algae living library	Session 3B: Engineering of Biorefinery Systems, Technologies, and End-to-end Integration Room: Kachina 1-3 Chair: John McGowen 15:25 - 15:45 [B.11] The strategy of whole cell biomass refinery of algal biomass

	<u>Barbara Freitas</u>, Mirian Mendes, Kyle Lauersen <i>King Abdullah University of Science and Technology Biological and Environmental Science and Engineering Division, Thuwal, Saudi Arabia</i> 15:45 - 16:05 [A.12] Inter-kingdom interactions within natural and synthetic algal-bacterial communities <u>Gergely Maróti</u>^{1,2}, Prateek Shetty¹, Attila Farkas¹, Bernadett Pap¹, Helga Szőcs¹ ¹<i>Institute of Plant Biology, HUN-REN Biological Research Centre, Hungary.</i> ²<i>University of Public Service, Faculty of Water Sciences, Hungary</i> 16:05 - 16:25 [A.13] Effects of temperature and H₂O₂ on EPS adhesive properties: implications for aggregation and biorefinery <u>David Fierli</u>, Simone Cuccagna, Tom Li, Matthew Rau <i>The George Washington University, Washington, DC, USA</i> 16:25 - 16:45 [A.14] Exploring the impact of biofilm surface area and biofilm retention time in algal biofilm photobioreactors <u>Fareed Abuzaid</u>, Grant Allen <i>University of Toronto, Toronto, ON, Canada</i>	<u>Won-Kun Park</u>¹, Gyeongho Seon², Minsik Kim³, Youngjun Choi¹ ¹<i>Konkuk University, Seoul, Republic of Korea.</i> ²<i>Korea Advanced Institute of Science and Technology, Daejeon, Republic of Korea.</i> ³<i>Inha University, Incheon, Republic of Korea</i> 15:45 - 16:05 [B.12] Toward a zero-waste microalgal biorefinery: Complete utilization of defatted <i>Chlorella</i> biomass as a sole heterotrophic substrate for <i>Chlorella</i> sp. HS2 and an improved composite filler <u>Jin-Ho Yun</u>^{1,2,3}, Hee-Sik Kim^{4,5} ¹<i>Korea Research Institute of Bioscience and Biotechnology, Republic of Korea.</i> ²<i>University of Science and Technology, Daejeon, Republic of Korea.</i> ³<i>Sungkyunkwan University - Natural Sciences Campus, Suwon, Republic of Korea.</i> ⁴<i>Korea Research Institute of Bioscience & Biotechnology, Yuseong-gu, Republic of Korea.</i> ⁵<i>University of Science and Technology, Yuseong-gu, Republic of Korea</i> 16:05 - 16:25 [B.13] A sustainable Biorefinery design for <i>Tetrademus obliquus</i> CT02 under large scale outdoor cultivation conditions coupled with pH guided CO₂ feeding <u>Ankan Sinha</u>, David Salem <i>South Dakota School of Mines and Technology, Rapid City, SD, USA</i> 16:25 - 16:45 [B.14] Preprocessing approaches to enable utilization of Sargassum biomass for bioenergy production <u>Bradley Wahlen</u>¹, Jeremy Sabo¹, Kastli Schaller¹, Clifford Louime², Payton Walker³, Peter Sheridan³ ¹<i>Idaho National Laboratory, Idaho Falls, ID, USA.</i> ²<i>University of Puerto Rico Rio Piedras, San Juan, Puerto Rico.</i> ³<i>Idaho State University, Pocatello, ID, USA</i>
16:50 - 17:10	Mini-Orals - Flash Talks Room: Kachina 4-6 Chair: Claire Sanders 16:50 - 16:55 [MO.01] Bioprospecting of algal bioactive metabolites for antidiabetic therapeutics using emerging computational tools <u>Anshul Kaushik</u>, Ritu Kothari, Kiran Bala	

	<i>Indian Institute of Technology Indore, Indore, India</i> 16:55 - 17:00 [MO.02] Bioengineering the marine microalga “<i>Nannochloropsis oceanica</i>” for the expression of the plant-derived enzymes olivetol synthase and olivetolic acid cyclase <u>Jose Cachay-Morante</u>¹, Sarah D'Adamo², Jagroop Pandhal¹ ¹<i>The University of Sheffield Department of Chemical and Biological Engineering, Sheffield, UK.</i> ²<i>Wageningen University & Research, Wageningen, The Netherlands</i> 17:00 - 17:05 [MO.03] Phosphate overplus response of <i>Chlamydomonas reinhardtii</i>: P deprivation under heterotrophic growth regime <u>Ana Laura Silva Gálvez</u>^{1,2,3}, Franja Prosenc^{1,2}, Martín Esteban González López³, Misael Sebastián Gradilla Hernández³, Alison Baker², Miller Alonso Camargo-Valero^{1,4} ¹<i>University of Leeds School of Civil Engineering, Leeds, UK.</i> ²<i>University of Leeds School of Molecular and Cellular Biology, Leeds, UK.</i> ³<i>Tecnologico de Monterrey School of Engineering and Science, Monterrey, Mexico.</i> ⁴<i>Universidad Nacional de Colombia Chemical Engineering Department, Colombia</i>
17:15 - 18:15	Welcome drinks reception & Poster session 1 Room: Hopi Ballroom

08:30 - 08:35	Welcome and introduction Room: Kachina 4-6	
08:35 - 10:15	Session 4A: Algal Biotechnology - Engineering, Metabolism, and Regulation Room: Kachina 4-6 Chair: Kyle Lauersen 08:35 - 08:55 [A.15] Multiscale modeling of microalga <i>Chlamydomonas reinhardtii</i> and <i>Nannochloropsis oculata</i> growth using Bio-Chemical Reaction Network <u>Mélanie Pietri</u> ^{1,2} , Thomas Rodet ³ , Loriane Alonso ⁴ , Adeline Suchel ⁴ , Jean-José Filippi ⁴ , Thomas Nowak ^{2,5} , Bruno Le Pioufle ¹ , Matthias Fugger ² , Sakina Bensalem ¹ ¹ Université Paris-Saclay, ENS Paris-Saclay, CNRS, LuMIn, France. ² Université Paris-Saclay, CNRS, ENS Paris-Saclay, LMF, France. ³ Université Paris-Saclay, ENS Paris-Saclay, CNRS, France. ⁴ Unité d'Appui et de Recherche (UAR) 3514 Stella Mare CNRS, Université de Corse, France. ⁵ Institut Universitaire de France, France 08:55 - 09:15 [A.16] Elucidating the role of autophagy-related proteins ATG8 in lipid droplet dynamics in <i>Phaeodactylum tricornutum</i> <u>Shagoofa Ali</u> ¹ , Sureshbabu Marriboina ¹ , Inna Khozin-Goldberg ¹ , Ayushi Dalmia ² , Hsu Yee Htet ² ¹ Ben-Gurion University of Negev, Israel. ² Ben-Gurion University of the Negev, Midreshet Ben-Gurion, Israel 09:15 - 09:35 [A.17] Light-driven co-cultures for sustainable biotechnology: Exploring the effects of spatial configuration on microbial interactions in a synthetic (cyano)bacterial consortium <u>Josie McQuillan</u> ¹ , Amy Liu ² , Nina Lin ² , Jagroop Pandhal ¹ ¹ The University of Sheffield, Sheffield, UK. ² University of Michigan, Ann Arbor, MI, USA	Session 4B: Life Cycle, Technoeconomic, and Sustainability Modeling and Analysis Room: Kachina 1-3 Chair: David Quiroz 08:35 - 08:55 [B.15] Maximizing light efficiency through algae concentration management: a techno-economic and life cycle assessment <u>Jack Smith</u> , Jonah Greene, Xing-Feng Huang, Kenneth Reardon, Jason Quinn <i>Colorado State University, Fort Collins, CO, USA</i> 08:55 - 09:15 [B.16] Techno-economic and life cycle analysis of algal turf scrubber systems and conversion of biomass to renewable diesel considering nutrient credits <u>Ashley Ryland</u> ¹ , David Quiroz ¹ , Mark Zivojnovich ¹ , Sungwhan Kim ² , Ryan Davis ² , Tyler Eckles ² , Jason Quinn ¹ ¹ Colorado State University, Fort Collins, CO, USA. ² Sandia National Laboratories California, Livermore, CA, USA 09:15 - 09:35 [B.17] Economic and environmental performance of hollow-fiber membranes for carbon delivery in a large-scale microalgae production facility <u>Jack Smith</u> , Jonah Greene, Xing-Feng Huang, Kenneth Reardon, Jason Quinn <i>Colorado State University, Fort Collins, CO, USA</i> 09:35 - 09:55 [B.18] Integrating Algae-Based Biofuel Production with Wastewater Treatment: Techno-Economic and Life Cycle Assessment of Sustainable Aviation Fuel Production from Waste Jonah Greene ¹ , Peter Valdez ² , Jens Dancer ³ , Martin Gross ³ , Shawn Starkenburg ⁴ , <u>Jason Quinn</u> ⁵ ¹ Colorado State University, USA. ² Pacific Northwest National Laboratory, Richland, WA, USA. ³ Gross Wen Technologies, USA. ⁴ Los Alamos National Laboratory, Los Alamos, NM, USA. ⁵ Colorado State University, Fort Collins, CO, USA

	09:35 - 09:55 [A.18] A bioprocess engineering approach to boost transformation and selection of fully segregated mutants in cyanobacteria <u>Cecilia Salvagnini</u>¹, Eliana Gasparotto², Elena Barbera¹, Matteo Ballottari², Nico Betterle², Eleonora Sforza¹ ¹University of Padova Department Industrial Engineering, Padova, Italy. ²University of Verona Department of Biotechnology, Verona, Italy 09:55 - 10:15 [A.19] Assessing nanotoxicity mechanisms towards microalgae at the nanoscale Nicolas Lesniewska^{1,2}, Varun Vyas^{1,3}, Jerome Duval¹, <u>Audrey BEAUSSART</u>^{1,4} ¹Interdisciplinary Laboratory for Continental Environments, Vandoeuvre Les Nancy, France. ²University of Turin, Torino, Italy. ³Bennett University, Greater Noida, India. ⁴Institute of Chemistry and Biology of Membranes and Nano-objects, Pessac, France	09:55 - 10:15 [B.19] Predictive Modeling of Algal Growth in Open Ponds: A Step Toward Digital Twin Implementation <u>David Quiroz</u>¹, John McGowen², Jason Quinn¹ ¹Colorado State University, Fort Collins, CO, USA. ²Arizona State University, Tempe, AZ, USA
10:15 - 10:45	Coffee break Room: Hopi Ballroom	
10:45 - 12:15	Plenary session 2 Room: Kachina 4-6 Chair: Taraka Dale 10:45 - 11:15 [PLE4] De novo organization of heterologous pathways in cyanobacteria with nanofilaments <u>Julie A. Z. Zedler</u> Friedrich Schiller University Jena, Jena, Germany 11:15 - 11:45 [PLE5] Carbon and phosphorus metabolism contribute to energy regulation in cyanobacteria <u>Jianping Yu</u> National Renewable Energy Laboratory, Golden, CO, USA 11:45 - 12:15 [PLE6] “DISCOVER Multi-Year Outdoor Cultivation Trials: Reflections on 8 years of outdoor cultivation trials: the successes and challenges that remain.” <u>John McGowen</u> Arizona State University, Tempe, AZ, USA	
12:15 - 13:15	Lunch Room: Hopi Ballroom	

13:15 - 14:55	Session 5A: Bioproducts: Chemicals and Proteins Room: Kachina 4-6 Chair: Julie Zedler 13:15 - 13:35 [A.20] Development of a novel bacterial cellulose-based dessert with dieckol from brown macroalgae: Feedstock selection, extraction optimization, and formulation Jeongho Lee, Yunseok Song, <u>Hah Young Yoo</u> <i>Sangmyung University, Jongno-gu, Republic of Korea</i> 13:35 - 13:55 [A.21] Heterotrophic production of sesquiterpenoid (+)-Nootkatone in <i>Chlamydomonas reinhardtii</i> <u>Merve Saudhof</u>, Thomas Baier, Olaf Kruse <i>Universität Bielefeld, Germany</i> 13:55 - 14:15 [A.22] Towards green biomanufacturing: exploiting fast-growing PCC 11901 for recombinant protein production Maggie Hicks, <u>Jose Moreno Cabezuelo</u>, Amrit Gill, Clemency Tilley, Andrej Ondracka, Stuart Ried, David Kim, Uma Sagaram <i>CyanoCapture, UK</i> 14:15 - 14:35 [A.23] Engineered parasitism: fully automated cyanobacteria conversion to bacterial leather for carbon sequestration <u>Ingie Baho</u>, Yitong Tseo <i>Massachusetts Institute of Technology, Cambridge, MA, USA</i> 14:35 - 14:55 [A.24] Retinol from microalgae: a sustainable breakthrough Reeza Patnaik^{1,2}, Sourav Kumar Bagchi¹, Ravindar Singh², Anshu Shankar Mathur², Faizal Bux¹ ¹<i>Durban University of Technology - Steve Biko Campus, Durban, South Africa.</i> ²<i>Indian Oil Corporation Research</i>	Session 5B: Algal Cultivation - Waste Utilization and Remediation Room: Kachina 1-3 Chair: Everett Eustance 13:15 - 13:35 [B.20] Metabolic engineering of thermoacidophilic microalgae enables wastewater-specific approaches to biorefinery design <u>Peter Lammers</u>¹, Mark Seger^{1,2}, Fakhriyya Mammadova¹, Keirsten Allen¹, Tayebah Abedi¹, Malia Boring¹, Alexandra Walters¹, Kevin Redding³, Andrew Webber³ ¹<i>Arizona State University - Polytechnic Campus, Mesa, AZ, USA.</i> ²<i>Heliae Development LLC, Gilbert, AZ, USA.</i> ³<i>Arizona State University, Tempe, AZ, USA</i> 13:35 - 13:55 [B.21] Sustainable production and valorization of microalgal biomass from ultrafiltrated livestock digestate <u>Tea Miotti</u>, Marica Peli, Giulia Viglioli, Stefano Cazzaniga, Matteo Ballottari, Nicola Frison <i>University of Verona Department of Biotechnology, Verona, Italy</i> 13:55 - 14:15 [B.22] Optimizing <i>Chlorella vulgaris</i> cultivation in aquaponic wastewater for high-protein biomass production <u>Juan Velasquez</u>¹, Roberto Romero¹, Halis Simsek², Jen-Yi Huang^{1,3,2} ¹<i>Purdue University Department of Food Science, West Lafayette, IN, USA.</i> ²<i>Purdue University Department of Agricultural & Biological Engineering, West Lafayette, IN, USA.</i> ³<i>Purdue University Department of Forestry and Natural Resources, West Lafayette, IN, USA</i> 14:15 - 14:35 [B.23] Performance enhancement of filamentous algae production in wastewater streams via novel growth substrata <u>David Bliersch</u>, Gabriel Proano <i>Auburn University, Auburn, AL, USA</i> 14:35 - 14:55 [B.24] Screening synthetic phycospheres for enhanced biodegradation of toxic textile dyes <u>Austin Semple</u>, Jagroop Pandhal <i>The University of Sheffield, Sheffield, UK</i>
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	<i>and Development Centre, Faridabad, India</i>	
14:55 - 15:25	Coffee Break Room: Hopi Ballroom	INSPIRE Algae (INSPIRE: Insights and networking from Senior Professionals Involved in Research and Education) Room: Apache/Navajo Facilitated by Christina Rene Steadman and Raul Gonzalez This session is designed for early-career researchers to engage in meaningful conversations, seek advice, explore potential collaborations and expand their professional networks with established scientists. INSPIRE Algae will be structured so that participants will have the chance to: i) meet peers and experts from academia, industry and government labs, ii) connect with potential mentors and iii) seek career advice. There will be two sessions: one on Monday morning and one on Tuesday afternoon. Graduate students and postdocs are encouraged to attend!
15:25 - 16:45	15:25 - 16:25 Session 6A: Bioproducts: Fertilizers and Amendments Room: Kachina 4-6 Chair: Ihana Severo 15:25 - 15:45 [A.25] Evaluation of the biostimulant activity of native microalgae <i>Chlorella sorokiniana</i> and <i>Scenedesmus desmodesmus</i> and their resistance to the most used agricultural pesticides in Costa Rica Karina Rodríguez-Mora ^{1,2,3} , Yariela Nuñez-Salazar ⁴ , Fabian Villalta-Romero ^{5,6} , Alex Ossa ⁷ , Mavis Montero ^{2,3} ¹ Unidad de Recursos Forestales, Instituto de Investigaciones en Ingeniería; Universidad de Costa Rica, Costa Rica. ² Centro de Investigación en Ciencias e Ingeniería de Materiales, Universidad de Costa Rica, Costa Rica. ³ Escuela de Química, Universidad de Costa Rica, Costa Rica. ⁴ Centro de Investigación en Biotecnología, Instituto Tecnológico Costarricense, Costa Rica. ⁵ Centro de Investigación en Biotecnología, Instituto Tecnológico Costarricense,, Costa Rica. ⁶ Escuela de	15:25 - 16:05 Session 6B: New Technologies - Separation, Refining, Detection, Characterization and Analysis Room: Kachina 1-3 15:25 - 15:45 [B.25] A novel, fast and reliable alternative for microalgal growth assessment in scalable cultivation systems Jose Ignacio Gayo Pelaez , Darren Oatley-Radcliffe, Alla Silkina Swansea University, Swansea, UK 15:45 - 16:05 [B.26] Development of a continuous in-situ algal biomass and health optical sensor Elliot Ferrell-Carretey , Ken Reardon Colorado State University, Fort Collins, CO, USA 16:05 - 16:25 [B.27] Impact of moisture and temperature on the quality of <i>tetraselmis</i> biomass post-harvest Jeremy Sabo , Bradley Wahlen, Gabriella Morales, Payton Walker Idaho National Laboratory, Idaho Falls, ID, USA 16:25 - 16:45 [B.28]

	<i>Biología, Instituto Tecnológico Costarricense, Costa Rica. ⁷Escuela de Ciencias aplicadas e Ingeniería, Universidad EAFIT, Colombia</i> 15:45 - 16:05 [A.26] Demand for regenerative agricultural products support adoption of commercialized products derived from microalgae <u>Erik Velkme</u>, Matt Saunders, Luke Cizek <i>Heliae Development LLC, Gilbert, AZ, USA</i> 16:05 - 16:25 [A.27] The role of <i>Tetrademus obliquus</i> biomass for improved wheat growth and soil health Caroline R. Schulze¹, Kaline A. Wagner¹, Glaciela Kaschuk¹, Anne C. D. Oliveira¹, Murilo G. Rampi¹, Vanessa M. Kava¹, José V. C. Vargas¹, <u>Ihana A. Severo</u>^{1,2}, Juan C. Ordóñez² ¹<i>Sustainable Energy Research & Development Center (NPDEAS), Federal University of Paraná (UFPR), Curitiba, PR, Brazil.</i> ²<i>Department of Mechanical Engineering, FAMU-FSU College of Engineering, Center for Advanced Power Systems (CAPS), Florida A&M University, Florida State University, USA</i>	Progress and challenges in the hydrothermal liquefaction of whole algae <u>Jacob Watkins</u>, Abhishek Kumar, Peter Valdez <i>Pacific Northwest National Laboratory, USA</i>
16:50 - 17:15	Mini-Orals - Flash Talks Room: Kachina 4-6 Chair: Matteo Ballottari 16:50 - 16:55 [MO.05] Performance evaluation of bio-stimulants derived from commercially cultivated seaweeds for improved production of marine microalgal biomass, lutein, and bio-chemicals <u>Shreya Sadukha</u>^{1,2}, Kirti Singhal^{1,2}, Bhavika Mehta^{1,2}, Arup Ghosh^{1,2}, Dineshkumar Ramalingam^{1,2} ¹<i>CSIR-Central Salt and Marine Chemicals Research Institute, Bhavnagar, India.</i> ²<i>Academy of Scientific and Innovative Research (AcSIR), Ghaziabad, India</i> 16:55 - 17:00 [MO.06] Optimizing engineered volatile isoprene production from <i>Cyanidioschyzon merolae</i> 10D through multi-parallel in-line headspace analysis and use of wastewater as culture medium <u>Melany Villegas</u>, Sebastian Overmans, Kyle Lauersen <i>King Abdullah University of Science and Technology, Thuwal, Saudi Arabia</i> 17:00 - 17:05 [MO.07]	

	Liquid ammonia-based extraction for microalgal biofuel production <u>Kiyoshi Sakuragi</u>, Yuki Maeda, Maromu Otaka <i>Central research institute of electric power industry, Japan</i> 17:05 - 17:10 [MO.08] Elucidating the intricate molecular dynamics and adaptive responses of <i>Chlorella minutissima</i> under hexavalent chromium for a resilient biorefinery paradigm. <u>Sonia Choudhary</u>¹, Manikyaprabhu Kairamkonda², Krishna Mohan Poluri² ¹<i>Indian Institute of technology, Roorkee, India.</i> ²<i>Indian Institute of Technology Roorkee, Roorkee, India</i>
17:15 - 18:15	Poster session 2 Room: Hopi Ballroom
18:15 - 21:00	Conference dinner (optional ticketed event)

08:45 - 08:50	Welcome and introduction Room: Kachina 4-6	
08:50 - 09:50	Plenary session 3 Room: Kachina 4-6 Chair: Jose Olivares 08:50 - 09:20 [PLE7] EU HORIZON-EUROPE Consortium “SUN-PERFORM”: Using Synthetic Biology and Biomimetics to establish microalgae as green cell factories for solar fuel production <u>Olaf Kruse</u> <i>Bielefeld University, Center for Biotechnology, Germany</i> 09:20 - 09:50 [PLE8] Microalgae commodities production - Current status and research needs <u>John Benemann</u> <i>MicroBio Engineering Inc., USA</i>	
09:50 - 10:20	Coffee break Room: Hopi Ballroom	
10:20 - 12:00	Session 7A: Bioproducts: Chemicals and Nutraceuticals Room: Kachina 4-6 Chair: Wim Vermaas 10:20 - 10:40 [A.29] Integrated algal biorefinery for biofuel, chemicals and sustainable materials <u>Tao Dong</u> <i>National Renewable Energy Laboratory, Golden, CO, USA</i> 10:40 - 11:00 [A.30] Into the era of eco-friendly sunscreens: Biomanufacturing of sunscreen components from cyanobacteria <u>Aditya Sarnaik</u> ¹ , Rocco Mancinelli ² , John McGowen ¹ , David Smernoff ² , Taylor Weiss ¹ ¹ <i>Arizona State University - Polytechnic Campus, Mesa, AZ, USA.</i> ² <i>HelioBioSys Inc., USA</i> 11:00 - 11:20 [A.31] Porphyridium exopolysaccharide bioproduct, applied as a hyaluronic acid-like cosmetic active <u>Fabien Havas</u> ¹ , Shlomo Krispin ¹ , Moshe Cohen ¹ , Joan Attia-Vigneau ² ¹ <i>Lucas Meyer Cosmetics, Israel.</i> ² <i>Lucas Meyer Cosmetics, France</i>	Session 7B: Algae Process Engineering - Cultivation and Harvesting Room: Kachina 1-3 Chair: Brad Wahlen 10:20 - 10:40 [B.29] Aquaculture waste biorefinery for biofuel production from a circular bioeconomy approach <u>Regina de Monserrat Gonzalez-Balderas</u> ¹ , Isabel Martinez Apodaca ² , Tanit Toledano-Thompson ¹ , Ruby Valdez-Ojeda ¹ ¹ <i>Scientific Research Center of Yucatan, Merida, Mexico.</i> ² <i>Anáhuac Mayab University, Merida, Mexico</i> 10:40 - 11:00 [B.30] Characterizing an algal turf scrubber community by phenotypic expression under different hydrodynamic flow operations <u>Peter Chen</u> , Ashley Ryland, David Quiroz, Lara Janiszewski, Jason Quinn <i>Colorado State University, Fort Collins, CO, USA</i> 11:00 - 11:20 [B.31] Comparing sedimentation and dissolved air flotation for microalgae harvesting: Influence of ionic strength on floc size and separation efficiency <u>Sakshi Tyagi</u> , NRH Rao, Wim Thielemans, Koenraad Muyllaert

	11:20 - 11:40 [A.32] Thermostable phycocyanin from cyanobacteria <u>Sunil Tiwari</u>, Wim Vermaas <i>Arizona State University, Tempe, AZ, USA</i> 11:40 - 12:00 [A.33] From waste to watts: designing efficient biophotovoltaic systems using microalgae <u>Dulce María Arias</u>, Patrick Okoye, Margarita Miranda, Angélica Guillén-Garcés, Francisco Vera, Hugo Olvera-Vargas <i>Institute for Renewable Energies- National Autonomous University of Mexico, Mexico</i>	<i>KU Leuven, Leuven, Belgium</i> 11:20 - 11:40 [B.32] Nanoscale dynamics of <i>Chlorella vulgaris</i> flocculation with pyridinium-modified cellulose nanocrystals <u>Ayessa Pires Maciel</u>^{1,2}, Wim Thielemans¹, Koenraad Muylaert¹, Cécile Formosa-Dague² ¹<i>KU Leuven - Kulak Kortrijk Campus, Kortrijk, Belgium.</i> ²<i>Toulouse Biotechnology Institute, Toulouse, France</i> 11:40 - 12:00 [B.33] Effect of nanoparticle addition on biomethane production from wastewater cultivated microalgae Cristobal Valdós¹, <u>Laura Vargas-Estrada</u>², Raúl Muñoz², P.J. Sebastian¹ ¹<i>National Autonomous University of Mexico Institute for Renewable Energy, Temixco, Mexico.</i> ²<i>University of Valladolid, Valladolid, Spain</i>
12:00 - 12:10	Conference closing Room: Kachina 4-6	