

International Aquaponics Conference: *Aquaponics and Global Food Security*

Introducing Your Speakers



Gene Giacomelli, University of Arizona-Tucson, Tucson, Arizona

Doctor Gene A. Giacomelli is the Director of the Controlled Environment Agriculture Center [CEAC] at the University of Arizona in Tucson, Arizona, and he is a professor in the Agricultural and Biosystems Engineering Department, an adjunct professor in the Department of Plant Sciences, and a member of the Bio5 Institute. He recently completed Sabbatical leave working in Italy at an aerospace company, Aero-Sekur, and with several universities, with focus on Bioregenerative life support food systems for Moon, Mars and Earth.

Dr. Giacomelli has B.S [Rutgers University] and M.S. [University of California-Davis] with degrees in engineering, and a PhD in Horticultural Engineering [Rutgers University], with advanced study in plant science and controlled environment production horticulture. This mix of technical expertise with crop production experience, provides an application of engineering design to the horticultural production problems within

intensive controlled environment plant production systems. He developed the Horticultural Engineering degree program at Rutgers University, the first of its kind in the US.

Dr. Giacomelli has designed, constructed, instrumented and operated various types of environmentally controlled greenhouses utilizing hydroponic-based crop production systems, including NFT, Ebb and Flood and aeroponic systems for greenhouse lettuce, tomato, strawberry, and numerous other crops. His professional activities have focused on Controlled environment plant production systems [greenhouse and growth chamber] research, design, development and applications, with emphases on: crop production systems, nutrient delivery systems, environmental control, mechanization, and labor productivity. He has designed and provided operational support with Sadler Machine Co., Tempe, Arizona for the first automated food growth chamber at the NSF South Pole Station in Antarctica.

He has developed and taught a 1-day greenhouse hydroponic crop production short course for 10 years, and has taught a greenhouse environmental control short course for nearly 25 years.

Dr. Giacomelli has lectured and studied in numerous countries around the world, including Canada, Chile, England, France, Germany, Israel, Italy, Japan, Mexico, New Zealand, the Netherlands, Spain and Taiwan. He has chaired or organized international symposia or workshops in the U.S., Japan, Taiwan, Mexico, Italy and the Netherlands. He is an active member of numerous scientific and professional societies, serving as an officer and on technical committees for the American Society for Horticultural Science (ASHS), International Society for Horticultural Science (ISHS), American Society for Plasmiculture (ASP), and American Society of Agricultural and Biological Engineers (ASABE).

He is the co-developer of two patented devices.

His long-term efforts include the continued development of the Controlled Environment Agriculture program at University of Arizona, which includes: educating undergraduates and graduate students in engineering, Plant Sciences and Ag. Education; researching controlled environment plant production systems; outreach through cooperative extension to the citizens of Arizona; and collaborating with programs for economic development.

Topic: Controlled Environment Agriculture for Aquaponics

There is an important need to maintain the plant and the fish environments for successful production within an aquaponic system. By monitoring the 'biology' of the complex and integrated systems, the understanding of how to manage the environmental control systems such as heating, cooling, oxygenation, nutrition, etc. can be more precisely and cost-effectively completed., and offers the potential for improved production and return on investments.



Dr. Bradley Fox, University of Hawaii, Honolulu, Hawaii

Bradley "Kai" Fox is an Assistant Extension Specialist with the Department of Molecular Biosciences and Bio-engineering, College of Tropical Agriculture and Human Resources, at the University of Hawaii, Manoa. He participates in extension outreach, and conducts research in integrated farming technology at UH Manoa. He has a BS in Biology, a MS in Animal Science, and a PhD in Fish Physiology. His primary goal is to transfer sustainable farming technologies to the public to help increase Hawaii's food independence.

Topic: Water Quality and Food Safety in Aquaponic Fish and Vegetable Production Systems

Currently, the USDA and many third party entities are unwilling to support food safety audits for aquaponic growers. In Hawaii, a preliminary study addressing microbial water quality related to food safety was recently conducted on experimental, backyard and commercial aquaponic systems, and the results will be presented and discussed.



Joel Salatin, 56, is a full-time farmer in Virginia's Shenandoah Valley.

A third generation alternative farmer, he returned to the farm full-time in 1982 and continued refining and adding to his parents' ideas.

The farm services more than 5,000 families, 10 retail outlets, and 50 restaurants through on-farm sales and metropolitan buying clubs with salad bar beef, pastured poultry, eggmobile eggs, pigator pork, forage-based rabbits, pastured turkey and forestry products using relationship marketing.

He holds a BA degree in English and writes extensively in magazines such as STOCK-MAN GRASS FARMER, ACRES USA, and FOODSHED.

The family's farm, Polyface Inc. ("The Farm of Many Faces") has been featured in SMITHSONIAN MAGAZINE, NATIONAL GEOGRAPHIC, GOURMET and countless other radio, television and print media. Profiled on the Lives of the 21st Century series with Peter Jennings on ABC World News, his after-broadcast chat room fielded more hits than any other segment to date. It achieved iconic status as the grass farm featured in the NEW YORK TIMES bestseller OMNIVORE'S DILEMMA by food writer guru Michael Pollan and the award-winning film documentary, FOOD INC.

A sought-after conference speaker, he addresses a wide range of issues, from "creating the farm your children will want" to "making a white collar salary from a pleasant life in the country." A wordsmith, he describes his occupation as "mob-stocking herbivorous solar conversion lignified carbon sequestration fertilization." His humorous and conviction-based speeches are akin to theatrical performances, often receiving standing ovations.

He has authored eight books, four of them how-to types:

[PASTURED POULTRY PROFITS](#): Net \$25,000 in 6 months on 20 Acres

[SALAD BAR BEEF](#)

[YOU CAN FARM](#): The Entrepreneur's Guide to Start and Succeed in a Farming Enterprise

[FAMILY FRIENDLY FARMING](#): A Multi-Generational Home-Based Business Testament

[HOLY COWS AND HOG HEAVEN](#): The Food Buyer's Guide to Farm Friendly Food, is an attempt to bring producers and patrons together in mutual understanding and appreciation

[EVERYTHING I WANT TO DO IS ILLEGAL](#): War stories from the local food front.

[THE SHEER ECSTASY OF BEING A LUNATIC FARMER](#)

[FOLKS, THIS AIN'T NORMAL](#): A Farmer's Advice for Happier Hens, Healthier People, and a Better World

His speaking and writing reflect dirt-under-the-fingernails experience punctuated with mischievous humor. He passionately defends small farms, local food systems, and the right to opt out of the conventional food paradigm. Four generations of his family currently live and work on the farm.

Testimonials

Joel Salatin was a great addition to our series, "The Ethics of Food and the Environment." This series brings scholars, policy makers and practitioners to campus to reflect on the ways that what we eat and consume can raise moral questions. After hearing these presentations — from some of the world's leading climate scientists — members of the audience often wonder what they can do. That's where Joel's talk really resonated. With great humor and passion, Joel presented an intriguing alternative to conventional food production, and inspired the audience to connect to local food systems.

Debra Satz
Marta Sutton Weeks Professor of Ethics in Society
Director, Bowen H. McCoy Family Center for Ethics in Society
Professor of Philosophy and, by courtesy, Political Science
Stanford University



Janeil Owen, Northwest Haiti Christian Mission, Zionsville, Indiana

Janeil Owen has been with Northwest Haiti Christian Mission since he was a child, serving in nearly every area of ministry, particularly NWHCM's main orphanage. He became Executive Director of the mission in 2007.

He received a B.A. in biblical studies from Cincinnati Christian University and is married to Heather Owen. They have four children: Payton, Josiah, Ruby and Zebadiah. They split their time between their homes in St. Louis du Nord, Haiti, and Versailles, Kentucky.

Topic: Aquaponics and Feeding Programs at the Mission (NWHCM)

Discussion about how aquaponics was started in the poorest region of the poorest country in the world, and how it is being used in our feeding programs.



Dr. Chris Hartleb, University of Wisconsin-Stevens Point Stevens Point, Wisconsin

Christopher Hartleb is a Professor of Fisheries Biology and Co-Director of the University of Wisconsin-Stevens Point Northern Aquaculture Demonstration Facility. He has over 20 years of research and teaching experience in fish ecology, aquaculture, and aquaponics. Currently, he teaches the UW-Stevens Point courses in aquaponics and aquaculture and conducts applied research on topics related to the advancement of aquaculture and aquaponics in a northern climate.

Topic: Fish Selection for Aquaponics

Traditionally, tilapia have been the preferred fish used in aquaponics but there are a variety of fish that are well suited for culture in recirculating culture systems. This presentation will provide culture information about Midwest fish that are well suited for aquaponics and compare their requirements and market potential with that of tilapia. Examples showing culture success and production potential along with insight into critical culture stages for these alternative fish will be shown.



Pierre Beauchamp, Del Oro Aquaponics, Auburn, California

Pierre Beauchamp is a 17 year old Junior at Del Oro High School in Loomis, CA. Pierre's passion for growing food started at his home garden at a very young age and was further inspired at the Live Oak Waldorf School. He started building hydroponic and aquaponic systems in his home greenhouse at 13 years old. He has built 8 different systems. Pierre was awarded the 2012 Sea World / Busch Gardens Environmental Excellence Award in the "Educator" Division (the first time in the 13 year history of the award that a "Student" was awarded the "Educator's" award due to the extraordinary teaching opportunities represented by the urban aquaponic growing systems). He also won second place in the United States Global Green International – Citizen Entrepreneur Award. For this, Pierre was sent to the International Eco-Summit Conference in Rio De Janeiro Brazil as a United States Student Delegate. Pierre has designed and constructed a "micro-commercial" aquaponics system in the

Del Oro High School Greenhouse that currently produces 60 head of lettuce and several pounds of herbs each week that are sold into the school cafeteria salad bar. Pierre and his teachers are now creating Aquaponics based curriculum to teach concepts in Biology, Agricultural Science, Physics, Mathematics and Economics. Further, Pierre has designed and built a prototype "portable teaching unit" to be used in school classrooms as teaching platforms for urban commercial and residential growing. Pierre believes that food production is a critical issue and intends to develop and teach economical methods for people to grow their own food and for urban areas to benefit from local, high volume food production.

Topic: Aquaponics at the High School Level

The presentation will include videos on my early projects and the latest "Micro Commercial" project that has been implemented at Del Oro High School (Loomis, CA), as well as interviews with school and district personnel that support the project. Details will include the project history and our goals for the future. I will include the numerous applications this system provides on an academic level as well as development of the STEM curriculum being developed based on NSTA standards. The process in which I became familiar with aquaponics and my inspirations to bring it to my high school will be voiced as well.



John Pade, Nelson and Pade, Inc., Montello, Wisconsin

John Pade, Co-founder, co-owner, Nelson and Pade, Inc., designs and oversees the construction of our Clear Flow Aquaponic Systems, oversees the operation of Nelson and Pade, Inc.'s demonstration greenhouse, provides tech support and on-site consulting and project supervision, teaches in Nelson and Pade, Inc.'s workshops and is directly involved in the day-to-day operation of Nelson and Pade, Inc.

Topic: Introduction

Aquaponics is a young but rapidly growing industry with applications of the technology ranging from home food production to commercial ventures. Individuals, businesses, governments, social groups, schools and other entities are exploring and implementing aquaponic projects around the world. Although the technology is developed to the point of commercial viability, there are hurdles to the growth of the industry, which include start-up costs and regulation.



Edoardo Pantanella, University of Tuscia, Viterbo, Italy

Edoardo Pantanella is currently Project Coordinator for the implementation of an integrated rural aquaculture program for food security in Myanmar through the University of Tuscia (UNITUS) located in Viterbo, Italy. As an Aquaponic Researcher, Manager for Eureka Experimental Aquafarm, Italy, he worked with the production and quality assessment of Integrated Agriculture Aquaculture Systems (IAAS) production and as a Research Manager with UNITUS, performed design, planning and construction of aquaponic systems, microscale aquaponics, and IAAS, along with management of standard and YY tilapia broodstocks fry grow out in passive solar systems, management of tilapia, African catfish, largemouth bass and mullet in recirculating/aquaponic systems, project development towards optimal plant and fish nutrition modeling, identification of safety procedures for commercial aquaponic operations, and production and quality assessment of vegetable productions under growing salinity in both traditional Aquaponics and substrate-based IAAS. He was also a

Researcher for Nam Sai Farms, Ban Sang, Thailand where he managed research on bioremediation of catfish and tilapia wastewater for food production (pond aquaponics).

Dr. Pantanella has a multidisciplinary education in agriculture, aquaculture and agroforestry with a holistic approach in system integration and management along with a background in fishery and forestry extension and is experienced in management and coordinating resources. Dr. Pantanella has a BS in Ecological Agriculture and Rural Development (Distinction), a MS in Aquaculture and Agroecology (Distinction), and a PhD in Aquaponics and Quality of Horticultural Productions (Distinction). His primary objective is sustainable food production through agriculture/aquaculture system integration and low-input management.

Topic 1: Advances in Freshwater Aquaponic Research

The session explains the different uses of aquaponics in both developed and developing countries and how fish/plant integration can be developed to increase food production.

Topic 2: Saline Aquaponics, Opportunities for Integrated Marine Aquaculture

The presentation will focus on the possibilities to grow vegetables or salt tolerant plants on brackish water. Some results obtained with different plants are explained.



James M. Ebeling, PhD, Research Engineer, Tucson, Arizona

Dr. James M. Ebeling is a semi-retired aquaculture engineer, who recently immigrated to Tucson Arizona from New Orleans with tentative plans of doing NOTHING, but.... James has worked in the area of aquaculture engineering for more than twenty five years, written an engineering text book on recirculating aquaculture system design with Dr. Michael Timmons from Cornell University ("The Yellow Book"), taught numerous workshops and short course and designed both small scale (Boutique) and large scale commercial aquaculture systems both here and abroad. His background in aquaculture engineering comes from both "book learning" (PhD Univ of Maryland) and in the real world having designed and constructed research facilities in Hawaii, Ohio, Maryland and Louisiana. Most recently James worked in New Orleans for Aquaculture Systems Technologies

conducting research in commercial algae production, denitrification for marine aquaculture systems and waste management. He and Dr. Timmons are currently working on their second book covering the engineering aspects of aquaponic systems.

Topic: An Engineer's View of Recirculating Aquaculture and Aquaponic Systems

A review of aquaculture/aquaponics system design and construction from an engineering perspective based on twenty hard years designing and construction research and commercial systems from marine shrimp to tilapia, from school systems to 10 million pounds a year barramundi, from Hawaii to Ohio and now Arizona.



Kara Berlage, North Star Homestead Farms, LLC, Hayward, Wisconsin

Kara Berlage, co-owner of North Star Homestead Farms, LLC and Farmstead Creamery & Café, is part of a team of enterprising women who are re-envisioning agrarian practices. With pasture-based dairy sheep, hogs, and a wide variety of poultry, they also keep an extensive market garden, honeybees, and most recently an aquaponics greenhouse. With a year-round CSA program, local farmer's market, wholesale accounts, and now a multi-faceted farm store that holds their from-scratch bakery, dairy plant for making artisan gelato, and space for community gathering as a café, grocery, and venue for local arts and music, it's hopping at the farm! With a BA in Environmental Studies with an emphasis in Sustainable Agriculture, Kara offers a unique story of how aquaponic

production can be one facet of sustainable farm practices that are aimed at serving local and community needs for food security, biodiversity, and wholesome choices.

Topic: Integrating Aquaponics into a Sustainable Farm and CSA Program

Take an insiders tour of contemporary, diversified sustainable agriculture with Kara Berlage, co-owner of North Star Homestead Farms, LLC. Along the way, we'll encounter pastured dairy sheep, poultry, and hogs; market gardens; happy tilapia and biosecure leafy greens; honeybees; a dairy plant; a farmer's market; a new look at CSA programs; wholesaling venues; and starting a new breed of farm store. Hold on, it's quite a ride!



Ryan Dale, Great Taste, LLC, Sharon, Wisconsin

Ryan Dale is a farmer, community activist and food-oriented business owner from SE Wisconsin. His interests and studies look to address local issues of: community food security, regenerative agriculture, renewable resource integration, and motivating people to truly take action in their communities. With the intent of transitioning our culture to adopt a healthier and more regenerative food economy, Ryan works with numerous farmers, gardeners, restaurants and food based organizations in his own community and across the United States to better implement strategies for food production and distribution.

Formerly the Construction/Renewable Energy Manager and traveling workshop instructor for *Growing Power Inc.* in Milwaukee, Wisconsin, Ryan spent many years traveling extensively throughout the nation

consulting and teaching integration methods for; small- and large-scale composting, vermicomposting, constructing greenhouses/high tunnels, greenhouse food production, aquaponics, small- and large-scale rain harvesting systems, appropriate water storage and delivery systems, and renewable energy/resource integration for small and medium farms.

Ryan is a Master Gardener Volunteer, instructor and student of Permaculture, certified PV installer, and is currently a consultant and contractor with Great Taste, LLC; a regenerative farming enterprise that assists local growers and community organizations by offering cost-effective project design, construction, education, and integration of site appropriate food and energy production systems.

Topic: “Pluralizing Polycultures”: Community-and Farm-Based Aquaponics

In this session, we will address topics relating to the integration of aquaponics in community-based programs and in small-to-medium size farms. We will discuss issues of: production inputs & outputs, economic feasibility, community involvement & investment, and we will attempt to quantify some of the many benefits that aquaponics can produce within a greater poly-culture system.



Rick Decker, Purina Animal Nutrition, Fond du Lac, Wisconsin

Rick is a nutritional consultant with Purina Animal Nutrition which is the parent company of AquaMax Fish Diets and Mazuri Exotic Diets. Rick has been with Purina since 1981 and has held many positions with the company. Currently he works as a consultant with the 200 locations of Purina dealers and Land O’Lakes Coops in WI and he also is a consultant for dealers in IL, MN and MI. Rick is a graduate of the University of Wisconsin Madison with a degree in Animal Science and Business. Although he works with all species, his heart is in wildlife, exotics and aquaculture.

Topic: What the Experts are Saying About Fish Free Fish Food

This session will discuss the digestive physiology of fish, the nutritional requirements of both omnivorous and carnivorous fish, and where current research stands in manufacturing diets that are economically feasible for commercial aquaculture.



David W. Ellis, Greens & Gills, LLC, Chicago, Illinois

David is the President and CEO of Greens & Gills, LLC, a proof-of-concept, indoor aquaponic farm in Chicago, IL. As of January, 2013, Greens & Gills became the first licensed aquaponic farm in the City of Chicago, helping pave the way for future urban farming ventures in the city. The company plans to wholesale their fish and produce to the restaurants of Chicago. The company's short-term goal is to assess the technical and economic viability of indoor, aquaponic food production. Once completed, the Company plans to scale up production in Chicago to either large indoor or greenhouse settings/installations.

David graduated from Emory University in Atlanta, GA in 2004. After graduation, David leveraged his passion for food into a job managing, operating and growing a large corporate catering business in Atlanta. In 2009, he moved back to his hometown of Milwaukee, WI to help grow a family-owned marketing firm and inject some new concepts into the company culture. Concurrently, he moonlighted as an aspiring aquaponic farmer; developing the Greens & Gills concept. In 2012, David, along with two business partners, launched Greens & Gills in Chicago, IL.

Topic: Urban Farming—The Greens & Gills Story



Carlos Leon, BOFISH, Guadalajara, Mexico

Carlos Leon is an Aquaculture Biotechnologist Engineer with Masters in Renewable Energies. He has been specialized in Recirculating Aquaculture Systems for tropical species and has designed/constructed different farms in countries such as: Mexico, Brazil, Chile, Venezuela, Colombia, Peru, Spain, Australia and United States. He is founder and director of the BOFISH organization, which operates in Mexico, Brazil and Chile.

He is owner of an 1 acre Commercial Aquaponics Farm situated in Mexico where they produce 3,500 lbs of Tilapia per month, and 50,000 heads of aquaponic plant per year. He has been in experimental aquaponics since 2001 and in the commercial stage since 2006. He also runs other integrated systems for aquaculture where aquaponics integrates into other agriculture activities to increase the sustainability and profitability of the systems.

Topic: A look at Aquaponics in Mexico and Latin America

This presentation will talk about the different designs that Latin American countries have developed in respect to aquaponics production. It will also include where the research is being conducted in terms of production resources reduction by recirculating and integrated systems. It will be complemented with a case study that was developed at Bofish farms to compare the production costs between different production systems and which are the goals to achieve a complete sustained production.



**Susan Miller M.S., University of Hawaii, Center on Disabilities Studies
Honolulu, Hawaii**

Hawaii Aquaponics Workforce Maui Project Director

Susan Miller been on the University of Hawaii College of Education, Center on Disability Studies faculty for 14 years at the Manoa campus. She moved to Maui in 2011 to launch the commercial aquaponics workforce development project at UH Maui College Kahului campus. For the last 10 years, she’s developed and led innovative workforce development/employment creation projects for unserved and underserved populations in Hawaii with a special emphasis on youth at-risk of school failure and adults with significant disabilities.

She headed a four-year interagency workforce development collaboration to promote employment for people with disabilities. The partners include the University of Hawaii, Maui Community Mental Health Center, the state Division of Vocational Rehabilitation and State Department of Labor and Industrial Relations. She specializes in creating student-centered, professional development learning/training environments based on individualized learning needs aligned with the principles and practices of Universal Design for Learning (UDL).

The Aquaponics Technician training and certification is aligned to industry standards and recognized as an occupation in USDOL Career and Technical Education (CTE) job sector “Natural Resources Productions.”

For past three years, she herself trained in various aspects of commercial aquaponics systems designs in consultation with University of Hawaii College of Tropical Agriculture, Nelson and Pade, Inc., Aquapono, Inc., University of Arizona Controlled Environment Agriculture and commercial aquaponics science and systems applications. She holds a master’s degree in education from Arizona State University, and earned her undergraduate degree at The Evergreen State College Olympia, Washington.

Topic: Commercial Aquaponics: A Pathway to Customized Employment

A snapshot of applied science utilizing recognized standards and practices as a universal designed technical pathway to employment of individuals with disabilities.



Rebecca Nelson, Nelson and Pade, Inc., Montello, Wisconsin

Rebecca Nelson, Co-founder, co-owner, Nelson and Pade, Inc., is involved in the day-to-day operation of Nelson and Pade, Inc., teaches in Nelson and Pade, Inc. workshops and writes books, videos, curriculums, course content, press releases, web content and Clear Flow Aquaponic system manuals. She assists clients around the world in getting established in aquaponics and successfully running an aquaponics business.

**Topic:
Conference Wrap-up and International Aquaponics Society Introduction**

In this talk, Rebecca Nelson will be providing a wrap up of the conference, introducing the International Aquaponic Society and discussing the goals and function of the organization and announcing the winners of the Aquaponics Poster contest.

The International Aquaponic Society, in partnership with the University of Wisconsin Stevens Point, is dedicated to aquaponics research, education and science-based, economically-viable aquaponic systems. The society is supported, in part, through a UWSP Foundation fund.

Take this link to the International Aquaponics Conference page, register today!

<http://www.uwsp.edu/conted/ConfWrkShp/Pages/AquaponicsConf.aspx>

Partners include:



**University of Wisconsin
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