Bioextractive Technologies for Nutrient Remediation International Workshop

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UConn, Stamford

Speaker Bios

Bela H. Buck
Professor of Applied Marine Biology
Alfred Wegener Institute
University of Applied Sciences Bremerhaven
Bremerhaven, Germany

Bela Hieronymus Buck studied neurophysiology and marine biology at the University of Bremen, at the Institute for Marine Research in Kiel and at the Center for Tropical Marine Ecology (ZMT) in Bremen. He was also involved in research projects concerning the aquaculture of giant clams at the Great Barrier Reef Marine Park Authority, the James Cook University and the Australian Institute for Marine Science in Townsville. He established a new institute, IMARE – the Institute for Marine Resources, in which he is a member of the Directory Board and is the head of the section "Marine Aquaculture for Responsible Fisheries." Bela H. Buck is responsible for the new land-based recirculation technology plant (2.66 Mio US $) for aquaculture research, which is under construction. He has been awarded three prizes during his scientific career: (1) for interdisciplinary research from the Chamber of Commerce in Bremen , (2) for the best Thesis of the Year 2004 (AWI) and (3) for being the 2005 Inventor of the Year (AWI).

Alejandro Buschmann
Professor
Universidad de Los Lagos
Puerto Montt, Chile

Alejandro Buschmann is a professor at the Universidad de Los Lagos in Chile, with over 90 peer-reviewed papers, in aspects of seaweed ecology and cultivation, and sustainable coastal and aquaculture strategies including integrated multi-trophic aquaculture (IMTA). He is a corresponded member of the Chilean Academy of Science and a Board Member of the International Seaweed Association (ISAC). Also, he was recognized by the International Foundation for Science (IFS) with The "Silver Jubilee Award" for his scientific achievements on seaweed aquaculture. At the present, he is the Head of the Research Center I-MAR and participant in scientific panels in the Chilean Science Agency (CONICYT) and the national commission for graduate program quality certification (CNA). As a scientific consultant, he has been able to support seaweed culture developments and the promotion of the use of sustainable environmental technologies for the industry.

Stephen F. Cross
Associate Professor and Director
Coastal Aquaculture Research & Training Network
University of Victoria
Victoria, Canada

Dr. Cross received his M.Sc. at the University of Victoria in marine quantitative ecology and his Ph.D. at the Aquaculture Institute, University of Stirling (Scotland). Although primarily a private-sector research scientist, he is also an Associate Professor and Director of the Coastal Aquaculture Research & Training (CART) Network at the University of Victoria. His developing research program focuses on the design and testing of Integrated, Multi-Trophic Aquaculture (IMTA) systems as an organic, and ecological approach to coastal aquatic food production. He is applying his research in the development of Canada's first Sustainable Ecological Aquaculture (SEAfarm) and successfully launched this commercial facility in spring 2009. Dr. Cross is a current Director on the boards of the Canadian Aquaculture Industry Alliance, the BC Shellfish Growers Association, the Pacific Sablefish Association, and the Pacific Organic Seafood Association - and is President/CEO of the Pacific SEA-Lab Research Society.

Dale Kiefer
Professor of Biological Sciences
University of Southern California
President of System Science Applications
Los Angeles, California

Dr. Kiefer, after working as a researcher for the Scripps' Marine Life Research Group and Visibility Laboratory, joined the faculty at the University of Southern California and is now a full professor in the Department of Biological Sciences. He is also President of System Science Applications (http://www.runeasy.com/), a marine consulting and software development company. In 1995 he served for 2 years as consultant to the Food and Agricultural Organization in Rome, Italy, where he applied his expertise in remote sensing to fishery management. He has published 75 papers and 16 published reports, 47 in the field of bio-optical oceanography, 21 relating to phytoplankton dynamics and modeling, 8 on pollution/water quality issues, and 8 on fisheries/information systems. He has also obtained 3 United States patents for inventions in optical instrumentation and wave damping floats. He has played a major role in developing EASy (Environmental Analysis System), the first geographical information system that was specifically designed for marine applications. Most recently, he has helped develop "AquaModel", which is used to analyze the operations and environmental impact of marine fish farms.

Hauke Kite-Powell
Research Specialist
Marine Policy Center
Woods Hole Oceanographic Institution
Woods Hole, Massachusetts

Dr. Hauke L. Kite-Powell holds degrees in naval architecture, technology and policy, and ocean systems management from MIT. Dr. Kite-Powell's research focuses on public and private sector management issues for marine resources and the economic activities that depend on them. Current research projects include: costs and benefits from improved ocean observing activities; policy issues surrounding use of ocean "space" for non-traditional activities, such as aquaculture and wind power; potential of shellfish aquaculture to contribute to nutrient level management in coastal water bodies; economics and management of marine aquaculture operations; environmental and ecological implications of long-term growth in marine aquaculture industries; economic dimensions of climate change effects on marine ecosystems and shoreline change; effectiveness and cost of measures to reduce ship strike risk and fishing gear entanglement risk to the North Atlantic Right Whale; and economics and development of the liquefied natural gas (LNG) shipping market.

Richard Langan
Director, Atlantic Marine Aquaculture Center
Co-Director, Cooperative Institute for Coastal and Estuarine Environmental Technology
Associate Professor of Biological Sciences, University of New Hampshire
Durham, New Hampshire

Dr. Richard Langan is an Associate Professor of Biological Sciences and Director of Ocean and Coastal Technology Programs at the University of New Hampshire. His research interests include development of environmentally sound practices and advanced technology for raising native, coldwater finfish and shellfish in exposed oceanic environments, nearshore molluscan shellfish aquaculture and restoration, and the application of science and technology for achieving clean water and healthy coastal habitats. He is a former commercial fisherman and the owner and operator of seafood and shellfish aquaculture businesses.

Odd Lindahl
Professor
University of Gothenburg
Kristineberg Marine Research Station
Fiskebacksil, Sweden

Odd Lindahl is a marine ecologist specializing in the study of eutrophication effects and re-eutrophication measures in Swedish coastal waters. He has become especially interested in using the bio-filtration capacity and environmental ecosystem services of mussel farming as a management tool for society in order to improve coastal water quality. Besides marine ecology, his research includes the use of mussels in organic feed and as organic fertilizer and also the economics of nutrient trading.

Mussel Farming Description: Many coastal areas are affected by eutrophication through nutrient runoff from agricultural operations, sewage discharges and other human activities. Blue mussels are currently being used in Sweden to harvest nutrients through their consumption of phytoplankton, for the sustainable production of valuable seafood, and as raw material for the production of animal feed, biofuels and fertilizers. Studies in Sweden have demonstrated that mussel farming can be used as a management tool to compensate for nutrient discharges in nutrient trading schemes. This concept has been given both political and financial support by the Swedish government as a measure to combat eutrophication and to improve coastal water quality. Nutrient recycling by shellfish may have great potential in temperate waters worldwide to counteract the negative effects of coastal eutrophication.

Robin Landeck Miller
Associate Scientist
HydroQual, Inc.
Mahwah, NJ

Robin Miller has more than twenty years of experience in water quality modeling, mostly in the NY/NJ Harbor Estuary, New York Bight, Long Island Sound system. Robin leads HydroQual's Environmental Fate and Transport Operation. Currently, Robin is HydroQual's project director for the development of TMDLs in the NY/NJ Harbor for toxic contaminants and nitrogen and carbon. Robin has been involved with numerous water quality projects related to Long Island Sound including a re-assessment of the nutrient TMDL and investigating factors contributing to the decline of the lobster population. Many of Robin's professional endeavors have been devoted to the application of the System-Wide Eutrophication Model (SWEM) to address the management of nitrogen inputs to the East River and Long Island Sound. She was directly responsible for the development of SWEM including its construction, calibration/validation, code refinement, peer review (i.e. through a Model Evaluation Group (MEG) process), and the management of the supercomputer resources necessary to implement SWEM.

Roger Newell
Professor
University of Maryland Center for Environmental Science
Horn Point Laboratory
Cambridge, Maryland

Roger Newell gained a B.Sc. and Ph.D. in Marine Zoology from the University of London. He was appointed in 1980 to the faculty of Horn Point Laboratory, University of Maryland Center for Environmental Science, Cambridge, MD, where he has served as a Full Professor since 1995. During his tenure on Chesapeake Bay, Dr. Newell has worked primarily on the ecology and biology of the eastern oyster, *Crassostrea virginica*. His research has helped foster a better understanding of the pivotal role that this once abundant suspension-feeding bivalve used to play in structuring the Chesapeake Bay ecosystem. This new appreciation has led managers to move away from early policies that only recognized the harvest value of oysters to an integrated management approach that tries to maximize both the ecological and economic value of oyster stocks.

Bob Rheault
Executive Director
East Coast Shellfish Growers Association
Wakefield, Rhode Island

Bob "Skid" Rheault was president of Moonstone Oysters in Narragansett, RI for 26 years. He has a Ph.D. in Biological Oceanography and is an adjunct faculty member in URI's Department of Fisheries & Aquaculture. He served as ECSGA President for 5 years before taking the Executive Director seat. Bob established the East Coast Shellfish Research Institute and has been successful in attracting several substantial federal research grants to address critical industry research priorities. Bob is an active member of the National Fisheries Institute and is a passionate industry advocate. His research interests include documenting and valuating the environmental services provided by shellfish aquaculture and using nutrient credit trading as a means to limit coastal eutrophication. He is currently involved in a NOAA-funded project to model the ecological carrying capacity for shellfish aquaculture and has been working with the ECSGA to establish Better Management Practices for the shellfish aquaculture industry. Bob is a member of the World Wildlife Fund's Bivalve Aquaculture Dialogs; an international group setting standards for sustainability certification for shellfish aquaculture. He holds a patent for novel upweller design and is a recipient of the National Shellfisheries Association's Wallace Award.

Kurt Stephenson
Professor of Resources and Environmental Economics
Virginia Tech
Blacksburg, Virginia

Dr. Kurt Stephenson is a professor in the Department of Agricultural and Applied Economics at Virginia Tech. Dr. Stephenson's research interests include market-based environmental policies, water resource policy, and the role of economics in public policy. Dr. Stephenson has published extensively on the application of market-like programs to water quality policy and has served as an advisor on nutrient trading program design and evaluation to numerous state and federal agencies. His current works includes investigating the potential use of oyster aquaculture as a nutrient management policy option.