RESEARCH EXPERIENCE FOR UNDERGRADUATES PROGRAM 2011
University of Wisconsin-Milwaukee, Center for Great Lakes Studies

Summer 2011: 6 June - 12 August 2011

Potential Student Mentors: Check REU Website for updates!

CARMEN AGUILAR, Ph. D.  Associate Scientist, Great Lakes WATER Institute.
Major Areas:  Biogeochemistry, freshwater, marine and hydrothermal environments, geomicrobiology, phytoplankton ecophysiology.

HARVEY BOOTSMA, Ph. D.  Associate Professor, School of Freshwater Sciences.
Major Areas:  Limnology: algal ecology, nutrient dynamics, food web dynamics.
Research:  Carbon and nutrient dynamics in benthic ecosystems. The influence of physical conditions (substrate type, hydrodynamics) on nutrient cycling and nearshore productivity. Spatial and temporal patterns of lake metabolism as reflected in CO2 dynamics.

THOMAS R. CONSI, Ph. D.  Shaw Associate Scientist, UWM Great Lakes WATER Institute.
Major Areas:  Aquatic Robotics, Aquatic Animal Biomechanics
Research:  Robotic systems for the long-term, high-resolution observation of aquatic animals in their natural environments.  Benthic aquatic robots.  Underwater observatories.  The mechanics, hydrodynamics, and control of undulating fin swimming in fish and in aquatic robots.  Novel biomechanical and sensory mechanisms in aquatic animals.

RUSSELL L. CUHEL, Ph. D.  Senior Scientist, Great Lakes WATER Institute.
Major Areas:  Physiological ecology of aquatic microorganisms in marine and fresh water; hydrothermal vent geomicrobiology.

RICK GOETZ, Ph.D.  Professor, School of Freshwater Sciences, University of Wisconsin-Milwaukee.
Major Areas:  Aquaculture and growth in fish.
Research:  The development of yellow perch aquaculture including the analysis of growth and nutrition in actively growing fish.  The differentiation of lake trout morphotypes.

TIM GRUNDL, Ph.D.  Professor, Geosciences Department
Major Areas:  Chemical dynamics of groundwater systems.
Research:  Kinetics of nitroaromatic degradation by ferrous iron, the source of radium in the groundwater of SE Wisconsin, the use of noble gases to trace provenance and recharge dynamics of regional groundwater systems, the development of real-time, in situ probes for the detection of contamination in harbor sediments.
JOHN JANSSEN, Ph. D. Senior Scientist, Great Lakes WATER Institute.
Major Areas: Fisheries ecology, fish sensory ecology.

REBECCA KLAPER, Ph.D. Shaw Associate Scientist, Great Lakes WATER Institute.
Major Areas: Impact of various emerging contaminants.
Research: Emerging contaminants (e.g. nanomaterials, pharmaceuticals) as well as natural stressors on freshwater organisms. Use genomic data as a tool to investigate the impacts of potential stressors and develop biomarkers of exposure and effect to be used as tools for ecological risk assessment.

J. VAL KLUMP, Ph.D. Senior Scientist & Director, Great Lakes WATER Institute, Professor School of Freshwater Sciences
Major Areas: Biogeochemistry; radiochemistry
Research: Carbon, nutrient and oxygen cycling; early diagenesis, particle dynamics, and benthic-pelagic coupling; Great Lakes observing systems

SANDRA MCLELLAN, Ph.D., Associate Scientist
Major Areas: Connections between environmental processes and human health
Research: To understand pathogen fate in large freshwater systems such as the Great Lakes, and develop new approaches for assessing pollution sources so that strategies can be devised to protect the Great Lakes and human health.

PAUL J. ROEBBER, Ph.D., Professor, Atmospheric Science Group, Department of Mathematical Sciences and Director, Innovative Weather Program.
Major Areas: Climate and weather. Physical system interactions between atmosphere and water.
Research: System dynamics at time scales ranging from decades to hours and spatial scales ranging from planetary to mesoscale (individual thunderstorm system).

J. RUDI STRICKLER, Dr. Sc. Nat. ETH. Shaw Distinguished Professor, Department of Biological Sciences.
Major Areas: Limnology, biological oceanography, zooplankton ecology, biomechanics.
Research: Zooplankton is the community of many small animals, called zooplankters, living in water, fresh as well as marine. We focus mainly on planktonic copepods -- calanoids and cyclopoids-- as well as on cladocerans.

JAMES T. WAPLES, Ph. D. Assistant Scientist, Great Lakes WATER Institute
Major Areas: Radiochemistry, carbon cycling, systems ecology.
Research: Using ambient radionuclides (e.g., $^{7}$Be, $^{90}$Y, $^{137}$Cs, $^{210}$Pb, $^{234}$Th) as chronometers to measure process rates in natural and man-made environments.