



News Release

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Great Lakes Observing System formed to improve data coordination

Ann Arbor, MI -- A non-profit corporation has been established in Michigan to formally initiate the Great Lakes Observing System Regional Association (GLOS-RA), one of 11 regional nodes of the U.S. Integrated Ocean Observing System (IOOS). A 12-member GLOS Board of Directors has been elected and will hold its inaugural meeting June 19-20, 2006, in Ann Arbor, Mich. *Biographies of the board members are attached.*

As the lone freshwater component of IOOS, GLOS is paving the way for improved water management and data exchange across the international Great Lakes region. In order to pursue ecosystem forecasting and indicator development for the Great Lakes, comprehensive data collection, compilation and management is sorely needed. GLOS is filling this niche by providing coordinated access to various physical, chemical and biological data sets and developing new products to support research, management and user communities. GLOS will provide critical real-time data for multiple users, including resource managers, researchers, educators, homeland security interests, the commercial shipping industry and the recreational boating community, among others.

A GLOS Steering Committee, made up of 30 key stakeholders, has been instrumental over the last two years in developing a business plan for the GLOS-RA, designing an appropriate governance structure, developing bylaws and compiling short-term priorities for GLOS implementation.

GLOS is initially focusing on data coordination within some of the busier and more highly populated interconnecting waterways. Planning is currently underway for a binational 3-dimensional hydrodynamic model for the St. Clair River – Lake St. Clair – Detroit River system. This modeling initiative is a critical element in implementation of a real-time monitoring network for the waterway, which is needed by municipal, county, state/provincial and federal interests to protect drinking water supplies for southeast Michigan and southwestern Ontario. The

coordinated 3-D model will be developed in 2007-08, contingent upon receipt of federal funding under IOOS appropriations. GLOS partnered with the Southeast Michigan Council of Governments to conduct a two-day technical workshop in March 2006 to define the functional requirements and detailed modeling specification desired by affected stakeholders.

On the education and outreach front, GLOS is teaming with the Great Lakes Sea Grant Network and the newly established Great Lakes Center for Ocean Sciences Education Excellence to do comprehensive user needs assessments, outreach planning and curriculum development. Other current GLOS activities include advocating for upgrades and additions to the National Data Buoy Center network and improvements to nearshore marine forecasts generated by the National Weather Service.

The Great Lakes Commission, based in Ann Arbor, Mich., has been leading initial development of GLOS, with funding through the National Oceanic and Atmospheric Administration, Coastal Services Center. For more information, visit www.glos.us.

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GLOS Board of Directors

Elected April 13, 2006



Alfred M. Beeton



Dr. Beeton served as Acting Chief Scientist (1996-1997) of the National Oceanic and Atmospheric Administration, U.S. Department of Commerce, until his retirement August 1997. He continued to provide advice to the Administrator of NOAA as the Senior Science advisor (1997-2002). He is an Adjunct Professor in Environmental and Industrial Health, School of Public Health, University of Michigan. At the University of Michigan he was Director of the Great Lakes and Marine Waters Center, which included the Great Lakes Research Division, Coastal Zone Laboratory, and the Michigan Sea Grant Program, and he was Professor of Natural Resources and Professor of Atmospheric and Oceanic Sciences in the College of Engineering (1976-1986). He held professorial positions at Wayne State University, Oregon State University, and University of Wisconsin-Milwaukee where he was Associate Director of the Center for Great Lakes Studies (1966-1973) and Associate Dean of the Graduate School (1973-1976). His government service includes work for the Michigan Conservation Department, the U.S. Bureau of Commercial Fisheries as Chief of the Environmental Research Program for the Great Lakes (1957-1966), and Director of the Great Lakes Environmental Research Laboratory, NOAA (1986-1996). Dr. Beeton was U.S. Chairman of the Science Advisory Board of the International Joint Commission, Commissioner of the Toxic Substances Control Commission for Michigan, Chairman of the PCB Committee and Chairman of the Committee on Ecological Effects of a Sea-Level Canal for the National Research Council when he was a member of the Environmental Studies Board (1976-1982). He served as Chairman of the International Environmental Program Committee of the NRC, The U.S. Committee of SCOPE/ICSU (1980-1983). He was Chairman of the Board for the Consortium for International Fisheries and Aquaculture Development (1983-1986). He was advisor and investigator for the Smithsonian Institution on the Nam Ngum Project in Laos, Volta Lake Project in Ghana, and Principal Investigator of the Lake Skadar Project in Yugoslavia. He negotiated collaborative research projects in Venezuela on Lake Maracaibo. The University of Michigan is his alma mater where he received his PhD in 1958. The University of Wisconsin-Milwaukee presented him a Honorary DSc in 1996. Al continues to be active on environmental issues. He is an advisor to the Great Lakes office of the National Wildlife Federation, he recently resigned from the Board of the Detroit Audubon Society. He is member of the Executive Committee of the Michigan Sierra Club. His emeritus appointment at the Great Lakes Environmental Research Laboratory enables him to keep knowledgeable and active on new issues. He and his wife, Ruth, live in Ann Arbor, Michigan. Al was born in Denver, August 15, 1927.

Jeffrey R. Boehm



Dr. Jeff Boehm has a keen interest in aquatic conservation, specifically the role that zoos and aquariums play in fieldwork and research, and ultimately in public awareness. He believes strongly that these organizations and allied institutions will play an increasingly important role by reaching people with messages of conservation, and inspiring greater stewardship of the natural world. Dr. Boehm has worked extensively in the conservation community to establish collaborative

and innovative partnerships, which address these issues. Currently, Dr. Boehm is focused on the launch of Shedd Aquarium's Great Lakes initiative. This collaborative program leverages the Aquarium's strength in education, exhibitry and communications. Close to two million guests visit the Aquarium each year and many more are reached through Shedd's marketing, public relations and education outreach programs. Through coordinated efforts with other Great Lakes organizations, Shedd will harness the power and reach of these programs to connect people who live throughout the basin with their Great Lakes. Shedd's vision is a Great Lakes watershed that is healthy, well understood and cherished far into the future. Dr. Boehm serves as the Aquarium's joint chair for this initiative. Dr. Boehm is a graduate of the University of California, San Diego, where he received his bachelor's degree, and the University of California, Davis, where he received his degree in veterinary medicine. Dr. Boehm completed an internship in small animal medicine in Southern California and then worked as a veterinary clinician at the Los Angeles Zoo. Since 1992, Dr. Boehm has worked at the John G. Shedd Aquarium in Chicago, where he is currently the Senior Vice President for Animal Health and Conservation Science. In this position he oversees the aquarium's veterinary care program, a variety of conservation science initiatives and the launch of the new Great Lakes conservation initiative.

Gerald E. Galloway



Gerald Galloway is a research professor in the School of Public Policy at the University of Maryland and the president-elect of the American Water Resources Association. Previously Dr. Galloway was a vice president of the Enterprise Engineering Group at the Titan Corporation. Dr. Galloway has served as the U.S. Secretary of the International Joint Commission and as a consultant on a variety of water resources engineering and management issues to the Executive Office of the President, The World Bank, the Organization of American States, the TVA, and the U.S. Army Corps of Engineers. He is former dean of the Academic Board (Chief Academic Officer) of the United States Military Academy (USMA). Dr. Galloway graduated from the USMA, and holds master's degrees from Princeton, Penn State, and the U.S. Army Command and General Staff College. He holds a Ph.D from the University of North Carolina in Water Resources / Geography.

Mark S. Grazioli



Grazioli's career spanned 35 years at the U.S. Army Corps of Engineers - Detroit District, with various assignments in Engineering and Construction Operations Divisions. Started as design engineer and rose to the position of Assistant Chief of the Engineering Division. Retired as Chief Construction Operations Division, a position held from 1980 to 1993. Responsible for Operations and Maintenance of 105 water resource projects on the Great Lakes, in the states of Michigan, Wisconsin and Minnesota. Responsible for Permits in the state of Michigan and a portion of Indiana, as well as Emergency Operations in the District. Staff of 500 people, with six field offices. Responsible for program execution of a \$60 million annual Operations and Maintenance Budget, requiring the prioritizing of commercial and recreational projects. Also responsible for the operation of Locks and a Hydropower Facility at the Sault Sainte Marie, Michigan. Coordinated projects with several Federal and State Agencies as well as Commercial and Recreational Users. For ten years, served on a Wisconsin Department of Administration Committee, reviewing and prioritizing harbor projects eligible for state funding. From 1985 until 1993 designated as the senior civilian reporting to the District Commander. After retiring from the

Corps of Engineers, Grazioli worked 10 years for the firm of Wade Trim and Associates, in the Detroit area. The firm provides engineering services for local municipalities as well as State and Federal Agencies, with offices in Florida, Michigan, Ohio and Pennsylvania. He served as a Project Manager for various projects, including a sewer improvement project for the City of Detroit, with a construction cost of \$1.1B. Mr. Grazioli held the position of Principal prior to his second retirement. Grazioli has a master's degree from Wayne State University and a bachelor's degree from the University in Detroit, both in civil engineering. He is a Registered Professional Engineer in the State of Michigan. Grazioli has a keen interest in navigational and environmental issues related to the Great Lakes and over 45 years experience in engineering including planning, design, construction and operations. He is familiar with the Great Lakes navigation system and has coordinated system improvements with governmental agencies at various levels, as well as private industry throughout his career. He has held positions of responsibility in both the Federal government and the private sector. He has also served on numerous boards and committees as part of his work assignments and as a volunteer.

Philip Keillor



Keillor began his professional career working as a project engineer and senior project engineer for 3M Company in research and development for nine years. He obtained the first Master's of Science degree in Ocean Engineering from the University of Wisconsin and worked many years as a coastal engineering specialist for the University's Sea Grant Institute. From 2000 to 2003, Keillor led a Great Lakes-wide effort to develop new guidance on coastal processes and shore protection for shore property owners on a University contract with the U.S. Army Corps of Engineers (Detroit District). He has led a four-university assessment of the environmental impacts of dredge material disposal in Lake Superior for the St. Paul District of the U.S. Army Corps of Engineers (in the 70s), and a four-university project to develop computer simulation and decision tools for sediment remediation (in the 90s) funded by the Great Lakes Protection Fund and USEPA-GLNPO. He helped Wisconsin's state and local governments assist coastal residents and communities in coping with natural coastal hazards of the Great Lakes and inland waters and served on various Wisconsin and Great Lakes work groups. Since retiring from the University, he does a little coastal engineering consulting as an expert witness, writer and educator on natural coastal processes and hazards, risk assessment and management, and climate change. Keillor is presently working on a NOAA-funded writing contract with the Association of State Floodplain Managers to help write a handbook for shoreland regulators that applies the ASFPM's No Adverse Impacts policy to all of the nation's coasts.

Gail Krantzberg



Dr. Krantzberg is Professor and Director of the Centre for Engineering and Public Policy in the School of Engineering at McMaster University.. The Centre offers a Master's Degree to engineers and applied scientist training them on complex environmental matters and enabling them to understand the application of science and technology to public policy. Gail completed her M.Sc. and Ph.D. at the University of Toronto in the fields of ecology, biology, chemistry and toxicology, studying how contaminants cycling in freshwaters and their ecological effects. She worked for the Ontario Ministry of Environment from 1988 to 2001, as Sediment

Specialist, Coordinator of Great Lakes Programs, and Senior Policy Advisor on Great Lakes. She is the past president of the International Association of Great Lakes Research. Dr. Krantzberg was the Director of the Great Lakes Regional Office of the International Joint Commission from 2001 to 2005, after having served on this binational treaty organization's Water Quality Board, Council of Great Lakes Research Managers, Sediment Priority Action Committee and Indicators Implementation Task Force. The IJC's Regional Office plays a central role of overseeing binational progress in Great Lakes clean up and protection under the auspices of the 1972 Great Lakes Water Quality Agreement. She has authored more than 90 scientific and policy articles on issues pertaining to ecosystem quality and is a frequent speaker to media and the public.

Frank L. Kudrna, Jr.



Dr. Kudrna became President of Kudrna & Associates, Ltd. in March, 1986 and, since 1998, serves as the Chief Executive Officer. The firm, with offices in Chicago and DuPage County, provides diversified consulting engineering services in the areas of civil engineering to industrial, commercial and institutional clients including municipal, state and federal agencies. He served as President and Chief Operating Officer of Epstein Civil Engineering, Inc. from July 1982 through March 1986. As Director of the Illinois Division of Water Resources from November, 1977 to June, 1982, he coordinated the water resource activities of the State of Illinois. He directed a staff of 160 with an annual budget of \$19 million and also chaired the Governor's State Water Plan Task Force. He spent nine years with the Metropolitan Water Reclamation District of Greater Chicago and during that period directed the Planning and Flood Control staffs. Prior to this he spent five years with the Illinois Division of Highways.

Dr. Kudrna is a registered Professional Engineer in the States of Illinois, California, Wisconsin, New York, Indiana, Michigan and Florida. Kudrna served as Chairman of the Illinois Delegation of the Great Lakes Commission where he was a Commissioner for 25 years. He served as a U. S. Board Member of the International Joint Commission, Great Lakes Diversions and Consumptive Uses Study Board and the International Great Lakes Levels Advisory Board. Kudrna also serves on the U. S. Department of Commerce, Sea Grant National Advisory Panel; NOAA's Science Advisory Board; and is a member of the Editorial Board of Seaway Review Magazine.

Dale K. Phenicie



Phenicie has worked with industrial organizations on environmental matters during his entire working career. He has identified pollutant release sources, been involved in the development of effluent and air emission control systems, overseen control measure implementation, worked on new industrial process designs which reduce or eliminate environmental impacts, and actively monitored the results of these efforts in plant effluents, air emission streams and the ecosystem. Phenicie has been involved in Great Lakes related environmental issues since 1991. He served on a U.S. EPA task force regarding the Great Lakes Initiative (GLLI), the IJC Virtual Elimination Task Force, has organized and chaired several industry oriented committees and working groups on Great Lakes matters, coordinated industry activity in the Great Lakes Binational Toxics Strategy, and has been a member of the SOLEC Steering Committee since 1994. Since 1996, Dale has pursued an independent consulting practice primarily focused on Great Lakes issues. A primary client has been the Council of Great Lakes Industries. His industrial expertise includes pulp and paper making processes, lumber and wood products production, chemical manufacture, and hydroelectric and

thermal electric generating systems. He holds degrees in Industrial Chemistry Technology and Paper Technology from Ferris State University and Western Michigan University respectively.

Harvey Shear



Shear is currently an adjunct professor in the Department of Geography at the University of Toronto at Mississauga, teaching undergraduate courses on world freshwater resources and ecology / economy and is developing a course on the Great Lakes. Shear is Canadian Chair of the International Joint Commission's (IJC) Council of Great Lakes Research Managers. His previous position as Regional Science Advisor for Environment Canada-Ontario Region involved provision of scientific advice in Ontario on all environmental issues from Point Pelee in Lake Erie to Hudson Bay. Shear is Canadian Chair of the Biennial State of the Lakes Ecosystem Conference (SOLEC) with U.S. EPA. He's held previous positions with the Department of Fisheries and Oceans and the IJC Regional Office. These involved development of biological monitoring programs, an intensive monitoring program for Lake Superior, establishment of a habitat management program for DFO in Ontario, and the land mark Pollution from Land Use Activities Reference Group (PLUARG) amongst other achievements. Dr. Shear has published numerous scientific papers on aquatic ecology and management, and has presented scientific talks at various scientific and non-scientific venues. He has also published several papers on the nutrient regime and pollution problems in Lake Chapala, Mexico's largest lake. He is actively involved in research on another Mexican lake, including the development of a basin wide management plan for this lake through extensive public consultation.

Richard Dow Stewart



Richard Dow Stewart is a Professor at the University of Wisconsin-Superior and the Director of the Transportation and Logistics Research Center and Co-Director of the Great Lakes Maritime Research Institute. He earned his Ph.D. at Rensselaer Polytechnic Institute's Lalley School of Management his Masters degree at the University of Wisconsin-Green Bay and his Bachelors at the US Merchant Marine Academy. Dr. Stewart has commanded ocean going ships and was manager of a \$300 million dollar fleet of tankers and bulk vessels trading world-wide. He was a Captain in the US Naval Reserve and holds a current Unlimited Ocean Master's License and STCW-95 certification. Dr. Stewart has extensive teaching experience in undergraduate and graduate courses in the US and overseas. He is an examiner for the American Society of Transportation and Logistics and is Certified in Transportation and Logistics by the AST&L. His publications include research reports, books and articles on transportation management, port operations, transportation education and marine environmental management. He is a consultant for law firms and transportation companies. Dr. Stewart is active in Boy and Girl Scouts, several professional societies and serves on public advisory committees and non-profit boards. Richard is married to Kathleen Collins and they have four children.

Nelson A. Thomas



Retired from US EPA January 1997 after working 36 years on water quality issues. Prior to that employment worked with the State of Ohio as limnologist on Lake Erie. Developed the phosphorus reduction plan to control Lake Erie's oxygen

problems. The later 26 years working for EPA focus on working on the Great Lakes. Capacities served includes; Director of the EPA Great Lakes Laboratory at Grosse Ile Michigan, Associate Director for Research Operations-Environmental Research Laboratory Duluth and Senior Advisor for National Programs. Associations with Great Lakes activities include Lake Ontario co-chair of biology International Field Year Great Lakes (IFYGL), Co-chair Biology IJC Lakes Huron and Superior Upper Lakes Reference Study, and Chair IJC Great Lakes Research Managers. Currently, member of Minnesota Sea Grant Program. Recently, term appointment ended as chair of the Duluth/Northshore Sewer District. Sailed and raced sailboats for 30 years on three of the Great Lakes. Authored and coauthored approximately 30 scientific papers dealing with Great Lakes water quality problems.

William J. Werick



Werick worked for the Corps of Engineers from 1968 until his retirement in April 2004. During that time he worked on the Great Lakes as a surveyor and dredging specialist, as a planner for the Buffalo district, on special assignments throughout the U.S., and for the last fourteen years, as a senior planner at the Corps' Institute for Water Resources near Washington, D.C. He has spoken on water resources at Yale, Harvard, Johns Hopkins, Cornell, the University of Washington, the World Bank, United Nations, and the National Academy of Sciences. He provided expert opinion on water management to the White House Council on Environmental Quality and Congressional subcommittee staff interested in water issues, and has been interviewed on a variety of radio talk shows about water issues. Werick is an expert on drought management. He was one of the principal analysts for the National Drought Policy Commission (1999-2000), and led the National Drought Study for the Corps from 1989 to 1993. During that study, he led the development of a method called Shared Vision Planning. He recently completed a shared vision planning effort by Canada and the U.S. to find better ways to manage Lake Ontario levels. Werick has applied these methods internationally. He demonstrated the shared vision planning approach for the Middle East Peace process negotiations in Washington in September 1993, and was the U.S. representative to a water loss reduction conference held in Netanya, Israel in 1996 as part of the multilateral peace talks. Werick holds degrees in mathematics from Canisius College and civil engineering degree from the State University of New York at Buffalo, He is a registered engineer in New York State, and is a graduate of the Corps Planning Associates program.