
CELEBRATING 50 YEARS OF RESEARCH
1871
DEDICATED TO EXCELLENCE
Buffalo State
Great Lakes Center
1966–2016

GLC Field Station, 1966

Great Lakes Laboratory At State College Approved

Will Carry On Water Conservation And Pollution Research on 8-Acre Site

Establishment in Buffalo of a Great Lakes Laboratory at the State University College at Buffalo was approved Thursday by the State University Board of Trustees in New York City.

It will occupy an eight-acre site at the foot of Porter Ave. to do research in aquatic sciences and public service areas such as water conservation and water pollution.

The laboratory chief will be Dr. Howard G. Sengbusch, director of the college's Arts & Sciences Division. He has been on the faculty since 1951.

He said the establishment of the water research center is an indication of the continuous growth of the Elmwood Ave. college, especially in the arts and sciences.

"The acquisition has tremendous potential in opening the door to constructive research in water resources and expanding the educational offerings of the college," he said.

He remarked that the college will play a significant role "in co-operation with the community in water resources management."

DR. HOWARD SENGBUSCH
Named Lab Director

The site included 3.3 acres owned by the New York Central Railroad and 4.6 acres owned by the State Office of General Services.

BUFFALO EVENING NEWS
Metropolitan Page

Courier Express - Oct 6 1964

Great Lakes Laboratory Dedication Set Saturday

Ceremonies dedicating the newly-established Great Lakes Laboratory, for research in the study of fresh waters, will be held at 3 Saturday afternoon at Buffalo State College.

The laboratory is on a 7.9-acre site at the foot of Porter Ave. The cost of establishing the Great Lakes Lab has not been disclosed.

More than 100 persons are expected to attend the opening ceremonies in the new science auditorium on the Elmwood Ave. campus. Dr. Paul G. Bulger, president of the college, will deliver the welcoming address.

Dr. Howard G. Sengbusch, director of the college's Arts and Sciences Division, who also has

District Democrat, and State Senator Earl W. Brydges, Republican majority leader.

Among those invited to attend are representatives of the area's major industries concerned with water pollution, civic and political leaders and representatives from other area colleges and universities.

After the ceremonies on the campus, the guests will be taken by bus to the site of the new laboratory for an inspection and ribbon cutting ceremony, which will be followed by a reception at the home of Dr. Bulger.

The new facility will do research in aquatic sciences and public service areas such as water conservation and research.

Fresh-Water Study Center To Be Dedicated Saturday

Great Lakes Laboratory to House Research Facilities at Buffalo State

A new facility for the study of fresh waters will be dedicated Saturday at Buffalo State University College. Called the Great Lakes Laboratory, it is located at the foot of Porter Ave. and will provide quarters for research in such areas as water conservation and aquatic sciences.

Dr. Paul G. Bulger, Buffalo State president, will welcome participants in the dedication ceremonies at 3 PM in the college's new science auditorium on the Elmwood Ave. campus.

Plans for the newly established laboratory will be described by Dr. Howard G. Sengbusch, dean of the Arts & Science Division at BSUC. Dr. Sengbusch will be in charge of the new facility.

Rep. Richard D. McCarthy (D., N. Y.) of the 39th District and State Senator Earl W. Brydges, Republican majority

years—said his group was negotiating for a new piece of property. It is expected that Buffalo State will lease a section of the laboratory site to the Sea Scout Alumni Association, to enable them to continue operation there.

According to Dr. Sengbusch, the laboratory has already moved into an operating state, with one research program under way. The building already at the site is undergoing rehabilitation and is expected to be ready by Christmas, he said.

To Buy Vessels

"During the second semester of this year, several research projects will be started there and perhaps some laboratory courses started," he continued.

"Plans are under way for a new building to provide faculty research space and teaching labs on the site. We are in the process of acquiring vessels to

DEDICATION

GREAT LAKES LABORATORY

STATE UNIVERSITY COLLEGE AT BUFFALO

SATURDAY, OCTOBER 8, 1966

NEW SCIENCE AUDITORIUM

DR. SIGMUND A. SMITH
Director of Mathematics and Science Division
Presiding

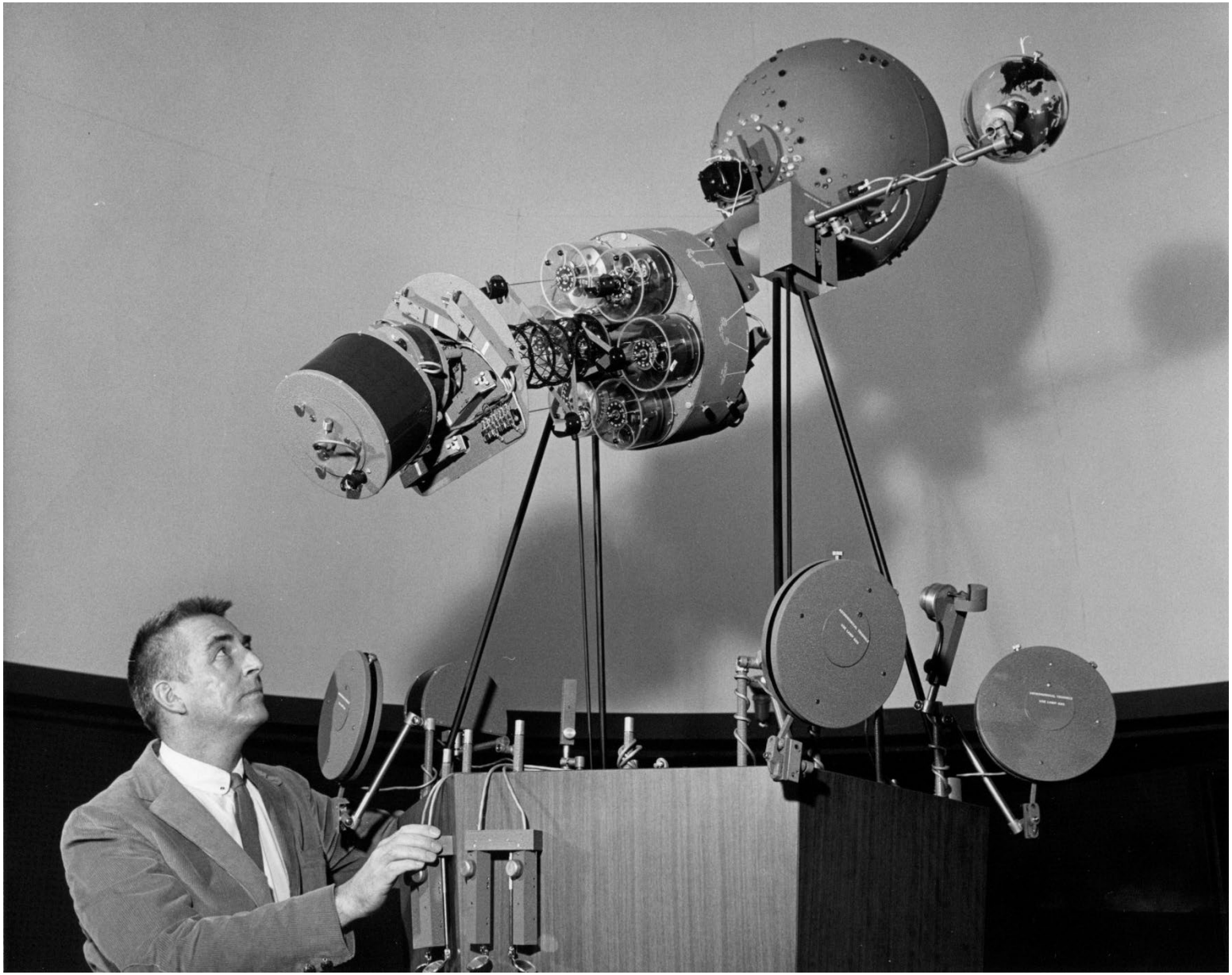
3:00 p.m.	Welcome	DR. PAUL G. BULGER *President*
	Introduction of Guests	
	Acceptance of Gift	
	Remarks	DR. HOWARD G. SENGBUSCH *Director, Great Lakes Laboratory* *Dean, Arts and Science*
		HON. EARL W. BRYDGES *President pro tem and* *Majority Leader* *New York State Senate*
		HON. RICHARD D. MCCARTHY *House of Representatives* *Washington, D.C.*

4:00 p.m. Dedication Ceremony at Site

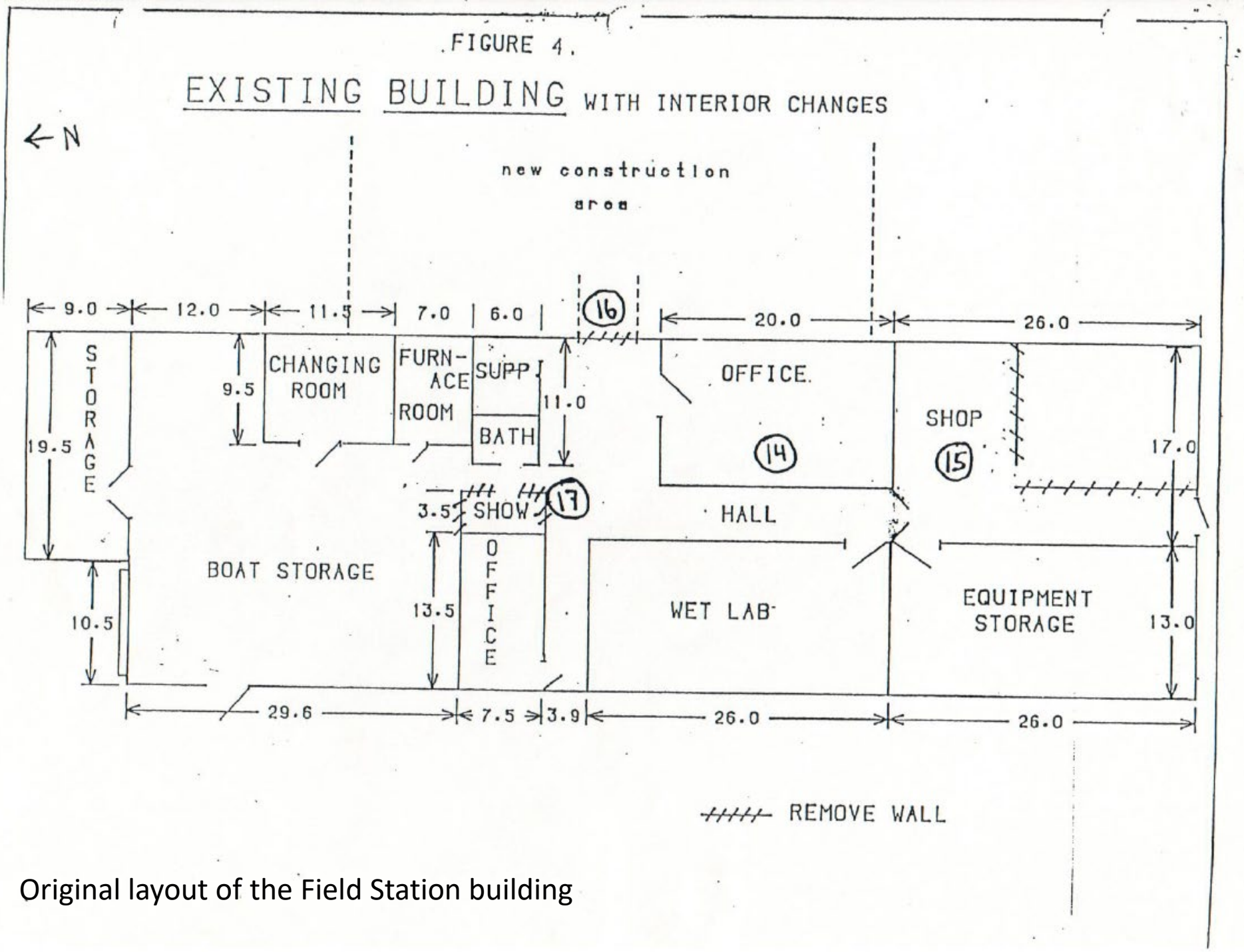
4:30 p.m. Reception
President's Home
152 Lincoln Parkway


Dedication GREAT LAKES LAB.
8 Oct. 1966
H.G.S. + Pres. P. Bulger


EAT LAKES LAB



Dr. Howard Sengbusch, Dean of Arts and Science,
helped establish the Great Lakes Laboratory in 1966.



Original layout of the Field Station building

An amphibious truck used in the early days of the GLC

Dr. Robert Sweeney

Director, 1966-1981

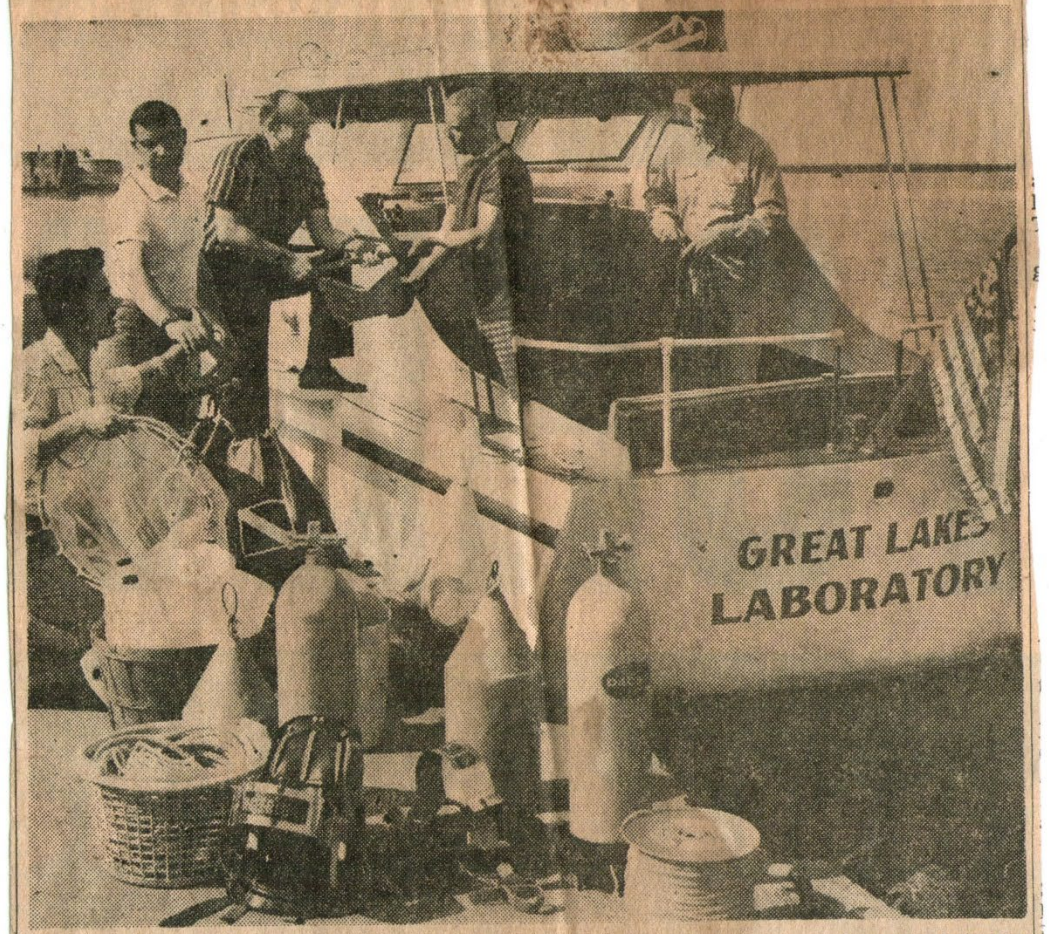
First focused on water quality and invertebrates in the Buffalo River, then other projects on Lake Erie and tributaries

Investigated Phosphorus abatement program's affect on the lake

In addition to Field Station, arranged for lab and office space on campus

34’ Great Lakes Cruiser, in service from 1967-1970

Ready to Start Study of Lake Erie



Two sciences, biology and geology, dived into Lake Erie off Sturgeon Pt., marking the start of an underwater study at this end of the lake. The venture, financed by a federal grant, was made possible by the co-operation of State University of Buffalo and State University College at Buffalo.

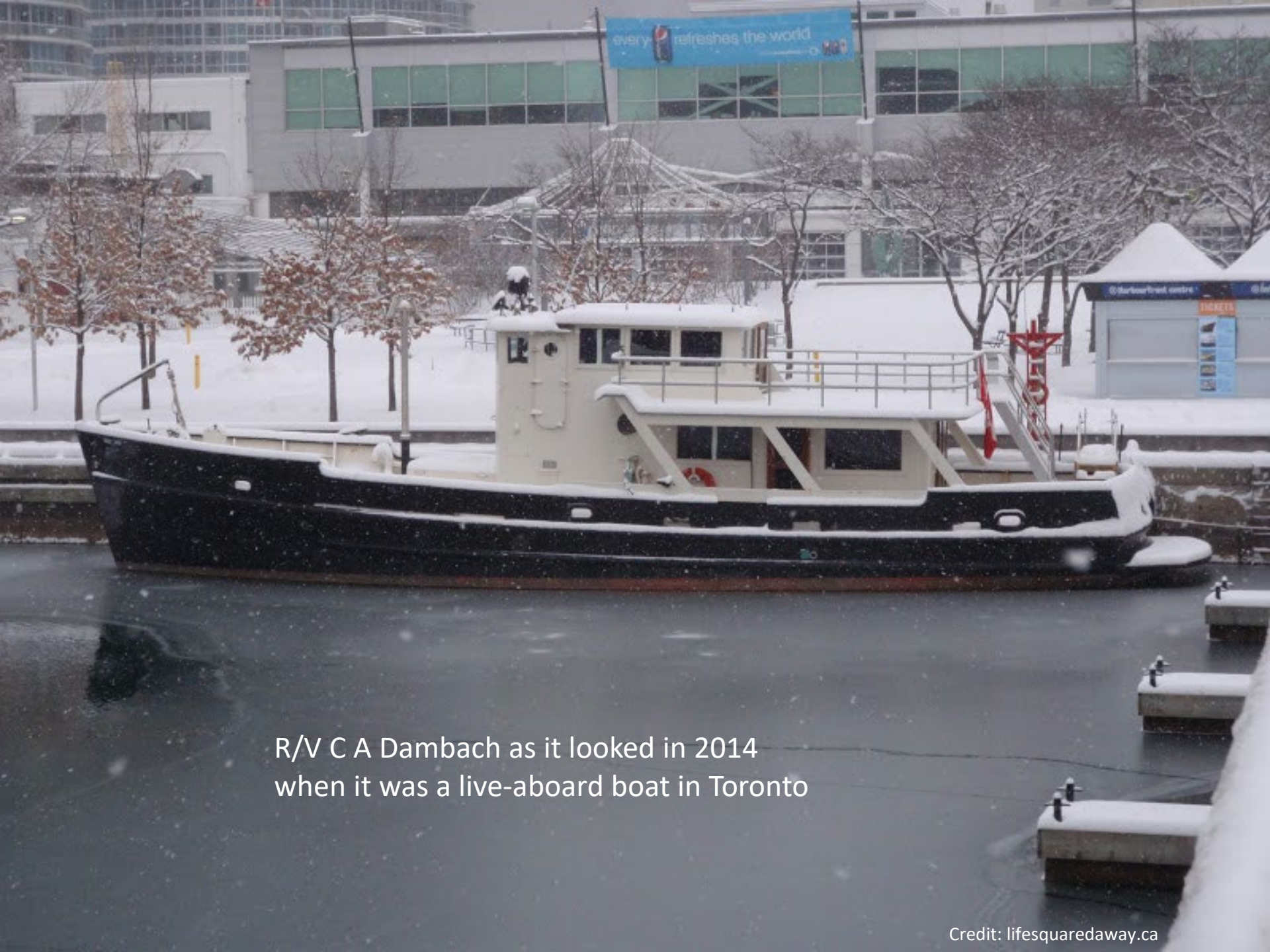
Diving gear and scientific equipment were loaded aboard the college's Great Lakes Laboratory cruiser near the Buffalo Yacht Club. Lake bottom geology will be studied and plotted—the 9 miles between Sturgeon Pt. and Pt. Abino, Canada. The biologists concurrently will study and set up reference stations while examining floc, a botton mass of organic matter related to lake pollution.

Participants in Tuesday's initial dive are, from the left: Edward Taublie, a graduate UB student working with Dr. Charles J. Cazeau, geologist at that university; Vincent J. Francavilla, graduate biology student; Dr. John F. Storr, UB biologist, and James Sutherland, graduate UB biology student. Coiling the line is cruiser pilot Barry Wech. Dr. Storr and Dr. Cazeau are the principal investigators.

Captain Barry Wech plotting a course

R/V C A Dambach, a 65’ T-boat operated by the GLC from 1970-1982

Credit: Bill K from US Army Boat History Pictures



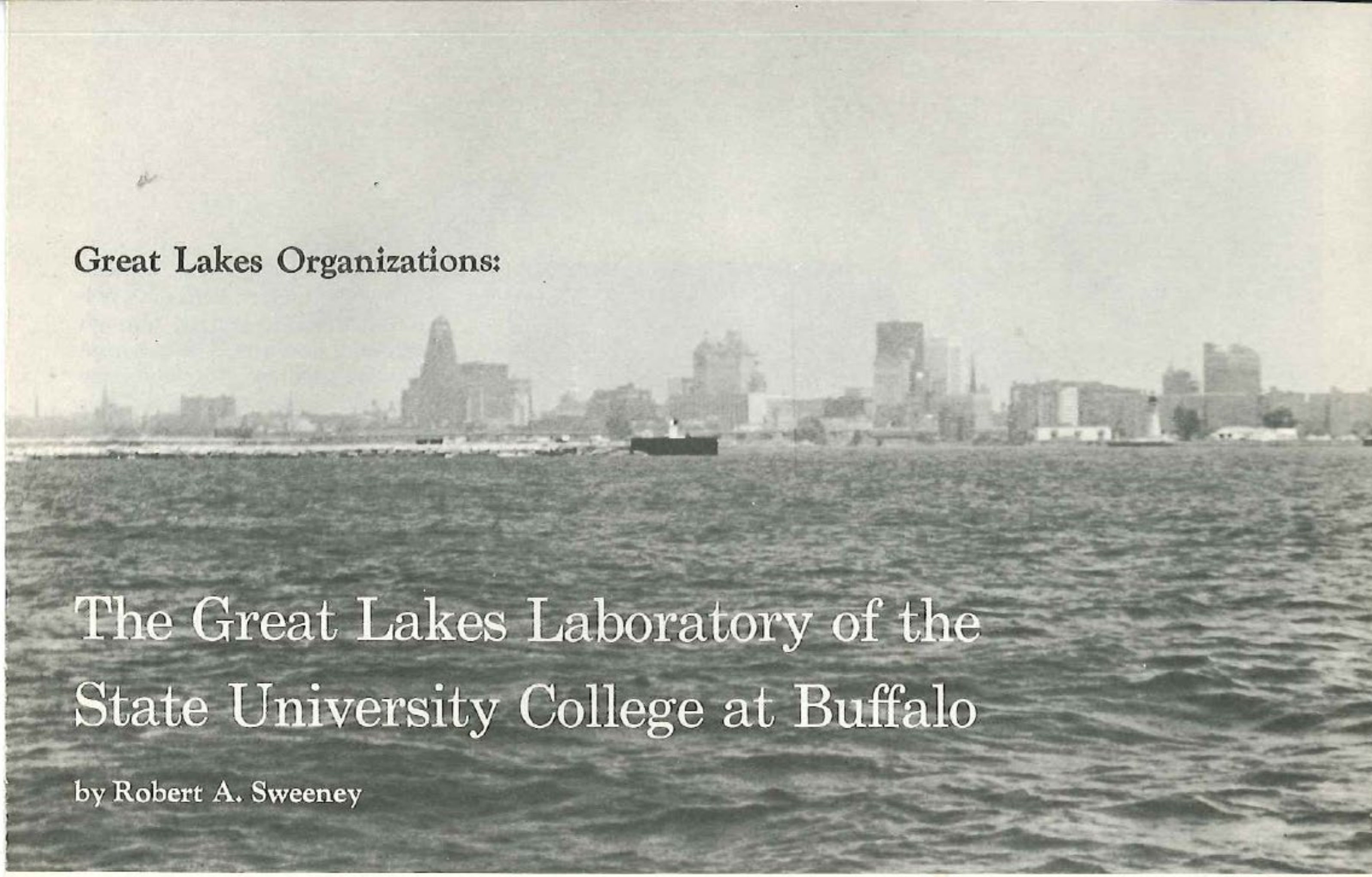
R/V C A Dambach as it looked in 2014
when it was a live-aboard boat in Toronto

Credit: lifesquaredaway.ca

Great Lakes Organizations:

The Great Lakes Laboratory of the State University College at Buffalo

by Robert A. Sweeney



William Doran

Within the years 1966-67 a number of Great Lakes programs were established including the Canada Centre for Inland Waters, Center for Great Lakes Studies (Wisconsin-Milwaukee) and the Great Lakes Laboratory.

However, the structure and mode of operation of the Great Lakes Lab are quite different from its sister institutions. Some infor-

other units which are located throughout the state. Twelve of these institutions are within 60 miles of either Lake Erie or Ontario.

Faculty and students within SUNY number 12,600 and 261,000 respectively. Unlike the Mid-Western university systems, SUNY neither has nor had a "central campus."

university-wide research center be created on a single campus or should programs be instituted on several campuses? A survey of the system revealed that faculty members from several units were conducting investigations and instructing courses related to the Great Lakes. To relocate these individuals and their on-going programs to a single campus would have re-

RIVER ON THE MEND

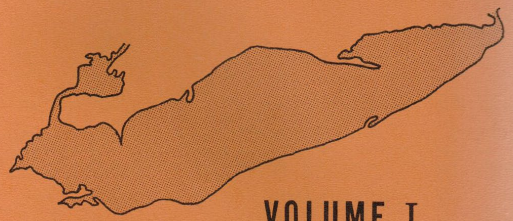
By Dr. Robert A. Sweeney, Director
Great Lakes Laboratory
State University College at Buffalo

In mid-summer 1972, a story that a fish was caught in the Buffalo River made the front and editorial pages of papers throughout Western New York and the Niagara Peninsula . . . Was the fish or the manner in which it was caught unusual? No, the fish was a sheepshead (Aplodinotus grenniens) captured by a teenager using a rod and reel . . . The newsworthy item was the fact that it was the first time in at least thirty years that a fish from Lake Erie had been caught at the headwaters of the Buffalo River. More importantly, it was a milestone in the rejuvenation of the major tributary of the Niagara River.

President Lyndon Johnson in 1965 termed the Buffalo River as the most fouled stream he ever had the displeasure of viewing. The Federal Water Pollution Control Administration (FWPCA), now the Environmental Protection Agency (EPA), listed the Buffalo

Reprinted from LIMNOS, Vol. 5 No. 2

ANNOTATED BIBLIOGRAPHY FOR LAKE ERIE



VOLUME I
BIOLOGY

PREPARED FOR THE
LAKE ERIE WASTEWATER
MANAGEMENT STUDY
U.S. ARMY ENGINEER DISTRICT, BUFFA

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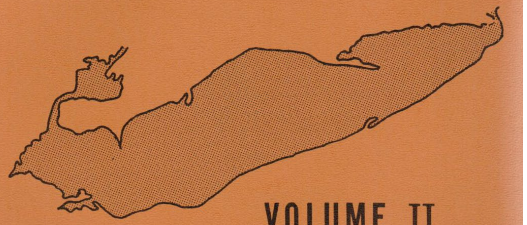

VOLUME II
CHEMICAL

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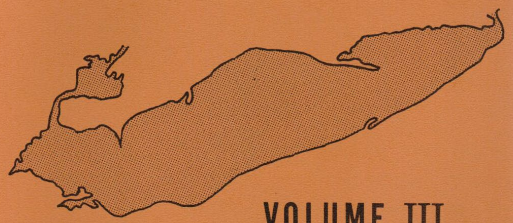

VOLUME III
ENGINEERING

ALO

OCTOBER 1974

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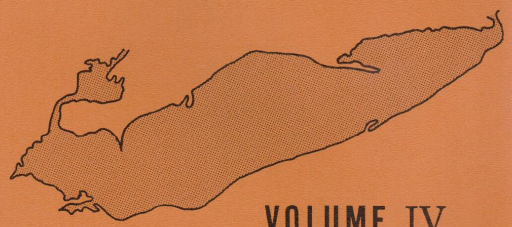
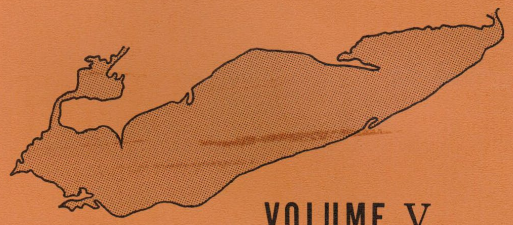


VOLUME IV
PHYSICAL

PREPARED FOR THE
LAKE ERIE WASTEWATER
MANAGEMENT STUDY
U.S. ARMY ENGINEER DISTRICT, BUFFALO

OCTOBER 1974

ANNOTATED BIBLIOGRAPHY FOR LAKE ERIE



VOLUME V
SOCIO-ECONOMIC

PREPARED FOR THE
LAKE ERIE WASTEWATER
MANAGEMENT STUDY
U.S. ARMY ENGINEER DISTRICT, BUFFALO

OCTOBER 1974

Great Lakes Lab grows to largest in country

By NANCY ROBERTI
of The Record Staff

The Great Lakes Laboratory (GLL), is a unit within Buffalo State College under the Natural and Social Sciences. Last year they took in $1.3 million, primarily from grants and contracts from federal agencies.

Established in 1966 by Board of Trustees at Buffalo State, GLL began its work in a building on the Black Rock Channel, a waterway that parallels the Niagara River to Scajaquada Creek. They started out with a staff of three in the field station at the foot of Porter Avenue. They were then given one lab in the New Science Building. Later they moved to labs in the basement of Perry Hall, and after spending a year and a half in the Campus School, GLL is now situated in 10,000 square feet of lab, office and storage space in the New Science Building.

Now they are the largest university-affiliated aquatic research program in the Great Lakes basin. They have 60 staff members on campus; 31 full-time, while the others are part-time during the academic year and full-time during the summer.

The director of the GLL, Dr. Robert A. Sweeney, helped to explain what is going on in and around the GLL.

The lab is divided into several units; biological, where they study the organisms and plants; chimical, where they analyze chemical pollutants and processes; the field, where samples are collected; data processing; the support unit, which operates ships.

A regular navy

"We have a regular navy," says Sweeney, in reference to six small outboard-powered boats, an "amphibious landing craft" called "Duck" which can function in or out of the water, and the GLL research vessel, the "Charles A. Dambach."

In use since 1970, "CA Dambach" is a 66-foot long T-boat for inter-island transport

THE C.A. DAMBACH, a 66-foot research vessel, is one of the mainstays of the Great Lakes Lab operation.

the GLL's $1.5 million dollars worth of equipment.

Director minimizes chaos

Sweeney, who calls himself "The director in charge of minimizing chaos," explained

amount of credit to the practical experience given them here."

More than 125 credited research projects have been generated by GLL staff.

John Reuter and Glenn Millner are two graduate students who are working in the

lake, lowering phytoplankton growth," says Reuter, involved in GLL since 1975. He is currently in the process of writing his thesis for his master's degree.

During the summer months they take samples and analyze them, looking for water

Dr. Harish Sikka

Director 1982-1987

Established the Environmental Toxicology and Chemistry lab

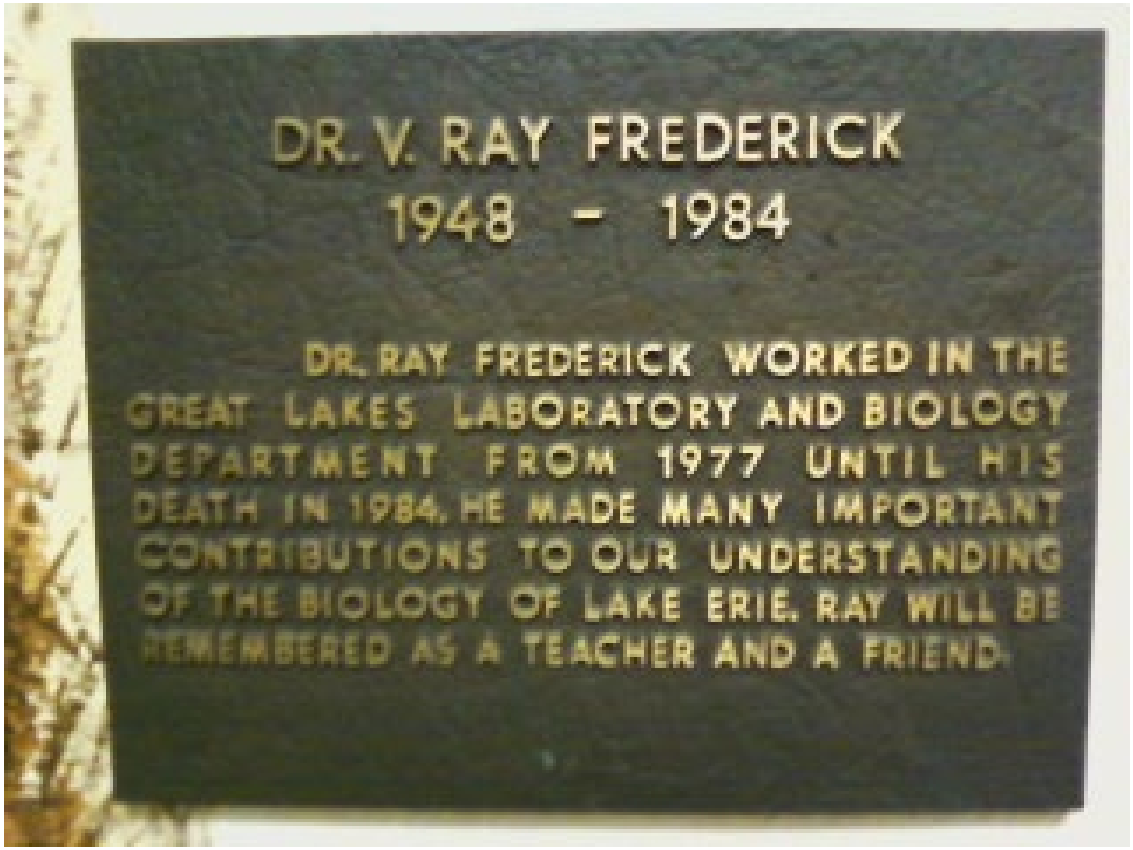
During this time, Dr. James Spotila also focused on fisheries in the surrounding waters, helping to create an artificial reef in Buffalo Harbor

CORPS OF ENGINEERS U. S. ARMY BUFFALO, N. Y.

U. S. TENDER MARKHAM III

TM-III-C 3 April 1974

37’ tender Markham III, used for field work in 1980s


DR. V. RAY FREDERICK
1948 - 1984
DR. RAY FREDERICK WORKED IN THE GREAT LAKES LABORATORY AND BIOLOGY DEPARTMENT FROM 1977 UNTIL HIS DEATH IN 1984. HE MADE MANY IMPORTANT CONTRIBUTIONS TO OUR UNDERSTANDING OF THE BIOLOGY OF LAKE ERIE. RAY WILL BE REMEMBERED AS A TEACHER AND A FRIEND.

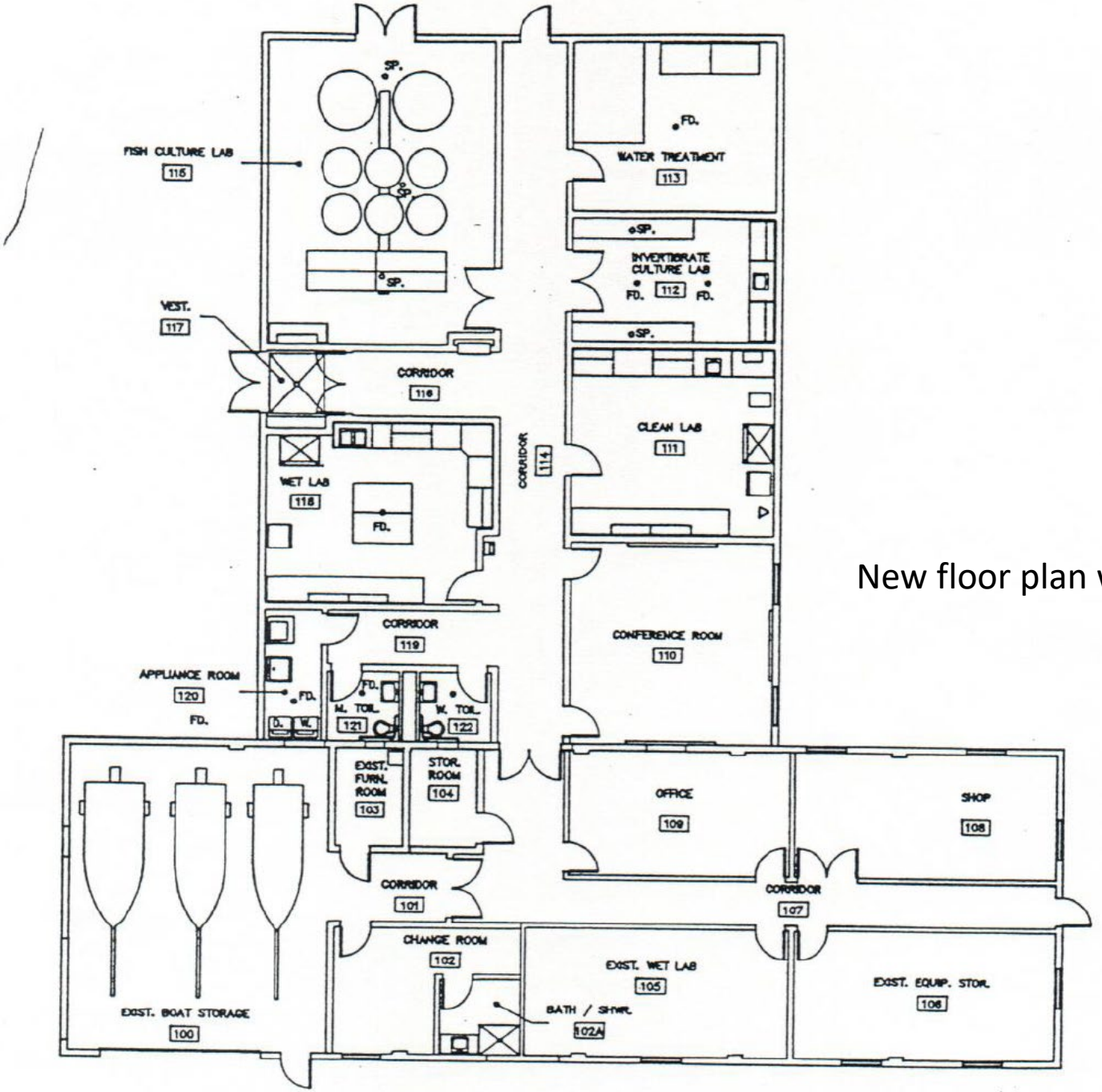
Dr. Charles Beasley

Director, 1988-1992

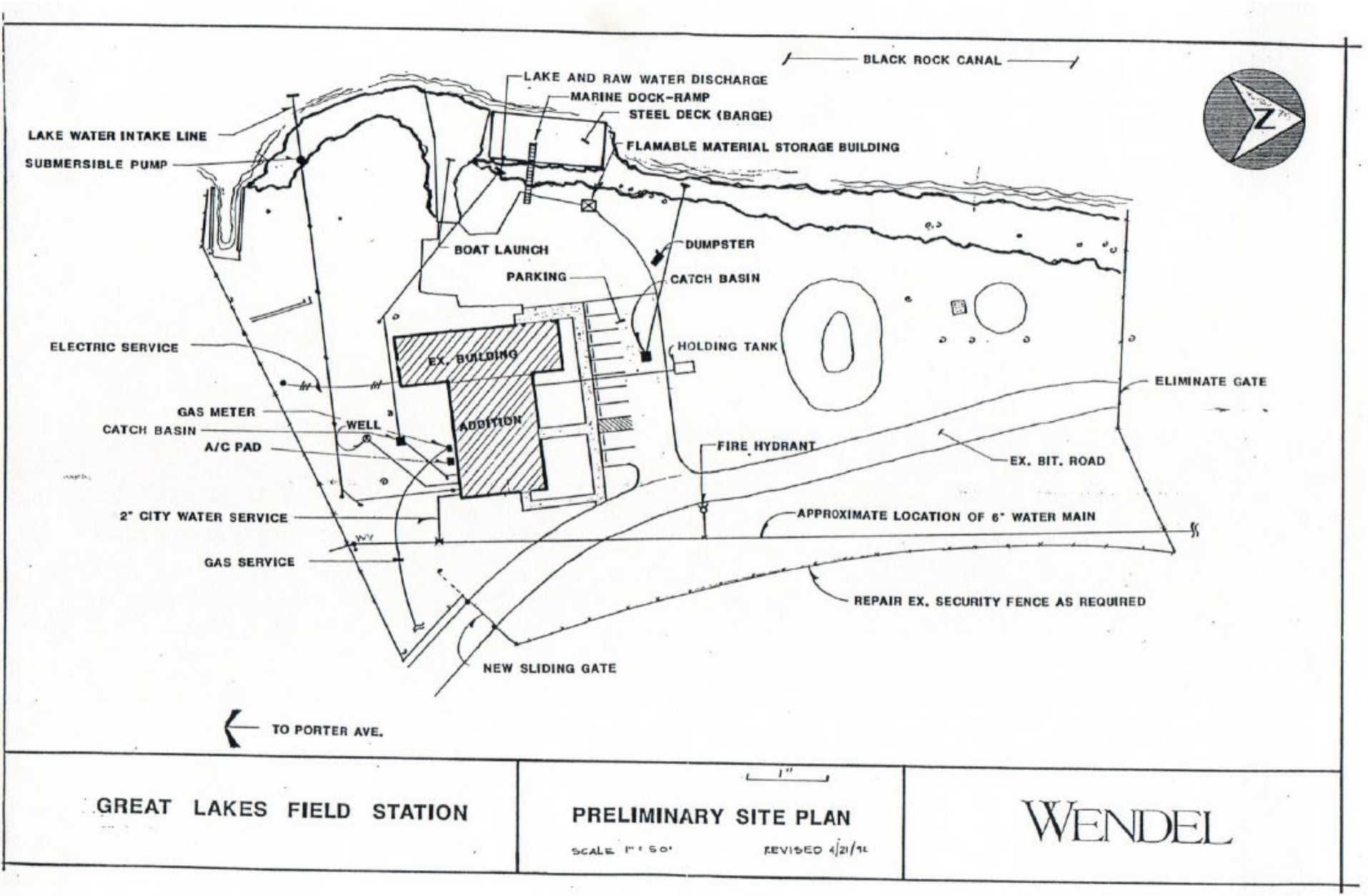
GLL renamed Center for Environmental Research and Education (CERE)

Collaboration with other departments, four divisions: Environmental Toxicology and Chemistry, Aquatic Biology, Water Resources Management, and Environmental Education

Renovated Field Station



New floor plan with addition



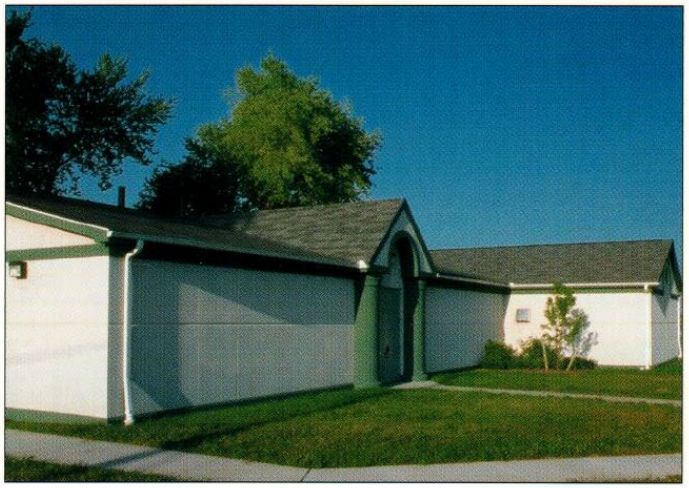
Improvements to the grounds and boat launch

Great Lakes Field Station
Laboratory Addition and Renovation
Buffalo State College, Buffalo, New York

Fish and zebra mussel rearing tanks.

Environmental chambers used for growing aquatic plants and algae.

Radioisotope fume hood, sterilizer and deionized water system.



Wendel provided services to Buffalo State College for a 3,600 sq. ft. laboratory addition and renovation to an existing facility. Located on the shore of the Niagara River at Lake Erie, this multi-use biology laboratory is used by students and researchers to study the ecology of the Great Lakes. This unique facility includes fish rearing tanks, environmental chambers, boat storage area/shop, and several laboratories including culture laboratories. Work included a well, lake water intake and discharge, sanitary sewer holding tank, new electrical service, new gas service, boat launch and ramp renovation, and site security system. Wendel's responsibilities included engineering, architecture and survey.

Project Value:	$750,000
Completion Date:	1993

WENDEL

R/V Hutchinson, 42’ Chris Craft Commander, used from the late 1980s through the 1990s


GC
7

Dr. Stephen Brandt

Director, 1994-1997

Renamed CERE to Great Lakes Center

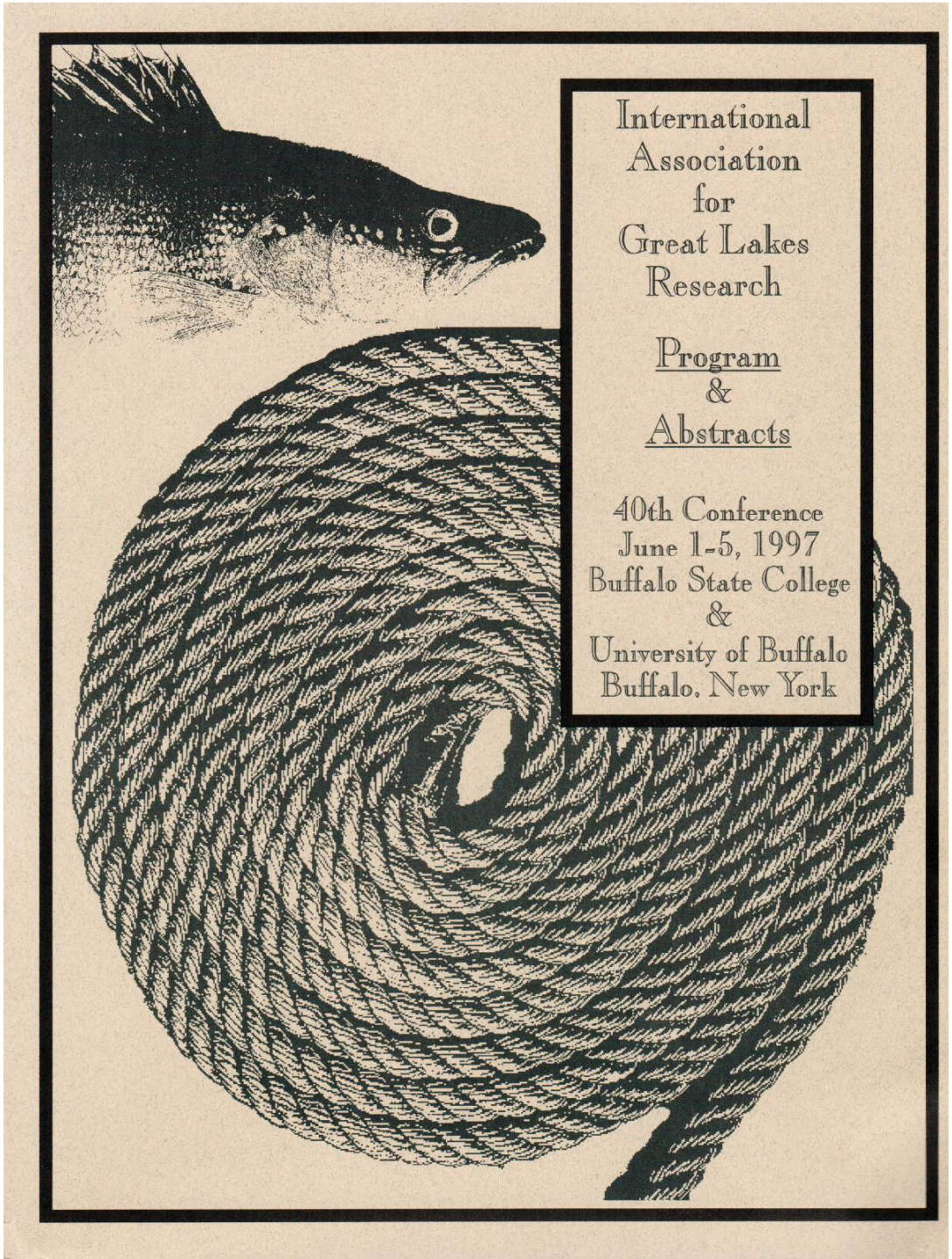
Fisheries ecology, bioenergetics modeling, and hydroacoustics

Hosted IAGLR in 1997

Multidisciplinary Master's Degree in Great Lakes Environmental Studies

40th Annual Conference on Great Lakes Research (IAGLR 97) Buffalo State College Buffalo, New York June 1-5, 1997

The 40th Annual Conference on Great Lakes Research will be held to exchange information on all aspects of research applicable to the understanding of large lakes around the world and to the human societies surrounding them. Among the planned activities is a public forum on "Great Lakes Fish and Fishing," sponsored by New York Sea Grant and the US Fish and Wildlife Service, among others. For further information, contact: Stephen Brandt, Great Lakes Center, Buffalo State College, (716) 878-4329, e-mail: iaglr@glc.snybuf.edu, or Joseph DePinto, (716) 645-2088, depinto@eng.buffalo.edu.



GREAT LAKES CENTER NEWSLETTER

May 1996
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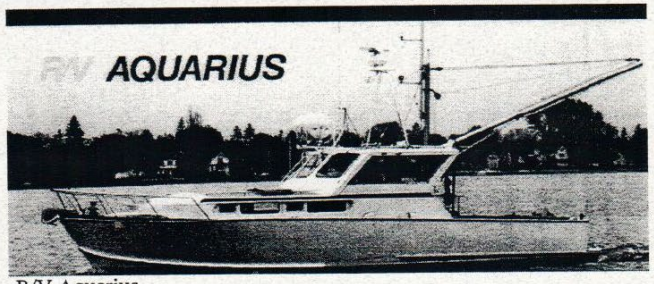

R/V Aquarius

Great Lakes Center For Environmental Research and Education Acquires New Research Vessel

The Great Lakes Center for Environmental Research and Education at Buffalo State College has completed its search for a new vessel with the recent purchase of the R/V Aquarius from the Wisconsin Sea Grant Institute. The R/V Aquarius is a 40 ft. steel-hulled research vessel, built in 1970 for the University of Wisconsin. The R/V Aquarius has served on the Great Lakes since that time, conducting scientific research aided by its special equipment. The vessel is equipped with a large boom for trawling or sampling, and its twin diesel engines give it a 12 knot speed with a high degree of maneuverability. It has a full range of electronic equipment, including a Loran-C coastal navigation system and three depthfinders. The R/V Aquarius will become an integral part of the Great Lakes Center's research programs, such as the Lake Erie Trophic Transfer project, and research being conducted on behalf of the New York Sea Grant Institute on Lake Ontario. It will also be used for courses offered as part of the annual Great Lakes Summer Institute, as well as in community outreach activities conducted by the GLC. The vessel arrived at the RCR Yacht Club on May 10th, where final preparations for use by the Great Lakes Center were made. **John Freidhoff**, Ship's Captain for the Great Lakes Center, has projected a launch date in early June, 1996.

IN THIS ISSUE:

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Dr. Gregory Stein
Dr. Steven Steiner
Dr. Thomas White

R/V Aquarius, 40’ steel-hulled vessel used from 1996 through mid-2000s

Dr. Gordon Fraser

Director, 1998-2007

Buffalo River, Combined sewer overflows (CSOs)

Outreach events

Teaching Pavilion constructed


8 8'99

Water Fest, 1999

Limnology field trip to Gull Lake, Canada, 1999

Limnology field trip to Gull Lake, Canada, 1999

Buff State launches Great Lakes research boat

BY JOE IANNARELLI
BUSINESS FIRST

All aboard.

Boarding calls were heard all along the upper Niagara River recently as Buffalo State College's Great Lakes Center launched its newest ship, the Research Vessel Seneca.

The environmental research and education center links high-quality studies with graduate and undergraduate classes focusing on ecological issues of the Great Lakes. The center operates an on-shore experimental lab and offers a graduate program in Great Lakes environmental studies.

The Seneca, with the center's 26-foot Aquarius, are used to deploy a variety of water and biological sampling devices, monitoring equipment and imaging controls.

The college obtained the 46-foot vessel from the U.S. Coast Guard last fall. Built in the early 1960s, it was stationed in Buffalo until it was placed in surplus and ownership transferred to the New York State Office of Government Services.

The center purchased the ship for $5,000, considered a bargain among seafaring folk.

"It's a good complement to our center," said Gordon Fraser, director. "We can take out larger classes for instructional purposes and bring more attention to the area's waterways. We hope to do some work with the Inner Harbor development as well."

BOB BUKATY/BUSINESS FIRST

Buffalo State College President Muriel Howard christens the Seneca during an official ceremony launching the research vessel. The ship is currently in Messena as part of a migratory study on American eels.

Work

Designed for forward and aft maneuverability, the Seneca's two-legged hoist that looms over its stern can raise 5,000 pounds. It will be used in oceanographic work on the Great Lakes to deploy large instrument packages and pull huge collection nets. The black and white barge-shaped vessel features dual steering wheels and a swiveling propeller that allows it to be piloted forward, backward and turn on its vertical axis 360 degrees.

"The vessel is also good for preparation of the Great Lakes Institute that will involve Buffalo State College, the University at Buffalo and Brockport State College," Fraser said. "The field station is slated for a major expansion with the construction of a $12 million, 20,000-square-foot facility. This will greatly expand our mission and we are developing a planning document for what we hope to gain from the institute."

The Seneca traveled to Messena via the Erie Canal to spend the month on an environmental impact study for the New York Power Authority. American eels will be caught and tagged before they migrate down the St. Lawrence Seaway to spawn in the ocean.

The center brings together more than 20 affiliated faculty from seven academic departments with particular emphasis on watershed hydrology, water quality, toxicology and chemistry.

The center promotes collaborative research with other academic and research institutions in the United States and Canada.

R/V Seneca, 46’ Coast Guard Buoy Tender, operated 2001-2010

R/V Pisces, 26’ work boat, used in late 1990s until 2007


Great Lakes Center
Buffalo State

BSC Great Lakes Center takes active role in Lake Erie's dead zone

By EVE WACKETT
Bengal News Reporter

The Great Lakes Center for Environmental Research and Education is performing research and meeting with the Great Lakes Commission and others to determine why Lake Erie is dying again. (www.buffalostate.edu/orgs/glc/) Lake Erie, the shallowest of the Great Lakes, was once deemed the place where "fish go to die" by talk show host Johnny Carson.

Captain John Freidhoff, the field station manager at the Buffalo State Great Lakes Field Office on Porter Avenue said, beginning in March meetings will take place with the commission and several research missions are scheduled to determine the "actual chemistry of the water." Funding is already in place for the research and budget cuts should not affect the work to be done.

"We will begin to take water samples at various depths as well as bottom samples to measure for oxygen, temperature, pH levels, chlorophyll and other factors," he said.

"We will enter the data into the GIS mapping program to analyze the results and compare the results with other data collected from the commission and others." (www.great-lakes.net/gis)

Thirty years ago, the United States and Canada signed the Great Lakes Water Quality Agreement, an agreement to protect and clean the Great Lakes. (www.epa.gov/water/yearofcleanwater) (www.binational.net)

Since the agreement was signed the Great Lakes have cleaned up considerably. Yet this past summer researchers

See "Lakes" Page 3

SpongeBob review

Page 8

Other highlights:

RECORD 2/21/03

Faculty Research

On the Waterfront

By Mary A. Durlak

SEAGULLS SHRIEK OVERHEAD, their white wings flashing against a summer-blue sky. The flags at the field station snap in the breeze off Lake Erie. It's a great day for field research on Buffalo's waterways.

COLLIGNON/JAROSZ

RESEARCHERS EXAMINE A BUFFALO RIVER CARP FOR ABNORMALITIES.

Sailing from the Station

The Aquatic Field Station, located on the Niagara River just a stone's throw from Lake Erie, is the main facility of the Great Lakes Center at Buffalo State College. The aquaculture lab and the research vessels housed there are key to the many research projects conducted or supported by the center.

"We have 26 externally funded research projects under way," said Gordon Fraser, director of the Great Lakes Center. Fraser, a geologist who specializes in marine sedimentology, is studying the Buffalo River for the U.S. Army Corps of Engineers.

"The corps has to dredge the river to maintain a navigable depth," said Fraser. "So they'd like to cut the sediment deposit to reduce dredging. And they want to know if heavy metals and organic compounds are contaminating the sediment."

Making a Difference

The Great Lakes Center also aids Buffalo State's watershed research team, whose members are active in many projects. Kimberley Irvine, chair and professor of geography and planning, and Randal Snyder, chair and associate professor of biology, are working on the Buffalo River habitat restoration project.

This project examines sites along the river to identify those areas most likely to benefit from restoration. Investigators look at the types of fish and benthos (bottom-dwellers) at various sites because different species indi-

SUNY Honors Researchers from Great Lakes Center

State University of New York Chancellor Robert L. King honored 38 of New York's most important and innovative scientists for their research at the second Chancellor's Recognition Dinner Honoring Research in Science, Engineering, and Medicine, held on October 24 at State University Plaza in Albany. Subodh Kumar and Harish C. Sikka, longtime Buffalo State faculty members and researchers, were among the honorees.

"These award-winning faculty members of the State University of New York are working to make scientific breakthroughs that will prevent or heal medical disorders and ailments, protect the environment, create new pharmaceuticals, and help us understand the origins of the universe," said King.

"These scientists represent SUNY's world-class faculty that has garnered more than $700 million for 9,000 research projects that are supporting 21,000 jobs in New York State," he added.

Responsible for generating nearly $70 million in research funding, the 38 men and women honored represent 23 SUNY campuses. Their research spans 21 disciplines, ranging from biology, chemistry, geology, and physics to medicine, computer sciences, materials science, and engineering. Buffalo State is the only campus to have two researchers selected for this honor.

Subodh Kumar is senior scientist of the Environmental Toxicology and Chemistry Laboratory at the Great Lakes Center for Environmental Research and Education and an adjunct research professor. Since joining the SUNY faculty in 1983, Kumar has been awarded research grants totaling more than $8 million by various federal, state, and private agencies, primarily the National Institutes of Health and the Environmental Protection Agency. His research has resulted in one patent and more than 85 publications in leading peer-reviewed journals in the fields of chemistry and health sciences. In addition, Kumar has presented papers at numerous national and international conferences, and has given seminars by invitation at research institutes. He was recently invited to serve on several panels of the National Institutes of Health to review research proposals submitted to the agency in the area of cancer research.

Harish C. Sikka is research director of the Environmental Toxicology and Chemistry Laboratory of the Great Lakes Center for Environmental Research and Education. His accomplishments in environmental

SEE **RESEARCHERS** PAGE 3 >

Accepting funding obtained by New York State Assemblyman Richard Smith (center), from left: John Montague, professor of technology; Carmine Grande, vice president for institutional advancement and development; Gordon Fraser, director, Great Lakes Center for Environmental Research and Education; and President Muriel Howard.

GROUND BROKEN FOR NEW TEACHING PAVILION

FIRST PHASE OF MASTER PLAN

BY NANETTE TRAMONT

BUFFALO STATE COLLEGE has received a $100,000 legislative appropriation obtained by Assemblyman Richard Smith to construct an outdoor community teaching pavilion at its Great Lakes Center for Environmental Research and Education Waterfront Campus.

The funds are in addition to $10,000 Smith previously obtained for the center to study how an oxygen-depleted "dead zone" in western Lake Erie may affect the water quality of the eastern part of the lake.

Smith said, "The external community teaching pavilion at the Great Lakes Center Waterfront Campus of Buffalo State College will work to provide those academics and professionals with a tremendous tool to continue their research in a number of areas, ranging from water quality to aquatic ecology, and help build upon existing programs and their positive results that have already been brought about, which in the long run—again—will benefit all of Western New York."

"We thank Assembly Member Richard Smith for his leadership in supporting Buffalo State College's vision for the development of our waterfront campus," said President Muriel A. Howard. "Thanks to him, the teaching pavilion will be the very first part of our master plan for this site to become a reality. This facility will help expand the educational capability and reputation of the Great Lakes Center. It will serve a vital role in freshwater studies in our region and throughout the world."

This planned one-story structure features a flexible space with a cantilevered deck facing the Black Rock Canal. Retractable windows and walls will allow the facility to be used in all weather conditions.

"THIS CLASSROOM WILL PUT STUDENTS WITHIN THE ENVIRONMENT THEY ARE STUDYING TO HELP MOTIVATE AND CHALLENGE THEM AS THEY EXPLORE THE REAL-WORLD SETTING OF THE GREAT LAKES."

—GORDON FRASER

Gordon Fraser, director of the Great Lakes Center for Environmental Research and Education, said, "We are grateful for these funds that will enable the Great Lakes Center to expand its support of graduate and undergraduate education at the college and provide a facility that can be used by the community. This classroom will put students within the environment they are studying to help motivate and challenge them as they explore the real-world setting of the Great Lakes."

The teaching pavilion, scheduled for completion next summer, will be located on the Black Rock Canal at the shoreline of the Great Lakes Center Aquatic Field Station. The proposed design is a one-story, 32-by-47-foot structure with a clerestory that will feature a 32-square-foot flexible space on the west side facing the canal; the north, south, and west sides will be equipped with plumbing and electrical services and portable risers that can be used for scientific demonstrations as well as community meetings. Retractable windows and walls will be installed between support piers to give the space all-weather-use capabilities.

The shore-side end of the pavilion will extend onto a deck cantilevered above the water, while the east end of the building will feature accessible restroom facilities and storage space.

Buffalo State's Great Lakes Center for Environmental Research and Education is the State University of New York's only

SEE **PAVILION** PAGE 7 >

Dick Smith Outdoor Classroom

Windows added later

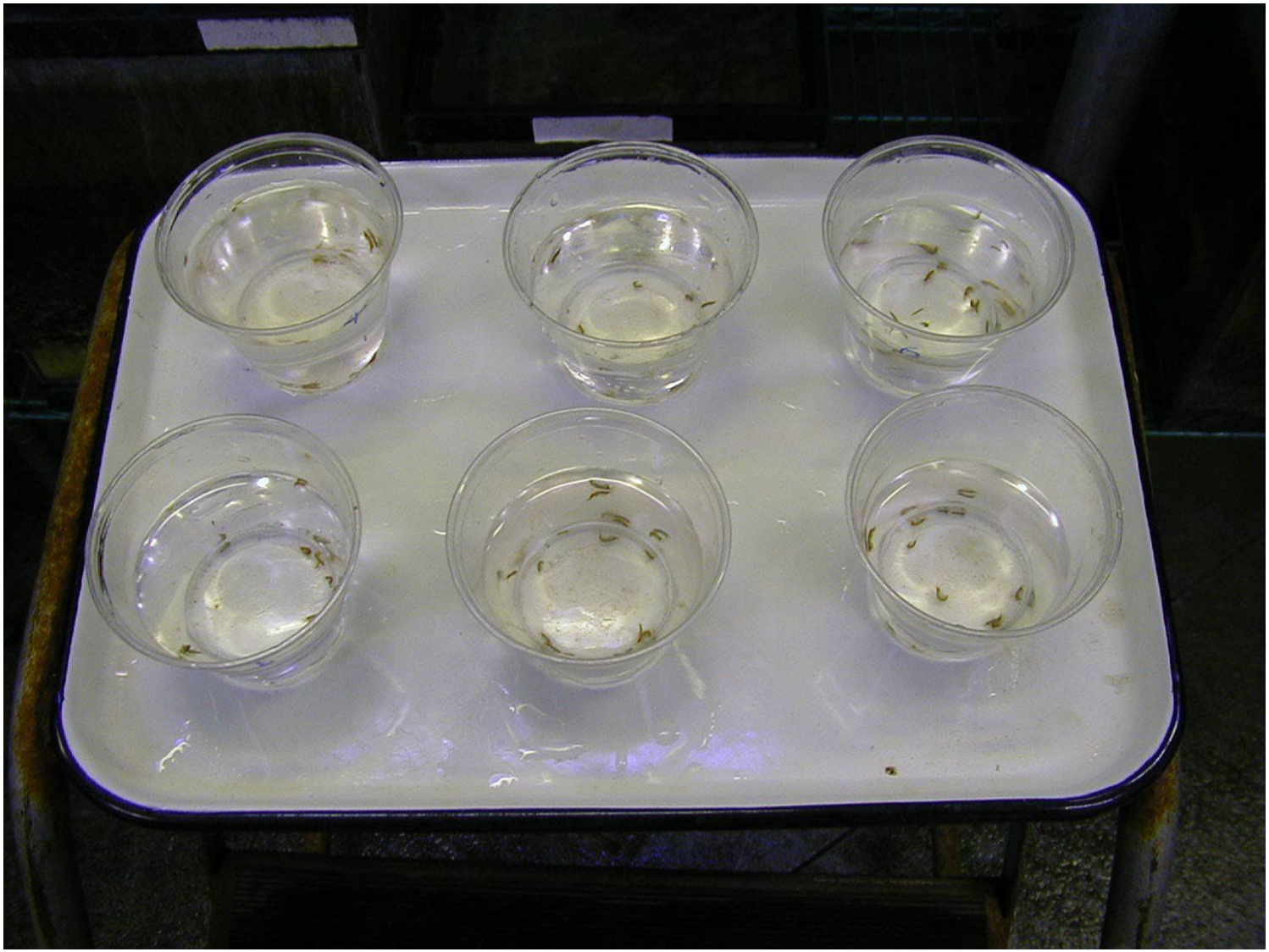
Eel survey, St. Lawrence River, 2001

Combined sewer overflow sampling

Installing Hydrolabs for the CSO project

Trout stocking project

Goby experiment



Amphipods

Sea scouts

Tern colony work

Tern colony work

Air sampling at the teaching pavilion (no windows yet)

Air sampling lab work

Buffalo Underwater Recovery Team (BURT) training

Earth Day 2002

Peter Ruddock analyzing fish samples by HPLC

Environmental Toxicology lab

Plans for the Great Lakes Institute

Fish lab

Holding tanks for three different temperatures of water for experiments

Fish tracking camera

Aquanaut program

Class tour for McKinley High School students

CENTER FOR GREAT LAKES ENVIRONMENTAL EDUCATION

Hosted CGLEE office at Field Station

Dr. Alexander Karatayev

Director, 2007-present

Increased research and publications

Invasive species, native species, nutrient studies, long term monitoring projects

Great Lakes Ecosystem Science Masters programs (M.A. and P.S.M.)

WNY PRISM

R/V John J. Freidhoff, 27’ aluminum-hulled boat, built in 2009 and currently used for research projects

Named in memory of “Captain John” Freidhoff, who passed away in a diving accident in 2007

Boat naming ceremony for R/V John J. Freidhoff

Tree planted in memory of Captain John at the Field Station

28’ Privateer, 2011-present

Seiche, 25’ work boat, 2010-present.
Used mainly for Dr. Jill Singer’s work in the Buffalo River.

6 feet of ice piled up on the Field Station Dock, February 2008

A rare glass-calm day

Lake Ontario Nearshore Nutrient Assessment, 2008

ASLO conference, 2008

Lake Erie transect sampling, 2008

GLRC meeting 2008

New windows at the Field Station for the main office

PBDE assessment in Lake Erie sport fish, 2009

GLRC meeting 2009


Dick Smith
Teaching Pavilion
Buffalo State

Nearshore and Offshore Lake Erie Nutrient Study (NOLENS), 2009

Backpack electrofishing

Replacing tanks in the fish lab

New tanks for the fish lab

New matching tanks for the fish lab

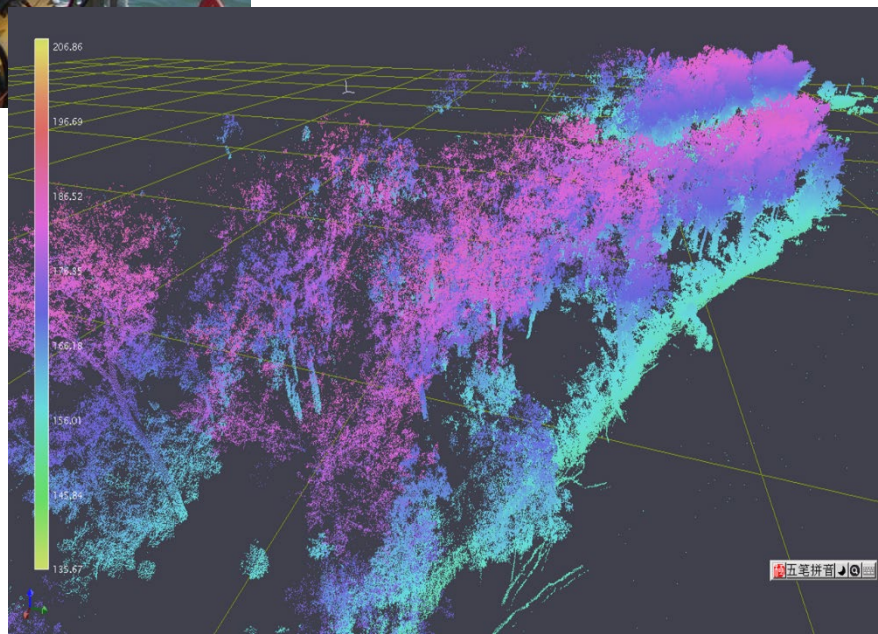
Stream mesocosm experiment

Field sampling demonstration for Dr. Standora's Ecology class

Fisheries management class electrofishing demonstration

Collecting mussels from the Buffalo River for C:N:P analysis, 2011

Limnology trip to Pymatuning, PA, 2011



Shoreline LiDAR mapping with visiting Chinese scholars

Unionid mussels in Great Lakes refugia, 2011

Unionid mussels in Great Lakes refugia, 2011

Great Lakes Center expands on projects

LENONS offers opportunity for improved water quality in lake

Michael Canfield
STAFF WRITER

Buffalo State's Great Lakes Center continues to help make strides toward restoring Lake Erie, with several on-going projects aimed at figuring out how to do just that.

According to its website, the center received a boost in funding this year for a total of $4.5 million, which funds 17 projects. Last year, the center received funding for 10 projects at $2.1 million.

One of the major projects the center is involved with is the nearshore and offshore Lake Erie nutrient study, or LENONS. The study, headed by Christopher Pennuto, a professor in the biology department, looks to determine how nutrients enter and move through the lake and how they affect the lake.

Lake Erie has had issues with nutrients in the water in the past, Pennuto said. This led to dead fish and the pea-green color the lake had at one time. Legislation passed in the 1970s eliminated a lot of the nutrients from places like waste treatment plants that are found in the water. The nutrients, however, seem to have returned to the lake.

"What we've seen over the last decade is that a lot of those same issues have recurred," he said. "There's a resurgence of some of those major issues. We've had algae washing up on the shore, botulism, those issues."

The study looks to find out where these nutrients are coming from, after the original sources were cleaned up in the '70s. Another part of the study looks at the role invasive species have played in the upswing in nutrient issues, Pennuto said. Zebra mussels and quagga mussels are the two dominant invasive species currently in the lake.

"They filter the water, and in doing so, they suck up all of the algae and the food resources for the base of the food web and send it to the bottom of the lake," he said.

This gives the lake a clear, clean appearance, which isn't necessarily healthy.

"Sunlight can reach the bottom, and we have stuff growing up off the bottom that didn't

See LAKES, on Page 2

Lake Erie Nearshore Offshore Nutrient Study (LENONS), 2011-2012

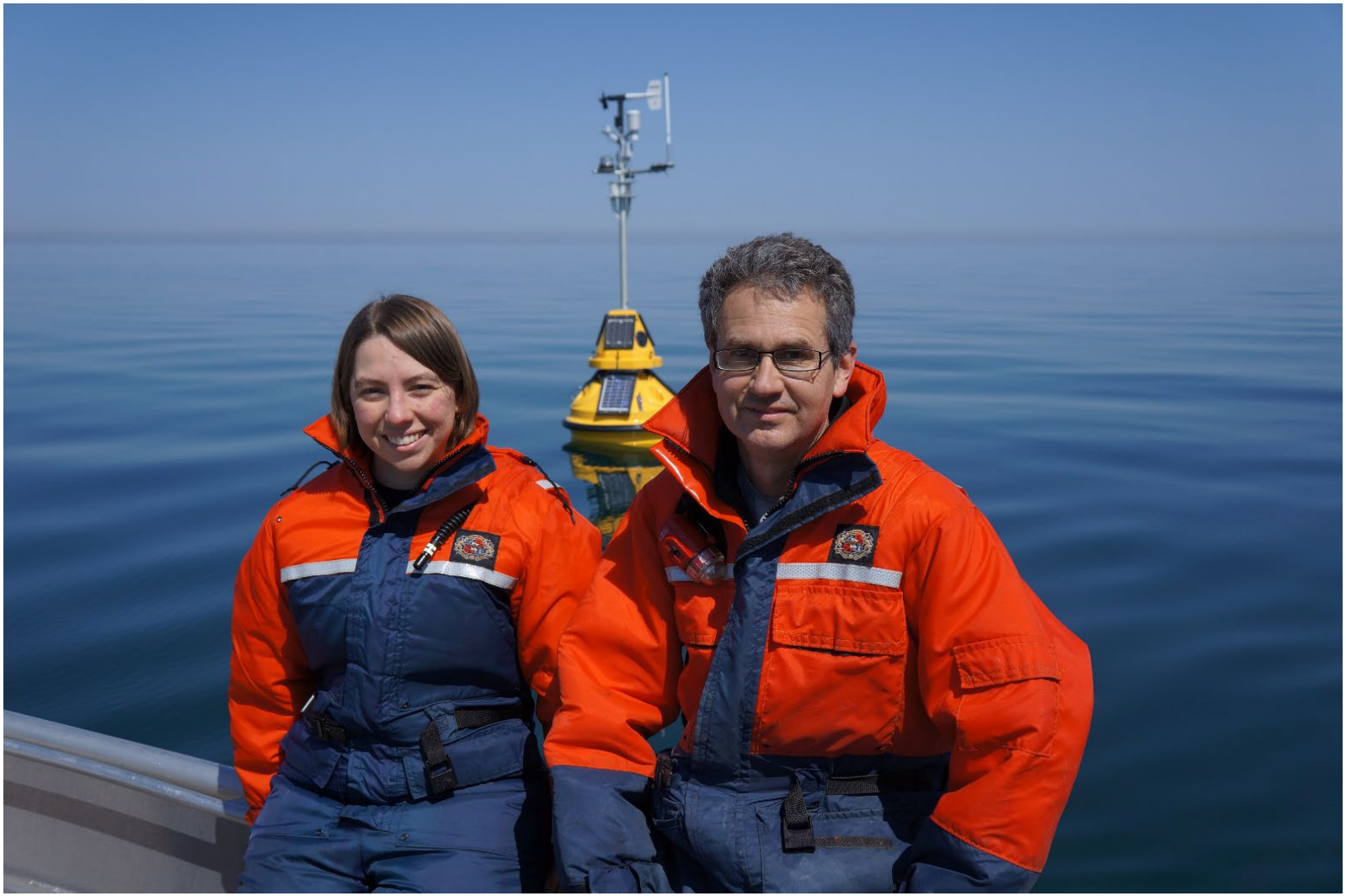
Lake Erie Nearshore Offshore Nutrient Study (LENONS), 2011-2012

Lake Erie Nearshore Offshore Nutrient Study (LENONS), 2011-2012

Lake Erie Nearshore Offshore Nutrient Study (LENONS), 2011-2012

Round goby impacts on stream leaf litter decomposition, 2012

Great Lakes Observing Buoy, 2011-present



Great Lakes Observing Buoy, 2011-present

Great Lakes Observing Buoy, 2011-present


50

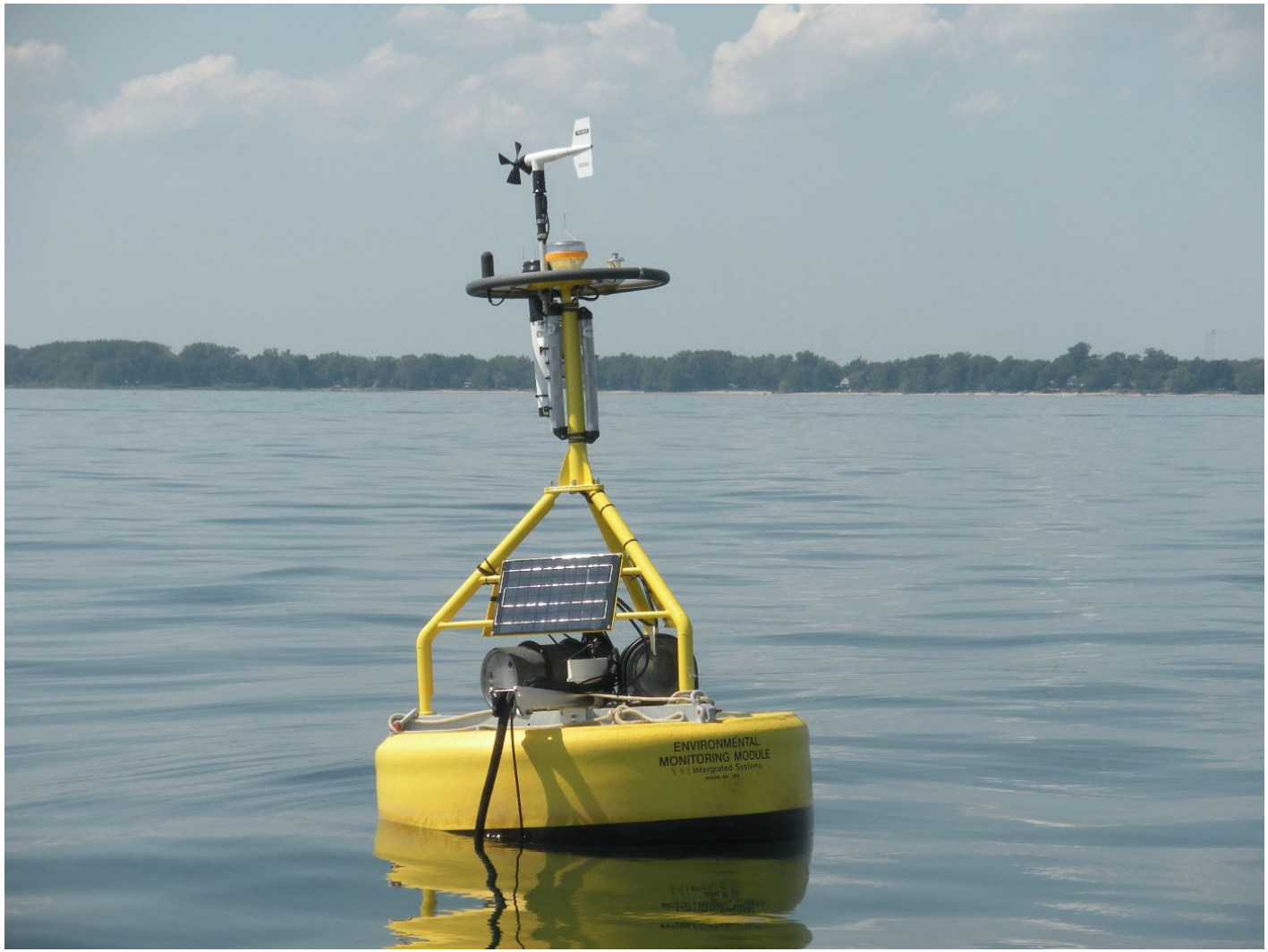
Dr. Snyder's studies on fatty acids and morphology of alewives

Low water at the Field Station, 2012

Low water at the Field Station, 2012

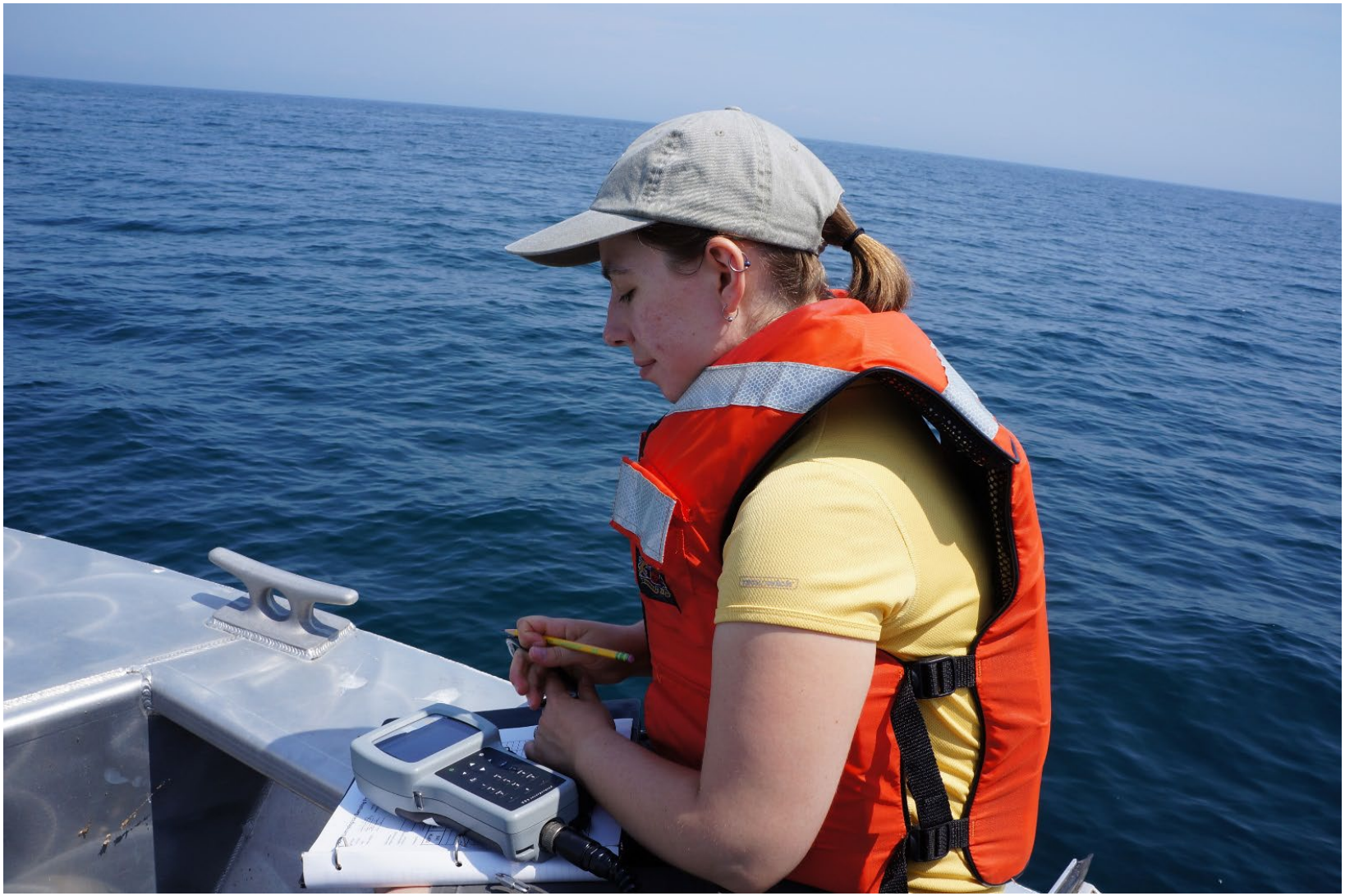
Low water at Dunkirk Harbor, 2012. The water was so low we couldn’t use the boat launch and had to be lifted down to the water to retrieve the buoy.

EPA buoy project, 2010-2012



EPA buoy project, 2010-2012

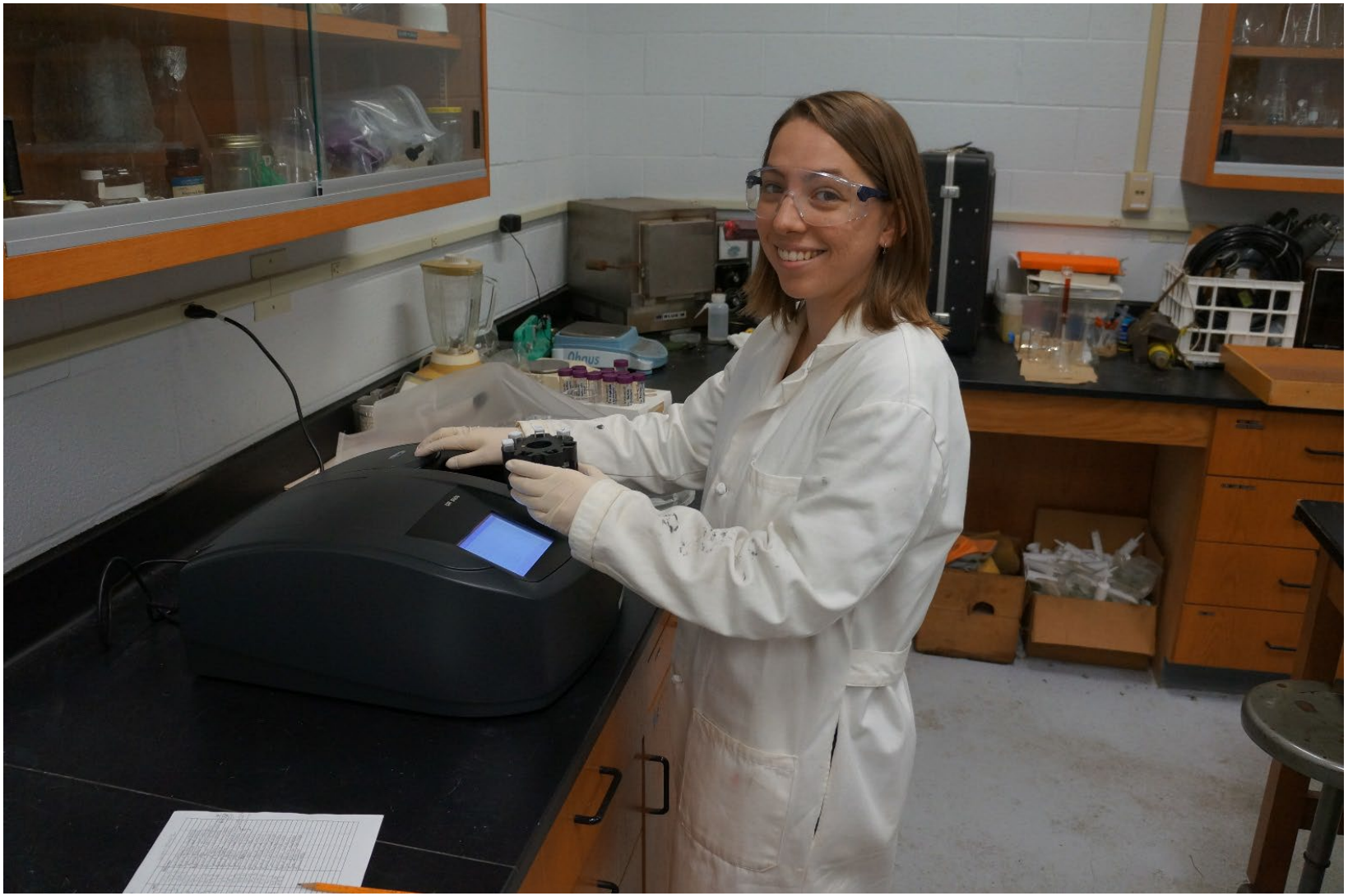
Fall Research and Creativity Fair, 2012



Lake Erie Lower Trophic Level Assessment, 2008-present

Mark collecting zooplankton samples for the Lake Erie LTLA

Josh piloting the John J. during a sampling trip for the Lake Erie LTLA



Chlorophyll analysis for Lake Erie LTLA

Survey of Texas Hornshell populations in Texas, 2012

Acquired the building next door at the Field Station for boat storage, 2012

Permanent indoor boat storage at the Field Station

Visiting scholars from China, 2012

Dr. Jagat Mukherjee working the Environmental Toxicology Lab

Dr. Subodh Kumar working in the Environmental Toxicology Lab

Algae growth experiment at the Field Station, 2013

Army Corps Concrete deliveries for work on the break wall

Ceremony for the reopening of the Bird Island Pier, 2013

Buffalo Niagara RiverKeeper paddle tours

BURT training, 2013

Native fish displays at the Field Station

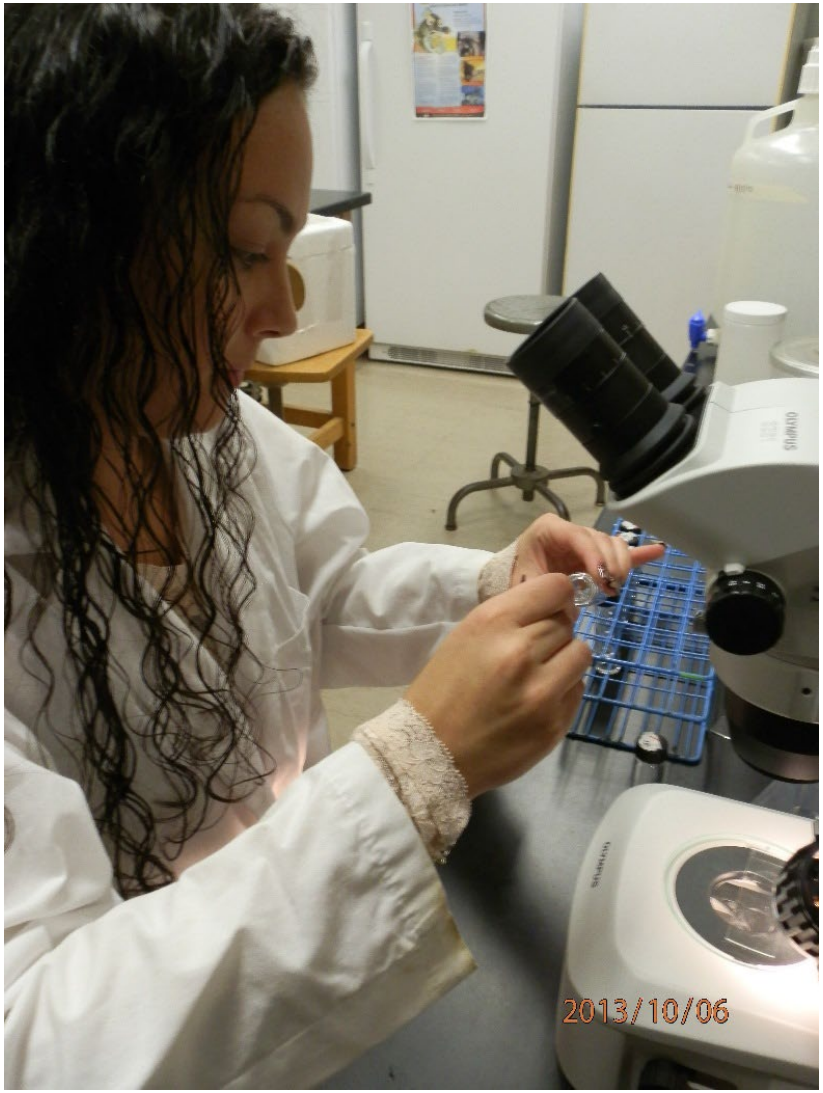
Ecology class demonstration, 2013

Fisheries class 2013

Dr. Alicia Pérez-Fuentetaja holding an invasive rudd caught during the Fisheries class demonstration

Environmental Toxicology lab in SAMC, 2013

Fish calorimetry project with SUNY ESF, 2013



Effects of Calcium decline and food levels on *Daphnia* development and reproduction

New GLC office and labs in SAMC

Field Station Open House, 2013

GES 460 class demonstration

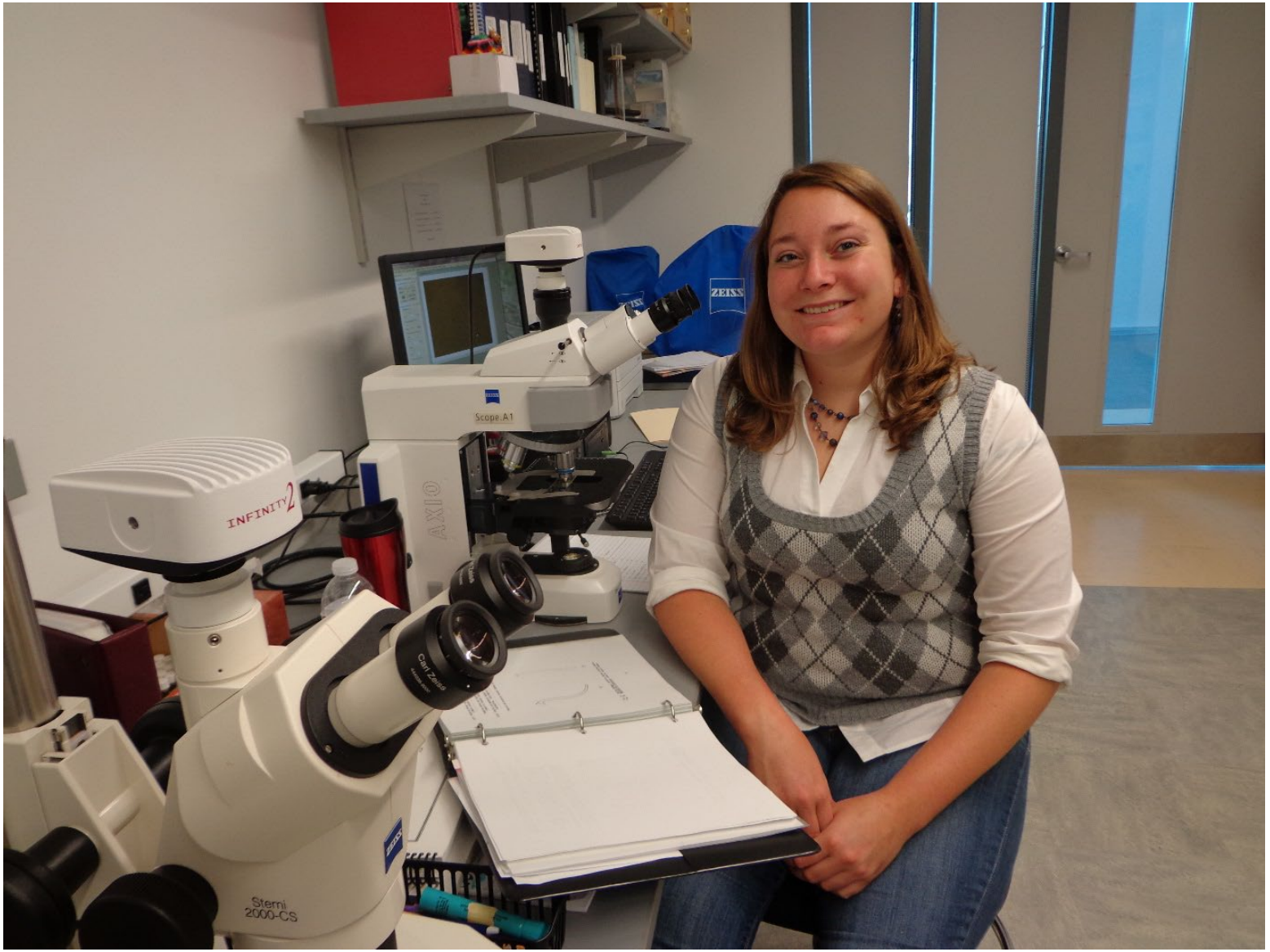
Oligochaete worm identification workshop
at Heidelberg College, Ohio, May 2013

EPA Long Term Monitoring of Great Lakes benthos aboard the Lake Guardian, 2013-present

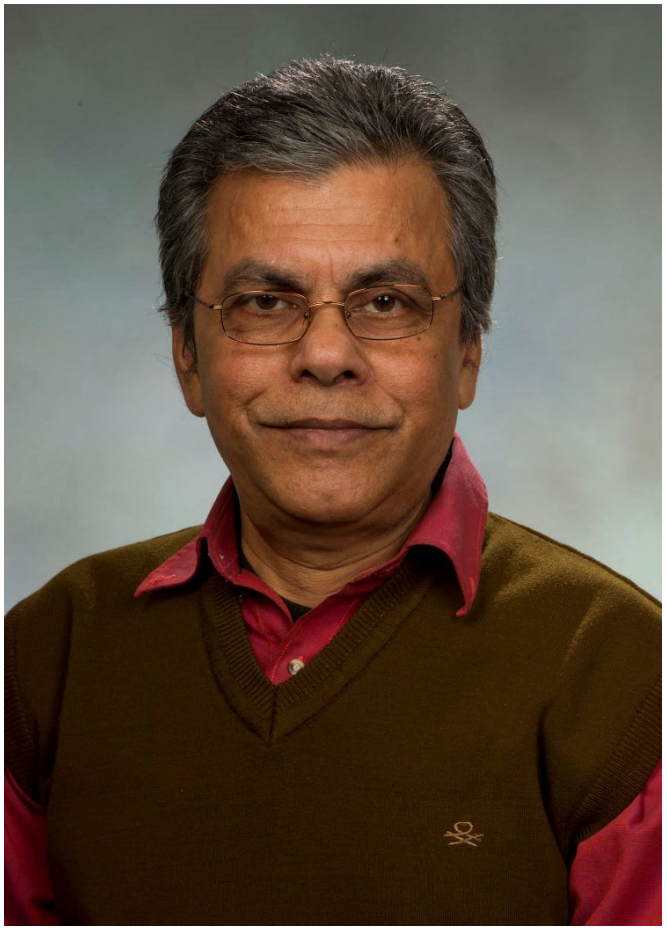
Safety training on the Lake Guardian

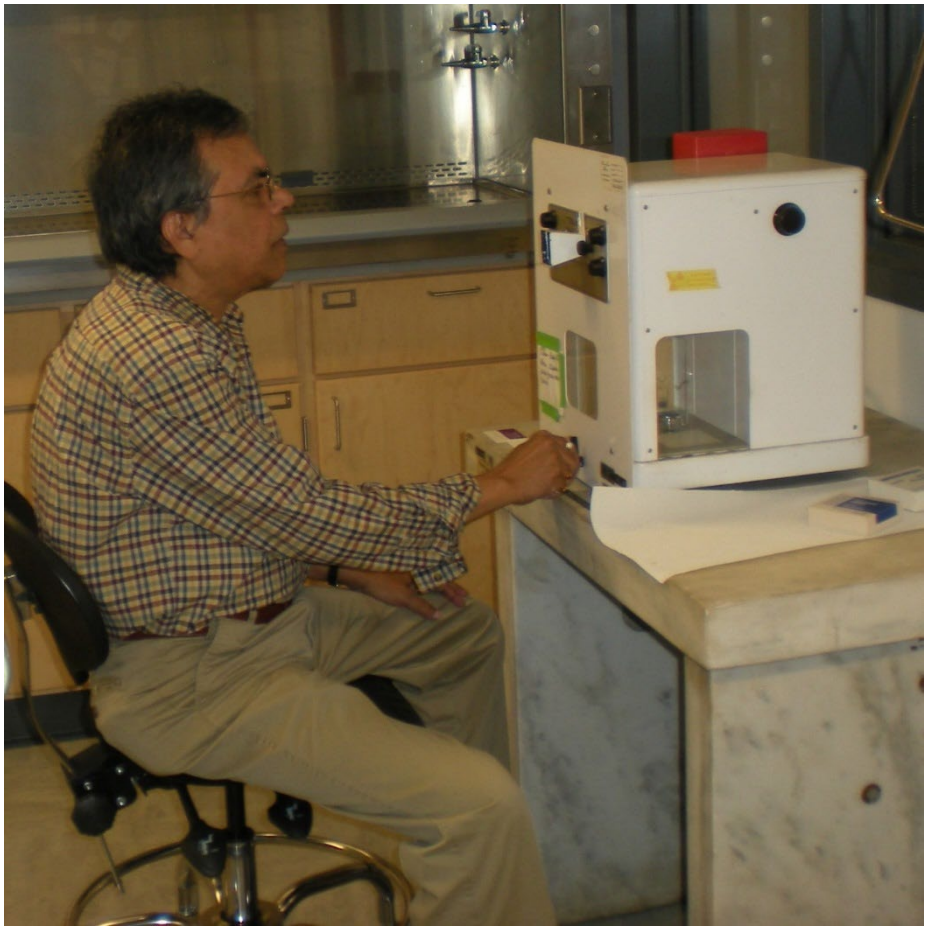
Sasha elutriating a benthos sample

Susan Daniel aboard the Lake Guardian with collaborators from Cornell



Susan Daniel identifying worm samples





In memory of Dr. Jagat Mukherjee, research scientist in the Environmental Toxicology lab, who passed away in 2014.

2014 Texas Hornshell survey

Collecting mussels for an experiment, 2014

Visiting scientist Frank Collas (Netherlands) conducting an experiment on dreissenid mussels at the Field Station, 2014.

IAGLR conference, Hamilton, Ontario, 2014

Monitoring Great Lakes ports for novel invasive species, 2014-2015

Monitoring Great Lakes ports for novel invasive species, 2014-2015

Round goby impacts on stream leaf litter decomposition, 2014

Western New York Partnership for Regional Invasive Species Management (WNY PRISM) office established, 2014-present

WNY PRISM seasonal workers removing water chestnut

WNY PRISM seasonals documenting occurrences of invasive species into the iMapInvasives database

Collecting beetles for purple loosestrife control

Surveying for pond loach (previously oriental weatherfish) with Dr. Chris Pennuto

Investigating lake sturgeon habitat use, feeding ecology and benthic resource availability in the Lower Niagara River, 2013-present

Tagging lake sturgeon before releasing them back into the lower Niagara River

Spring sampling in the lower Niagara River, 2015

Emerald shiner habitat conservation and restoration study in the upper Niagara River, 2013-present

Seining for larval emerald shiners

Electrofishing for emerald shiners

Night-time electrofishing

Dr. Alicia Pérez-Fuentetaja working on the emerald shiner project

Outreach for the emerald shiner project at the Niagara Aquarium

Deploying temperature probes in tributaries of the Niagara River

Mark Clapsadl investigating the bioenergetics of the emerald shiner

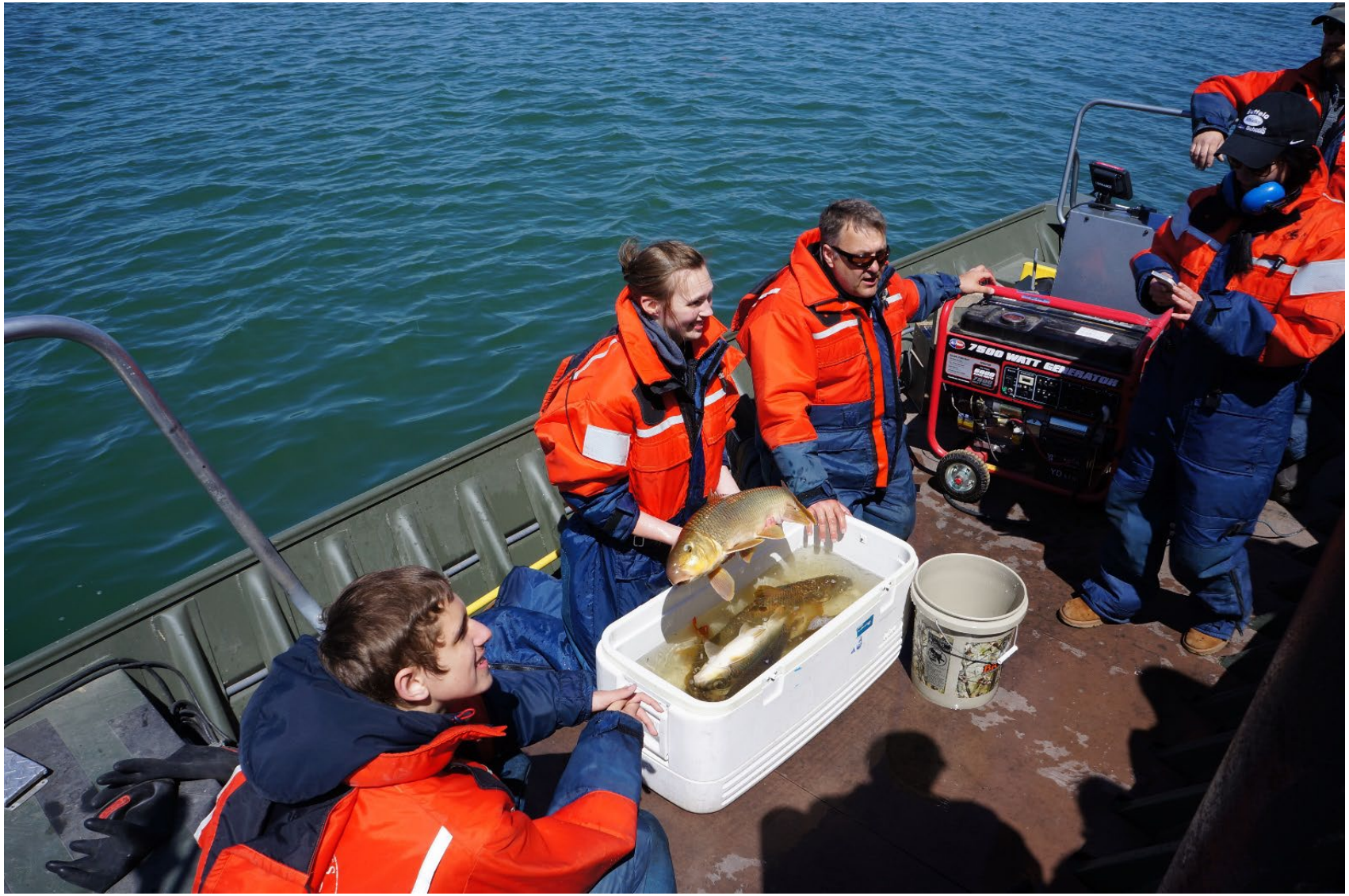
Josh Fisher identifying larval fish

2nd International Meeting on Biology and Conservation of Freshwater Bivalves, hosted by the GLC in October 2015

2nd International Meeting on Biology and Conservation of Freshwater Bivalves, hosted by the GLC in October 2015

CSMI Benthic studies of Lake Erie (2014) and Lake Mighigan (2015)

Visiting students from Singapore with former Buffalo State scientist Dr. Kim Irvine, 2015



Electrofishing demonstration for McKinley high school students, 2015

Brown trout caught during electrofishing demonstration

Limnology trip to Pymatuning, PA, 2015

Invertebrate identification workshop hosted by GLC, May 2015

Fisheries class demonstration 2015

Celebrating 50 years of research on the Great Lakes!