Fruitful Collaborations

UMBS Limnology instructor Paul Moore made a video documenting his class's field work this summer. In it, student Shelby Burgess stands knee deep in Carp Creek, reaching into the clear water. “We’re surveying for mussels,” she explains. “We’re going to compare [them] to the ones that we found in Burt Lake canal.” The class was conducting a health assessment on behalf of the Burt Lake Preservation Association (BLPA).

Moore, a Professor at Bowling Green State University says, “[BLPA] asked us to do a complete ecological analysis of the Plymouth Beach.” Burgess says the canal, which was built in the 1960s, is aggressively managed. “Homeowners there use a lot of herbicides to kill all the plants to be able to move their boats easily. And they also use fertilizers on their lawns which probably also run off into the canal.”

Mussels were just one measure of aquatic health the students used. In another scene from the class video, Michelle Busch and Rachel Weston are picking, squeezing and rinsing water plants over metal trays. Busch explains, “Diatoms grow on plants. [They tell us] about water chemistry and nutrients that are available and the current that's here.” Weston says they will then compare diatoms collected in the canal with those from elsewhere in the lake.

In the end, Moore's class determined the canal was surprisingly healthy. “They shared their findings with the BLPA. They also presented the organization with a management plan that Moore says “included recommendations for maintaining the ecology of the canal's micro-habitat.”

Limnology wasn’t the only class working for an area association. The Field Botany of Northern Michigan class, taught by C. Eric Hellquist, Assistant Professor at the State University of New York Oswego, conducted a multi-part research project for the Little Traverse Conservancy (LTC). And students in Introduction to Urban and Environmental Planning – a new course for the Station in 2011 – worked on projects for Tip of the Mitt Watershed Council.

A Legacy on the Lake
by Mary Crum Scholtens

This summer, former Biological Station Director, Dr. David Gates, celebrated his 90th birthday on Douglas Lake. He enjoys excellent health, a keen intellect, curiosity, and enthusiasm for life. And he revels in the fact that a member of the 4th generation of the Gates family, his granddaughter, Sarah Elise Field, was a student at the Biological Station this summer. No other family can boast such a legacy at UMBS.

In 1911, David Gates’ father, Frank C. Gates, arrived at Douglas Lake for his first summer at UMBS. see Legacy, p. 7
I have been thinking a lot lately about the heart of the Biological Station. Next summer will be my 10th year as director and each year the meaning that this place has to people becomes richer to me. Our first Friends and Alumni of the Biological Station (FABS) weekend last August was a homecoming for all kinds of people. We had an alumna from 2009 and a couple who met at the Station celebrating their 70th wedding anniversary. One alumnus drove all the way from Louisiana, returning for the first time in 42 years and bringing his wife to the place he’d told her about all these years. Another alumnus made his regular pilgrimage to fly his flag over the volleyball court and sleep in a sleeping bag in his favorite cabin.

There is a look – you know the look – people get when they tell me about their time at the Station. They don’t have to have met their life partner here or have set a course for their future career path. Even if they were only here for four weeks one year, their face still lights up when they recall it. These experiences are priceless. Yet they do come at a cost. Even the most affordable of our courses – a 4-week session for a Michigan in-state undergraduate – costs over $3,500. Out-of-state students attending our 8-week summer session pay almost $13,500, in addition to travel expenses.

Fortunately, we are able to offer many students some amount of financial assistance. We have 17 separate scholarship/fellowship funds. Better yet, nine of them are unrestricted with respect to recipients, allowing us the most flexibility in using them.

Our various scholarship endowments total around three-quarters of a million dollars. Not shabby, yet our anticipated payout from them in 2012 is $54,000 – enough to fully cover 4 out-of-state students or 15 in-state spring students. Regardless of how we parse it, the money does not go far enough.

Students need this assistance. Many of them are foregoing a summer job to take classes at the Station, trading income for a tuition bill. Still others withdraw their applications once they receive our financial aid award and realize it is not enough to make the station affordable. This is disappointing. Current research shows that engagement and immersion in hands on research, which is at the heart of student experiences at the Biological Station, is critical to attracting and retaining students in STEM (Science, Technology, Engineering, and Mathematics) fields.

The Biological Station engages and excites students in all of these areas and has a strong record of alumni moving on to careers in research and other professions requiring analysis of data and development creative solutions to thorny problems. We want students to experience our programs regardless of ability to pay.

I am asking that you help make Douglas Lake memories for future generations of students. A gift to any of the scholarship funds listed on the enclosed envelope helps. Better still is a gift to our Development Fund, which lets us use your gift where we need it most: scholarships now, other efforts once we remove the cost barrier for attendance.
Station News

Tribal Students Exposed to Science, Culture and Nature at Camp KinoMaage

Twenty rising eighth-grade students from the Sault Ste. Marie Tribe of Chippewa Indians spent a week at the Station in June for Camp KinoMaage.

KinoMaage means "to share teachings" in Anishshinaabe, the language of Ojibwe/Chippewa. Stephen Best at the U-M School of Education developed a curriculum rich with sharing.

UMBS instructors and students helped introduce topics such as ecology, archaeology, and ethnobotany. Several Sault Tribe elders also were on hand to tell stories of the tribe legends.

"I never met any real life scientists before," said 13-year-old Jake Dudeck. "They weren’t entirely what I expected. They’re official scientists. I kind of expected some goggles and lab coats."

Noting that the students were "seeing science in action," Angeline Boulley, Sault Tribe education director, said, "They’re seeing that it goes beyond the classroom, that it goes beyond a lab coat and stereotypes that they have about science, about scientists, about careers in science."

This was excerpted from Deborah Greene and Dana Sitzler’s article in the Record Update, June 14, 2011 (http://www.ur.umich.edu/update/archives/110614/sault).

Facilities Update

Facilities Manager Tony Sutterley reports the following projects have been completed for the Station this fall:

- Cosmetic and structural improvements to Sparrow Lab: new paint, doors and landscaping (with the help of the Bug Camp Stewards).
- Drilling of a new well that will service the hilltop research facilities.
- Replacing the Dining Hall and Kitchen flooring.
- Converting the lone cabin behind the Dining Hall (a.k.a. “The Pit”) into an electrical switchhouse.

High-Tech Research "Toys" Focus of Fall Workshop

Heidi Purcell (above), from the U-M Naval Architecture and Marine Department, clears weeds from a "BathyBoat" propeller. She and Kyle Kwaiser (below, right) coordinated the Advanced Aquatic Sensor Workshop held at the Station September 12-13. UMBS partnered with the Global Lake Ecological Observatory Network (GLEON) and the Alliance for Coastal Technologies (ACT) Great Lakes Chapter to host the gathering.

CORRECTION: In the Spring 2011 Douglas Lake Report, we neglected to list Dianne Taylor and Sherry Webster as missing from the group photo of the Douglas Lake staff.
Estate Gifts Leave Lasting Impact

A 100-year-old Bug Camp alumnus known as “The Bird Man” and a sharp-dressing former UMBS instructor each gave the Station a surprise gift this past fiscal year. The estates of Robert A. Whiting and Frederick H Test, respectively, contained bequests to the Biological Station. Neither man had made his gift intentions known to the University in advance, so both gifts were unexpected.

The Test bequest was supplemented with gifts from his family to endow the Fred and Avery Test Student Scholarship (see article, Fall 2010 Douglas Lake Report). Robert Whiting’s gift greatly enhanced the Gates Graduate Student Fund and the Station’s general development funds.

Station administration constantly hears from friends and alumni of the Station who say their experiences on Douglas Lake — no matter how brief — stay with them forever. Robert Whiting perfectly illustrates the impact UMBS can have on an individual. He took classes at the Station from the mid-1940s to 1955. He then went on to a life that included WWII Army service, teaching high school and junior college, running programs at Michigan’s Boy Scout Camp Teetonkah, and extensive service to the Michigan Audubon Society. Yet his bequest shows that the Station remained dear to him his whole life.

Whiting’s gift, as well as those of others, allowed him to show his affection for UMBS in a lasting and meaningful way.

Anyone interested in making a bequest to the Biological Station, or notifying the Station of an existing planned gift, should talk to Diane Tracy, drtracy@umich.edu, 734-615-6761.

We have updated the "Event Multimedia" section of our website with some fun items from summer.

• First, we have assembled images from the construction of our rain garden into a slide show. It has before and after photos, as well as faces of the garden’s builders and residents (look for the toad).

• Second, we have published a poem by this year’s Pettingill Lecturer, Laurie Allmann. As part of her presentation, she read her original composition, In the Abstract (excerpted at right), inspired by the UMBS bibliography.

She browsed our abstracts on-line (http://umbs.lsa.umich.edu/research/) before coming to the Station. Once she was on campus, she visited LaRue Library in person to see the actual documents.

The result is an ode to 100 years of research and scholarship, complete with references to piping plovers, Les Cheneaux, Emblemesoma auditrix, and milkweed.

Both the slide show and the full version of In the Abstract are available at www.lsa.umich.edu/umbs/events/eventmultimedia.

Excerpt from In the Abstract
reprinted with permission by Laurie Allmann

To think that yesterday
I didn’t know that half a dozen sand spits on the mitten’s tip of Michigan are oriented with their spines aligned, all trending to the west/northwest suggesting that prevailing winds came from the east-southeast 11,000 years ago— wind that raced in summer over Glacial Lake Algonquin, gaining power in the stretch across an estimated fetch of two hundred fifty miles

To think that yesterday I passed the hours unaware that all the while the likelihood of male cicadas singing was increasing with the brightness of the sky; not knowing that the females listening in through their tympana would more likely move toward males who nailed the high notes, with peak frequencies of 9 kHz rather than 5—not really a surprise— But if I’d known there was a word so apt to describe that act of navigating toward a sound, I could have said “Nice phonotaxis” as I dropped my son at practice and he moved toward the metal ‘ping’ of baseball bats from fields beyond the trees...

full text and citations available on our website (see article, left)
Collaboration, from front page

and the Cheboygan County Planning Department.

“The Station has a long history of partnering with our neighbors,” says Director Knute Nadelhoff er. It was the efforts of UMBS students in the late 1970s that led to creation of the Tip of the Mitt Watershed Council. Collaboration on LTC properties dates back many years as well.

“It’s such a worthwhile idea,” Hellquist says. His class studied the Bessey Creek Nature Preserve on Douglas Lake’s northwest shore. The half-acre preserve was created in 1988. This summer’s research was the first comprehensive survey of its plant life. “Prior to our work there was just a three-page management plan that was mainly property information,” Hellquist says. “We provided a 30-plus-page plan.”

The Field Botany class presented LTC with several items: a species inventory, an assessment of flowering plant quality and diversity, a sampling of the forest community, and a complete conservation management plan based on LTC’s template. Hellquist says the forest assessment is especially useful because “It provides a baseline understanding of the swamp forest canopy and species composition prior to the anticipated arrival of the Emerald Ash Borer.”

Doug Fuller, Director of Stewardship for LTC agrees. “We got a lot of information that we would probably never otherwise have the ability to collect.” Fuller, who is also a UMBS alumnus, sees the UMBS-LTC collaboration as mutually beneficial. “Having our preserves used for education and research is part of our mission. I hope these collaborations can continue or be expanded in the future.”

Fuller need not worry. “We are very interested in working with our neighbors on environmental science issues that affect all of us,” says Nadelhoff er.

“It’s a win-win situation,” echoes Phil D’Anieri, a Lecturer at the University of Michigan who taught the Introduction to Urban and Environmental planning class.

“Students learn much more and learn more deeply about issues when they engage in real world situations. Our community partners get work done that they couldn’t afford to have done otherwise and by motivated and talented students to boot.”

You can watch the Limnology class video at our website, www.lsa.umich.edu/umbs/ in the Students section, under Courses → Course Descriptions → Limnology.
The heart of UMBS is on Douglas Lake. But for several staff, its home is in Ann Arbor eight months of the year. They operate out of a small suite of offices in the Chemistry Building on the U-M Diag.

As with the Pellston-based staff, the Ann Arbor office spends much of the fall tying up loose ends from summer. Student Services Coordinator Peggy Meade compiles course and REU evaluations and summer comments and suggestions. She cleans up lingering enrollment and grade reporting problems. Kyle Kwaizer, UMBS Data Manager, works with Bob Vande Kopple in Pellston to ensure the fresh crop of data sets and metadata (location, methods, researchers, etc.) make it into the Station’s database.

Staff also turn their thoughts to the next field season. Associate Director Karie Slavik observes, “My job is like managing a small village. The day-to-day activities of the spring and summer are planned throughout the year.” She and Director Knute Nadelhoff er kick off the fall by finalizing which classes they will offer the following spring and summer. Slavik also identifies the next year’s mini-courses and recruits instructors for them.

Alicia Farmer, Communications Coordinator, begins recruiting students for the upcoming year. Staff and enthusiastic alumni represent the Station at more than 12 separate on- and off-campus recruiting events. In addition, Farmer makes presentations to approximately 50 classes containing several thousand students total. Printed materials and electronic advertisements get posted across campus and sent to institutions across the country.

Meade is heavily involved in recruiting as well. It’s safe to say no student comes to the Station without first talking to her – often repeatedly – to get all of her or his questions thoroughly answered. Meade also coordinates the paperwork and communication associated with student applications, admission and enrollment. To ensure enough minivans for classes, Meade has to place her order with transportation services by late fall.

Pam Ballard, UMBS Accountant, returns to the more routine elements of her job in the fall. She performs on-going administration of grants, payroll, and general accounts. As Slavik confirms faculty hires, Ballard formalizes the offers and makes sure faculty are on the university payroll.

By January, the pace of work starts accelerating. REU (Research Experiences for Undergraduates) applications are nearing their deadline and prospective student traffic is heavy. Meade and Ballard handle a steady flow of applications, registration fees, and related record-keeping.

Kwaizer and Farmer keep the Station’s web pages current with updated applications, deadline information and news. Farmer advertises a series of events including the Ski Weekends, Garden Party, and Mini-Courses.

As teaching assistants, resident advisors, and other temporary summer help are selected, Ballard formally hires each of these people.

Slavik meets with many prospective students, fielding both general questions and financial aid inquiries. Communication between Ann Arbor and Pellston becomes more frequent as student, faculty and researcher lists and totals are sent on
for housing assignments and meal planning.

Toward the end of winter semester staff make final preparations for the upcoming academic sessions. They host an Ann Arbor orientation for incoming students. Meade coordinates rides among students who are driving up minivans. Farmer firms up a schedule for the Summer Lecture Series. Ballard begins work on student billing for the spring residents’ housing and dining.

One by one, all staff but Ballard, who remains in Ann Arbor year round, move crucial items from their Ann Arbor offices and homes to the Station. Slavik and Meade are settled well in advance of the first students’ arrival for spring session.

There are many other components to each person’s job, from ordering supplies to planning and administering the Station’s budget to coordinating new programs and special projects. The Biological Station is most visibly active between May and August, but even in the winter, and even 260 miles from Douglas Lake, its staff are working diligently to keep it running smoothly.

Legacy, from front page

the Biological Station. One hundred years after Frank Gates’ arrival, his great-granddaughter, Sarah Elise Field, made the same trip. In between, Frank Gates’ son and granddaughter also spent time at UMBS.

It took less than two weeks before Field was “outed” as the former director’s granddaughter. Dr. Gates sought out one of her professors, Dr. Paul Moore, at the 4th of July picnic. When Moore asked if he should go easy or hard on Field, the former director said without hesitation, “hard.” On the next field trip, Moore informed Field, “You’ll be the first student in the water and the last one out of the water.”

Field is the daughter of Heather Gates and John Michael Field. Her major at the University of Michigan is Program in the Environment, which combines the disciplines of biology, geology, chemistry, and “environment.” She also has a minor in Criminology. She plans to go to graduate school for Marine Biology to study sharks and coral reef ecosystems. This summer, she was enrolled in Moore’s Limnology course and Curt Blankespoor’s General Ecology class.

Field often studies with books open on a picnic table in the Chatterbox. She studies outside whenever she can because she loves to be outdoors. Her study carrel on the shore also affords her the opportunity to see who just might come into camp for a visit. She spots her grandfather’s car in camp when he comes over to meet with the staff, faculty, or administration from time to time or to attend the lectures.

This summer, following a lecture that Gates attended at the Station, Field waited to speak with him outside the Marian P. and David M Gates Lecture Hall. As people were standing around talking after the lecture, Gates put both of his hands on his granddaughter’s shoulders, looked intently at her, and said with the full measure of a grandfather’s pride, “You and the Biological Station are a perfect fit, like a hand in a glove.”
2012 Mini-Courses Preview

Aquatic Macroinvertebrates of Northern Michigan Lakes and Streams (Kevin Cronk): This class focuses on the identification of aquatic macroinvertebrates commonly found in Northern Michigan lakes and streams, but also delves into macroinvertebrate biology and general stream ecology. We will focus on three aquatic insect orders per day, followed by a day devoted to non-insect taxa. The class will visit a variety of lakes, streams, and wetlands on a daily basis to collect aquatic macroinvertebrates, practice identification skills, improve understanding of macroinvertebrate ecology, and, optionally, create individual reference collections. Kevin L. Cronk is the Monitoring and Research Coordinator for the Tip of the Mitt Watershed Council.

Birds of Northern Michigan (Mary Whitmore and Bob Hess): This class, which takes place when early summer singing and nesting are underway, features lots of time in the field. The focus is on learning to identify birds by sight, sound and habitat. During this course there is an overnight field trip to the Seney National Wildlife Refuge in the Upper Peninsula of Michigan. The main instructor is Mary Whitmore, who has a rich background in ornithology and is very familiar with the birds of northern Michigan. Bob Hess is the former director of the Michigan Department of Natural Resources’ Nongame Wildlife Program.

Wetland Ecology (C. Eric Hellquist): Northern Michigan has an exceptionally diverse array of wetland habitats, all of which have unique stories to tell. We will visit wetlands including Great Lakes shoreline marshes, inland marshes, cedar swamps, and peatlands. We will discuss the post-glacial history of the landscape that provided the context for today’s wetland environments. A central focus of our class will be reviewing the ecological processes responsible for the abundance and distribution of the species we observe. C. Eric Hellquist is an Assistant Professor at the State University of New York at Oswego and a faculty member at the UMBS.