College of Letters & Science
UNIVERSITY OF WISCONSIN–MADISON

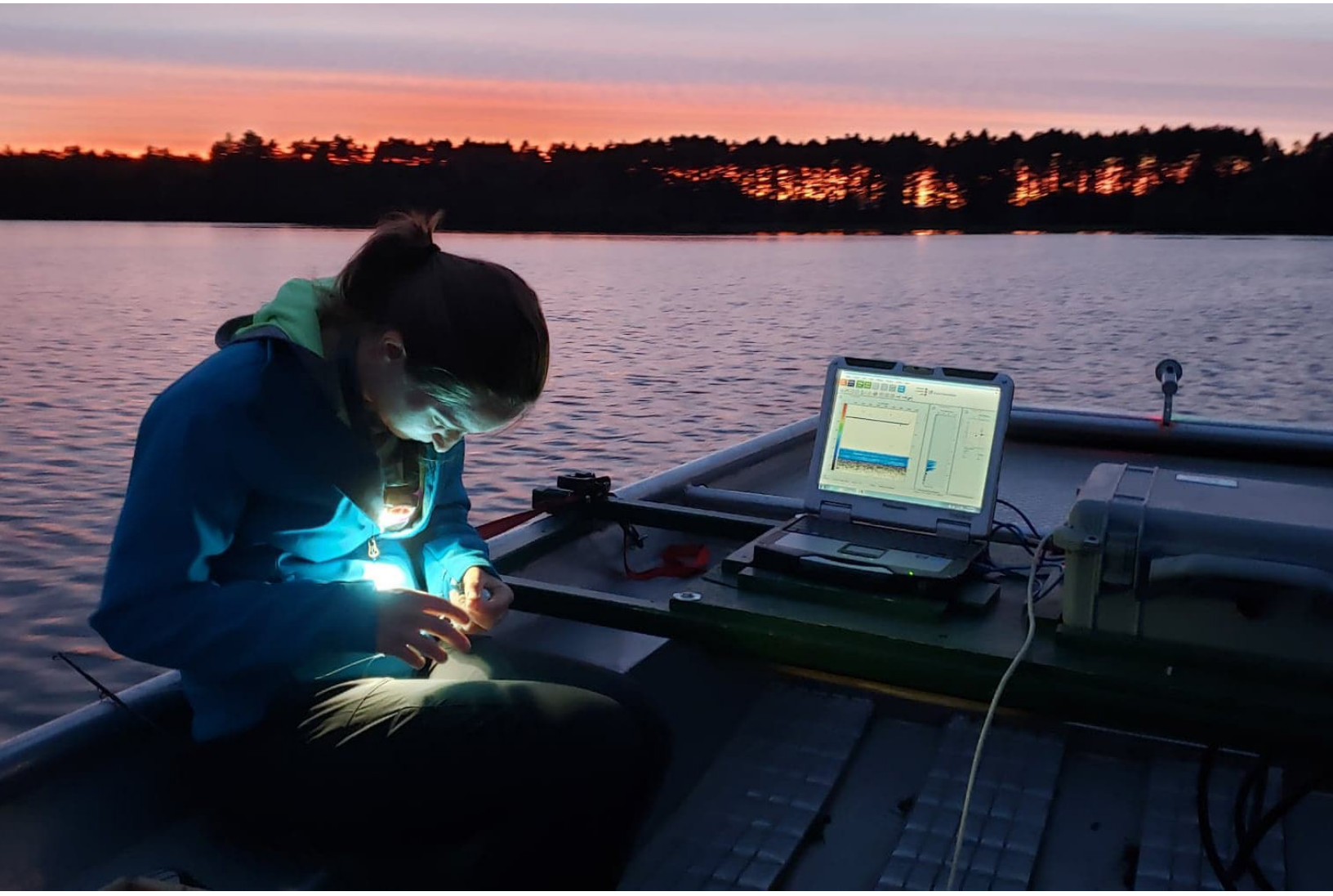
LIMNOLOGY NEWS

News for Alumni and Friends of the Center for Limnology

Fall 2020

Our Year of Socially Distant Science

Read more on page 6



Dusk on Sparkling Lake, where volunteer Amber Mrnak helped husband, Joe, take hydroacoustic surveys for fish this summer. *Photo: Joe Mrnak*

Photo: Jeff Miller

I won't mince words – COVID-19, societal reckoning with racial inequity, and widespread social upheaval have made for a challenging and disheartening year for each and every one of us.

A recurring theme of this newsletter is the many ways that the Center for Limnology (CFL) adapted to the reality of 'socially distanced science.' We offered 'virtual' summer undergraduate research fellowships. Our famous limnology course (Zoology 315) went online. We shifted to all-digital outreach, launching a popular Q&A blog series for kids called 'Water We Talking About?' (page 4). And I'm pleased to report that the science still happened. We safely conducted key field sampling for the North Temperate Lakes Long Term Ecological Research (NTL-LTER) program, as well as other high priority projects (page 6). All of this is a testament to the amazing and adaptable folks at the CFL. People rose to the occasion.

As COVID-19 dragged on, there were numerous occasions where we realized the benefits of being virtual. For example, with the shift to Zoom, attendance at our weekly Wednesday lunch seminar increased notably. Moreover, we've been able to feature an especially diverse and international slate of speakers - speakers that would have been out of reach for in-person programming. Undoubtedly there will be aspects that we carry forward in the post COVID-19 world. We're looking forward to that.

2020 has been a remarkable year for the CFL in terms of transitions. Olaf Jensen made the move from Rutgers to UW-Madison as a new faculty member. Zach Feiner joined the CFL as a fisheries research scientist in July. Aaron Nolan is our new Hasler Lab Manager. And we will soon welcome Grace Wilkinson as our newest CFL faculty member (page 5). With the recent onboarding of Hilary Dugan (Professor) and Gretchen Gerrish (Trout Lake Station Director), the last few years have been a period of unprecedented change and growth at the CFL.

I'll close with a warm 'thank you' to the many generous alumni, friends, and donors who have financially supported the CFL during the past year. Individual donations allow us to sustain our impact, pursue innovative research projects and train the next generation of freshwater leaders (page 10). We couldn't have done it without you. Please don't hesitate to drop me a note and an update.

Jake Vander Zanden
Wayland Noland Distinguished Chair
Director, Center for Limnology
University of Wisconsin-Madison

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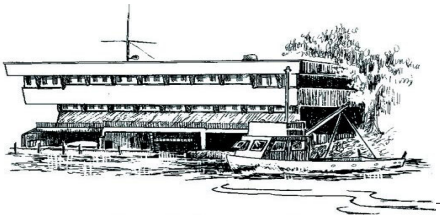


In Fight Against Invasive Species, Can the Cure Be Worse Than the Disease? by Mary Magnuson, UW-Madison Communications

Efforts to control invasive species like this Eurasian water milfoil can sometimes do more harm than good in a lake. *Photo: Alison Mikulyuk*

Invasive Eurasian water milfoil is flourishing in Wisconsin's lakes, sometimes outcompeting native plants and creating floating mats that cause problems for people, boats and property values. But the benefits of using one type of historical lake-wide herbicide treatment may be outweighed by the costs to native aquatic plants.

In a study published in the journal *Facets*, scientists from the Wisconsin Department of Natural Resources (WDNR) and the CFL analyzed more than 600 surveys of plant life conducted in 442 Wisconsin lakes by the WDNR, local lake associations and private companies. They focused on how native plant species fared when in the presence of milfoil, versus when exposed to lake-wide herbicide treatments.

Lake management teams often try to tackle their milfoil problems with chemicals, which reduce the size of the milfoil population but can have off-target effects. In most lakes, lake-wide herbicide treatments are associated with more native plant declines than the milfoil, according to the study.

Alison Mikulyuk

But not every lake responds to herbicides or milfoil invasions in the same way, and each lake has a variety of different stakeholders involved to take into consideration, according to Alison Mikulyuk, a CFL alum, who is now a WDNR aquatic scientist. She co-authored the study with CFL director, Jake Vander Zanden, whose lab Mikulyuk worked in while earning her doctorate.

For many lakes, Mikulyuk says, it's likely they may not have to use a lake-wide herbicide treatment on milfoil until native plant species are clearly suffering. For other lakes, a control regime not involving herbicides may work instead.

"A lake-wide approach to managing Eurasian water milfoil is not a one-size-fits-all kind of thing," Mikulyuk says. "Lake-wide treatments like this may be only appropriate for situations where adverse Eurasian water milfoil effects are very clear."

The researchers recommend lake managers craft a plan based on integrated pest management, a philosophy designed to aid in decision-making about herbicides versus alternative methods when controlling invasive species or pests. Such strategies could help managers choose between using lighter herbicide treatments with increased mechanical control — for example, hand-picking milfoil — or only using herbicides when the milfoil becomes too widespread.

"The answer isn't always 'yes' and it isn't always 'no.' Each system that milfoil invades is unique, it's a unique event," Mikulyuk says. "And in general, it's not a death sentence for a lake if an invasive species is introduced. But in some cases they can be really problematic [and] have negative ecological impacts on the community itself."

Vander Zanden says Mikulyuk's work over the years has brought a new dimension to his lab, which typically studies fish and aquatic invertebrates, and — through her connections at the WDNR — amplified the CFL's focus on finding opportunities to apply UW–Madison research.

"When she started her PhD in my lab, she was already a scientist at the WDNR, and an expert on aquatic plants and the management of invasive water milfoil," Vander Zanden says, "so from the start there was a mutual exchange of ideas. She also brought insights into my lab group that derived from her experience working for our state's natural resource management agency. As a result, much of the work in my lab group emphasizes the 'So what?' question."

As for the "So what?" with herbicide control of milfoil, Mikulyuk hopes her research will help lake managers make cautious, more informed decisions about their invasive species control strategies. Now, she and the WDNR are working on an online portal to help disseminate their water milfoil data easily.

No Crowds? Virtual Outreach to the Rescue!

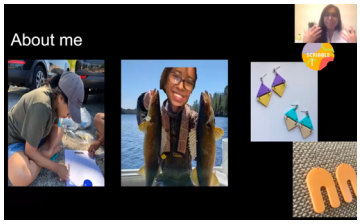
by Adam Hinterthuer

Here at the CFL, we are big believers in the Wisconsin Idea. But we also believe in science and "safer at home" orders - which means in-person outreach was off the table in 2020. However, thanks to the wonders of the Internet, we still managed to find some new ways to connect. **Here are a few examples:**

Water We Talking About?

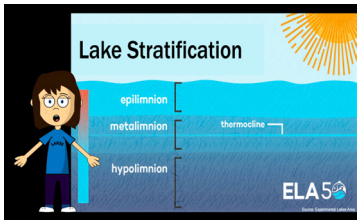
As parents across the world found themselves thrust into homeschool duty in March, we wanted to help keep their new virtual learners entertained. One idea was the CFL blog series, "Water We Talking About?" Each week, kids sent in questions ranging from why water can look like root beer to why there aren't any seashells on the lakeshore. The series really took off and had CFL faculty and students fielding questions from across Wisconsin and as far away as Pennsylvania. Some queries even had us hunting for outside help from folks like the WDNR's furbearer ecologist, Lake Erie's "snake lady," and even a freelance astrobiologist!

Facetime Fellowship



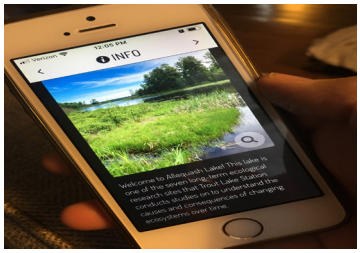
Each year, a handful of accomplished students give presentations summarizing their summer fellowships at Trout Lake Station. These fellowships are made possible by gifts from generous donors, many of whom also spend their summers up in the Northwoods. They usually stop by for our annual "Fellows Luncheon" but, this year, that luncheon looked a little different. Instead of gathering in the Tug Juday conference room for sandwiches, we gathered around our laptops to watch students explain how they worked on Trout Lake research projects from home. Some even got creative and photoshopped their faces onto photos of in-person fieldwork! These talks are now on our YouTube channel for anyone to enjoy.

Limnology 2.0



In 2020, North America's oldest limnology course got a digital update. We love to boast that we have the largest and longest-running undergraduate limnology course in the world. When CFL assistant professor Hilary Dugan began building her syllabus for Zoology 315 this year, she didn't think she'd be teaching from home. Still, Dugan pivoted brilliantly, deciding to prioritize virtual lectures. Instead of two in-person lectures a week, this year's students got weekly YouTube videos and live Q&A sessions. While creating all this content meant less summer vacation time, Dugan's work helped improve the way future limnology courses get taught and produced some online artifacts that will be used well into the future.

Trout Lake Station Virtual Open House



Since 2011, the Trout Lake Station Open House has drawn hundreds of visitors to our station each year to chat with students about their summer research projects and enjoy free Babcock Dairy ice cream. While we weren't about to ask 300 people to hang out this year, our summer science communication intern, Cassie Gauthier, took the lead on a cool idea to keep people engaged. Using a mobile app called ActionBound, Cassie put together a massive smartphone scavenger hunt involving each of the northern Wisconsin study lakes in our long-term ecological research project. Participants could visit each lake either in person or virtually and learn about invasive fish, carnivorous plants and much more. To top it off, The Corner Store – a popular Vilas County spot for summer ice cream stops – offered up cones for folks who finished the hunt!

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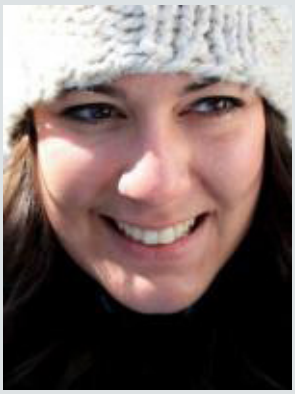
Meet the Newest CFL Faculty Member

by Adam Hinterthuer



Not all news in 2020 was bad, and one particularly good bit of news here at the CFL is that Grace Wilkinson will soon be joining join our faculty at Hasler Lab! (In fact, as this newsletter went to press, she had just closed on a house in Madison.) Grace comes to the CFL from Iowa State University, where she was an assistant professor in the Department of Ecology, Evolution and Organismal Biology studying ecological resilience and nutrient dynamics in lakes. While we'll obviously have to wait to celebrate in person, we did reach out to Grace so she could introduce herself to her new limnological community.

Tell us a little about your research.

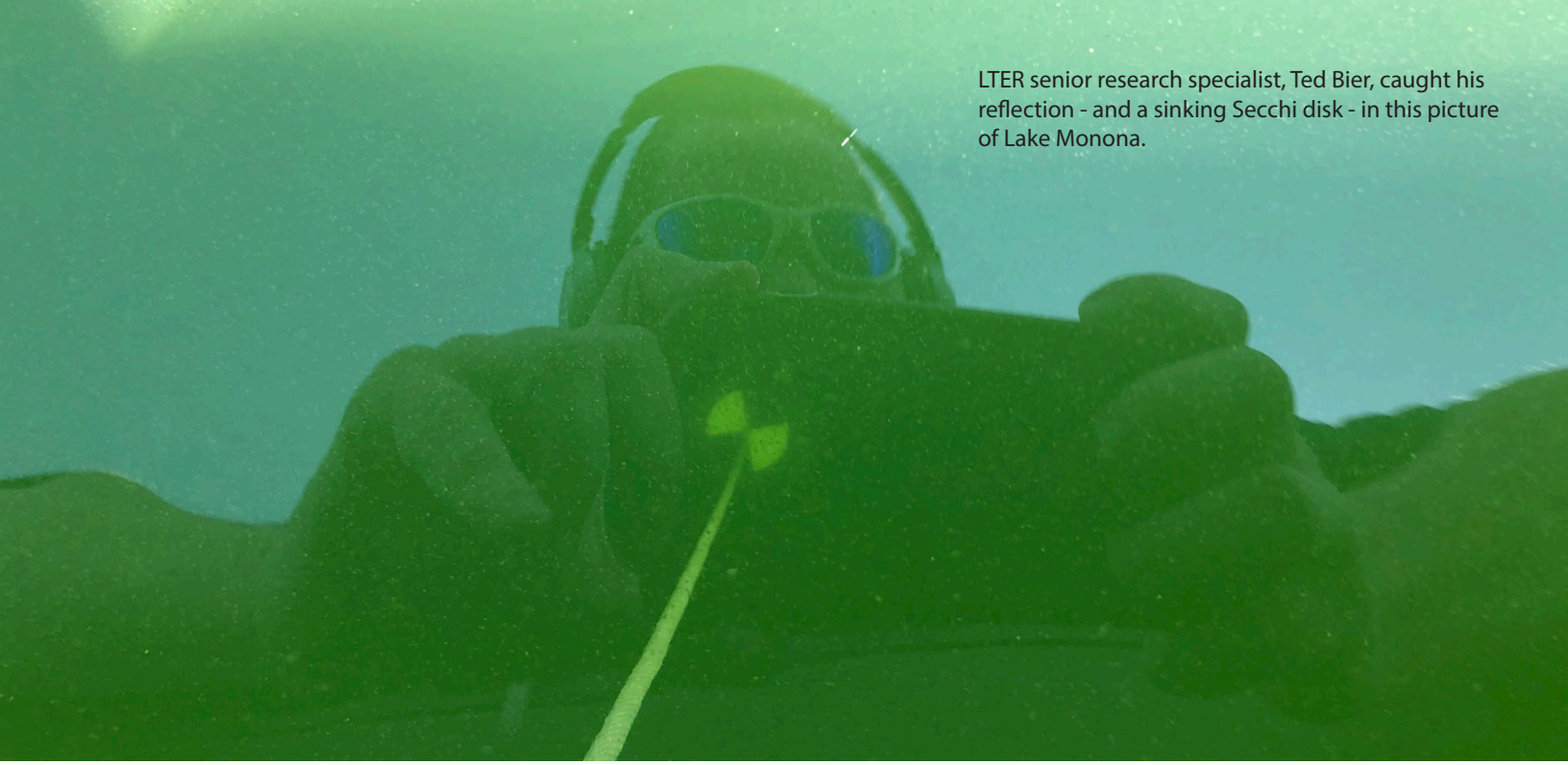
My research program focuses on the dynamic links between lakes and the surrounding terrestrial landscape, and how these links shape processes within the lake. Currently, I have been focusing on the long-term trends in algal blooms and the role of land use and climate change in driving harmful algal blooms. (Editor's Note: Here's another bit of good news from 2020 – Grace's most recent paper on harmful algal blooms found that, despite popular perceptions, there's no evidence they're actually getting worse.) Additionally, we're working on understanding the consequences of these changes on carbon cycling in lakes with really high nutrient loads and production.

What made you apply for the opening here at the CFL?

I spent a lot of time "CFL-adjacent" during my PhD and collaborated with scientists at both Hasler Lab and Trout Lake Station. I was always impressed by the collaborative community of limnologists doing cutting-edge research. After a few years developing my research program at another university, I was drawn to the CFL-model of community and resource sharing and jumped at the chance to have such wonderful and knowledgeable colleagues!

Is there anything you're especially excited about in terms of moving to Madison and getting more familiar with Wisconsin lakes?

I have spent a fair bit of time over the past decade in northern Wisconsin at the University of Notre Dame's Environmental Research Center (UNDERC) and Trout Lake Station. However, I've spent relatively little time on the lakes in the Madison area. I'm looking forward to "getting to know" these lakes outside of the academic literature and building connections with the water community here in Madison. As for moving to Madison, I'm excited to take advantage of the wonderful outdoor spaces in southern Wisconsin and I look forward to exploring the food and arts scene in town when it is safe to gather in these spaces again.



LTER senior research specialist, Ted Bier, caught his reflection - and a sinking Secchi disk - in this picture of Lake Monona.

Socially Distant Science: Even Amid a Global Pandemic, CFL Was Busy with Research in 2020

by Adam Hinterthuer

CFL graduate student Holly Embke and her research technician and COVID pod partner, Aly Andersen, prepare a boat for field work. *Photo: Gretchen Gerrish*

Earlier this summer, Ted Bier was out on Lake Monona with the Madison skyline bobbing in the background collecting samples for the North Temperate Lakes (NTL) Long Term Ecological Research (LTER) project. It was Bier's 18th year with the NTL-LTER but, like most things in 2020, it was anything but routine.

For starters, Bier was alone on the water. Back on shore, research specialist Alice Ogden-Nussbaum, who would normally be helping take plankton tows or filtering water samples, sat watching Bier through binoculars so she could call for help should he fall into the 50-degree water.

While these "socially distant" measures kept fieldwork safe and allowed the CFL to continue doing research this year, Bier says that the inability to share the workload took its toll. In most years, an LTER crew can be on a lake by mid-dash morning, back to the lab early afternoon and then, after processing samples, make it home for dinner.

But, "when you have to do a lake by yourself," Bier says, "it takes two to three times longer so, realistically, it's a twelve-hour deal."

Of course, the CFL was lucky that our faculty, graduate students and field technicians got to do research at all this year.

"Based on the time-sensitive nature of the long-term sampling, you just can't put it off and do it later," says CFL director Jake Vander Zanden. "Plus," he says, "we had several ongoing whole-ecosystem experiments and just didn't want to give up on those."

Vander Zanden credits staff at both Hasler Lab and Trout Lake Station (TLS) for quickly putting together COVID-safe protocols and getting "essential research" approval from the University. He was also thankful for help from College of Letters & Science Associate Dean Gloria Mari-Beffa, who "went way above and beyond in helping us to make it all happen," he says. "In the end, we pulled off a pretty awesome field season."

Gretchen Gerrish, who began 2020 excited for her first full season as director of TLS, agrees. She found herself scrambling in March as COVID-19 precautions sent station staff into "work from home" mode and shut down the usual flood of

summer undergraduates. In the end, only a handful of graduate students and research technicians were allowed on station – and, even then, were required to quarantine for 14 days upon arrival and limit social and fieldwork interactions to each research project's "pod."

"We lost a really important component without undergraduates," Gerrish says, but "we still had a really productive summer. It's kind of shocking how much happened in terms of the amount of research that took place. It was neat to have our graduate students think-tanking and working in small groups. You didn't see a lot of people, but a lot happened."

For Joe Mrnak, these developments meant he got to spend another field season with a very familiar partner – his wife, Amber.

This was an important summer for Mrnak, a new Ph.D. candidate who is working jointly under Jake Vander Zanden and Greg Sass at the Wisconsin DNR, to launch an ambitious research project trying to restore native cisco populations in northern Wisconsin lakes.

CFL graduate student, Joe Mrnak, spent the summer with a familiar field technician - his wife, Amber. *Photo: Joe Mrnak*

In their life together, Amber had already worked for credit on Mrnak's undergraduate senior thesis and spent two years on payroll as one of the research technicians for his master's degree. But, when the pandemic left him without his undergraduate field crew, he says, she went above and beyond anything she's had to do before.

"Amber is a 7th and 8th grade science teacher in Poynette and, when our [field season] kicked off, she was online teaching all of May and the first week of June and still helping me with my fieldwork," he says.

Joe and Amber lived in the upstairs level of Juday House on the station while two other research technicians occupied the downstairs apartments. A handful of other graduate students were also scattered across Trout Lake's cabins with their own research pods. While hanging out in the lab or someone else's cabin was off limits, Mrnak says, they were able to safely enjoy bonfires and fishing trips and a quieter summer up north.

"I'm a recluse, so 2019 was crazy with all the undergrads," Mrnak says. "2020 was awesome from my perspective."

Other than missing out on a WDNR rainbow smelt removal that happened right after ice-off in early spring, Mrnak says his field season was relatively unaffected by the pandemic. A lot of that, he says, had to do with the "phenomenal leadership" of Gretchen Gerrish. From getting creative with his crew assignments, to expediting paperwork, to making sure equipment and schedules were all lined up and ready to go, Mrnak says, Gerrish "really made the summer successful."

Not everyone's summer was quite so uncomplicated. Back down near Madison, Ted Bier not only had to work around pandemic restrictions, he discovered even more challenges awaiting him at Fish Lake, one of the LTER study lakes just northeast of Sauk City.

"Fish Lake has unprecedented flooding, it's up almost five feet in last few years," Bier says. The result is that it has overtopped the land between it and Mud Lake and the two are now a single body of water Bier began calling "Fud Lake."

It was so flooded that Fish Lake's boat ramp was too far underwater to reach without drowning his truck, so Bier had to get creative in order to reach his sampling spots.

One ill-fated early attempt at getting all of the LTER sampling equipment to the middle of Fish Lake involved an extra-large swim raft. Unfortunately, Bier says, a submerged fence post tore a hole in the raft.

"The boat was collapsing around me, so I had to jump in to save five-grand worth of equipment," he says. Luckily he was able to wrap the deflated parts of the raft around the more sensitive equipment and swim safely back to shore.

After another misadventure with a quickly stolen canoe, Bier ended up purchasing a small plastic bass boat from Cabela's which let him get out on the lake and ensure that the LTER's 40 year program of monitoring our lakes continued uninterrupted.

If this summer showed us anything, it's that the show must go on – no matter how distant we have to stay from our fellow researchers or how high the waters get on our research lakes.

Epic Summer Road Trip Finds Small Streams Have Big Impact

by Adam Hinterthuer

Back in July of 2018, Center for Limnology graduate student Rob Mooney set out on an epic road trip around Lake Michigan. He'd already completed eight circuits of the lake over the previous two years for a study on seasonal changes in tributaries flowing into the lake.

This time, however, Mooney's plan was even more ambitious. He would take water samples at as many of the nearly 300 tributaries that flow into the lake as he could in as little time as possible.

Rob Mooney, a CFL graduate student working in Emily Stanley's lab, led the study.

While obstacles like dangerous road crossings and encounters with aggressive dogs made stopping at every stream impossible, at the end of six days Mooney had a snapshot of 235 tributaries that empty into Lake Michigan. That, says Mooney, "was just cool in itself," but "a bonus was that we actually started to see patterns."

In an article on his adventure published this October in the Proceedings of the National Academy of Sciences, Mooney says these patterns revealed that small streams play an outsized role in feeding algae blooms and impacting coastal waters.

CFL professor Emily Stanley says Mooney's study "is unique in quantifying the amount and type of nutrients being delivered to a lake at such an epic scale." She likes to joke that Mooney's massive sampling effort was a like "NASCAR science, except he went clockwise!"

Fueled by weak motel coffee and a glovebox full of sugary snacks, Mooney and recent UW–Madison graduate Will Rosenthal sampled nearly 40 streams a day. For each tributary, they would find a road crossing as close to the lake as possible, then walk out to the middle of the bridge or culvert over the stream and toss a bucket tied to a rope into the water. After filtering these water samples into small vials and tucking them into a well-iced cooler, they headed along the coast to the next stream.

"Within the Great Lakes there are hundreds and hundreds of small tributaries that are flowing in but, for the most part, they haven't been considered by previous nutrient-loading studies because they're so small compared to the big ones," Mooney says.

That focus, he says, overlooks some important impacts. For example, smaller tributaries often have nutrient loads that are high for their size and contain higher percentages of soluble reactive phosphorus, a compound that is readily available for nutrient-starved algae or aquatic plants to snap up and use to feed their growth.

They also don't have high stream flows, which is important, Mooney says, because "they aren't blasting water out into the lake but getting pushed back against the shore so all of the nutrients they have stay available along those coastlines."

And that fact may point to the most important takeaway of Mooney's study.

"It's hard to think of a Great Lake, like Lake Michigan, as a singular lake. It is just so massive and built up of all of these smaller segments of coastline that have different tributaries running in," he says.

In other words, no one experiences the lake at a whole-lake scale.

"One of the reasons why I wanted to stop at every tributary is because, on my earlier sampling trips, I would stop and get lunch somewhere and talk to the people who lived and owned businesses and rented out hotels along the coast," Mooney says. "If any stream is going to affect their daily livelihood, it's going to be the smaller ones that will have a direct impact on the shoreline they live along."

Screen shot of Rob's GPS driving route used for the ~1,500 mile sampling trip. Each flag represents a road crossing over an inflowing tributary.

Mooney hopes his study can help resource managers target nutrient-reduction efforts to have the biggest impact for nearshore ecosystems and local communities. "There is still a lot to learn about how these smaller tributaries influence coastal water quality throughout the Great Lakes," he says.

But that doesn't mean he's feeling the itch for a tenth lap around the lake. While he may miss the open road and front-row seats to every mile of the Lake Michigan coastline, he laughs, "for me, sampling forty streams a day and driving hundreds of miles for six days straight is definitely not the most sustainable research model."

Field Samples: Postdoc and Graduate Students

Robert Ladwig (Postdoc, Hanson & Dugan) @hydrobert

Robert is from Jena, Germany and completed his Ph.D. in Civil Engineering at the TU Berlin and the IGB Berlin. He was a visiting researcher in Saitama, Japan studying the effects of artificial re-aeration techniques on reservoirs.

A key point of his research at the CFL is the development of open-source scientific software for process-based lake modeling applications. He also explores the dynamics of dissolved oxygen depletion processes in lakes as well as how climate change will affect future summer stratification periods. As a computational limnologist, you will find Robert mostly in front of his computer if he's not too busy standing in front of a whiteboard.

David Ortiz (Ph.D., Stanley) @H2Ortiz

David grew up in Des Moines, IA and completed his M.S. in Environmental Science at Iowa State Univ. While there, David's work focused around the ecological service of nutrient retention that wetlands provide. During his M.S., he concentrated on temporal and spatial dynamics of shallow eutrophic lakes.

David's Ph.D. work at the CFL is focused on spatial and temporal heterogeneity of lakes in both experimental and non-experimental states using the FLAMe sampling platform. David spends his summers in northern Wisconsin at either TLS or UNDERC collecting vast quantities of data. When he's not on a lake collecting data, he is found hiking, fishing or reading.

Ashley Trudeau (Ph.D., Jensen)

Ashley completed her undergraduate at UNC-Chapel Hill, taught middle and high school science for 4 years, and moved to Berlin for a M.S. in fish biology, fisheries science, and aquaculture at Humboldt Univ. As a Ph.D. student at the CFL, Ashley spends her field seasons in Vilas County interviewing recreational anglers.

Ashley studies the dynamics of recreational fishing effort in marine and freshwater fisheries, using multiple methods to observe and count anglers and then uses these data to understand how site characteristics, regulations, and angler preferences predict fishing effort at different sites. As a full-time WI resident, Ashley is excited to study the winter ice fishery.

Catching Up With Alumnus Jim Cloern


Jim Cloern aboard a USGS research vessel in San Francisco Bay.

Where are you now and what are you up to? I live in the San Francisco Bay area, retired after 43 years at the U.S. Geological Survey (USGS) where I directed a research program on San Francisco Bay to understand how estuaries are changed by human activities like introductions of non-native species, river damming, water diversions, nutrient enrichment and landscape change as well as understanding variability of the climate system from events like heat waves, floods and king tides.

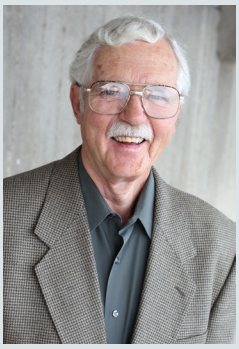
What led you to study at the CFL and fond memories? I had a great biology teacher at New Berlin high school and came to UW in 1966 already thinking about a Biology major. I was completely hooked after taking Intro Biology but had no idea where that interest would go until I took the Limnology course taught by Professors Arthur Hasler and John Magnuson. That course, followed by Fisheries Biology (Professor Magnuson) and Zooplankton Ecology (newly hired Professor Stanley Dodson) sparked a life-long passion for the aquatic sciences and gave me the foundation for graduate studies culminating in a Ph.D. from Washington State Univ. My memories of life at UW during the late 1960s are indelibly etched in my brain. I remember a meeting in Professor Hasler's office, looking out his window onto Lake Mendota and thinking this is cool -- how do I get to do this? I found the answer. Madison, Wisconsin is a special place, and its surrounding lakes provide a magical setting for the study of Limnology.

How have you been spending your time in this year of the pandemic? We have spent most of 2020 safely distanced in the Sierra Nevada mountains. I'm fully engaged as a research scientist, editing ASLO's newest journal *Limnology and Oceanography Letters*, serving on advisory committees, continuing to write on USGS San Francisco Bay research.

In Memoriam - James Kitchell

Professor Emeritus James F. Kitchell passed away after a long illness on July 28, 2020 at the age of 78.

Jim pioneered the development of bioenergetics models for fishes and applied these models to diverse problems of fish management and food web change in the Great Lakes and inland lakes. He was a core contributor to the trophic cascade concept and a long series of whole-lake experiments to study cascades in small experimental lakes, Lake Mendota, the Great Lakes, and oceans. He received many honors for research, including a named professorship, the Arthur D. Hasler Professor of Zoology, and awards from the American Fisheries Society, American Society of Limnology and Oceanography, and Great Lakes Fisheries Commission.



In 1970 Jim joined the Limnology Lab as a Project Associate working on Lake Wingra. He was appointed to the faculty of Zoology at UW-Madison as Assistant Professor in 1974 and transitioned through the academic instars to Professor in 1982. Jim served as Associate Director of the CFL from 1985-2000 and Director from 2000-2009. Jim trained dozens of graduate students and postdocs. Throughout his career Jim co-taught Ecology of Fishes, first with John Magnuson and then with Jake Vander Zanden. For many years he organized Problems in Oceanography, the core course of UW's Oceanography and Limnology program (now Limnology and Marine Science). Jim was an outstanding lecturer and storyteller in scientific meetings and the classroom. He played a vital role in building the CFL, and we are saddened by his passing.

Making Connections: Individual Donors Support Promising Students and World-Class Research at the CFL

by Adam Hinterthuer

Jack and Pat Lane talk with summer fellows, Meredith Smalley and Paul Schramm, after an annual "Fellows Luncheon" at Trout Lake Station.
Photo: Carol Warden

Earlier this year, the CFL received a gift that will endow an award to annually recognize noteworthy research in the graduate student community at Trout Lake Station and help defray costs associated with graduate work.

Sandy Gillum and her late husband, Don, are the donors behind the Gillum Trout Lake Station Graduate Student Support Fund. Sandy notes that she and Don had discussed ways to support freshwater research for years and knew they wanted it tied to graduate students. "We truly believe that good management and good decision-making stem from knowledge," she says, "and [we have] a strong interest and confidence in the environmental knowledge that comes from graduate studies."

The Gillums' relationship with the CFL began back in 1996, when Sandy was studying lakeshore habitats and involved in common loon research with the Wisconsin Department of Natural Resources (WDNR). The WDNR had hired a graduate student to assist with the projects and he needed somewhere to live for the summer.

"He had no place to stay, he had no money and he had a clunker of a car," Sandy recalls. She says she "hunted all over" for an affordable place but had no luck. "Finally," she says, "I called Trout Lake Station."

Gillum had spent time in and around northern Wisconsin lakes since the early 1950s, but that 1996 phone call was her first connection with Trout Lake Station. It's a connection that has endured ever since. Through a career that included stints as president of the Vilas County Lakes and Rivers Association and vice president of the Wisconsin Lakes Association, Gillum never forgot how good it felt to make it possible for a young scientist to work on Wisconsin's lakes. In the back of her mind, she knew she would love to do it again.

The Gillum's gift is one of many ways that individual donors help keep the CFL at the forefront in the field of freshwater sciences. Of course, not all of them come from people with such strong prior connections.

Jack and Pat Lane's story is more of a happy accident. In 1998, the Florida-based couple drove to Georgia's Jekyll Island to attend a UW Foundation event where they saw CFL director emeritus John Magnuson give a talk on limnology in Wisconsin.

"What is this word?" Jack remembers thinking. "We'd never heard it before." But the couple was intrigued and, from their summer cabin on Sugar Camp Lake in Oneida County, they soon learned about Trout Lake Station and were introduced to Tim Kratz, who was then station director. Through these connections, the John and Patricia Lane Award in Limnology was born. Since 2011 "Lane Fellows" have spent summers pursuing all sorts of limnological projects – from restoring walleye populations, to building "bog batteries," to honing their science communication skills.

In all, the Lanes have helped 24 undergraduates and graduate students get invaluable "real life" experience conducting fieldwork on Wisconsin lakes.

"We've enjoyed supporting something that's worthwhile," says Pat. "I mean, we love our lakes!"

The Lanes aren't the only family supporting our students. For example, the E.T. and Jean Juday Award in Limnology was created by the descendants of one of limnology's important historical figures, Chancey Juday, and also endows summer fellowships at Trout Lake Station.

In addition to student awards, individual gifts also sometimes help support specific research projects, like the invasive rainbow smelt removal project in Crystal Lake. Or they can be key in getting innovative research off the ground. Upon his retirement, CFL director emeritus Steve Carpenter and his wife Susan established a fund for "creative, innovative, and novel research" conducted by CFL faculty that, they hope, will be a source of funding for promising projects that are not yet developed enough for sources like federal grants.

Whatever path it takes to get to us, the support of individuals is crucial to ensuring the CFL is both a leader in limnology as well as a source of life-changing experiences for our students.

Individual gifts make it possible for students to get hands-on fieldwork experience.
Photo: Sydney Widell

See all 'Awards' and 'Catching Up With Alumni' at our CFL Newsletter webpage

Science on Tap Minocqua and CFL Wednesday Seminars continue virtually

Science on Tap-Minocqua was doing on-line learning way before COVID made it cool. We have streamed in-person shows live for years. Join us on Zoom or watch live on YouTube.

CFL weekly Zoology 911 Wednesday noon seminar moved from the Water Science Engineering Lab to Zoom.

PLEASE JOIN US!!

THANK YOU FOR SUPPORTING THE CFL

The generosity of our supporters allows the Center for Limnology to continue to train the next generation of limnologists, generate new knowledge about inland waters, and share this knowledge with diverse audiences. Please consider making a gift to the Center for Limnology Endowment Fund.

CFL Support webpage:

https://limnology.wisc.edu/support/

or

Contact Jake Vander Zanden at 608-262-3014 or mjvanderzand@wisc.edu

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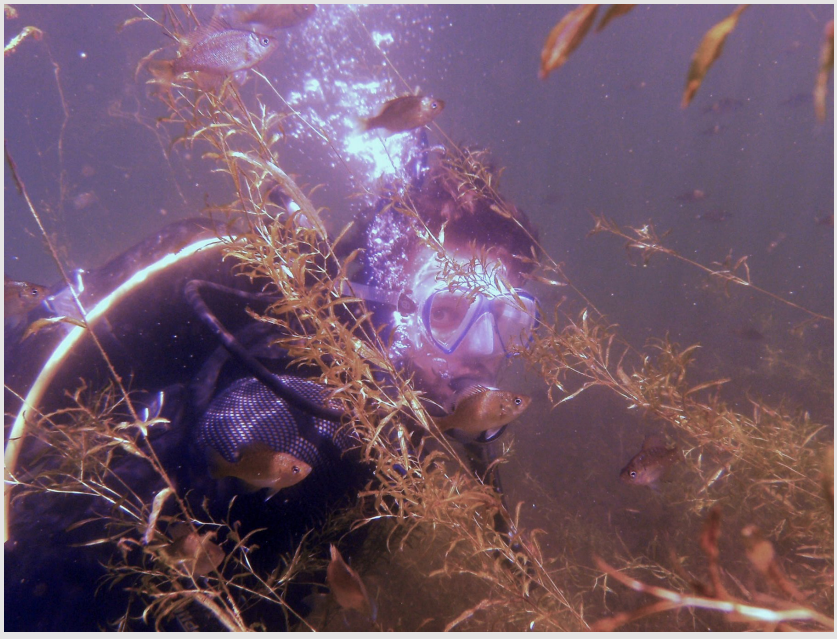

Although she's no stranger to our lakes, Grace Wilkinson is thrilled to be back in Wisconsin - this time as the CFL's newest faculty member! (see page 5)

Left: Grace Wilkinson scuba diving in Sparkling Lake