SCI-TECH

"If we save our wild places, we will ultimately save ourselves."
STEVE IRWIN AUSTRALIAN CONSERVATIONALIST

Students gather bird migration data on campus roofs

BY KRISTIN CHUANG
CONTRIBUTING REPORTER



COURTESY OF JUSTIN LEAHY
Yale College students Julien Amsellem '27, Justin Leahy '29 and Owen Robertson '29 received $2,000 through the Yale Law School's Law, Environment & Animals Program grant program to research nocturnal bird migration over Yale's campus.

During fall migration, more than 2 million birds fly over New Haven every night, according to Julien Amsellem '27. Almost none of them can be seen. But Amsellem, along with two other students, is studying them.

The Law, Environment & Animals Program — or LEAP — a student grant program at Yale Law School, funds students working on research and creative projects related to threats facing animals. This year, undergraduates Amsellem, Justin Leahy '29 and Owen Robertson '29 received $2,000 through the program for their project, "Nocturnal Monitoring of Avian Migration over Yale."

Since early September, the group has placed devices on campus rooftops to record the calls of migrating birds, in hopes of monitoring which species pass over the city and informing local efforts to reduce bird deaths.

"A lot of people realize they'll see a dead bird hit a window and they'll be like, 'Oh, that's a shame,' but they're not realizing the scale at which this can happen or the impact that light pollution and buildings at night can have on birds that are migrating," Amsellem said.

When birds migrate, they emit diagnostic night flight calls — or NFCs — that allow them to communicate with one another. By recording and analyzing NFCs, the group can monitor the quantity and diversity of birds flying through the Yale area.

The students are especially seeking to gather data on declining species, like the Bicknell's Thrush, to raise awareness about light pollution in New Haven. If successful, their dataset would be the "first comprehensive analysis of nocturnal migration in the immediate region," according to their grant proposal. Their data could help support conservation of endangered or unknown bird species migrating in Connecticut.

Leahy said he hopes the measures from their project can inform organizations like Lights Out Connecticut, which advocates for turning off lights during bird migration periods, and the Audubon Society, a bird conservation group.

"Bird-friendly building window policy is starting to spread more across the country, but if there's more of a personal connection — like this specific bird flies over roughly this frequency, and it's very much so on the decline — it adds a more emotional aspect to legislators and people," Leahy said.

The three students first met through birding. Amsellem, a co-president of the Yale Birding Student Association, took Leahy and Robertson birding around New Haven when they visited campus for Bulldog Days as prospective students. Amsellem had attempted a similar project previously, but building managers would not allow him onto the roof of Kline Tower over concerns of safety.

After Leahy and Roberson became students, the group got in contact with Viveca Morris, co-leader of the Yale Bird-Friendly Building Initiative and executive director of LEAP, who pointed them towards the grant. Once their application was accepted, Mark Veronneau, a Yale Office of Facilities employee and fellow bird enthusiast, helped them get onto campus roofs and determine optimal recording locations.

Previously, the students have recorded bird calls from their phones, but with the $2,000 funding from the LEAP grant, the group placed specialized recording devices at the top of the Environmental Science Center, Payne-Whitney Gymnasium and Whitney Grove Square.

The devices record bird calls from sunset to three hours after sunrise, saving the recordings to a data storage bank that can be analyzed through bird call identifying software. They plan to gather data during migration season — September to November and again starting in April — and examine it in the months between. The undergraduates are hoping to publish their results.

"I think that NFC monitoring, though it has really exploded in popularity over the past couple years, is still sort of a new frontier in birding — both in terms of bird distributions and also just understanding the calls that they make," Robertson said.

"We don't have a complete register, by any means, of bird nocturnal vocalizations. And we're still finding new things."

According to Roberston, the only other nocturnal flight call recording setup in Connecticut is no longer active.

He hopes their project could inspire others, especially students at other colleges, to set up their own NFC monitoring.

"There's not very many in the Northeast, and especially, the idea of a ripple effect, like a positive feedback loop of advocacy and conservation success with policy — that could be a fun thing to witness this project do," Robertson said.

Outside of their LEAP project, all three students hold leadership roles in the Yale Birding Student Association. They have been birding since childhood and hope to share their love of birds with other students on campus.

Every year, during the peak of migration season and during the full moon, Amsellem sets up a scope on the Silliman courtyard and allows passing students to look through the scope, where they can see the moon backlighting a constant passage of birds flying south.

"The idea that a bird that is smaller than my fist and weighs five ounces is making a transnational journey multiple times in its lifetime is shocking when you think about it," Amsellem said.

According to BirdCast by the Cornell Lab of Ornithology, an estimated 2,101,200 birds crossed New Haven County on Saturday night.

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Yale New Haven Hospital center aims to calm crises

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The Yale New Haven Hospital Children's Crisis Intervention Center, Connecticut's only hospital-based center for children experiencing mental health emergencies, opened in July.

Newly-completed renovations to the space aimed to adapt to the changing needs of the children the center seeks to serve and make rooms safer for psychiatric patients. The facility now allows for more children to be accommodated through the use of a hybrid model, which incorporates both private patient rooms and open bays to provide children more autonomy and mobility during their visit.

Pamela Hoffman, medical director of the center and associate professor at the Yale School of Public Health, said it was important to create a place where patients have autonomy over their movement.

"The idea is that being in a space where you have agency over where you can go, as opposed to being in an emergency room where you're stuck in your room and you can't leave those four walls," Hoffman said in a Zoom interview.

The CIC regularly hosts events, such as group yoga, deep breathing and coloring sessions.

Hoffman explained how the integrated nursing station and open space contributes to the success of the atmosphere.

"It's not closed in. It's not glassed out, and we had a group yoga session. Kids are on mats. Another child is literally leading the yoga breathing," Hoffman said.

Beth Heinz, the senior vice president for the YNHH Women's and Children's Health Services, said the original plans for the facility resembled an extension of an emergency room, rather than a therapeutic center.

"If you think about an emergency room, it's very loud," Heinz said in a Zoom interview. "Usually they're closed-off rooms. You hear sirens, lots of noise, and so I asked that we pause the construction to think about it in a very different way."

Inspired by the Emergency Psychiatric Assessment, Treatment and Healing — or EmPATH — model used by the Medical University of South Carolina, the center's founders were inspired to create a space that is not only calm but in which children can freely move about.

The EmPATH model was developed by Scott Zeller to deescalate emergency room mental health crises to reduce the number of inpatient hospitalizations. Heinz is credited as bringing the EmPATH model to YNHH's Children's Crisis Intervention Center.

Linda Mayes, the chief of child psychiatry at YNHH, explained that pediatric mental health emergencies have been increasing in recent years.

"There's not only an increase in the number of children and adolescents needing services, but there's also a change in severity," Mayes said over Zoom. "That is, that kids are just sicker, and they need services for longer periods of time."

Together, Hoffman and Mayes explained that there has been a shortage of mental health services available for children, a problem exacerbated by the COVID-19 pandemic.

The American Rescue Plan Act of 2021 provided over $350 billion of COVID-19 relief grants to state and local governments.

According to Hoffman, YNHH was able to utilize these funds to tackle the mental health issues exacerbated by COVID-19.

However, Mayes emphasized that the root cause of this rise is much more complex and should not be blamed solely on the pandemic.

Hoffman said the American healthcare system's focus on intervention rather than prevention has also contributed to the rise in mental health crises.

Research at the Access Lab at the Yale Child Study Center has focused on improving early access to evidence-based mental health care for children.

Chandler Brown, the lead research coordinator for the Access Lab, explained that preventative care focuses on obviating mental health crises from occurring, whereas intervention focuses on reducing immediate harm after symptoms or emergencies occur.

"Unfortunately, because that's after the problem has already been established, so many families, instead of being proactive, it's a reactive approach to it," Brown said. "Once it's there, it's kind of hard to find something that can fix the problem immediately."

Additionally, families often face long wait times for intervention programs, Brown added.

Currently, YNHH is implementing the REACH program, which trains pediatricians in frontline skills in assessment and early intervention.

"Pediatricians are just hungry for basic training in how to identify mental health needs in kids. It's not something they get in pediatric training," Mayes said.

The CIC's calming environment aims to help children connect with healthcare differently and learn crucial skills in emotional regulation and management that will benefit them for years to come.

"There's different things that you can use in coping when you are in a crisis. That the best way to learn those skills is when you're able to test them out," Hoffman said. "And so this is a perfect place for them to be able to test that out."

The Children's Crisis Intervention Center at Yale New Haven Health's York Street Campus is located at 20 York St.

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COLETTE YERRID / CONTRIBUTING PHOTOGRAPHER



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Amid rising pediatric mental health emergencies, Yale New Haven Hospital opened the state's only hospital-based center for children experiencing mental health crises this July.