



FROM THE DIRECTOR

Welcome to the fall/winter edition of the Kelly Adirondack Center newsletter. It has been a busy – and beautiful – fall at the center, with lots of events. One highlight (which we plan to make an annual event) was the Adirondack Dinner for students and community members. We worked with Hallie Bond, former KAC director and author of *The Adirondack Cookbook*, on a menu reflecting the cuisine of the area. Dishes included dandelion green salad, chili crusted venison loin with a berry reduction, lamb ragu, gnocchi, three sisters succotash, Johnny cakes, smoked wild berry crumble and iced mint tea.

We also hosted a dinner with Union Sustainability Manager Grace Hotopp and student club leaders to help plan and coordinate student environmental and outdoor themed activities. We are pleased that U-Sustain, the campus sustainability organization, will have its final fall meeting at the KAC. We are always happy to host meetings of campus or community groups.

[Our current exhibit](#) features photos and artifacts from the newly acquired [Dalton-Loines collection](#), on display through February. Elsewhere in this newsletter, you can read about how to access Adirondack Research Library collections online and read a summary of research conducted by the 2023 KAC Summer Fellows. Recordings of most of our events (in person or online) are [posted at our website](#).

Margie Amodeo is working with the Schenectady County Cooperative Extension Master Gardeners to create a new native and pollinator garden at the KAC entrance. We hope to have student help in planting the garden, and assuming all goes well, we hope to have an “opening” for the new garden before the end of the academic year. Stay tuned for that. It is a nice project to contemplate during the long winter nights.

We thank our many followers and supporters and hope to see you soon. Even though winter is coming, it is still a good time to visit the center to browse the Adirondack Research Library, enjoy the exhibition or hike the neighboring Reist Sanctuary trails.

Stay well and stay warm,

Doug Klein

FACULTY DIRECTOR, KELLY ADIRONDACK CENTER



KELLY ADIRONDACK CENTER
AT UNION COLLEGE

WILDERNESS & WATERWAYS

UNION.EDU/ADIRONDACK





2023 KAC SUMMER RESEARCH FELLOWS

Each summer, the Kelly Adirondack Center funds student fellowships focused on furthering our understanding of the complex relationships between nature and society. The goal of the Summer Research Fellows Program is to support students doing scholarly work under the guidance of faculty sponsors. This year's researchers used experiential learning outside the classroom to hone their critical thinking and technical skills. Students worked with faculty to develop personalized projects that expanded their understanding of topics and the research process. All of the projects engaged students in off-campus environments within the community. They studied how global challenges appear in critical local issues, promoting not only a sense of belonging but social responsibility.

Analyzing Street Tree Diversity Due to Redlining Districts in Schenectady and Niskayuna

Allie Malatesta

Street trees are a very important part of a neighborhood's ecosystem, providing substantial benefits to the surrounding area, from shade and habitats to slower-driving cars and decreased crime. Furthermore, they reflect a cities' investment into a neighborhood due to planting and upkeep costs. However, in certain neighborhoods there has historically been less investment and tree planting as a result of redlining, a governmental financial program in the 1930s that targeted communities of color. Wealthy, typically white neighborhoods received an A-grade rating (most loan-secure), while poorer neighborhoods received lower ratings (B-D) making it harder for occupants to access financial resources. This also resulted in already impoverished communities experiencing restricted access to the ecosystem benefits that street trees provide. This summer, I analyzed differences in tree growth and composition in Schenectady neighborhoods to document the effects of institutionalized racism through this practice. We observed differences in tree size and species composition. D-grade ("redlined") neighborhoods and C-grade neighborhoods compared to B-grade neighborhoods had significantly less available sites for trees, as well as fewer trees in all size classes (small, medium, and large). There were not enough replications of A-grade neighborhoods within current Schenectady city limits, and therefore these values ended up being insignificant in our results. In relation to species, D-grade neighborhoods had lower diversity in three different tests compared to the B- and C-grade neighborhoods. These results indicate that there is a correlation between neighborhoods' historical redlining status and their current ecology, which reflects continued environmental injustice.



*Johanna DiCerbo
and
Allie Malatesta
Photo by
Paul Buckowski*

Black Locust Removal in the Albany Pine Bush

Johanna DiCerbo

The Albany Pine Bush is a globally rare pine barren that is currently being overtaken by the invasive black locust tree species. Black locust threatens the natural biodiversity of the habitat, and so there are efforts to remove this species from the Pine Bush. Unfortunately, previous research has shown that soil nutrients are significantly altered after black locust removal, which can slow the re-establishment of native species. So, my research is investigating whether nutrient loss occurs because of soil mixing during restoration. We collected soil cores from the Albany Pine Bush in six different locations before and after tree removal, and analyzed them for soil carbon and nitrogen content. We found that the soil

samples before restoration had higher concentrations of carbon and nitrogen in the top layer of soil, whereas after restoration there were no significant differences in the amount of nutrients in the different layers of soil. This result supports our hypothesis that tree removal has the unintended consequence of altering soil chemistry and, potentially, slowing recovery. Identifying restoration methods that minimize soil disturbances is a possible avenue moving forward. We encourage preventative methods rather than restorative methods in keeping the Pine Barren unaffected by black locust.



*Johanna DiCerbo
and
Allie Malatesta
Photo by
Paul Buckowski*

Bird Songs

Alicia Cynamon and Aspen Morris

Our research explored the roles of conservation and birdsong in the practice of soundscape composition. We spent several weeks travelling around Schenectady and the greater area collecting field recordings of local sites and their birds. We then compiled and edited these recordings into a personal database of unique sounds, from which we derived two compositions. Our works are long-form, experimental pieces that address the conservation of bird species from different vantages and are each entwined with our own creative voices.



Aspen Morris
Photo by Paul Buckowski



Prof. Christopher Chandler and Aspen Morris
Photo by Paul Buckowski

Lyme Disease

Bennett Beaulieu

Lyme disease, discovered in 1977, has emerged as a significant concern for both ecologists and the public. The bacterial infection, primarily spread by *Borrelia burgdorferi* (occasionally *Borrelia mayonii*) through infected *Ixodes scapularis* ticks on the eastern coast of the United States, leads to over 400,000 annual cases within the United States, and is often misdiagnosed. Lyme disease in humans is difficult to detect, due to its discreet host and rapid spread. It commonly initiates as a rash, pain, fatigue, and progresses to severe issues if untreated. Thus, through our research, we aim to develop a safe, effective vaccine using outer membrane vesicles (OMVs), avoiding previous pitfalls of traditional weakened bacteria-based vaccines and triggering protective immune responses. Our goal this summer was to produce our *B. burgdorferi* outer membrane protein of choice, BB0405, to be used as our future vaccine antigen. Our findings suggest that the protein is being cleaved upon production, an unexpected result that will require further examination.

CONNECT WITH COLLECTIONS

EXPLORING THE ADIRONDACK RESEARCH LIBRARY ARCHIVES

The Adirondack Research Library holds over 80 unique collections focused on recreation, history and the environment. These collections are a rich resource open to anyone passionate about learning more about the people, policies and natural resources of this very special place.

We invite everyone to browse our site and explore links to our collection of over 600 maps and 1,300 postcards. Links are also available to our archival collections, including those of environmental activists Paul Schaefer and John Apperson; photographer Osmond D. Putnam's images of life in 19th century Johnsbury; the Dalton-Loines family and their summers on the waters of Lake George; and avid hiker and skier, Kay Flickinger Dockstader. All of these include important metadata making them easily searchable by subject.

The Adirondack Research Library website also includes links to finding aids. Finding aids are descriptive guides that assist researchers in navigating our different collections. They allow users to select areas of interest before reviewing materials at the library.

Whether you're interested in studying correspondence, ephemera, photographs or documents, or just looking to browse, we welcome you to visit the Adirondack Research Library in person. Appointments are encouraged so we can have the materials you are looking for ahead of time. To make an appointment please visit our contact page. We are open Monday through Thursday from 10 a.m. to 4 p.m.

Margie Amodeo

KELLY ADIRONDACK CENTER COORDINATOR



THE KELLY ADIRONDACK CENTER AT UNION COLLEGE

WILDERNESS
WATERWAYS&U

Faculty Director of the Kelly Adirondack Center

Doug Klein

897 Saint David's Lane
Niskayuna, NY 12309

Kelly Adirondack Center Coordinator

Margie Amodeo

Contact us at the Center by emailing: kellycenter@union.edu

UNION
COLLEGE
FOUNDED 1795

UNION.EDU/ADIRONDACK