



*Erik Larson '93*

BIOMASS COORDINATOR: KIRSTEN SLETTEN '16

## Making an IMPACT

by Andrew Salij '19

As students at St. Olaf, it can often prove easy to fall into an academic routine focused merely on the curricula of one's courses. While one should be diligent in their studies, one should never forget the purpose of science: to increase the collective knowledge of humanity. Over the past few months, dozens of St. Olaf students organized into multiple teams executed this goal in developing novel hypotheses for the causes of modern medical predicaments such as hypoplastic left heart syndrome (HLHS) and sporadic Fallopian tube epithelium transformation to ovarian cancer. Said students produced and presented these hypotheses as part of the Mayo Clinic Innovative Minds Partnering to Advance Curative Therapies (IMPACT) competition.

In engaging with the theoretical aspect of science, students scoured relevant literature as they gained understanding of both our collective knowledge and lack of knowledge of the topics at hand. Students plunged into myriads of research papers,

becoming subject matter experts who ultimately constructed new, plausible explanations as to the cause of their chosen disorder. After submitting their hypotheses and rationale to IMPACT director Dr. Katie Campbell, students prepared themselves for presentation at Mayo Clinic.



Dr. Katie Campbell, The director of the IMPACT program at Mayo Clinic

On March 5<sup>th</sup>, the St. Olaf teams presented their findings at Mayo, with five teams placing so highly with their written submissions that they were invited to give oral presentations on their hypotheses to a captive audience of competing teams and Mayo researchers. All

# BioMass

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teams gave poster presentations, as well, but those that did not present orally were already out of the competition.

Evidently, the Oles prepared well as one of our teams received a silver medal for HLHS research and another placed bronze for ovarian cancer research. Dr. Kim Kandl supervised both of those teams in preparing for presentation.

### IN THIS ISSUE:

#### Oles in the Environmental Field

By Nick Wahl, '16

**Page 2**

#### Weaver Dunes: St. Olaf's Hidden Gem along the Mighty Mississippi

Student Naturalist Article by Sam Weaver, '16

**Page 3 and 4**

## Student Naturalist Article:

# Oles in the Environmental Field

by Nick Wahl '16

**Erik Larson '93**

What does every St. Olaf student look forward to over spring break? Networking and career exploration of course! This spring break, I traveled to Denver with twenty-one other Oles to participate in the Piper Center's Connections Program. This program sends current Oles to different cities around the country in order to network with alumni, explore career opportunities, and gain insight into living in different cities after graduation. Each trip has three areas of emphasis. Our program in Denver focused on the marketing, healthcare and environmental fields. With an interest in environmental testing and consulting, I excitedly applied for the connections program in order to meet alumni in the environmental field.

We began our trip in Denver by attending St. Olaf on the Road, an event that brings alumni, parents and current students together. Three Ole alumni gave presentations describing their current work following their education at St. Olaf. The first presentation was given by

Beth Jensen '02 who works to establish an index for improving sustainability for the outdoor recreation industry. Jonathan Cappelli '10, who founded his own consulting firm, presented on the issues of water limitation and population growth in Colorado. Finally, Ben Lundstad '92 gave an update on his research in the field of DNA sequencing where he uses CRISPR to edit genome sequences. As a founding member of the Limestones, Ben has also managed a lucrative singing career in a popular Denver based band *Face*, which has toured nationally.

Our Connections trip continued by giving us the opportunity to visit a number of businesses where Oles work in the environmental field. This included visiting Cimarex, an oil and gas company, the National Oceanic Atmospheric Association (NOAA) in Boulder, and the National Renewable Energy Lab. Our time in Colorado concluded with a

presentation by polar explorer Eric Larson '93. Eric and his exploration partner were the first people to reach the North Pole by foot. Eric uses his exploration to each people about the arctic landscape and how it is changing through climate change.

Throughout our trip, alumni shared great insight into the post-graduation journey that brought them to the place they are today. These journeys often took unexpected turns, though each alumni credited their success to critical thinking and interpersonal skills gained from St. Olaf. The environmental field is one of the largest and fastest growing, drawing on all disciplines. Connecting with alumni gave me insight into the extent of this field, whether it involves writing code for educational technology at NOAA, performing gene synthesis to improve human defense against viruses, or simply reminding people how wild and precious our world is.



# Weaver Dunes: St. Olaf's Hidden Gem along the Mighty Mississippi

by Sam Weaver '16

St. Olaf College students have a tremendous resource available to them that all too often goes underappreciated and underutilized. St. Olaf's Weaver Dunes field station sits along the Mississippi River amongst rolling hills, soaring bluffs, and the glassy waters of Lake Pepin. Weaver Dunes plays host to a bountiful diversity of wildlife, and offers a gorgeous setting in which to do field work, catch and handle incredible animals, and to relax and enjoy the beauty of nature.

## Abundant Diversity



*A bullsnake*

Within the Biology department, multiple classes utilize Weaver Dunes for class research projects and field trips. One project that illustrates the incredible diversity of the area is the Drift Fence project undertaken by students in Professor Freedberg's Vertebrate Biology class. Drift fences are used to capture animals including bull snakes, gray tree frogs, deer mice, masked shrews, leopard frogs, hognose snakes, and a number of other species. Students also have the



*A gray tree frog*

opportunity to catch owls and songbirds in mist nets, and place bands on birds which are used for research all across the United States. Additionally, with its vast marshes, lakes, and the Mississippi River, Weaver Dunes is a great spot for bird watching, as it provides immaculate habitat for vast numbers of local and migratory bird species, particularly the majestic sandhill crane.

## Saving the Blanding's Turtle

The Blanding's turtle is one of the most threatened turtle species in the United States, and the largest, most diverse Blanding's turtle population in the entire country resides at Weaver Dunes. Blanding's turtles are listed as endangered by the IUCN Red List, meaning they face a high risk of extinction in the near future. The Nature Conservancy originally decided to protect Weaver Dunes to preserve the Blanding's turtle population, but it has the added benefit of providing vital

sanctuary for hundreds of other species. Since Blanding's turtles are primarily threatened by habitat destruction and degradation the preservation of rare pristine habitat, such as Weaver Dunes, will be vital in keeping the Blanding's turtle around for future generations.



*A Blanding's Turtle*

## Immersion in Nature

Spending a night at the field station is something every biology major at St. Olaf should experience. Isolated from civilization, you are presented with a novel opportunity to immerse yourself in nature. You can drive to a nearby lake and see vast flocks of waterfowl. As dusk sets in, the woodcocks perform their bizarre yet beautiful mating ritual, spiraling up into the sky and twirling back down. As you fall asleep, you're serenaded by the western chorus frogs and spring peepers calling from the pond just steps away from the house. And on top of all this, you have the opportunity to catch an adorable saw-whet owl in the nets set up in the nearby forest. Some of my fondest memories from my time at St. Olaf were made at Weaver Dunes, and if you're ever given the chance to get out there, I implore you to take it.



Sources:

<http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/minnesota/placesweprotect/weaver-dunes-scientific-and-natural-area.xml>

[http://www.stateofwonders.com/prodimages/FALL\\_16.jpg](http://www.stateofwonders.com/prodimages/FALL_16.jpg)

Thanks to Steve Freedberg for the pictures

*SAVE THE DATE: SENIOR BANQUET May 16<sup>th</sup> 6:00 PM*

*Bio in South India  
Applications due April 15<sup>th</sup>  
Talk to Sara Fruehling, Anne  
Walter, or Mike Swift*

*Honors Day Science  
Poster session takes place  
on Friday, May 6 from  
4:00-5:30 in 4th Floor of  
Regents Natural Science.  
Delicious hors d'oeuvre  
will be served during the  
event.*



As seen in lab.... Photo credit: Hunter Lin