



BEFORE COVID-19



AFTER COVID-19

UWSIF FACILITY MASCOT

STABLE
ISOTOPE
FACILITYUNIVERSITY
OF WYOMING

INSIDE THIS ISSUE

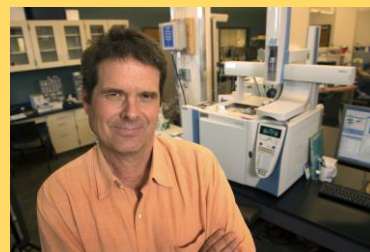
UWSIF ANALYTICAL NEWS
(in the rear view mirror)

One of the bright spots for UWSIF in 2020 was the continued growth of the measurement of triple isotopes (^{15}N , ^{13}C , ^{34}S) on a single sample. Using triple isotope analysis has allowed UW researchers to look closer at ecosystems, in particular diets and food webs. Researchers across campus have begun to use this powerful technique to answer ecological questions which were unattainable just a few years ago.

In 2020, UWSIF started the pursuit of a new and exciting method for the analysis of dissolved nitrate. The method uses a simple chemical procedure where Ti(III)Cl is used to reduce the nitrate (NO_3^-) to nitrous oxide (N_2O), a molecule which is relatively easy to analyze for nitrogen and oxygen isotopes. Lower analytical costs and quicker turn-around times would be the immediate benefit.

THE STABLE ISOTOPE FACILITY

Learn more about the Stable Isotope Facility on Page 2.

RESEARCHER IN THE NEWS

Dr. David Williams is a professor in Botany and ESM. On Page 2, see how stable isotopes help him pursue his plant ecology research.

ISOTOPES ON CAMPUS

See Page 2 for the latest UW isotope papers and who has received funding involving stable isotopes.

Halloween Fun!

Again in 2020, the UWSIF invited UW Lab School students to carve pumpkins. Go to page 2 to see all the fun.

THE STABLE ISOTOPE FACILITY and COVID-19.

Although COVID-19 protocols forced most of University of Wyoming campus to shut down and go to an off-campus work format, the UWSIF managed to continue to process samples for the entire year. A combination of careful scheduling and a decrease in incoming samples (due in part to restricted field sampling) allowed UWSIF to maintain social distancing protocols all the while continuing to analyze samples for our clients. Our facility does not foresee problems with continuing to produce high quality isotopic analyses for 2021.

FEATURED RESEARCHER



Dr. Dave Williams

Professor in the Departments of Botany and Ecosystem Science and Management

Dr. Williams uses stable isotopes to better understand plant-stress responses, ecosystem processes and biogeochemical dynamics. Dave's group is currently investigating ecohydrology and biogeochemistry in forested ecosystems, wetlands and high elevation lakes in Wyoming using stable isotopes to trace water flows and microbial processing of carbon and nitrogen. Dave uses isotopes to understand plant resource use and responses to drought in the Sonoran Desert in Arizona and Sonora Mexico. The main focus of this work is on the isotopic ecology of giant cacti and their nutrient and water use and impacts in desert ecosystems.

Read more about Dave's work at:
<https://dgwilliamslab.com>

ISOTOPES ON CAMPUS

Congratulations to Dr. William Fetzer. He and his lab group received several new grants that use stable isotopes.

Tracking energy flow in the Great Lakes using stable isotopes (Great Lakes Fishery Trust - \$288,000)

Using eye lenses of fish to track chronological foraging histories (UWYO - \$4,000)

Estimating consumption of stocked salmonids in the North Platte Reservoirs, WY (Wyoming Game and Fish Department - \$208,000)

UWSIF OUTREACH "Lab School Carvers"



Take a biodiversity theme, add pumpkins and some University of Wyoming Lab School art students and let the fun begin! The 2020 UWSIF pumpkin carving theme was:
"How wildfires affect Wyoming wildlife".

CONTACT INFORMATION

Stable Isotope Facility
 Phone: (307) 766-6373
 Email: uwysif@uwyo.edu
<http://www.uwyo.edu/sif>

Craig Cook
 Facility Director
 Email: ccook21@uwyo.edu

Chandelle Macdonald
 Laboratory Manager
 Email: cmacdon1@uwyo.edu