

TERRAPENE TIMES



Adopt-A-Turtle Newsletter

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Research, education, outreach, & conservation



Biology Department

WU Day of Giving a Big Success



Students Steven and Sam helping promote the Adopt-A-Turtle program during our day of giving.

To kick this newsletter off I (Dr. Benjamin Reed) and my students would like to extend a massive thank you to everyone who donated to the Adopt-A-Turtle program on 2/6/20 as part of Washburn University's annual Day of Giving event. Our day began with a dollar-for-dollar match of up to \$2,500 by Helen and Bob Meinershagen which we eventually surpassed! In total, we had 42 individual donors ranging from students, family of students, Washburn Faculty, and wide variety of friends and education through research supporters.

By the end of the day we raised \$5,435 to support our student-driven chelonian (turtle, tortoise, terrapin) research at Washburn University. Now that we are into June and summer research is in full swing (Spring research was limited due to the ongoing Covid-19 crisis) and the donations received during the Day of Giving have already been used for a variety of purposes. Later articles in this newsletter will address how our research funds have been used but they include attending student conferences, a spring 'break' research trip to a field station in western Nebraska (Cedar Point Biological Station; CPBS), building behavior assays, paying for student housing over the summer at CPBS, and for purchasing essential research equipment, including radio transmitters and telemetry equipment. Again, a massive thank you to all donors!

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"NATURE DOES NOT FORGET BEAUTY OF OUTLINE EVEN IN A MUD TURTLE'S SHELL."

-HENRY DAVID THOREAU



Graduating Senior Highlight

This spring was understandably difficult for graduating students (at any level) due to the Covid-19 pandemic and the inability to gather in large social events including graduation ceremonies and parties. That said, I can still highlight the

achievements of my graduating research students here. I had three graduating seniors this spring. Storme and Kat focused their efforts on a small mammal demographic study in my lab and Jake (pictured right) worked

on box turtle ecology, specifically conditions influencing when box turtles enter and leave brumation (ectothermic version of hibernation). All three of these students were absolutely fantastic to work with and the I wish them the best of luck in the future!



Sam & Research Day at the State Capitol

I have had the privilege of working with Sam (pictured far right) for the past two years through my turtle research program at Washburn University. In fact, Sam was the very first student brave enough to ask to do research with me (I was a brand-new WU biology faculty member at the time). Since that fateful day, Sam has completed an amazing summer-long research project in 2019 and additional fire ecology/box turtle work in 2020. Sam presented his early work at the Kansas Herpetological Society meetings in Hayes, Kansas (Sternberg Natural History Museum) in the fall of 2019. Sam

has also presented aspects of his work via a second research poster at Washburn as part of the Washburn Transformational Experience (WTE) symposium. Finally, and most impressively, Sam was one of five student projects selected to be presented at the Topeka State Capitol Building as part of a statewide Research Day at the State Capitol for Undergraduates. This presentation marked Sam's *THIRD* research poster he has created and tailored to his target audience. Sam got to meet many state politicians with several members leaving their contacts for additional

discussions regarding ecological research, conservation, and of course, turtles! Great job Sam!



Private Landowners and Supporters: Making Student Research Possible

Often research (student or otherwise) is conducted on University property such as main campus or at a field station, or is otherwise limited to public property including city, state and national parks. However, there is no guarantee that local properties such as these meet the minimum qualifications or characteristics for a desired research program. For a while, this was exactly the case when I started my box turtle research program at Washburn University. I could not find suitable box turtle habitat that was large enough to maintain a viable population of research animals over the long-term. Eventually however I found a beautiful property with lots of box turtles and incredibly supportive landowners (to whom I was a complete stranger).

Although this property was large and had lots of ornate box turtles roaming its tallgrass prairie, I still had a major problem! The primary focus of our student research projects revolves around movement ecology and the factors that influence how and why animals move the way they do. Turtles, as I have learned, have

little regard for property lines and move freely from one property to the next. Needless to say, this poses a huge problem! My students and I will have focused months and months on the movement of a specific turtle (via radio telemetry) only for it to eventually walk off our property and onto another. Fortunately, every single surrounding landowner we have met has been incredibly supportive of our work and has granted us permission to track turtles on their property as well (should the turtle roam their way). We have now gotten permission from 9 contiguous landowners covering well over 500 acres of property to track our turtles! Again, all of this would not be possible with the generosity of these property owners so a massive shoutout to them is warranted. These landowners have not only granted us permission to

“Turtles, as I have learned, have little regard for property lines and move freely from one property to the next.”

track turtles that have moved onto their property but they have also gone above and beyond and now send us pictures of turtles they find (hugely valuable) and when conditions are right, will even hold on to unmarked/measured turtles for us until one of the team can get out there and collect the necessary information.

I have also met and made many new friends throughout my time as a box turtle researcher in Kansas. One such friend is Caryn Miriam-Goldberg who, being an amazing writer and endlessly creative soul, has agreed to name all of the turtles we find! As a numbers guy, M10 (meaning male #10, the 10th turtle found at the site) is great, but it lacks a certain ‘pizzaz’ that a name can provide. M10 is now known as Orion and he shares his space primarily with Lydia, Persephone, and Odin. Thank you to Caryn and my field site landowners! To read more about Caryn’s turtle naming check out this link and her amazing blog: <https://www.carynmiriamgoldberg.com/naming-the-turtles-on-a-healing-journey-everyday-magic-day-974/>

Collaborations: Building for the Future

One thing I have certainly learned over the years is the importance of collaboration. Of course, this life lesson extends beyond the narrow scope of research, but that is what I will be briefly focusing on here. I have been thrilled to find so many willing collaborators regarding the box turtle research program. Dr. Paul Wagner, WU physiologist and resident fantastic carpenter, has helped Steven (who focuses on animal cognition and spatial memory) build a fully collapsible yet highly sturdy wooden maze. Prior to Paul's help, we had been using a foam board built maze that was relatively unstable and difficult to assemble/reassemble. Of course this upgrade will only improve the

type of data we collect during our trial runs enabling us to better understand the role of an animal's spatial memory to enable an animal effectively and efficiently (or not) move throughout their range to find food, possible mates, and refuge sites (like holes, dens, and basking spots).

Other collaborations include working with Dr. Joshua Smith (WU Forensic Biologist/Geneticist) on the genetics of a parasitic flesh fly that can kill box turtles, Dr. Jia Feng and Geographic Information Systems (GIS), and with the Topeka Zoo regarding a statewide box turtle demography study to determine how stable box turtle populations are throughout the state.



Spring break!

It is not every day you can get three students to willingly do school related work over spring break but that is exactly what happened this March. Over spring break we rented a large seven-seater vehicle, loaded it down with research equipment, supplies, and our own personal gear and traveled seven hours west to Cedar Point Biological Station in western Nebraska. This field site, owned and operated by the University of Nebraska-Lincoln, is home to one of my summer research sites (the other being

east of Topeka, KS). The goal for this trip was to locate the brumation locations for our turtles there and to expose students to research and

"It is not every day you can get three students to willingly do school related work over spring break!"

life at a field station, which can be very different than driving from school/home to a field site each day. We had a great time, the trip was hugely successful, and one of the students (Aubrey) is currently

living at CPBS as I write this doing a six-week spatial ecology and behavioral syndrome study. Aubrey will be joined by Sam in late June to help her complete her time-sensitive and intensive behavior work for the last three weeks of the study. Three UNL students are also working on this box turtle project and I will be at CPBS for the first week and last three weeks of the study as well. Good luck to Aubrey and the others!! See enclosed photos for additional details.

MEEC Conference 2020

Learning how to conduct research is hugely important for young biologists. This includes hypothesis and prediction generation, experimental design, statistical analyses, and forming conclusions. However, all of this work is for naught if the researcher's findings cannot be effectively communicated to others. One way in which students can learn to

communicate their research effectively and confidently is by presenting at research conferences and symposia. This spring, myself and four of my students Jake, Olivia, Colin and Steven (pictured left to right) attended the Midwest Ecology and Evolution Conference at Western Illinois University. The students did a fantastic job, and all were excited to go to another

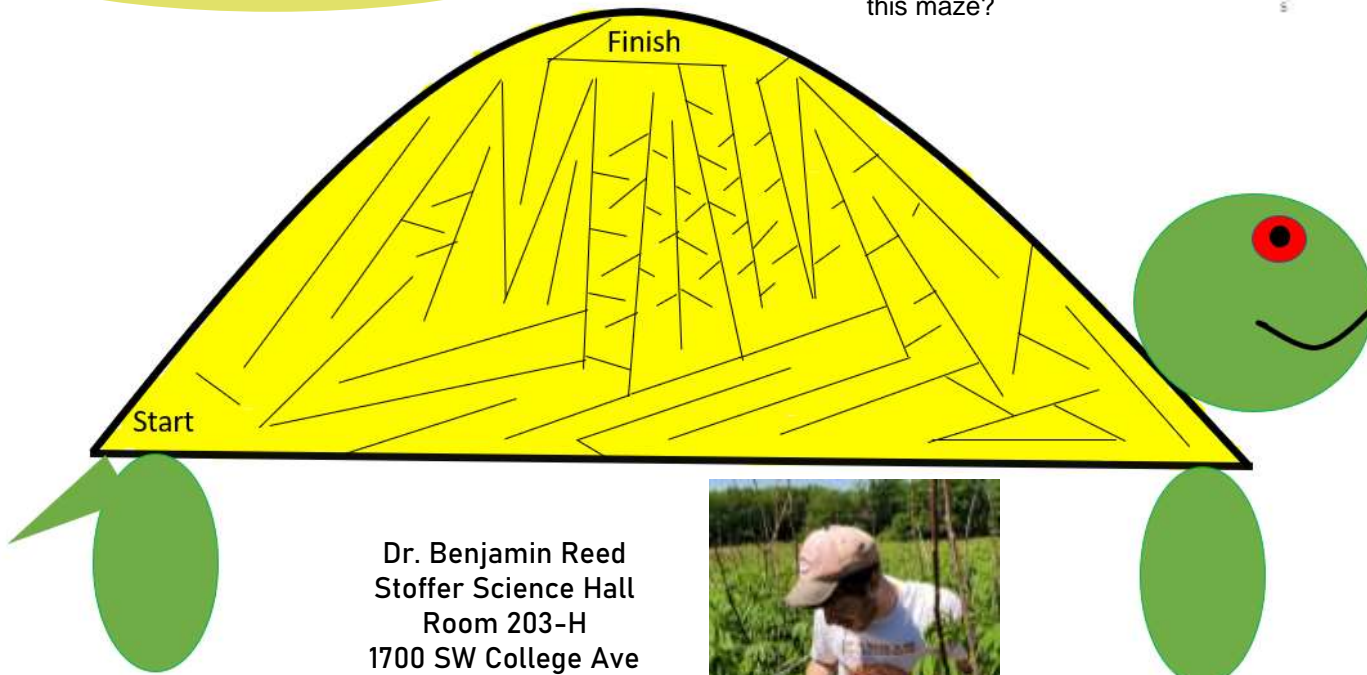
conference. The Adopt-A-Turtle funds helped cover the cost of attending this conference.



We're on the Web!

<https://wu-turtle.weebly.com/>

Box turtles are excellent at navigating through their habitat. Can you navigate like a box turtle through this maze?



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2019-2020 Highlights

This newsletter has lots of text, perhaps too much. Thus, I have created a website (link above) where a collage of photos can be seen on the homepage.

That said, here are some 2019-2020 highlights related to the chelonian research program at Washburn University

- 11 former (graduated) and active WU students engaged in chelonian or sister research projects: Jake, Kat, Storme, Sam, Colin, Olivia, Aubrey, Steven, Sally, Brice, and Rebecca
- Five former or current UNL student researchers: Devin, Taylor, Natalie, Megan, and Shelby
- Training 2 post-graduate field techs in search of telemetry experience
- 8 poster presentations at 4 different venues (Midwest Ecology & Evolution Conference (MEEC), WTE day of Transformation, Kansas
- Herpetological Society Meetings, and Undergraduate Research Day at the State Capitol
- 6 student Washburn Transformational Experience grants awarded to students with one pending!
- Two papers currently in the works with more to come!
- Outreach events at the Topeka Zoo, Karllye Woods kids' camps, and dozens of telemetry demos. If interested please contact me!

