

How a Summer Job Led to a Lifelong Career

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Let's Learn About Each Other!

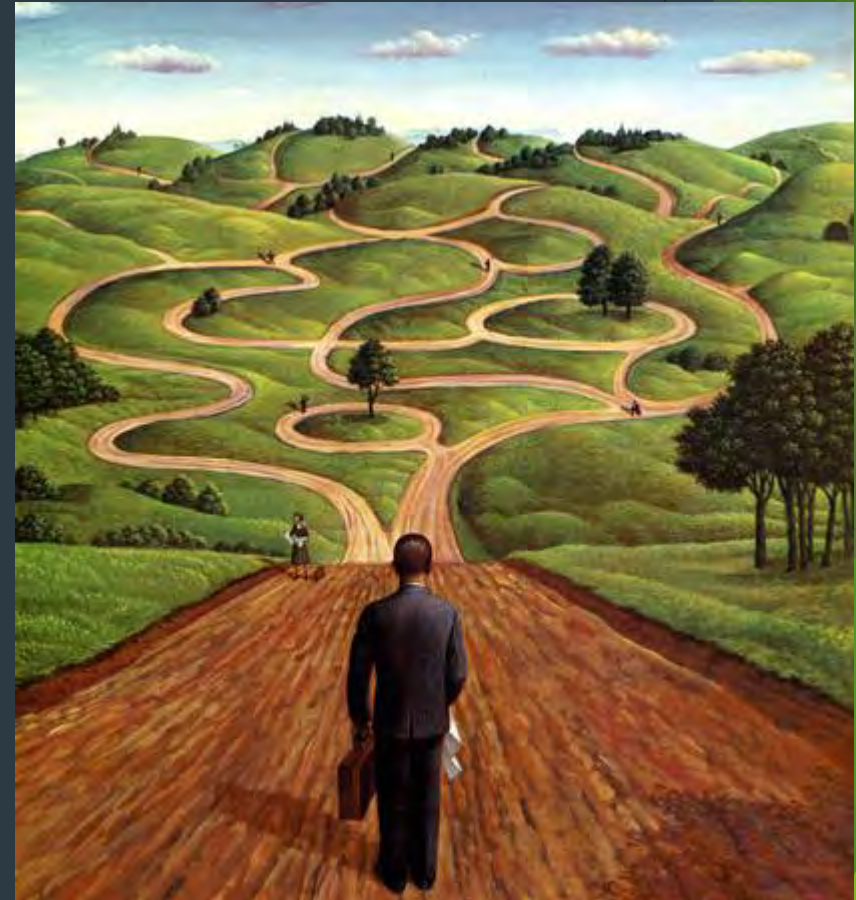
- ▶ In the chat:
 - ▶ What are some of your career interests?
 - ▶ What part of IL (Northern, Central, Southern, etc.) are you from?
 - ▶ What year in school?
- ▶ About me:
 - ▶ Dr. Carrie Butts-Wilmsmeyer
 - ▶ Director of the Center for Predictive Analytics
 - ▶ Southern Illinois University Edwardsville

How Did I Get Where I Am? A Lot of Little Random Chances that Were Really Opportunities

What People See

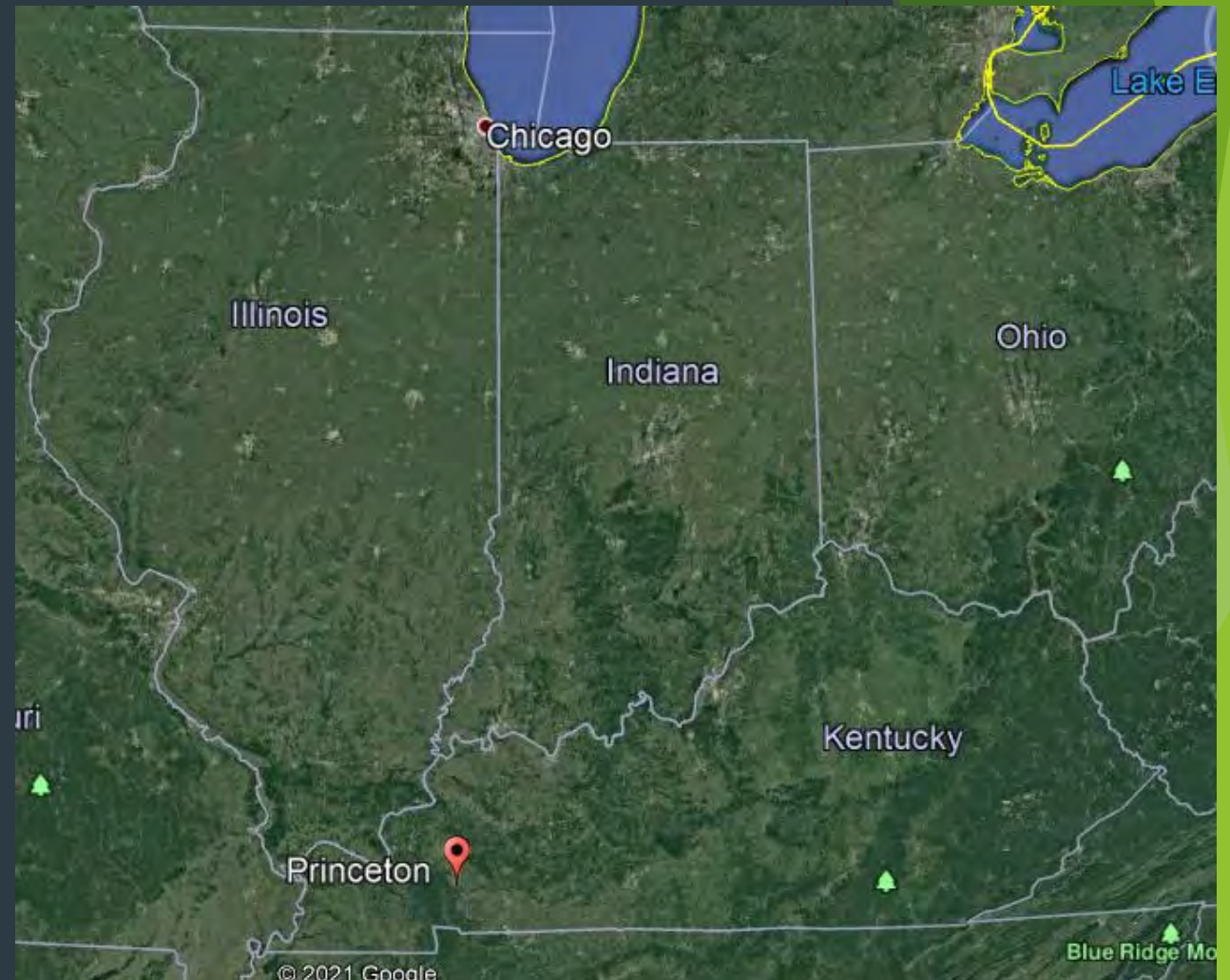
Interest → Tech Job → BS → PhD → Career

What Really Happened:



The Story of a Teenager's Job and an Opportunity

- ▶ Like every teenager, I needed a job
- ▶ Started helping keep records (financial and pedigree) for a purebred cattle farm near home
- ▶ Why did I get hired?
 1. I was cheap labor
 2. The community was awesome!
 3. Excel and computers didn't scare me, and I liked to tinker



What In the World Were You Doing as a Teenager?

- ▶ Started out as a farm hand and turned it into my SAEP.
- ▶ The farmer I was working for needed an extra set of hands organizing pedigrees.
 - ▶ And then realized that my method made reporting easier.
 - ▶ Then asked me to start keeping track of receipts and financial records.
 - ▶ Then asked for help to identify areas to cut costs.
 - ▶ Then asked if I could do a historical pedigree analysis



You Said SAEP...a Data Scientist and Professor was in FFA?

- ▶ And it was instrumental!
- ▶ Interpersonal skills
- ▶ Technical applications
 - ▶ e.g. Working in a greenhouse and SAEP
- ▶ And mentors



And Because I was in FFA...

- ▶ I took part in something called the KY Farm Bureau IFAL program.
- ▶ Institute for Future Agricultural Leaders
 - ▶ Partnership with multiple campuses in KY to give promising new ag students a chance to see what college in an ag program and what an ag career might look like.
 - ▶ And by chance, I was assigned to the University of Kentucky

And I Was a Nervous Wreck

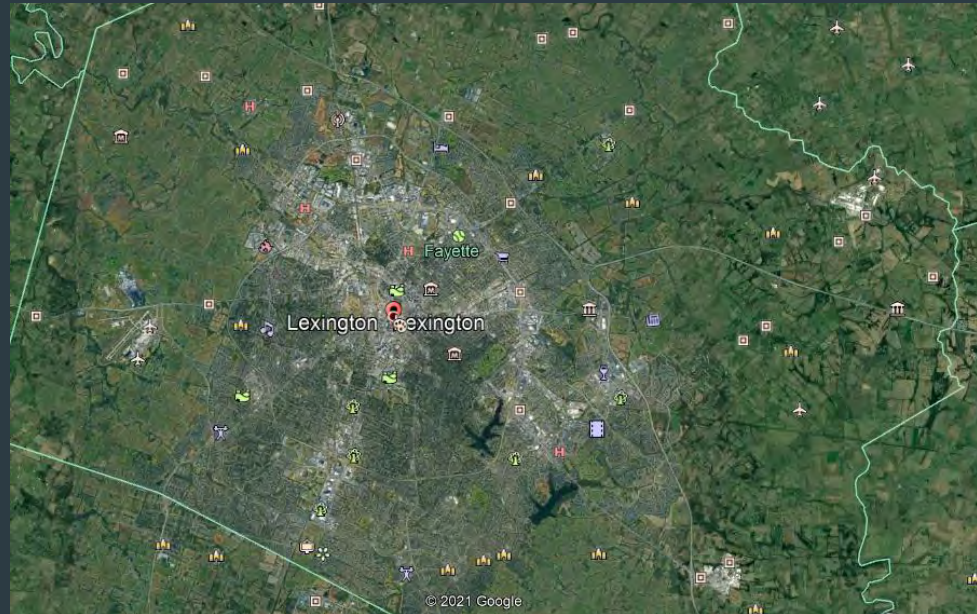
Princeton, KY

- ▶ Pop ~6,500

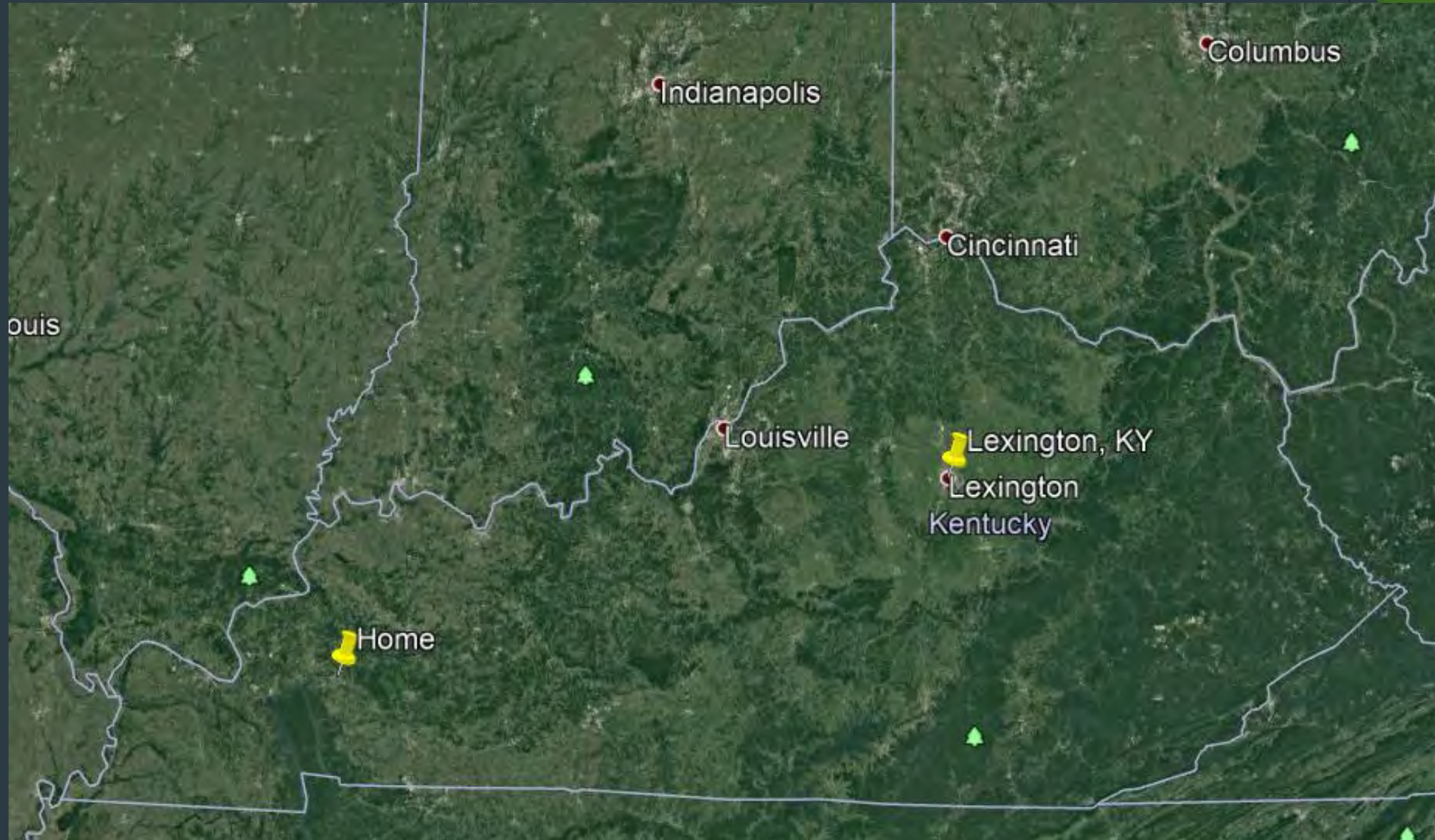


Lexington, KY

- ▶ Pop ~300,000



And I Was a Nervous Wreck



And What Happened?

- ▶ I had a ball!
- ▶ I made lifelong friendships
- ▶ And I realized something about their programs in comparison to the small liberal arts colleges I had been looking at: they were applied!



Undergraduate College Experience

- ▶ Gen-Ed Courses: Had them taken care of through AP and Dual Credit (mostly). Took some over at Bluegrass Community and Technical College. Took last few through UK.
- ▶ Started out in the Pre-Med track, Majoring in Agricultural Biotechnology
- ▶ Decided that blood and guts weren't my thing
- ▶ But still LOVED genetics, and took math and stats classes for fun

Was That Enough to Get Me Into a Good Grad Program? Uh No.

- ▶ Ag Student Council and Ag Ambassadors
 - ▶ Jason Headrick
- ▶ Research Lab Experiences
 - ▶ Ludmila Lapchyk
 - ▶ Bill Witt
- ▶ And Internships
 - ▶ Sherm Johnson
 - ▶ Jennifer Tarter Steinke



Pause: Where Have I Learned the Most?

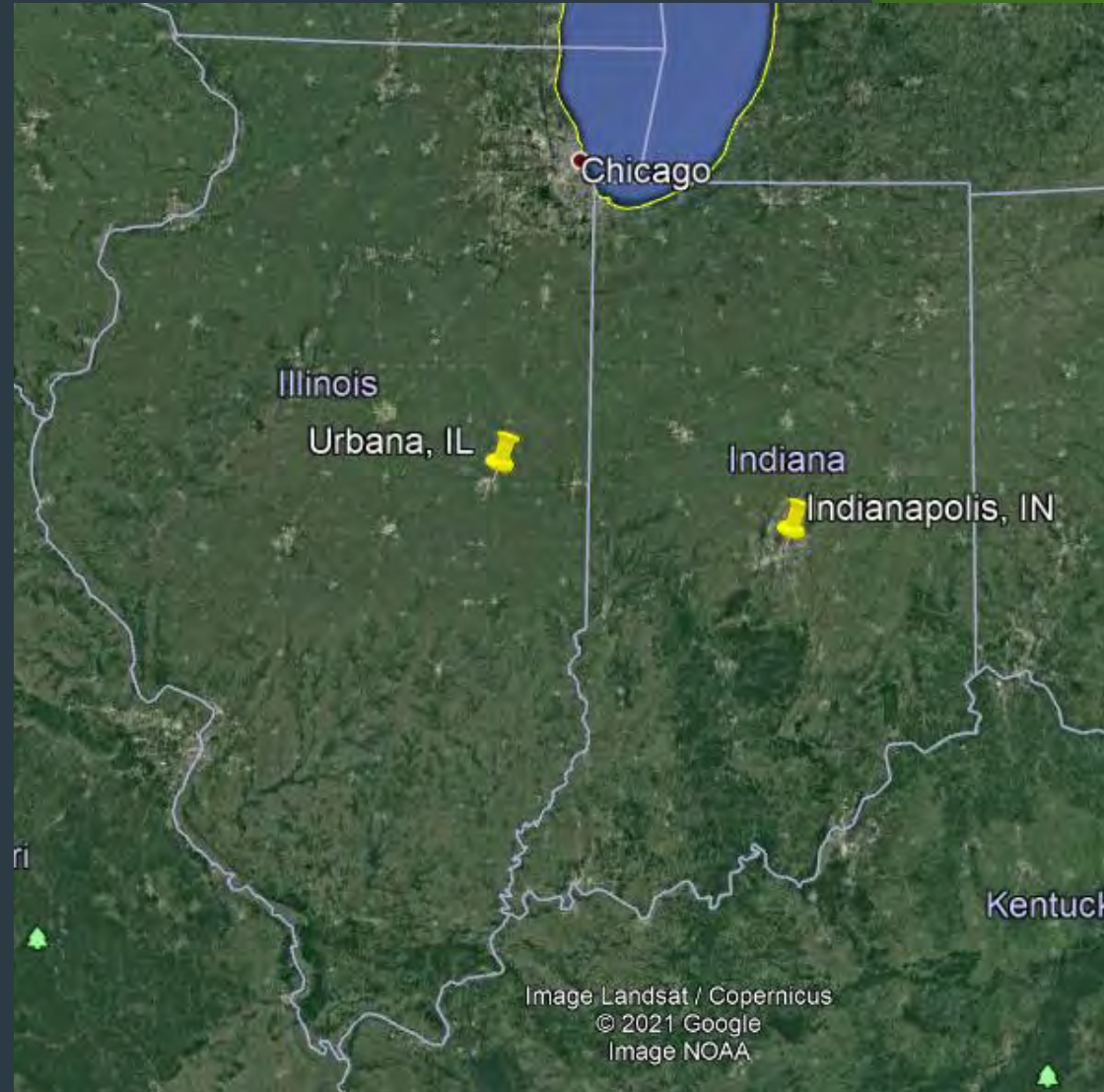
- ▶ My applied experiences!
- ▶ Internships with Monsanto (now Bayer) and Pioneer Hi-Bred (now Corteva) were instrumental in teaching me how to be a plant breeder and statistical geneticist
- ▶ And I accidentally had data projects each time...

Grad School - University of Illinois PhD in Plant Breeding and Genetics



When Life Gives You Lemons, Make Lemonade

- ▶ By chance, worked at Dow AgroSciences (now Corteva) for a year as a Visiting Research Scientist
- ▶ Worked with the Analytical Technologies Laboratory Group
- ▶ And somehow still managed to hang out with the data scientists, too!



And When Companies Start to Consolidate...



What Does a Biostatistician Do?

- ▶ Taught courses in applied statistics
- ▶ Helped others in the department analyze their data
 - ▶ And it was fantastic!
 - ▶ Experiences can't be taught in a textbook
 - ▶ And neither can advanced data analysis/data science
- ▶ Research in statistical genetics



The Quarryman's Principle

- ▶ “Once you [think you] know everything there is to know about something, it’s time to hang up your hardhat and go home.”
 - ▶ I never stopped learning or taking random opportunities
- ▶ I remember feeling irritated that I was a jack of all trades and a master of none.
 - ▶ And yet, I was picking up experiences all along the way
 - ▶ I couldn’t yet see how they were all going to come together
- ▶ And I constantly had mentors all along the way. Watch and learn from the people around you. And you never know who might be watching.

And Then There Was Another Opportunity

- ▶ In Jan. 2019, SIUE opened a search for a Director of their new Center for Predictive Analytics (C-PAN)
 - ▶ Wanted to get back closer to family
 - ▶ And the position was so similar to what I had been doing
- ▶ By this point, I had 16 years' experience working with data and record-intensive research
 - ▶ It seems crazy, but I still use those same skills that I did in high school working on the farm...plus a lot more
 - ▶ And a ton of other random, winding experiences that made it possible to talk to a variety of people

So What Do I Do Now as a Data Scientist and Director?

- ▶ I get to analyze all types of datasets!
- ▶ I work on projects from all walks of life
 - ▶ “Data’s data and tools are tools”
 - ▶ I’m always learning new tools and techniques
- ▶ I get to work with students
 - ▶ Teaching
 - ▶ Research programs and internships
 - ▶ Training programs and workshops
 - ▶ Especially in ag



What Kinds of Projects Do You Work On?

- ▶ AG! Crop modeling, statistical genetics, and how to incorporate sensor data in all that. Training and data science education, especially in the food, agricultural, and environmental sciences.
- ▶ Health and public health datasets. COVID-19, Parkinson's, cancer, housing and socioeconomic factors, you name it.
- ▶ Cyberinfrastructure and training in how to navigate the data landscape
- ▶ And tons of collaborative projects! With people that I'm still learning from.



Secret Code

- ▶ Digital Ag Careers

What About SIUE?

- ▶ Nationally accredited institution with a low student-to-faculty ratio of 15.2
- ▶ 13,000 students and ~350 areas of study
 - ▶ STEM+B are excellently supported and have ties to industries in the St. Louis area
- ▶ 90% of SIUE grads surveyed report securing a job or continuing their education within one year of graduating
- ▶ Annual tuition and fees of \$12,219
- ▶ Close partnerships with SWIC, Lincoln Land, Lewis and Clark
 - ▶ And transfer plans from all community colleges in Illinois:
<https://www.siu.edu/transfer/programs/index.shtml>



What About SIUE?

- ▶ Plenty of research and internship opportunities
 - ▶ URCA
 - ▶ Student Career Center
 - ▶ 5 State-Recognized Research Centers
 - ▶ Independent Internships
 - ▶ Proximity to St. Louis and Internship/Co-Op/Job Opportunities
 - ▶ But still small-town and safe
- ▶ Culture of Caring
 - ▶ Student Success Center and ESRA research
- ▶ Ample Student Organizations



If I Were to Pursue Ag, but Went to SIUE...

- ▶ Engineering
- ▶ Business
- ▶ Biology, Chemistry, and Environmental Science



Thank You! Are There Any Questions?

- ▶ Feel free to email with questions: cbuttsw@siue.edu
- ▶ <https://www.siue.edu/inrs/factbook/pdf/FbCurrent.pdf>
- ▶ <https://www.siue.edu/about/chancellor/pdf/2020-chancellors-report.pdf>
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