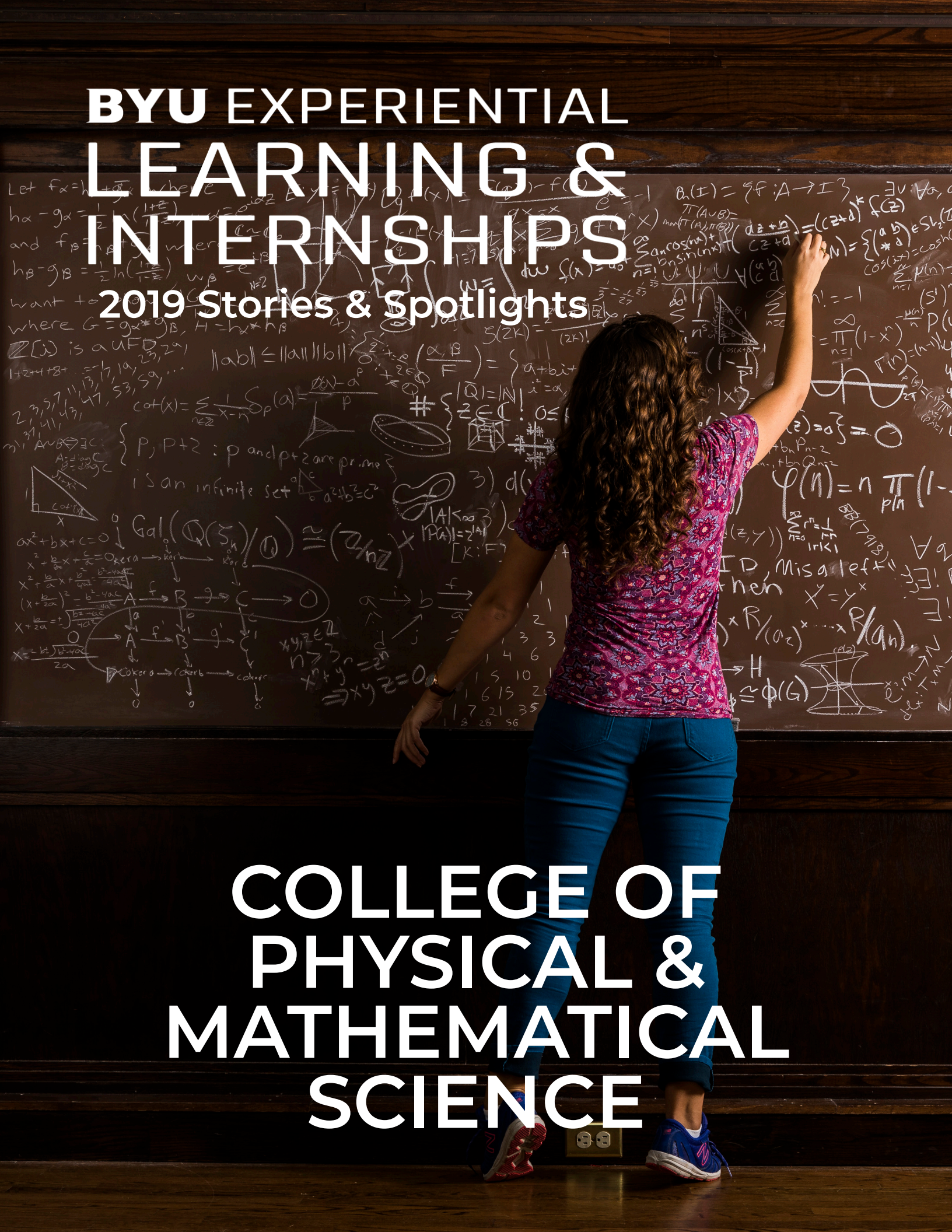


BYU EXPERIENTIAL LEARNING & INTERNSHIPS

2019 Stories & Spotlights



COLLEGE OF PHYSICAL & MATHEMATICAL SCIENCE

INTERNSHIP COORDINATORS

David Allred	Physics & Astronomy
Del Scott	Statistics
Dennis Ng	Computer Science
Diana Larsen	Statistics
Gregory Conner	Mathematics
John Price	Chemistry & Biochemistry
Kathryn Tucker	Geology

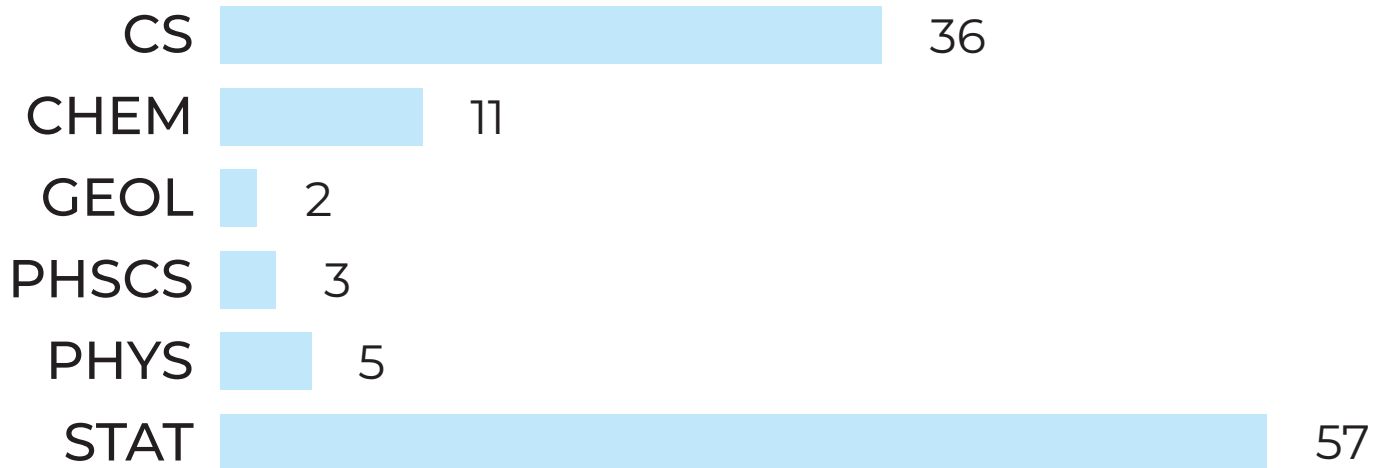
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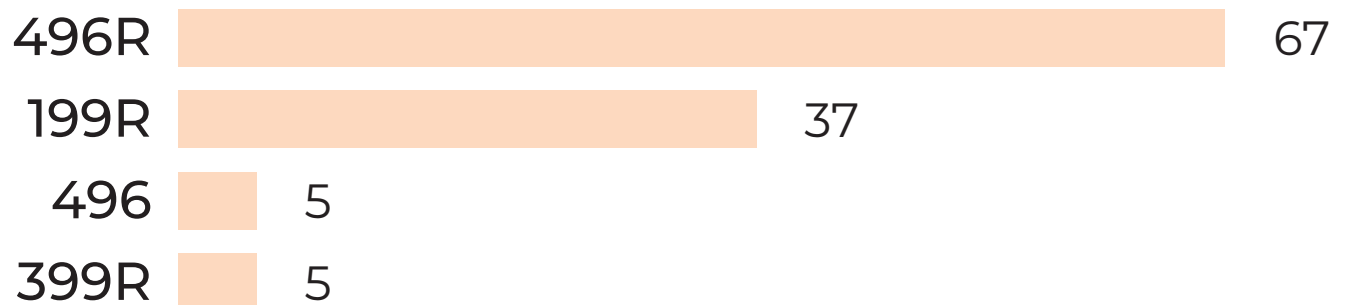
**These stories were submitted by the students via survey. If your department is not represented, then we did not receive a suitable response from your interns. The college internship statistics only reflects internship courses where the students completed an internship application before enrolling.*

COLLEGE INTERNSHIP STATISTICS

DEPARTMENTS



COURSES



114

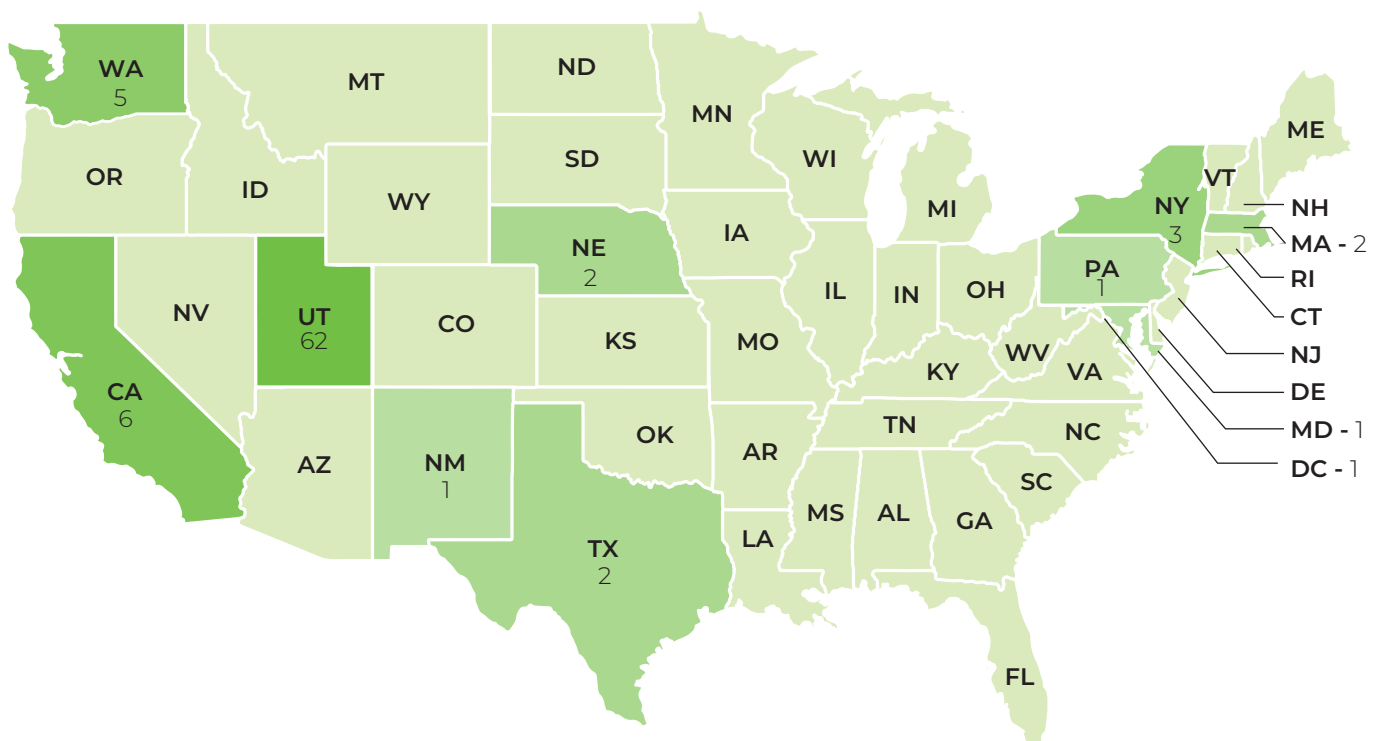
INTERNS

2019: WINTER • SPRING/SUMMER • FALL

TOP 5 PROVIDERS

1. BYU On-Campus (18)
2. DoTerra International LLC (6)
3. Simple Nexus (5)
4. Alpine School District (4)
5. Microsoft (4)

IN 11 STATES



ALISON DIAN JEPSEN

MOTIVHEALTH

I worked with the underwriting team to quote new groups for health insurance. I mostly did documents prep. If a company wanted to see how much our rates would be, I would communicate with their insurance broker. I'd ask for information about their employees including birth date, zip code, current health concerns, and past rates. Then I would format the data so we could use it to calculate premium rates. The hardest part was

when documents contradicted each other or had incomplete information. I had to comb through them to find what I needed. I also would update our internal records to keep track of groups we cover.

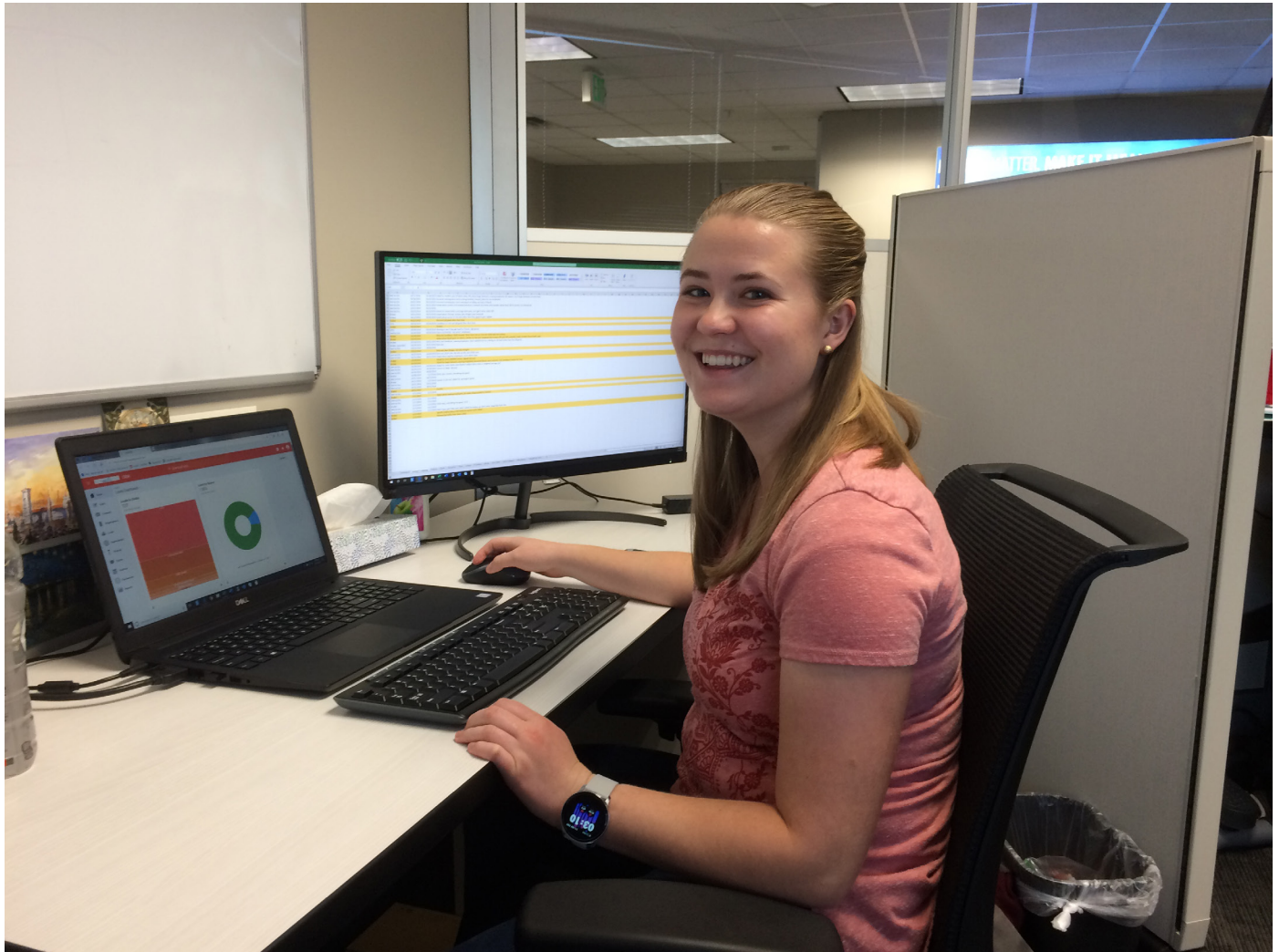
“Instead of just hearing about theory in class, I was seeing how it applied to real-world phenomena.”



Alison Dian Jepsen in front of the MotivHealth building.

I really liked the connection I saw between this work and the classes I've taken in school. The company's actuary pulled out a whiteboard and showed me and the other intern how we use a normal distribution to estimate how many claims will be above a certain threshold. Instead of just hearing about theory in class, I was seeing how it applied to real-world phenomena. I also was grateful for the respect I received from the actuaries, being invited to all meetings and having things explained that I didn't understand yet. I felt like part of the team.

The most useful thing I learned was business emailing. I did a lot of emailing internally and out of the office. I had to



Alison Dian Jepsen at her work desk.

learn how to be professional and relay information quickly and clearly. Another thing was Excel. We used Excel most of the time to format data and summarize it. I learned more functions and tools in Excel and got a lot better at it. The most help I had was familiarity with the

terms such as deductible, out of pocket maximum, copayment, etc. Also the idea of distributions and how we can estimate how many claims would be above what threshold, etc. My skills have improved so much!

READ MORE ABOUT ALISON'S STORY HERE

BEN ANDERSON

SOUTHWEST

My internship at Southwest was amazing. I was concerned that I might not get the opportunity to work on meaningful projects and apply my studies but I was wrong. It was an amazing opportunity and I got to work with some of the best people.



Ben Anderson in front of a plane engine.

The work was challenging and meaningful. Working at Southwest has its perks, including free flights. I got to see some great places this summer and experience some things I wouldn't have had the opportunity to at any other company. I would highly recommend this internship to anyone who is interested.

"The most useful thing I have gained from this experience was how to take a problem and not just solve it, but present it in a way that is compelling."

The most useful thing I have gained from this experience was how to take a problem and not just solve it, but present it in a way that is compelling. I learned that a good presentation has a story to it. I learned what makes a good powerpoint and what doesn't. I also learned that the most fulfilling work was when I got to apply my studies.

I developed a lot of professional skills such as, how to make a powerpoint, how to interact with others, and how to build

relationships at work. Southwest has a great culture and provided me with excellent opportunities.

My courses prepared me for the internship by giving me some basic skills in Excel. But mainly, I learned how to take a big goal and break it down into smaller pieces. I learned how to work hard and diligently until my assignment was done.

There were times throughout the internship that I got feedback from my manager on things that I could work on. I took that time to reflect and then integrate the changes into my work and I feel like my work got better after that.

“I got to see some great places this summer and experience some things I wouldn’t have had the opportunity to at any other company.”

Southwest is the best place you can intern and has a great program geared towards making you great future employees at whatever company you want.



Ben Anderson (right) traveling over the summer.

[READ MORE ABOUT BEN'S STORY HERE](#)

CASEY PRATT KIMBALL

DOTERRA

The opportunity allowed me to develop financial analysis skills as well as perform analyses in Tableau. I was given a lot of training and help during the course of my internship. Every week, I was given a training on a specific software and practiced the material. My team was very helpful and friendly. They gave me the resources needed to do my projects and they effectively communicated the requirements. I learned how to derive insights through data analytics and visualization, specifically in Tableau. This

skill is very helpful and applicable to any and all of my future pursuits. They provided the basics needed for data analytics.

It would have been more helpful to do more relevant projects in the industry, rather than cater it to academia. I used skills such as data analytics, data visualization, communication skills, financial forecasting, price analysis, excel automation, and public speaking among other things.



Last day for Fall interns. Daniel, Peter, Aaron, Jake, Nathan, Casey, James, Travis, JP, Kendall, Spencer, Jessica, Scott

[READ MORE ABOUT CASEY'S STORY HERE](#)

MARK GOLD

BYU-CHEMISTRY

I started doing research in the Christensen lab at BYU in May of 2018. I was initially hired to the lab to analyze a random peptide array to find a binding motif of capillary morphogenesis protein 2(CMG2). Since then, I have learned and utilized peptide synthesis, western blot, SDS-PAGE with Coomassie staining and silver staining, mass spectrometry, DNA gels, HPLC, mini-prep, cell transformation, DNA cut and paste cloning, Q5 DNA mutagenesis, colony PCR, and others to the advancement of our research. I learned many of these skills before taking courses on biochemical methods to help keep the research moving forward. When I took the courses that went over these methods, I improved my techniques and increased productivity. From these many things that I have learned, I have been in charge taking arguments from lab meeting and making sure that our work is progressing towards publication. I have made several figures that will be used in future publications as well as developed several tools that can be used in the lab for future researchers.


I have always been fascinated with those who give their life to serve others. I worked as a first responder EMT for 2 years in provo. I also worked as a CNA for



Mark Gold in the lab.

2 years in Orem working with individuals with special needs. I loved that going to work was my 1000+ daily good deeds. While in my internship, I realized that the research that I am doing can affect the lives of millions down the road. This is when I started to focus more on research. I love that science can be used to improve the quality of life of millions and I would say that this is the most impactful thing that I have learned during my internship.

For me, the course work and my internship went hand in hand. One didn't make sense without the other. That is why my freshman year was not as impactful as it could have been. Once I started doing research, I really began to understand why I was doing things and why certain courses were important. There are many things that I have already done during my internship because of new skills. To



quickly analyze large data sets, like a random peptide array, I have coded using MATLAB's bioinformatics toolbox. One of the first programs I wrote selected the highest binding sequences of the random peptide array, filtered them for good kD values, and searched for sequence homology in extracellular matrix protein sequences. This project was completed quickly and contained other functions which saved time. One such function of the program plotted identified sequences on known 3D protein structures. Later, I took the project a step further and used the peptide sequences with poor kDs for filtering out false positives for many of the peptide arrays that we have had done in the lab.

I then used solid-phase peptide synthesis, HPLC, and mass spectrometry to synthesize, purify, and confirm the peptides that were identified. These peptides were used in the lab for Bio-layer interferometry, cellular migration and proliferation assays, and other phenotypic tests. To further the research, I modified a lentiviral plasmid through mutagenesis and cut-and-paste cloning. This plasmid contained DNA from CMG2 and mRuby-2. In-between the two protein DNA segments was a unique cut site

that allowed for changing of the protein or the fluorophore. This allowed for easy development of lentiviral vectors that would express fusion proteins.

"I love that science can be used to improve the quality of life of millions."

All of these things are essential experiments that all biochemist should be able to do. I believe that they will give me a large advantage in the work field. The first thing I noticed as I began to do research was that what was being taught in the classroom actually was applicable to real life things. I started wishing that I had paid more attention my freshman year. Additionally, at the time that I started research, I wanted to become a doctor. Over the last year, I have realized that every reason I wanted to become a doctor can be fulfilled as a researcher. I have really grown to love research. My internship helped me connect with the teachers which made it easy to get letters of recommendations. I also have learned so many great skills that have set me up for graduate school.

READ MORE ABOUT MARK'S STORY HERE

BETHANY FRY

BYU GEOLOGY FACULTY

I was able to be a research assistant for one of the geology professors on campus. He has data regarding earthquakes and volcanic activity in the Indonesia area. I was able to clean and sift through the data. I looked for patterns and was able to fit regression models to the data to find out how volcanic events and earthquakes are linked. I coded in Python and then in R. I also took a regression class concurrently with my internship. I was able to take what I learned in my statistics classes and apply the principles I learned to real-world data. I am finding that there is not much correlation between earthquake and volcanic events. This is interesting to note because Indonesia lies on a fault and there are many earthquakes.

Because of this finding, it begs the question, does this happen everywhere? Are earthquake events not strongly correlated to volcanic events everywhere? If so, what makes Indonesia different? This research is also helpful to people in Indonesia. Natural disasters happen on different islands with different frequencies. I made some graphs and charts so that each event is color-coded to the location where it occurred. This allows people to see which places are most active and the

people can become properly prepared to face these natural disasters. It was interesting to put my regression/statistics skills in realworld data, and improve some of my coding skills. I was able to enhance some of my coding skills in Python and then also utilize skills I had learned in R to implement the code. The statistics regression class helped me know just about everything I needed to know. Some important skills are timeliness, working independently, and communication.

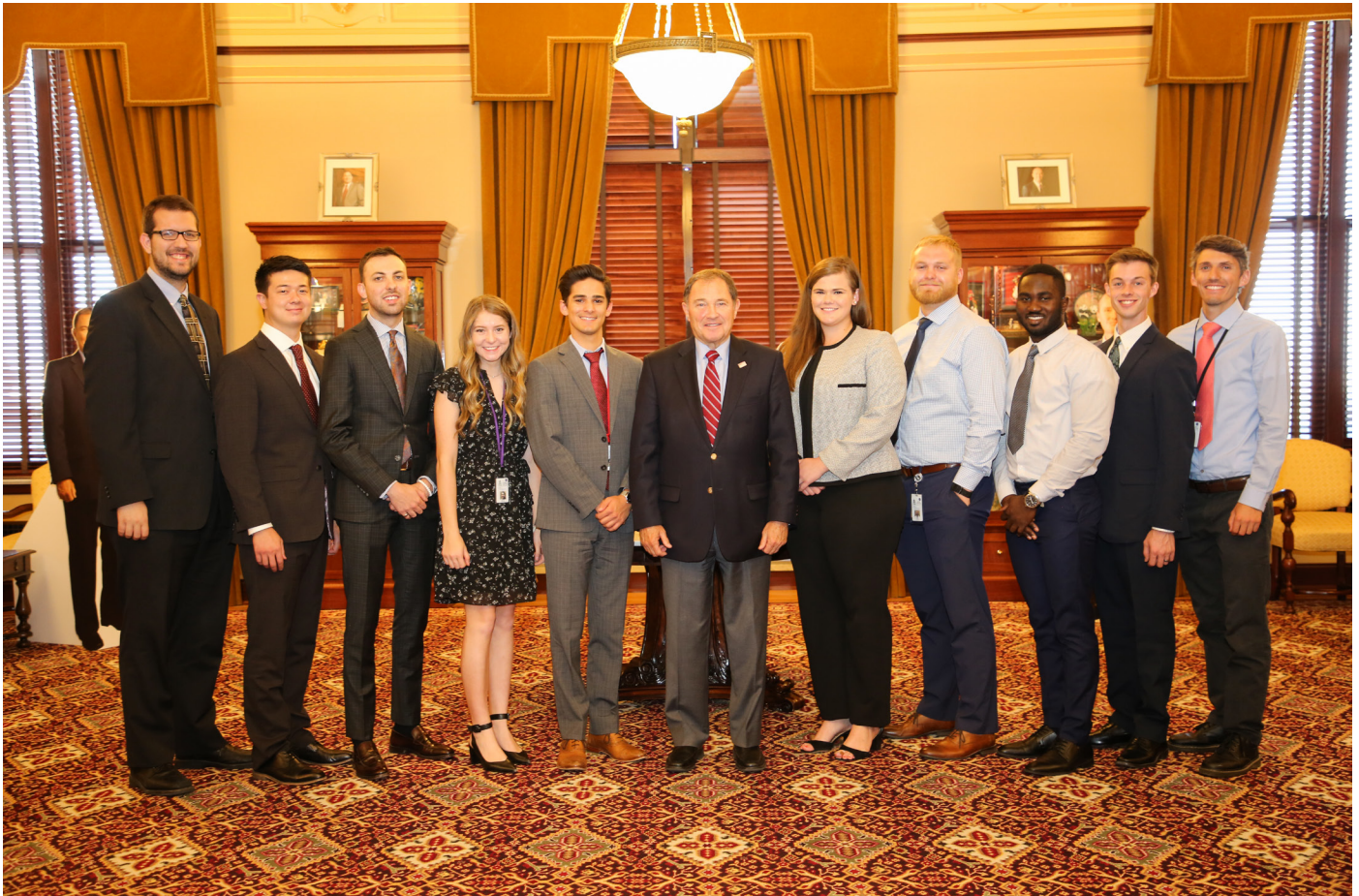


Bethany Fry

[READ MORE ABOUT BETHANY'S STORY HERE](#)

JACOB ACQUAH

GOVERNOR'S OFFICE OF MANAGEMENT & BUDGET



Jacob Acquah (third from the right) and the staff.

This was a great internship to apply the skill sets I learned in class. I did a lot on statistical analysis, research, and forecasting. I assisted the director of the Budget office in analyzing the volatility of Utah food tax as measured to other sales tax in the economy during which a conclusion was made not to increase or scrape out the food sales tax since it does not have a significant effect.

With the other interns, I assisted in researching the various water rates in Utah. The water rates are updated every calendar year. This is used to check on the various cities on how they tax their residents. I also forecasted and predicted the some key indicators in the Utah economy. They mostly showed a stable or increase. I was a member of the Utah subcommittee for Innovation where

we came up with useful suggestion for legislators on how to retain USTAR.

“I also learned about not being afraid to ask if you don’t know. Goals are achieved when employers and employees are able to communicate effectively.”

I learned a lot about government policies and budget. I also learned about not being afraid to ask if you don’t know. Goals are achieved when employers and employees are able to communicate effectively. I learned a lot from the Executive Director of GOMB from training and her book “Seductive Seven” which focuses on making better decisions. I had the opportunity to sit down with the Governor Gary Herbert twice and listened as he advised the other interns and I to go out and make a difference. I also learned



Jacob Acquah shaking hands with Governor Gary Herbert.

several skills, such as communication, R programming, excel, data analytics, team work stats 123, IS 515, and English writing.

[READ MORE ABOUT JACOB'S STORY HERE](#)