

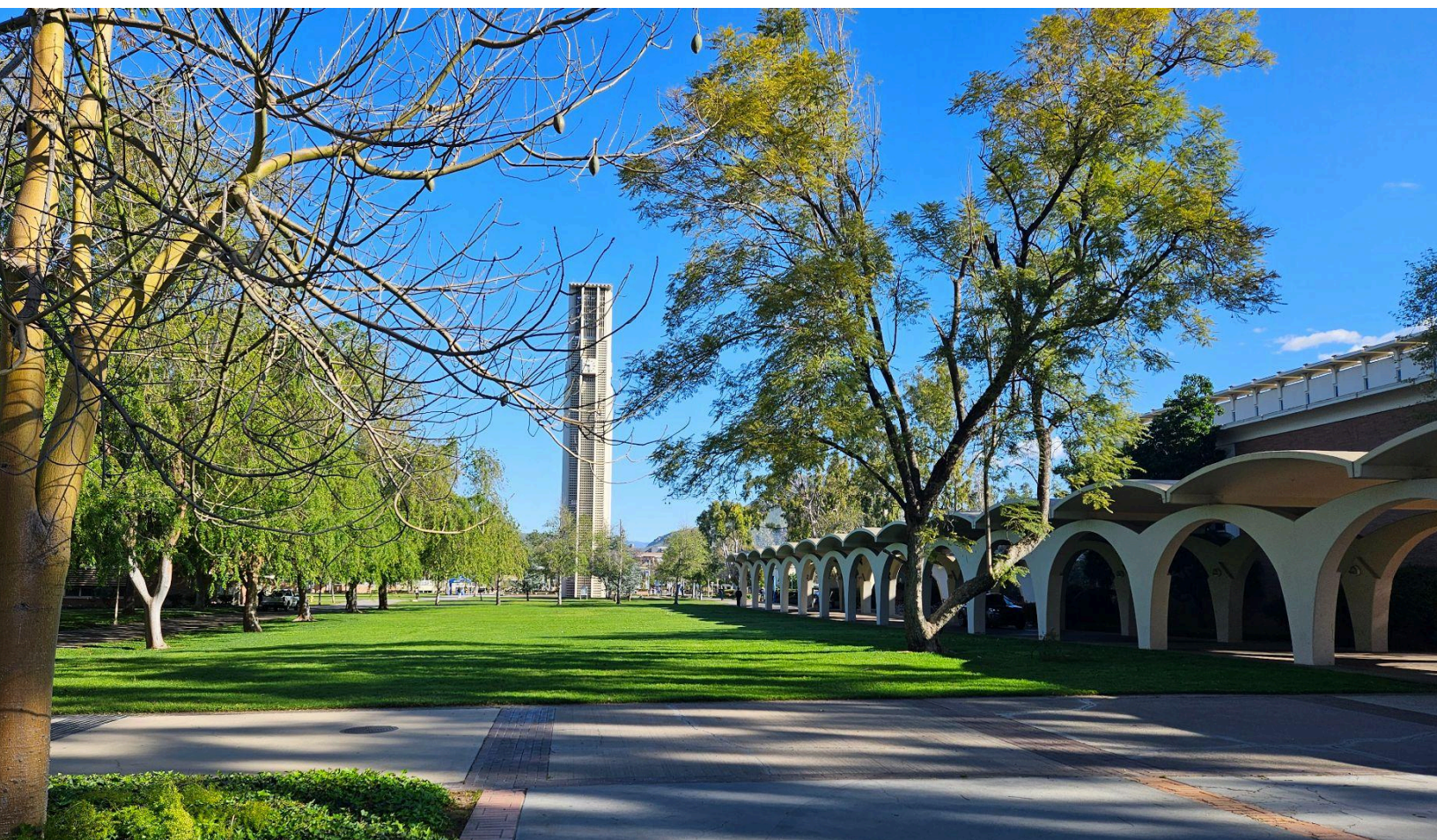
Winter in Statistics

UC Riverside Department of Statistics Newsletter, Winter 2024

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“Statistics - A subject which most statisticians find difficult but which many physicians are experts on.”
- Stephen S. Senn

Photograph courtesy of Jericho Lawson



Faculty Spotlight

Dr. Xinping Cui

Dr. Xinping Cui was elected as a Fellow of the American Statistical Association (ASA) in 2023. In this quarter's faculty spotlight, the Statistics GSA asks Dr. Cui a few questions.



Where did you receive your graduate degree?

I received my PhD in Biostatistics from UCLA.

Did you work anywhere before UCR? If so, where and what did you do there?

No. I began my tenure at UCR immediately following the completion of my PhD at UCLA and have been a part of the institution ever since.

What kind of research have you done? How can your research be applied to other data?

My research has encompassed a diverse range of fields including platform trials, where we are establishing statistical principles for the design and analysis of multiple concurrent treatments, for example, Healey ALS platform trial data (<https://www.massgeneral.org/neurology/als/research/platform-trial>). My research also delves into the development and application of advanced statistical models to understand biological phenomena. This includes discovering mathematical models for dynamic cell polarity signaling and analyzing spatiotemporal dynamics in reaction-diffusion systems, such as pollen tube tip growth, by leveraging differential equations, deep learning and generative AI. These research can potentially be applied to the fields such as materials science and environmental modeling, where understanding dynamic spatial processes is crucial. Another line of my research involves developing robust statistical methods combined with multiple testing for biomarker discovery in plant, crop, human genomes and metagenomes using high-throughput genomic data.

How did your interest in statistics begin?

My fascination with statistics was sparked when I enrolled in my first graduate statistics course which is nonparametric statistics. The class required me to undertake a project using SAS, which led me to invest countless days and nights into it. Ultimately, I earned a B - the sole B of my entire graduate studies in Statistics.

What advice would you give to graduate students?

Embrace the journey with curiosity and resilience. Dive deep into the theoretical foundations of statistics; this will be your bedrock in a field that is constantly evolving with new methods and technologies. Balance

this with practical applications. This will not only enhance your skills but also help you discover your interests within the vast realms of statistics.

Networking is key. Engage with peers, professors, and professionals. Attend seminars, join statistical associations, and participate in conferences. These connections can provide mentorship, collaboration opportunities, and open doors to future careers.

Don't shy away from challenges, as they are often the best learning experiences.

Take care of your well-being. Make sure you enjoy your time as a student.

Keep an open mind, stay adaptable, and remember that every statistician's path is unique- forge your own with confidence.

What is one interesting fact about yourself you would like to share?

I ran Marathon twice, did skydiving once, and climbed mountain whitney (14505 feet) in half a day. I am an avid tennis player.

Life Beyond UCR:

Christian Dueñas

I'm Christian. I spent 6 years at UCR where I did a B.S. and M.S. in Stats. I'm currently working as a Data Scientist for Red Bull. My job duties are actually pretty broad, so I'd say that I'm a jack-of-all trades in terms of my skill set. I've worked on projects regarding sales, logistics, social media data and events. Some of my personal favorites include building a web scraper that found all the music festivals in the world and analyzing gaming tournament foot traffic to help the marketing team in activations.



How did you determine your career path after graduating?

Being transparent, I didn't really have a meticulous plan on what I'd do after graduating. Instead I explored different opportunities as a student to see where they would lead.

I had done undergrad research for the USDA, so applied statistics in the life sciences felt like an obvious next step for grad school. It was valuable work, but over time I found myself wanting to try my hand at something different. So I decided to make a pivot towards industry and see what kind of positions would be a good fit.

I applied for all sorts of jobs, but ended up going with a Summer internship at Red Bull. After completing the internship, I stayed in touch with my coworkers and contributed to the team lead's motorsports side project. When graduation came around, the team reached out and asked if I was interested in a full-time role. After a short interview, I accepted the position and started a week or two after I graduated. Can't say that I ever expected to be in my current role, but I'm really happy that things played out the way they did!

How did your interest in statistics begin?

I'd say I just kinda wandered into it. I took an AP stats course in high school because I thought it sounded cool. The class ended up being pretty enjoyable, as it was the first time I saw math actually being applied to the real world. I did really well in the class, so when admissions came around, I enrolled as a stats major without even really thinking about it. I really enjoyed my stats classes at UCR, so I just stuck with it. Fast forward and now I use it for a living!

What did you learn as a graduate student that you use in your current work?

Grad school definitely taught me how to "context switch." My job requires me to work on a bunch of different projects, all of which might require different skills. Some days involve analysis, others data engineering, or even creating pitch decks on PowerPoint. Tools and technology also change frequently, so I need to be able to keep up and learn quickly. I'd never touched things like Snowflake or AWS in school, but I was able to pick them up pretty quickly on the job.

It's not too dissimilar from how a grad student is going to be taking different courses on multiple subjects in a short amount of time. So I'd say the most useful thing I learned in school was "how to learn" as opposed to any particular skill or subject.

The pacing of grad school also translated pretty well into my current job. The project timeline is pretty similar to how classes were structured, i.e. we spend 10 weeks on a subject, wrap it up and then pivot to the next subject.

What is your fondest memory of UCR?

Honestly just a lot of simple moments spending time with my friends on campus. After leaving college and starting a full-time job, it's way harder to just spontaneously gather people and simply hang out. Definitely something I took for granted in hindsight.

TAing was also a really fun experience. After being a student for so long, it was a fun challenge to flip the script and have a go at teaching. Getting the students engaged and seeing them have an "aha" moment was super rewarding.

The concerts also ruled! ASPB put together some killer lineups.

What advice would you give to the current graduate students?

My job is interesting in that not only do I need all the stats and coding necessary to make data "usable," but I then need to demonstrate how it can be used to produce actionable insights. This can be a tricky transition because in school, everyone "believes in data." Students are usually handed data sets and some instructions on what to do with it, some of which can be really specific. Nobody is really questioning the "value of statistics" or if it actually works.

In contrast, a lot of decisions in non-tech industries are made through intuition. Asking someone to use a statistical model is also asking them to fundamentally change how they perform their job. So my job requires me to be a salesperson and sell a data driven approach. It comes down to having the technical chops to create a data product, as well as the persuasion skills to convince people that your work is valuable.

I think what has helped me the most in my current role was work I did on personal projects. Usually I'd pick a topic that I thought was cool, but didn't inherently lend itself to a "data project." Then I'd try to think about interesting questions that I could use data to answer, and where that data might live. One project I worked on was for ranking players in gaming tournaments. Most people were doing this using intuition, so I thought it'd be interesting to let an algorithm take a crack at it. After figuring out where tournament data lived, I

scraped it, went through the process of making it usable for an algorithm, created visualizations, and then shared it with people to get feedback. Projects like this went a long way in helping me better understand how to make data actionable.

ChatGPT is also awesome. I use it everyday for work and it speeds my productivity by quite a bit. So learning so prompt engineering will definitely take you a long way!

Dr. Isaac Quintanilla Salinas



What is your current work?

Assistant Professor of Statistics at California State University, Channel Islands

What did you learn as a graduate student that you use in your current work?

I teach several courses in statistics and work on several applied projects. I teach several methods I learned from STAT 201, 202, and 208 to my students. Outside of teaching, I primarily use mixed-effects models to analyze data from different fields.

What is your fondest memory of UCR?

I enjoyed working on the SMART Program. Building community between undergraduate and graduate students has been the best part of UCR.

What would you do differently if you were to start graduate school now?

Today is certainly a different place from when I started my time at UCR in 2016. With the advent of large language models, it is an exciting time to be in Statistics/Data Science. However, I would not change my previous research or trajectory. I enjoyed what I studied and what I accomplished at UCR.

How did you determine your career path after graduating?

I got hired as an Assistant Professor for CSUCI before I defended, so there was not much time to try different things. I enjoy my current career because I have a flexible schedule, continue to educate students, and work on projects of my choosing.

What advice would you give to the current graduate students?

Being in the Statistics Department allows you to work in any field that requires quantitative thinking. Use this time to explore other fields and network with graduate students from other departments. Find what you are interested in and continue to get involved in those fields. Lastly, develop the mentality that you can face any challenge, statistical or not, using the skills you gained from the Department. Obtaining a graduate degree is just a stepping stone to what your future holds, and you will continue to challenge yourself and learn after you graduate from UCR.

Trey McGonigle

Tell us a little about yourself. What are you currently doing?

I am currently doing biomedical research at Vanderbilt University Medical Center located in Nashville, TN. I work cross-disciplinarily with physicians and research faculty in Psychiatry, Radiology, and Public Health. Working with collaborators with different interests affords me the opportunity to apply a wide variety of statistical methods day to day. To this day, I have co-authored and published 9 articles at Vanderbilt! I also recently started as a TA for a MPH regression modeling course. In my free time I love to climb and explore all the great eats that Nashville has to offer!



How did you determine your career path after graduating?

I wanted to do something that made a genuine, positive impact on the world. Additionally, being able to continue my education with open access to literature and mentorship from senior statisticians was a priority for me. Biomedical research checked all these boxes for me and now, a little over a year in, I feel as though I made the right choice!

How did your interest in statistics begin?

Throughout my childhood, I always thought I wanted to be a mechanical engineer designing automobiles. However, in my senior year of highschool I took both AP Physics and AP Statistics and found that I absolutely hated physics but loved statistics. So, on a whim in my applications I chose statistics as my desired major and through my time at UCR I knew that statistics was something I wanted to spend the rest of my life doing. Statistics is great because it is applicable to any field and you can tailor what you do with it to your specific interests!

What did you learn as a graduate student that you use in your current work?

Pretty much everything from Stat 293! I primarily work on longitudinal data using mixed effects models, but I also do a fair amount of survival analysis for Radiology.

What is your fondest memory of UCR?

There's too many great candidates to narrow it down to just one! I will say that I think what makes UCR Statistics stand out against other programs is the community and interpersonal relationships it fosters. So much of the joy I was able to experience at UCR is due to the support by the genuine, empathetic faculty, and my peers. Those late night board game sessions and chats after GSA events will always be special to me.

What advice would you give to the current graduate students?

Embrace the intimate learning environment that this program offers and get involved! Not every graduate program affords you the opportunity to have such small class sizes, so go to office hours and ask questions (the professors love it, too). Getting together with other students, whether that be an official GSA event or otherwise, is a great way to destress while having fun, and develop that support structure to get through all the challenges grad school throws at you.

DEI Corner



DIVERSITY, EQUITY, AND INCLUSION COMMITTEE



OUR COMMITTEE



DEI committee was established in Summer 2021. Our goal is to foster an inclusive and welcoming culture and atmosphere for all members of our department – students, staff, and faculty.



OUR MISSION

Our committee embraces the unique and rich perspectives and experiences that arise from racial, ethnic, socio-economic, sexual, gender, and religious diversity within our department. Through our DEI committee, we organized and hosted several DEI-centered activities for faculty, staff, and students, which have been paramount to retention and creating a welcoming environment for new members.

Let's continue to learn together



PREVIOUS EVENTS

- Alumni panels
- Climate survey
- Social hours
- Workshops

AMSTAT NEWS

Our department's DEI efforts were featured in the newsletter of the American Statistical Association (AMSTAT news). Scan the QR code to learn more.



STAY TUNED!



- On March 14th, we will organize the **2nd Statistics Department Pi-day Celebrations** together with GSA and HISS.
- We will launch a **climate survey** in the Spring quarter.



VISIT OUR WEBSITE



2023-2024 MEMBERS



- Drs. Analisa Flores and Esra Kurum (co-chairs)
- Andrew Mejia and Luz Sandoval Manjarrez
- Jericho Lawson, Emily Ouyang, and Noe Vidales
- Varsha Kuppa and Zach Nguyen

Don't forget to visit our bulletin board in the department to learn more about fostering a diverse, equitable, and inclusive environment AND pin your origins on the map!

FLIP *the* script

RACE & ETHNICITY

Even with the best intentions, we can say or do things that are offensive and hurtful. Getting past these missteps means recognizing that our words matter. This means taking action by using words that create inclusive environments where people feel both that they are valued and that they belong.¹

IMPACT		RESEARCH SAYS
Ignoring differences can stifle trust, authentic communication, and your ability to connect with someone who is different from you in some way.	<p>"WE DON'T SEE COLOR— ONLY PEOPLE."</p>	It is not racist to see a person's race or ethnicity—it is in fact a natural tendency. Avoiding conversations about race to maintain neutrality will not create an ideal work environment for <i>all</i> employees. ²

WHAT TO DO INSTEAD

Ask your colleagues who have a different racial, ethnic, or cultural background than yours if they feel your workplace honors their identity and experiences.

IMPACT		RESEARCH SAYS
Implies that you had lower expectations, possibly because of the person's race or ethnicity.	<p>"YOU ARE SO ARTICULATE."</p>	This reinforces the stereotype that people of color and ethnic minorities are less competent than their white counterparts, and that those who are successful are an "exception to the rule." ³

WHAT TO DO INSTEAD

Provide concrete examples of why and how you felt the individual excelled. For example, ***"Your presentation was very motivating, and it aligned with our business goals very well."***

IMPACT		RESEARCH SAYS
Insinuates that racial or ethnic minorities are "outsiders" who can't speak English and don't really belong where they live or work.	<p>"SHE SPEAKS ENGLISH WELL."</p>	People of all races and ethnicities can speak English well. ⁴

WHAT TO DO INSTEAD

Unless the person has previously struggled with the English language and has made vast improvements, it is better to congratulate your peer on the content of their work.

IMPACT

Shutting down authentic conversations disempowers and shames people by diminishing their experiences, feelings, and sense of worth.

RESEARCH SAYS

Minimizing another person's experiences can raise tensions, lead to defensiveness, and reinforce exclusion.⁵

"YOU ARE OVERLY SENSITIVE."

WHAT TO DO INSTEAD

Step into another person's shoes and learn more about their experiences. For example, *"I recognize that this is important to you; I'd like to understand more..."*

IMPACT

Questioning the qualifications of other colleagues can make them feel that they must always "prove" themselves worthy to be in their role.

RESEARCH SAYS

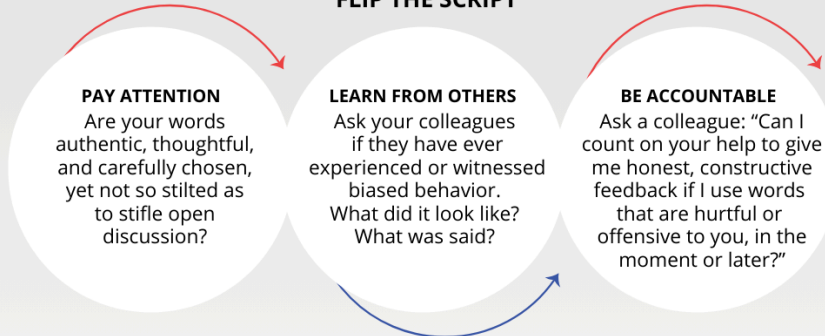
Some people assume that people of color have benefitted from special treatment through affirmative action or quota systems and are therefore not qualified.⁶

"SO, HOW DID YOU GET THIS NEW POSITION?"

WHAT TO DO INSTEAD

Congratulate your colleague on the new position. Ask questions such as, *"What energizes you about your new role? How can I support your transition? How can we team up to advance our company's mission?"*

FLIP THE SCRIPT



SOURCES

1. Catalyst, *Engaging in Conversations About Gender, Race, and Ethnicity in the Workplace* (Catalyst, 2016).
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3. Derald Wing Sue, "Microaggressions: More Than Just Race," *Psychology Today*, November 2010.
4. Derald Wing Sue, Jennifer Bucceri, Annie I. Lin, Kevin L. Nadal, and Gina C. Torino, "Racial Microaggressions and the Asian American Experience," *Culture Diversity and Ethnic Minority Psychology*, vol. 13 no. 1 (2007): p. 72-81; Shirin Hakimzadeh and D'Vera Cohn, *English Usage Among Hispanics in the United States* (Pew Research Center, 2007); Benjamin Herscovitch, "English is the Language of the Asian Century," *Australian Broadcasting Corporation*, September 12, 2012.
5. Catalyst, *Engaging in Conversations About Gender, Race, and Ethnicity in the Workplace* (Catalyst, 2016); Jean Kantambu Latting and V. Jean Ramsey, *Reframing Change: How to Deal with Workplace Dynamics, Influence Others, and Bring People Together to Initiate Positive Change* (Santa Barbara, CA: Praeger, 2009).
6. Derald Wing Sue, Christina M. Capodilupo, Gina C. Torino, Jennifer M. Bucceri, Aisha M. B. Holder, Kevin L. Nadal, and Marta Esquilin, "Racial Microaggressions in Everyday Life: Implications for Clinical Practice," *American Psychologist* (May-June 2007): p. 271-286.
7. Catalyst, *Engaging in Conversations About Gender, Race, and Ethnicity in the Workplace* (Catalyst, 2016).



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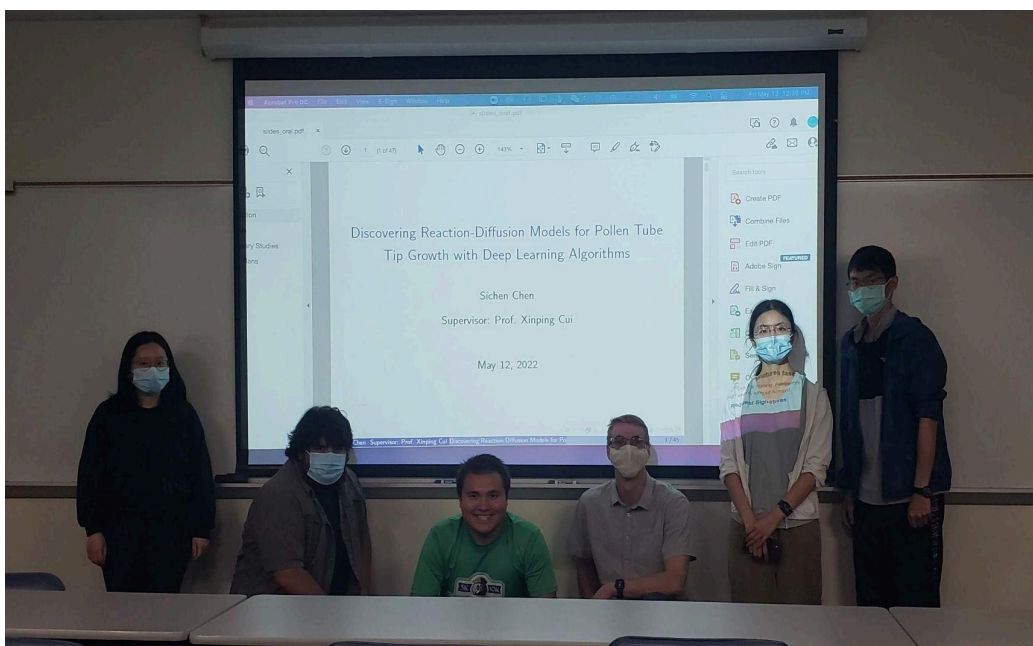


updated: 7 May 2018
CATALYST.ORG

Graduate Student Seminar

A Seminar for Graduate Students

The GSS series is an opportunity for graduate students in our department to showcase some of the cool things they are doing, gain presentation practice, and get to know each other. The presentations can be on a variety of topics, including research, projects, internships, a topic you want to investigate, a paper that you found interesting, and more. Anything that is appropriate for the graduate-student level audience that could be of interest to the graduate students of this department is welcomed. The GSS welcomes, and **ENCOURAGES**, anyone who is interested to attend. This includes undergraduates, faculty, and staff. This is open to **ALL** graduate students.



Some previous seminar titles include the following:

- "Prediction in Spatially Varying Functional Model for Spatiotemporal Data"
- "Nonparametric Estimation of Random Treatment Effects with Infinite Mixture Models"
- "Introduction to Statistical Network Analysis"
- "Analyzing Risk Effects of Death after Aortic Valve Replacement Surgery: A Comparison of Joint and Marginal Models"

We are always looking for speakers to present a talk. Whether it involves research, class projects, tutorials, or other ideas, we would love to have you present!

If interested, please email ucr.grad.stat@gmail.com with your plans for a talk!

Important Dates

Event	Dates
Initial Registration Window	Feb. 12 - Mar. 7, 2024
Continuing Registration Window	Mar. 8, 2024 - Apr. 12, 2024
First Day of Spring Quarter	Mar. 27, 2024
First Day of Spring Instruction	Apr. 1, 2024
Academic and Administrative Holidays	Mar. 29, 2024 May 27, 2024 Jun. 19, 2024
Add/Drop Date Deadline	Apr. 12, 2024
Last Day to Withdraw from Course (no fee)	Apr. 19, 2024
Last Day to Change Grading Basis (no fee)	Apr. 19, 2024
Last Day to Withdraw from Course (\$4 fee)	May 10, 2024
Last Day to Change Grading Basis (\$4 fee)	May 24, 2024
Last Day of Instruction	Jun. 7, 2024
Finals Week	Jun. 10-14, 2024

Feedback?

If you have any feedback or suggestions you would like to make, please email ucr.grad.stat@gmail.com.