

FALL 2021 EDITION

Editors' Note



BACK IN THE CLASSROOM

In the Fall 2021 semester, many aspects of campus life went back to "normal." More and more classes were in-person, bringing back the liveliness of campus that students missed last year. The university kept COVID cases at a minimum with routine testing for those not fully vaccinated.

This semester, the Actuarial Science Club was happy to return to a majority of in-person events throughout the semester. In-person socials, workshops, and presentations allowed ASC members to meet each other face to face once again. Throughout this newsletter, we discuss some of the challenges we are still facing and the excitement of returning to normalcy.

Go Illini!

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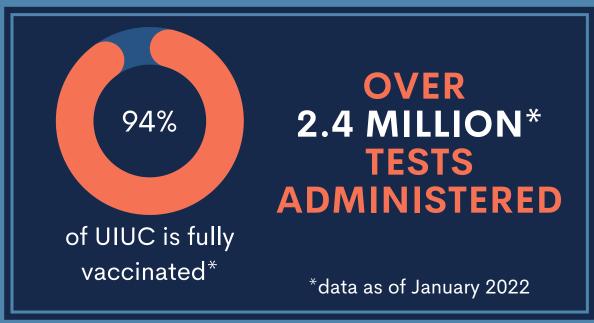
ACKNOWLEDGEMENT



COVID-19 CAMPUS UPDATES

The University of Illinois has continued their efficient COVID-19 containment efforts. Starting at the beginning of the fall semester, students were required to show proof of full vaccination to have access to university buildings and in-person classes. If not fully vaccinated, students had to get tested with a saliva-based test every other day. This helped keep new COVID cases on campus to a minimum. Vaccine appointments and booster appointments were made available to students and faculty. Many classes were able to remain in-person for the entirety of the semester, with masks required indoors.

Looking forward, the university will start the spring semester with one week of all online classes. This will allow all students and faculty time to receive a mandatory on-campus COVID test before returning to inperson classes. While many classes are scheduled to be in-person, the university is recommending that all faculty, staff, and students wear N95, KN95, or Level 3 surgical masks while indoors. One free mask will be provided to all faculty, staff, and students.



FALL RECRUITMENT:

COMPANY PRESENTATIONS

AUGUST

- Optiver
- Pinnacle
- **CNA**
- Old Republic International

SEPTEMBER

- Willis Towers Watson
- 🔷 Cigna
- PwC
- Aon
- Traveler's Insurance
- RLI
- Oliver Wyman
- Deloitte
- Milliman
- State Farm
- CVS/Aetna
- ♠ RGA
- Milliman FRM & Life

NOVEMBER

- Mercer
 - Segal

This semester, there were 19 companies that gave presentations in-person, hybrid, and virtually. The presentations took place throughout the fall semester. Typically, company representatives presented their company's structure, culture, and employment opportunities in the form of a slideshow or an interactive activity. At the end of each presentation, students had the opportunity to ask questions and network. If you or your company is interested in presenting to our students, please feel free to reach out to **Daniel Polites at** companypresentations@ascillinois.com.

FALL RECRUITMENT:

MEET THE FIRMS

This fall, ASC hosted Meet the Firms virtually for the second year in a row. To improve the virtual experience, we utilized feedback from last year's Meet the Firms and decided to host the event on Zoom. Using Zoom, students were able to join breakout rooms with the specific company and recruiter of their interest. This platform mirrored an in-person career fair as students were able to easily share their resumes and have one-on-one conversations with recruiters.

Our choice to use Zoom was also rooted in the fact that it has been widely used throughout the pandemic by both universities and companies, so students and recruiters would be comfortable using the platform. Overall, the event received a great amount of positive feedback from both students and recruiters.

"IT WAS MY FIRST EXPERIENCE
WITH ANY KIND OF JOB FAIR
AND DESPITE IT BEING OVER
ZOOM I STILL FELT I WAS ABLE TO
HAVE MEANINGFUL
CONVERSATION AND
COMMUNICATION."

"THE EVENT RAN VERY
SMOOTHLY. ALL OF THE
CANDIDATES THAT I MET WERE
VERY KIND AND PROFESSIONAL.
THEY ALL SEEMED TO COME
PREPARED AND WERE EXCITED
ABOUT OUR COMPANY!"

FALL RECRUITMENT:

MEET THE FIRMS

Meet the Firms 2021 hosted 31 companies, which was 10 more than last year's event, with over 130 participating students!





























































Moving forward, ASC hopes to return the event to an inperson setting at the Illini Union, but we are strongly considering a virtual option to accommodate companies and recruiters who are unable to travel to Urbana-Champaign.

[Fall Events]



Workshops

- Resume Workshop
- Interview Workshop
- Elevator Pitch Workshop
- Coaching Actuaries/BAII Plus
 Workshop
- Course Selection Workshop
- Visa Workshop
- Actuarial Exam Panel

Social Events

- Freshman and Transfer Student BBQ
- Fall Kickoff
- Apartment Bash
- Club Dinner at Kung Fu Tea
- Club Dinner at Murphy's Pub
- Apartment Crawl
- Club Dinner at Mia Za's
- Club Dinner at Chipotle
- Curtis Pumpkin Patch
- Bar Crawl
- International Dinner
- Club Breakfast at Merry Ann's
- Semi Formal at Illini Inn
- Ice Skating
- Senior Send Off





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SOA Update: University-Earned Credit



Starting in the third quarter of 2022, the SOA will be implementing a new way for college students to receive actuarial exam credit. Universities that have been a Center of Actuarial Excellence for two consecutive years will qualify for the new University-Earned Credit program, or UEC program. If implemented by universities, students will be able to earn credit for certain SOA exams by getting the required UEC score in the course. The course must cover the exam's syllabus and it must be approved and monitored by the SOA to ensure that learning is consistent across universities. For UEC courses, 80% of the grading points will be proctored exams, with the cumulative final being worth at least 50% of the grading points. After receiving their final grade, students will have the option to pay the regular exam fee and submit a UEC Candidate Application to receive exam credit.

The University of Illinois's actuarial department applied for UEC credit for five available exams: FM, SRM, FAM, LTAM, and STAM. The department will learn which exams are approved early spring semester. Additionally, the department will be running a pilot section of the UEC version of SRM in the Spring 2022 semester. If successful and the courses are approved, all UEC courses will be open to students in the Fall 2022 semester.

Alumni Mentorship Program

What is AMP?

ASC's Alumni Mentorship Program has provided opportunities for students to gain an understanding of the actuarial science field and develop their professionalism since 2017.

Students are paired with alumni based on interests and goals.

This semester, there are 26 mentors from a wide variety of industries and backgrounds who are partnered one-on-one with students ranging from freshmen to graduate students.

The mentors and mentees meet for a total of six hours, in 1-hour monthly sessions or 30-minute biweekly sessions, to discuss anything from industry trends to work life to resume reviews.

One of my mentor's tips that I found the most memorable is to not take rejection personally and cast a wide net for jobs and internships.

Overall, the AMP meetings were helpful for me because I was able to learn firsthand from an actuary in the field with long history and experience to share.

We mainly discussed the mentor's college experiences, career path, and some useful tips about how to get involved on campus. One particular thing I learned is the importance of balancing networking with alumni and schoolwork.

Kaia Hsu, Mentee

Mingli Xu, Mentee

The most important thing that I took away was that experience and your personal preferences matter more than anything. I should focus on developing my interests and explore all my passions so I can determine what kind of actuarial work I want to do in the future.

Pooja Khatri, Mentee

If you are interested in taking part in this program as a mentor contact Shreya Kodati at: outreach@asc-illinois.com



Interview with Tim Cardinal

Tim Cardinal is an instructor of actuarial science and risk management at the University of Illinois Urbana-Champaign. He is currently a Principal at Cardinalis 1 Consulting, a boutique consulting firm established in 2010 that provides PBR, GAAP and LDTI implementations. He has 30 years of experience in the life insurance industry. He received a B.S. in 1987 and M.S. in 1991 in Mathematics from the University of Illinois.

What classes do you teach now and which are you teaching next semester?

I taught 210: Theory of Interest and I'll teach that spring semester, along with 410: Investments and Financial Markets.

Why did you choose UIUC?

I am an alumni, I did both my undergraduate and graduate here. I had reached out to Runhuan Feng back in 2015 for some assistance on a consulting project and we've kept in touch. The SOA is embarking upon University Earned Credit (UEC) to increase focus on critical thinking and business skills, so I had reached out to him over the summer and he said, "Hey we've got an opening, would you be interested?" We had talked about teaching a few years ago, but COVID put that on the back burner.

What is your teaching philosophy?

I like to challenge and engage people - I find they rise to the occasion. In formative training I develop students' knowledge and skills as future practitioners. Until UEC goes into effect next fall, I also prepare for successful actuarial exam outcomes.

I treat my class somewhat like how I treated my staff in terms of development. There are short term goals, let's say learn some knowledge, but in the long term, for career development, I try to understand what a student is passionate about, what their strengths and skills are and then help them develop. My job is to help them achieve their goals. In the context of theory of interest, it's a very fundamental topic, but it permeates everything an actuary does and it affects financial decisions across all businesses and organizations. I went beyond what is typically done in a classroom - currently there's a large gap between a "textbook" and how things are done in the real world. This past fall, I tried to balance two goals. One is that immediate goal of, "Hey they're going to have take and pass FM". Two, as a practitioner, what will they actually need to know and be able to do. In a math class, students form impressions that actuaries calculate something, nearly always using a formula and deductive reasoning starting with a given set of unambiguous methods, assumptions, and inputs to work formulaically towards the singular right numerical answer. In real life business problems, methods and assumptions are ambiguous and there is a spectrum of solutions ranging from not-so-good, to good, to better. I gave my fall class a taste of what that ambiguity looks like as an actuarial practitioner in my consulting engagements and how it impacts solving business problems. UEC completely shifts the formative training first and foremost to be businessoriented focused on cultivating critical thinking, communication and other business skills.

Do you have any remarks for alumni?

What I would say to alumni is that they can make a difference whether they are practicing fellows or in the formative stages as actuarial students. If you are able to, there are a lot of rewards that come out of giving and volunteering your time and getting involved. As an actuary, you have a lot to offer to non-profits that need help with risk management, financial management, and strategic decisions. It could be any non-profit or at your children's school such as parent clubs. It could be Illinois's Actuarial Science Club. What I find is the more you give, the more you can develop your leadership and communication skills.



Interview with **Xiaochen Jing**

Dr. Xiaochen Jing is an assistant professor of Actuarial Science and Risk Management at the University of Illinois Urbana-Champaign. He is an alumnus of the Actuarial Science program at UIUC where he earned his master's degree. In 2021, he received his PhD from the University of Wisconsin.

What classes do you teach at the University of Illinois?

I will be teaching two classes in the coming spring. They are ASRM 499 which is Predictive Analytics. I will also be teaching MATH 563 which is about Risk Modeling and Analysis.

Why did you choose the University of Illinois as where you would end up teaching?

The actuarial science program here is one of the greatest programs in the U.S., if not in the world. As an alumnus myself, I know the program very well and that it has a long history. It has a very good reputation in academics, and it has a strong connection to the industry. I also have great interactions with the faculty and staff. I actually took several courses from Dr. Runhuan Feng during my master's studies. He introduced me to actuarial science research and academics. Recently, I am also interested in the machine learning topics, and I think this is one of the research interests of Dr. Frank Quan. He has a strong background in data science, and I am currently assisting him in one of the IRisk Lab projects called "Auto Machine Learning."

What is your teaching philosophy?

I'm still developing my teaching skills, and one of the things I think about a lot is how to meet the different needs in the same class with different students. If I implement one schedule for all students, then some of them definitely won't be able to have the best environment for them to learn. I started a lot of surveys asking students what they want and then separated them into subgroups. If you want to discuss with others, I'll put you in this group. If you prefer to work on your own, then that's fine too. I won't try to set you up with other students, but I will kind of monitor your progress in different ways. For example, you can come to the office hours if you have questions to have one-on-one meetings if you prefer. There is an online forum that I maintain that can have asynchronous communication with the students and also for communication among the students. If I had to define my philosophy, I want to learn about students' different preferences, and then I will try my best to accommodate them in the way that is fair to the whole class.

Do you have any advice for both incoming and current students?

I think the actuarial science field has a lot of applications. So, from my experience, I think one of the questions you may want to ask yourself is if you want to develop fundamental tools for analysis in the general actuarial world, mathematics, economics, or data science. Do you want to develop fundamental tools for other people to use? Or do you want to study questions in a more empirical kind of way? It's kind of like in computer science; do you want to develop the hardware for other people to use or do you want to develop a software for a specific application? I think our students here generally have a strong background in mathematics, statistics, and analytical skills, and it's natural for us to go into a more technical position in the industry. However, if you have the time, energy, or interest, it might be interesting for you to try out a few economics or finance classes to broaden your view as well.

Risk Analytics Symposium 2022: ACTUARIAL PERSPECTIVES ON CLIMATE CHANGE

On March 25th, 2022, the Actuarial Science Club at UIUC will host its annual Spring Symposium, where experienced business leaders from the actuarial world share their expert insight on emerging trends within risk management and insurance. The theme of this year's symposium is Actuarial Perspectives on Climate Change.

Despite challenges posed by the COVID-19 pandemic, ASC and the Illinois Risk Lab joined forces to host the virtual Risks Analytics Symposium 2021: Actuarial Innovations to Emerging Risks. This was an all-day event bringing together leaders from both the academic community and the insurance world to discuss how innovative methods, such as InsureTech, AI, and data analytics, are being utilized to solve emerging risks across the insurance industry.

Unlike previous years, the Risks Analytics Symposium 2022: Actuarial Perspectives on Climate Change will be a hybrid half-day event where university students as well as academics and industry professionals will have the opportunity to network and view live presentations in-person at UIUC or virtually through Zoom.

Stronger and more frequent natural disasters generated by global warming have already caused great physical and financial losses for families and businesses. The structure of this event will allow for an in-depth analysis of the present and future risks of climate change. Attendees will get the chance to learn about how the insurance industry is mitigating climate risk and ask questions during comprehensive Q & A sessions with experts in the field.

Anyone is welcome to join this year's symposium, including alumni. If you are interested in participating in the symposium, please contact Andrea Wilcox at vpinternal@asc-illinois.com or Naomi Logan at workshops@asc-illinois.com for more information about the event and the opportunity for SOA associates and fellows to earn continuing education credit.

Illinois Risk Lab

What is IRisk Lab?

Officially established in Fall 2018, the Illinois Risk Lab (IRisk Lab), in the Department of Mathematics at the University of Illinois at Urbana-Champaign, grew out of the Research Program in Risk and Actuarial Science, which was sponsored by the Society of Actuaries from 2014 to 2017. The IRisk Lab currently serves as an industry-academic collaboration hub, facilitating the integration of discovery-based learning experience for students, and showcasing state-of-the-art research in all areas of Risk Analysis and Advanced Predictive Analytics.

Opportunities include research projects, student consulting, research seminars, and the Risk Analytics Symposium. Faculty, industrial partners, and students collaborate to address business-oriented research problems. Throughout the semester, students will gain real-life experience in innovative research, collaboration, and presentation skills. Our industry partners have access to the latest progress and new perspectives from our collaborative research and identify potential future employees from our student researchers.



Analysis of Defined Outcome Investing Algorithm

A few years ago, a new investment approach came to market——Defined Outcome Investing(DOI). DOI often promises the delivery of the upside performance of an equity asset to a certain level, with a defined downside protection amount, over a pre–established period. The first DOI ETF was just introduced in late 2018. In the following few years, DOI has become one of the most popular financial products in the market. According to Innovator, the DOI ETFs AUM(Asset Under Management) has rapidly grown to \$1.7 billion in one year and nearly \$4 billion in 2 years. However, the DOI strategy can be easily replicated by synthetic option product combinations.

Our research team is working with a corporate partner to analyze an optimization algorithm to construct an optimized option product portfolio as a synthetic DOI strategy with better performance and greater transparency. As a result, we plan to publish a white paper to describe this methodology and model.

COUNTRY Financial Business Owner's Policy (BOP) Loss Predictive Model Project

For the insurance industry, the potential to understand customers and businesses using new dimensions represented by social and other online data can unleash significant new insights from both customer behavior and risk perspective. These insights can drive insurance automation, underwriting efficiency, and enhanced customer experience. The objective of this project is to develop and optimize the loss prediction models empowered by those insurtech innovations. This project is a real-life actuarial data science project provided by Carpe Data and COUNTRY Financial. Carpe Data is an Insurtech company that provides insurance companies with next-generation data solutions to gain a more in-depth insight into risks. COUNTRY Financial is a US insurance and financial services company that offers a range of insurance and financial products and services, including auto, home, life, commercial insurance, etc.

AXIS Systemic Cyber Threats Project

AXIS Capital is one of the major insurance carriers that provide cyber policies. As the world is becoming more connected than ever, systemic cyber threats pose a great risk to businesses that rely on information technology, as well as to insurers like AXIS, who provide financial protections to those businesses. As an example of systemic cyber threats, the outage of cloud services may simultaneously impact many policyholders, thus leading to a large number of claims that AXIS shall be responsible for. To improve insurers' resilience against this risk, this project aims to explore and identify a suite of internal systemic cyber threat scenarios that together are broad enough to cover the entire threat landscape, but individually are specific enough to be used in practice on a stand-alone basis to support business decision making and risk understanding. Furthermore, in this project, we will try to characterize each scenario for the inference of its occurrence likelihood and severity, and the results will be used to support setting capital and pricing loads, to challenge probabilistic risk modeling approaches, to monitor and manage exposure and risk trends, and may be used to set strategy.

Luyan Sales Data Analysis Project

Sales data provides businesses with valuable information on the profiling of their customers, and thus has important implications on business problems, such as the improvement of customer satisfaction, retention rate, and sale efficiency. In this project, a dataset of sales records will be provided by Luyan Pharma, which has not been analyzed and utilized to its full potential for the purpose of gaining insights into the company's operations and customers and guiding business decision–making. Luyan is a pharmaceutical company headquartered in Xiamen, Fujian, China, with operations in health product R&D, manufacturing, and distribution. As an industry leader, it is exploring new ways of improving its services provided to its customers.

Automated Machine Learning (AutoML) Project

Machine Learning (ML) techniques have been applied broadly in the field of actuarial science and achieve fruitful results. However, to solve a practical problem with ML, the agent needs to preprocess the dataset, choose the proper ML tools, and tweak the hyperparameters of the model. All these steps are task-specific and require expert knowledge, which may render less effective ML model performance when operated by a non-ML-expert agent. To this end, AutoML is developed to facilitate the usage of ML by non-expert agents and aims to integrate the automated data processing, model selection, and model tuning into one system. This project develops two versions (Python and R) of AutoML pipeline that adapts and modifies the existing AutoML packages (for example, caret, AUTO-SKLEARN) to fit better for the actuarial ML problems.

Contact irisklab.uiuc@gmail.com for more information





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Tim Cardinal Instructor



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December 2021 Graduates

Blake Andrew Dos Santos Joshua Matthew Fischer Ian Hazali Joanne He Divya Keiriwal Sara Anjuli Lagvankar Xi I in Dillon Etienne Maguigad Aanika Mathew Inu Bruhathy Miriyala Alexander Pavlin Panayotov

Tyler Mu-Young Park

Jaewon C Pyo Jacqueline Lauren Schuman Georgios Nicholaos Spiratos Luke Sutton Stees Jack Twohig Christian Urena Alexander K Valkanas Nikhil Bhupendra Vekaria Brendan Patrick Watson **Emily Sara Willard** Jesse D Yan Daoqiang Ye



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ILLINI BASKETBALL





As of January 8th, the Illini boast a 4-0 conference record for the first time in over a decade. They hold an overall record of 11-3 heading into the gauntlet of Big Ten matchups which continue through February. Kofi Cockburn now shines as the most dominant center in the NCAA, and with the return of fifth year seniors Trent Frazier and Demonte Williams to lead the Illinois offense one last time, Coach Brad Underwood has another stellar team this season.

Illinois entered the season unranked and with several key players on the bench due to injury. Fans started to get nervous after a nail-biting loss to Marquette in November. The Illini then dropped a devastating loss to Cincinnati and then another close game to ranked Arizona. However, players have recovered from their injuries, with the exception of Andre Curbelo, and have been winning games by impressive margins. This included the recent victory over Missouri in their annual "Bragging Rights" game with a score of 88–63.

After Ayo Dosunmu was drafted by the Chicago Bulls, there was concern that the Illini would have trouble finding an identity on the offensive end. Fortunately, players like Alfonso Plummer have helped them develop further into a 3-point shooting team making them a threat both on the glass and the perimeter. New players are getting the chance to prove themselves and show how deep the Illinois roster is. Ayo was honored in the game against Maryland for his role in developing the basketball program, and it was well deserved. We look forward to the rest of the season facing off against Big Ten competition, and we wish the Illini luck heading into March.

Campus Events

Despite the ongoing pandemic and COVID variants, campus life has been able to remain lively and safe. This semester the University took many precautions—from vaccines to testing to face masks. Under these rules, classes and activities remained in person with some virtual options, allowing students to enjoy traditional college pastimes and social activities while staying safe.

Weekend Film Series

Weekend movie nights were easily accessible at the Illini Union, where recent blockbuster movies were played in the Pine Lounge on Friday and Saturday nights. This semester's lineup included popular films such as Jungle Cruise, Black Widow, In the Heights, and Cruella. Students could save the trip to the theater and enjoy these films right on campus.

Illini Union

The Illini Union provided students with an array of social activities and free food almost every weekday night. Campus groups, local artists, and even touring acts performed on Musical Mondays in the Courtyard Cafe. Trivia Tuesdays gave competitive Illini a chance to win a selection of fun prizes while testing their knowledge. On Wednesdays, students had the opportunity to share their hidden singing talent during Karaoke. Finally, Fridays offered a chance to laugh and relax during Friday Funnies where comedy and improv groups performed. Once a month, the Union also hosted Illinites, a campus party with a variety of fun themes such as Falling for Illinites, Friends, and Winter Wonderland. Illinites were also available to enjoy virtually.

Krannert Shows

The Krannert Center for Performing arts came to life this semester with a variety of interesting shows and performances. The University Bands and Orchestras were able to give live performances with a streaming option for those who wished to watch from home. Other shows were also able to go on such as The Brazilian All Stars, Contratiempo & Las Cafeteras, and the Nutcracker. Students could enjoy these shows free or at discounted prices.

Recreation Centers

Between the Activities and Recreation Center (ARC), ice arena, outdoor fields, and Illini Grove, an array of activities and sports were offered to Illini. With a reservation, students could even swim in the indoor pool or take a fitness or wellness class at the ARC. Sadly, the Campus Recreation Center East (CRCE) remained closed this semester to serve as a COVID clinic for vaccinations and testing.

Barn Dances and Semi-Formals

To many students' delight, barn dances and semi-formals made a return this semester. Sororities, fraternities, and clubs held semi-formals where students could dance the night away at venues such as the Canopy Club. Actuarial Science Club even hosted its own semi-formal at the Illini Inn. For those who enjoy a more casual dance, students could get their cowboy on at one of many barn dances held at local farms. Members of a variety of clubs and Greek life organizations were able to dance to country music and enjoy a bonfire or hayride at these dances.

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Special thanks to...

Claudia Freiji Shreya Kodati Kaia Hsu Mingli Xu

Pooja Khatri Tim Cardinal Xiaochen Jing Frank Quan

Actuarial Alumni Community

2021-2022 ASC Executive Board

