



UMKC RooMath News

Department of Mathematics & Statistics Newsletter

<http://cas.umkc.edu/Math>

Volume 11, Issue 1

Fall 2018

UMKC Department of Mathematics and Statistics: Home for Exceptional Students and Faculty

Alumni, students, friends old and new, welcome!

The UMKC Department of Mathematics and Statistics has been home for exceptional students and faculty. Each year several UMKC Math & Stat students and faculty publish their research in well-regarded journals. They also present their work in different conferences. As you'll notice in this newsletter, undergraduate and graduate math & stat students have been very successful in finding jobs and internships. Each year, the UMKC Math competition team participates in the Missouri Collegiate Mathematics Competition.

Faculty-Student research has traditionally been very popular in our department.

The Math Club, Chess Club and Mathematics & Statistics Graduate Student Organization (MSGSO) have organized several fun activities such as Pi Day, the Integration Bee, and Mid Semester gatherings. They also hold recruitment events and student showcases.

MSGSO has organized the graduate student series and has helped several undergraduate students find their way to different graduate programs.

Faculty members have tirelessly contributed in research, teaching and service both locally and globally.

Despite severe budget cuts at the College and the University levels, the Math & Stat Department remains as one of the most active and high-impact departments at UMKC. Regarding the teaching provided by our department, here are some stats:

- The Math Department produced 10,140 credit hours in FS2017, an increase of 71.6 % from Fall 2013.
- The Math Department teaches more than 5.7 % of all UMKC credit hours.
- There are more than 4,000 student enrollments in math & stat courses per academic year.

In this newsletter you will find the praiseworthy efforts of faculty, staff and students since Fall 2017. The De-

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partment of Mathematics and Statistics continues to be a vibrant, energetic, and diverse community of scholars.

Despite the limited space in this newsletter, we have tried our best to provide a summary of faculty and student activities. We hope you enjoy reading about them.

Critical Advice for Math Majors

Guidelines for being successful in the Job Market

You may wonder why some math students graduate and have no job offer and some graduate with 2 or 3 job offers. What is the successful career path? With a degree in mathematics and statistics you may find jobs in the areas of actuarial sciences, mathematical and statistical modeling, data analysis, biostatistics and many more. For those with a degree in mathematics and statistics, a simple search in the internet brings job titles such as SAS Statistical Modeler, SPSS Modeler and Developer, Investment Analyst, Data Analyst, Data Scientist / Modeler / Developer, Quantitative Modeler, Statistical Modeler, Advanced Analytics Modeler, Mathematical Modeler, Commercial Analyst, Risk Analyst, Modeling and Simulation Analyst, Consultant, Consulting Actuary, Senior Budget Analyst, Accounting Supervisor, and Actuarial Analyst. The old view of only becoming a math teacher with a degree in math and stat has changed long ago.

In this short note, we provide you with critical information that can greatly help you build your portfolio and eventually find a math/stat-related professional job.

Acquire Skills in Modeling and Data Analysis: More than half of the job titles mentioned above, are related to modeling or data analysis. You need to focus on courses that are related to modeling and data analysis. These are Linear Algebra (Math 300), Ordinary Differential Equations (Math 345), Mathematical Modeling (Math 469), Elementary Statistics (Stat 235), Mathematical Statistics I (Stat 436) and Mathematical Statistics II (Stat 441).

Learn Programming and Computational Software: You also need to be familiar with coding and computational software such as Matlab, SAS, R, and SPSS. Fortunately, as a UMKC student, you have access to all of these packages through the remote lab (<http://www.umkc.edu/is/remotelabs/>). Click on Connect Now and enter your username and password to access SPSS, Matlab and SAS. The other one is R (<https://www.r-project.org/>), which is free software. For SPSS (see for example the following link), read the example on statistics and click on “show me” to learn how to use SPSS and how to interpret the results. https://www.ibm.com/support/knowledgecenter/SSLVMB_20.0.0/

com.ibm.spss.statistics.help/idh_idd_tab_vars.htm). For Matlab you may look at (<http://www.mathworks.com/>), which is often covered in Math 300.

Build Your Resume: Contact UMKC Career Services (<https://career.umkc.edu/>) to build a professional resume that reflects your math, stat, programming, and research skills.

Apply for Internships: If you are a junior or senior student, then in the **January to March** period you need to apply for 20-30 internships (of course first you need to build your resume and probably get 2-3 recommendation letters from the professors that you have taken courses with). There are several internship opportunities available in the Kansas City metropolitan area such as internships offered by Cerner (http://www.cerner.com/about_cerner/careers/students/summer_internships/), Sprint (<http://careers.sprint.com/>) and H&R Block (<https://www.hrblock.com/corporate/career-opportunities>).

There are also internships listed by AMS (<http://www.ams.org/programs/students/emp-internships>). You can also earn credit hours for a math- or stat-related internship; for more information please see: <http://cas.umkc.edu/math/student-resources-2/student-opportunities/internships/>

Become an Active Math Club Member: It is free, it is fun, and more importantly it connects you to other math majors. It also looks great on your resume. Think about it, you are applying for a job and in your resume it says that you’ve been president, vice president, or executive officer of UMKC Math Club for more than a year. This can be impressive and it can be a sign of leadership, and administrative skills. For more information please see: <http://cas.umkc.edu/math/student-resources-2/math-student-organizations/> and <https://roogroups.collegiatelink.net/organization/umkcmc>

Apply for SEARCH, SUROP and REUs: There are several benefits in doing undergraduate research: Students are trained and learn how to do research and how to apply the techniques that they learned in lectures, the research experience can help them find internships or professional careers, having research experience shows that a student has done more than just take classes

and earn a degree. Through group projects students practice team work, collaboration and skilled communication, by presenting their work they gain presentation skills and more importantly they gain confidence and become more motivated.

UMKC provides undergraduate research opportunities through SEARCH (Due September) and SUROP (Due March) (<http://www.umkc.edu/searchsite/how/index.shtml>). Here is how it works: Decide on your research area of interest, find a faculty mentor (see for example the Applied Mathematics Group <http://cas2.umkc.edu/mathematics-old/amg/>), complete a SEARCH or SUROP application.

If you are a junior or senior student, then you may apply for Research Experience for Undergraduates (REU) programs. REUs support active research participation by undergraduate students in any of the areas of research funded by the National Science Foundation. Applicants should note that most application deadlines fall in February - March. For more information please see: <http://cas2.umkc.edu/mathematics-old/amg/> and <http://www.ams.org/programs/students/emp-reu#sthash.u1Nbl04C.dpuf>

Having an undergraduate research experience will put your job application ahead of many other applicants. Note that you need to present your research in a conference or symposium such as the UMKC Undergraduate Symposium (<http://www.umkc.edu/searchsite/symposium/index.shtml>) or MathFest (<http://www.maa.org/meetings/mathfest-2017>)

Math Matinee

Every Wednesday (During Fall & Spring Semesters)
Time: 3:00-4:00 PM
Location: Royall Hall, Room 203

Join the Math Club and M.S.G.S.O. each Wednesday to listen to the BBC's A Brief History of Math and watch a fun math-based video. After we will discuss and socialize. It is a great way to meet your classmates in Mathematics, Statistics, Engineering, Physics, and Economics! All Faculty, Staff, and Students from all departments are invited.

UMKC Math & Stat Student Organizations and Activities

If you are a new student, you may want to learn about the math and stat student organizations and their activities. Here is a summary:

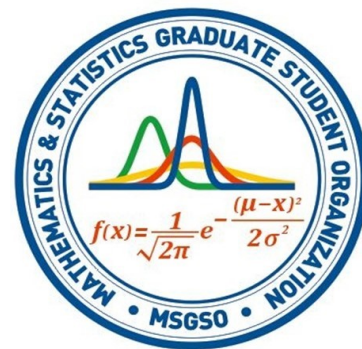
Math Club

- Pi Day
- STEM Night
- Integration Bee
- Math Matinee



MSGSO

- Graduate Seminar Series
- Fall/Spring Welcome Picnic
- Recruitment Day



Chess Club

- Chess Tournaments
- Weekly Friendly Matches



Applying for Internships: A Key Step Towards A Successful Math & Stat Career Path

“During the school year, students may feel overwhelmed with coursework, sports, or co-curricular activities that may keep them extremely busy while leaving no time to think of doing an internship or a job. However, Internships are a proven way to gain relevant knowledge, skills, and experience while establishing important connections in the field. Internships may be completed during fall or spring semester or full time over the course of the summer.”

<https://www.thebalance.com/is-an-internship-really-all-that-important-1986800>

Last year we interviewed Math Major **Mary Ellen Cox** and she provided helpful and productive advice for students. This year we asked her to give us an update on her Internship in Kansas City .

Lockton Companies - Mary Ellen Cox

My time at Lockton Companies this semester was very informative. I was able to bring my math skills into play with real world applications. A typical week for me was between 20-30 hours. Lockton, currently, is focusing its efforts on a US strategic plan that I was able to assist with. In this strategic plan, I was in charge of pulling data from historical records and projecting growth. I also was able to model what needs to be accomplished for Lockton to grow at the rate they have in mind. For that to happen, I needed projected hires, ramp rates, etc. This allowed me to not only work more with modeling, which I had not had much experience with, but it also gave me the exposure to people in our company as I reached out for help.

Another thing that I did this semester was dive into the “personality” tests that we have producers take. I

was able to look at their scores on the three tests that we give, and figure out not only what the range of scores is to be a successful producer at Lockton, but I was able to project how a producer would score on test 2 or 3 based on how they scored on test 1 with correlation coefficients. For this I analyzed revenue by producer and assessed who we already know is a successful producer. My bosses found value in my work, and value in how I suggested the data should be cut to get optimal outputs.



I am very grateful for my time at Lockton this past year. I accepted a position, in fall of 2017, at Black and Veatch as an entry level position in their management consulting division with the title of ‘analyst’. I strongly believe that my experience at Lockton helped me attain the job. My 2 bosses were very encouraging of my leaving Lockton, and they have continued to give me the tools that I need to be successful.

The Department of Mathematics and Statistics hosts Kansas City Mathematics Technology EXPO

Fri. & Sat. Oct. 5th and 6th, 2018

University of Missouri - Kansas City

<http://www.kcmathtechexpo.org/home.html>

The Kansas City Mathematics Technology EXPO is a forum for mathematics instructors at both the college and secondary levels to demonstrate how they use technology successfully in their teaching, to learn about new mathematics technology, and to discuss the philosophy and future of technology in the mathematics classroom.

Q & A with student Shelby Bell, who finds joy in numbers

Note: Shelby is now a graduate student in Biostatistics at KU Medical Center.

Source: <https://info.umkc.edu/news/math-is-no-1>

Shelby Bell, '18

Program: Bachelor of Science in [Mathematics and Statis-](#)



[tics](#) with a minor in Computer Science

School: [College of Arts and Sciences](#)

Hometown: Independence, Missouri

Why did you choose UMKC?

It was close to home, had a good program compared to other schools close to home and was affordable with the scholarships I received.

Why math?

I chose to study mathematics and statistics because I have always been really good at it and it is one of the only things I thoroughly enjoy doing on a daily basis.

What are the challenges and benefits of the math program?

Math is a very difficult subject in general, and that makes the program a challenge. However, the main challenge of the program for me has been trying to decide when to

take certain math classes to prepare me for graduate school or other courses I need to take since some courses are only offered once a year and sometimes even less than that.

The main benefit of this program is that it teaches you to persevere. Studying math means you will fail and make mistakes often. This program, and all the professors in it, teach you how to be a better student and more importantly, teach you to keep trying.

You graduate in May. What's next?

As for a career, I'm not sure yet! My next step is to pursue a graduate degree in the field of biostatistics. I do know that someday I want to help people, I'm just not sure how I would like to do that yet.

How has your college program inspired you?

My program has inspired me in many ways. One is to help others learn math, and I have been able to do this by joining the supplemental instruction team at UMKC. (Supplemental instruction is an academic support model that utilizes peer-assisted study sessions.) Another way my program has inspired me is to always take the extra step to go beyond just learning how to do a math problem and learn how to apply it outside of class.

Since entering college, I've learned that I have a love for learning and helping others. This has led me to pursue graduate school and a job where my main purpose is to help with a good cause.

What do you admire most at UMKC?

The thing I admire most about UMKC is that they want everyone to succeed in what they do here. I admire this most because there are so many different places where students can go to receive help on challenging subjects. There is the math and science tutoring center in the library, the Supplemental Instruction program and so much more!

Are you a first-generation college student?

Yes, and being a first-generation college student means

helping my family as much as I can. My dad and grandma worked so hard to get me whatever I needed when I was growing up even though we didn't always have the money. My hope is that my degree will enable me to be able to take care of them someday.

What is one word that best describes you?

Dedicated. I will do whatever it takes to get something done and succeed.

How I think I got into Harvard and How You Can Too by LeAnna Cates

LeAnna graduated from UMKC in 2017 with a B.S. in Biology and an emphasis in Bioinformatics, with minors in Mathematics and Chemistry. She is an alumnus of the Interdisciplinary Applied Mathematics Program, where she studied Zika virus transmission dynamics using mathematical modeling techniques with Dr. Naveen K. Vaidya. Currently, she is an M.S. student in the Department of Global Health and Population at the Harvard T.H. Chan School of Public Health. Her research interests are around utilizing quantitative approaches in decision-



making and econometrics to inform policy decisions and interventions in the developing world, related to women's empowerment and women's agency.

Picture: <https://info.umkc.edu/news/research-hub>

The first day I met my cohort in the Master of Science program in the Department of Global Health &

Population, I struggled to convince myself that I belonged there. My imposter syndrome led me to irrational questions like *What do I have to Offer? Am I going to keep up? What if they made a mistake?* But after many conversations learning of my peers' backgrounds, stories, motivations, and skill sets, I quickly realized why I was brought here.

During my undergraduate career at UMKC, I spent a lot of time building my technical skill set. My emphasis was in Bioinformatics, and I did **my minor in the Mathematics department**. I took a myriad of programming courses, ranging from Python to C++ and learned MATLAB with alumnus professor Dr. Naveen K. Vaidya through UMKC's **Interdisciplinary Applied Mathematics Program**. During the summers, I did research with the Boston University Bioinformatics Department, where I learned R and database management. I was never a programmer before, but I became one because I was willing to take on that challenge, and I knew it would be useful, regardless of the field I pursued afterwards.

Aside from my computer science courses, the most valuable course I took during my undergraduate career (as I'm realizing now in my Biostatistics and Epidemiology courses) was STAT 436 titled Introduction to Mathematical Statistics I. That course, taught at the time by Dr. Richard Delaware, was a huge learning curve for me. But now, as I'm taking my first few technical courses in my graduate program, I'm utilizing all of the concepts, logic, and frameworks that I learned in STAT 436 to answer interesting questions like *"What's the prevalence of Dengue virus in Brazil?"* Or *"Given that 10% of young indigenous women in Peru are infected with HPV between 2015 and 2016, what's the incidence rate?"*

So what's the bottom line? Why do I think I got accepted into Harvard? Of the 18 individuals in my cohort, I am one of the few with a hard quantitative background. I often assist my peers with their problem sets, solve coding problems, and utilize many of the skill sets I learned while in the Math and Biology Departments at UMKC to answer impactful questions.

Here's my advice for you, regardless of the path you decide to take after you get your Mathematics degree:

Spend time building your skill set.

Take hard quantitative classes.

Know a statistical programming language (e.g. R, STATA, SAS, SPSS, MATLAB)

Build context with internships and summer programs.

Find a mentor you mesh with, and one who's willing to push you in your career.

Don't ever underestimate the value in your hard science degree, especially mathematics. It's not easy to find logical critical thinkers with such a valuable quantitative tool kit. Remember, the skills you build now through your coursework and research may help you answer life-saving questions tomorrow.

Rachel Crowell writes for the AMS Online & More

Rachel Crowell graduated from UMKC in Dec. 2014 with a B.S. in Mathematics. She was awarded the 2015 AMS-AAAS Mass Media Fellowship, for which she worked at The Oregonian for ten weeks in the summer of 2015. Now she has been selected to co-edit the AMS "Blog on Math Blogs": <https://blogs.ams.org/blogonmathblogs/>

You can read one of her **AMS News** posts on *scutoids* from August 14, 2018 at: http://www.ams.org/news?news_id=4516 And! She just had an article published in



Forbes online: <https://www.forbes.com/sites/rachelcrowell/2018/09/14/modeling-hurricane-florence-and-the-mathematics-of-planet-earth-conference/#40ddfaee2ee7>

Source below: <https://blogs.ams.org/blogonmathblogs/editors/>

She describes herself as a freelance math and science writer currently based just north of Des Moines, IA. At UMKC she had the privilege of completing two undergraduate research projects – one focused on modeling gang activity in Kansas City as an infectious social disease and the other on modeling liquidity risk in the bond market. She began dreaming of “being a writer” in second grade, but didn't believe her dream would become a reality until she was selected for the AMS-AAAS Mass Media Fellowship. She first realized her aptitude and passion for mathematics in college with the help of her enthusiastic and witty (now retired) introductory calculus professor. She's thrilled to work in a profession that combines two of her greatest interests. Follow her on Twitter [@writesRCrowell](https://twitter.com/writesRCrowell).

Math Majors Callie Lane and Rachel Talmadge Win 2018 HOMSIGMAA Student Paper Awards



Callie Lane, B.S. 2018, won the national 2018 Student Paper Contest sponsored by the History of Mathematics Special Interest Group of the Mathematical Association of



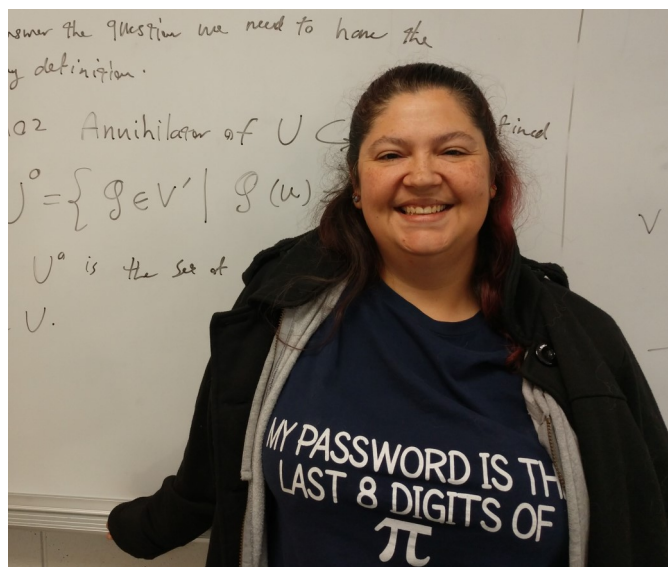
America (HOM SIGMAA). Callie's paper is titled "Race to Refraction: The Repeated Discovery of Snell's Law". Math major **Rachel Talmadge** co-won second place with her paper "François Viète Uses Geometry to Solve Three Problems". Both papers were supervised by Dr. Richard Delaware in Math 464 WI. For more information visit <https://www.maa.org/press/periodicals/convergence/hom-sigmaa-2018-student-paper-contest-winners>

Big Congratulations to Callie and Rachel !

Math Major Hope Mertz Publishes in the Sosland Journal

Mathematics major **Hope Mertz** has her Math 464 WI (History of Mathematics) paper "King of the Mountain" (about mathematician Regiomontanus), published in *The Sosland Journal 2018* this fall. This issue is available as a PDF file at: <https://soslandjournal.files.wordpress.com/2018/10/sosland-2018-full-issue.pdf>

Congratulations!



Math Majors Whitney White and Mastin Tapp Publish in LUCERNA

Both Mathematics majors **Whitney White** and **Mastin Tapp** will have their Math 464 WI (History of Mathematics) papers published in *Lucerna* <https://honors.umkc.edu/get-involved/lucerna/>, volume 13, this academic year.



Whitney's paper is titled "Ostrogradsky's Divergence Theorem", and Mastin's is "On a Few Less Well-Known Problems from the Latter Part of Leonardo of Pisa's *Liber Abaci*." Congratulations both!



Middle School Math Major and Soccer Star Lexie Howard

Middle School Mathematics major **Lexie Howard** has been featured in two University News articles lately. In the Oct. 10, 2017 issue she was quoted saying "I am very passionate about math... Being able to influence any child during the stage of development is such a big thing. I am grateful to have the opportunity to do that." In the Oct. 2, 2018 issue, her soccer skills were the focus. She's scored a record 33 career goals at UMKC and also holds the program record for most career points and most career game-winning goals. She graduates in May 2019. Congratulations!



What can I do with a Math and Stat degree?

If you are a math major, the above question will be more and more important to you as you reach your senior year. There is a wide range of jobs that you may be qualified for with a bachelor's degree in Math & Stat:

- Acoustic consultant**
- Actuarial analyst**
- Actuary**
- Chartered accountant**
- Chartered certified accountant**
- Data analyst**
- Data scientist**
- Investment analyst**
- Research Assistant**
- Secondary school teacher**
- Software engineer**
- Statistician**

There are also jobs where your Math and Stat degree would be useful. Here are a few examples:

- Civil Service fast streamer**
- Financial manager**
- Financial trader**
- Insurance underwriter**
- Meteorologist**
- Operational researcher**

Quantity surveyor

Software tester

Applied Math, Math and Stat are among top 15 college degrees!

Source: U.S. Bureau of Labor Statistics

2020 Projections	Applied Math	Math	Statistics
Rank	10	11	15
Starting Median Pay	\$52,600	\$47,000	\$49,000
Mid-Career Median Pay	\$98,600	\$89,900	\$93,800
Growth In Pay	88%	91%	91%
Projected Job Growth	16.7%	16.7%	14.1%



<https://roogroups.campuslabs.com/engage/organization/umkcmc>

Minor in Actuarial Sciences: A new degree plan to be offered by the Math & Stat Department

What is an actuary?

"Through their knowledge of statistics, finance, and business, actuaries assess the risk of events occurring and help create policies that minimize risk and its financial impact on companies and clients. One of the main functions of actuaries is to help businesses assess the risk of certain events occurring and formulate policies that minimize the cost of that risk." - Bureau of Labor Statistics

Who can earn the minor?

The minor is open to undergraduate students in all majors, though it is most beneficial if the student is a mathematics, business, accounting or economics major due to the courses required for the minor.

What are the benefits of completing the minor?

Some of the courses in the minor serve as starting points for learning the concepts covered on the first two actuarial exams (P/1 and FM/2). Most companies hiring actuaries want to see that students have attempted at least the first two exams before graduation. Companies that actively recruit include Mercer, Aetna, GEICO, Anthem and Lockton. Some courses in the minor meet the Validation by Educational Experience (VEE) requirements. Taking these courses while at UMKC means that you won't have to take them somewhere else after you graduate.

Where can I go on the web to find out more about actuaries and what they do?

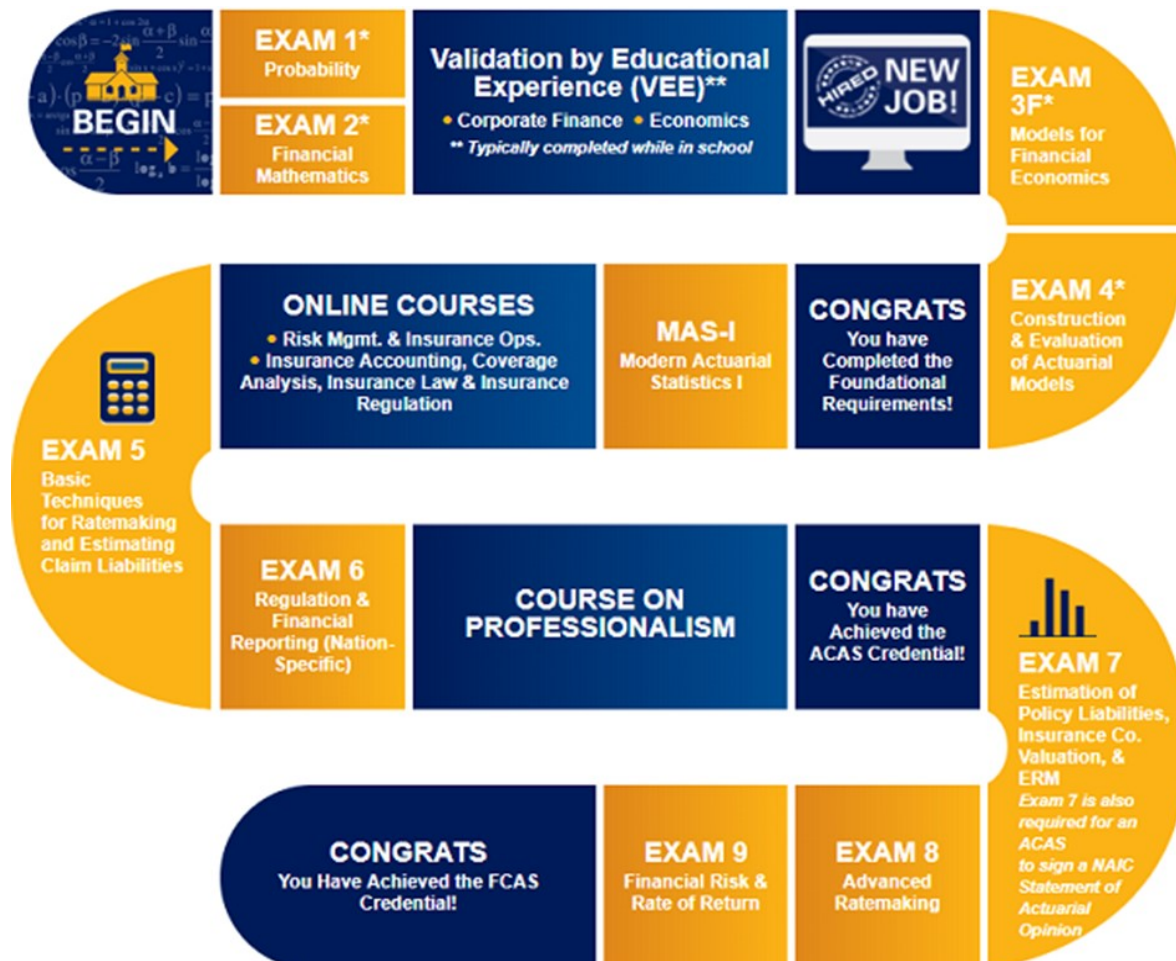
Information on actuaries and the exam process: www.beanactuary.com

U.S. Department of Labor Occupational Outlook handbook: www.bls.gov/oco/ocos041.htm

American Academy of Actuaries: www.actuary.org/aboutus.asp

Society of Actuaries: www.soa.org,

Casualty Actuarial Society <http://www.casact.org/>



Source: <https://www.casact.org/admissions/process/>

Requirements for the Minor in Actuarial Science*

The student will complete the following courses (28 credits):

Courses	CH	When Offered	Actuarial Exam*/ Validation by Educational Experience (VEE)
Mathematics			
Math 220 Calculus II	4		
Economics			
ECON 201 Introduction to Economics I (Macroeconomics)	3	F, Sp, Su	VEE (Grade B- or higher)
ECON 202 Introduction to Economics II (Microeconomics)	3	F, Sp, Su	VEE (Grade B- or higher)
Accounting			
ACCTNG 210 Introduction To Financial Accounting	3	F, Sp, Su	
Finance			
FIN 325 Financial Management	3	F, Sp	VEE (Grade B- or higher)
FIN 345 Investments	3	F, Sp	Exam 2(FM), Financial Mathematics
Statistics			
Stat 436 Introduction to Mathematical Statistics I	3	F, Su	Exam 1(P), Probability
Take six credit hours from the following courses:			
Stat 441 Introduction to Mathematical Statistics II	3	Sp	Exam 4(C)- Part I, Construction of Actuarial Models
Stat 496 Internship (Must be related to actuarial science)	3	on demand	
MEDB 5505 Introduction to R (offered online)	1	F, Sp, Su	
MEDB 5506 Introduction to SPSS (offered online)	1	F, Sp, Su	
MEDB 5507 Introduction to SAS (offered online)	1	F, Sp, Su	
Stat 480/5580** Statistical Models in Actuarial Science Currently offered as Math 490	3	Alt. Sp 2020 on	Exam 4(C)- Part II, Construction of Actuarial Models
Stat 482/5582** Statistical Models for Life Contingencies Currently offered as Math 490	3	Alt. F 2018 on	Exam 3(MLC)- Part I, Models for Life Contingencies
Stat 484/ 5584** Actuarial Theory of Pensions and Social Security Currently offered as Math 490	3	Alt. Sp 2019 on	Exam 3(MLC)- Part II, Models for Life Contingencies

Prerequisite Trees*:

Math 210 → Math 220 → Stat 436 → Stat 441.

Stat 436 → Stat 480.

Stat 436 → Stat 482 → Stat 484.

Acctng 210 → Fin 325 → Fin 345.

Econ 201 → Econ 202

* The minor has now been fully approved.

Emanuel Sierra Wins the 2018 Departmental Teaching Award

PhD student, **Emanuel Sierra**, won the 2018 Departmental Teaching Award. Emanuel started the Master's program in Mathematics in fall 2013 and graduated in spring 2015. he is currently a PhD student under the supervision of Dr. Noah Rhee. The department congratulates his achievement and wishes him the best in his personal life and career.

Graduate Student Wins GTA Excellence in Teaching Award

The winner of a 2018 School of Graduate Studies GTA Excellence in Teaching Award is PhD student, **Russell J Latterman**. He was a great help to our department. He recently moved on from UMKC due to family reasons. Congratulations to Russell!

Congratulations Dr. Gerry Baygents and Dr. Jones Mutua!

Gerry Baygents earned his doctoral degree in Mathematics with co-discipline in physics in Spring 2018, under the supervision of Dr. Majid Bani-Yaghoub. His thesis, "Spatiotemporal Modeling and Analysis of Disease Spread in Wildlife", has already given rise to two joint papers with Dr. Bani-Yaghoub. His dissertation is available at the MoSpace:<https://mospace.umsystem.edu/xmlui/handle/10355/64140> Dr. Baygents is currently a faculty member at Trinidad State



Left: Dr. Jones Mutua; Right: Dr. Gerry Baygents

Junior College, Colorado. In addition, **Jones Mutua** earned his doctoral degree in Mathematics under the supervision of Dr. Naveen K. Vaidya. Jones Mutua's PhD thesis title is "Modeling HIV-1 Infection and Immune Responses Under Drugs of Abuse", which is available at <https://mospace.umsystem.edu/xmlui/handle/10355/64525> Dr. Jones Mutua is currently a faculty member at the Department of Computer Science, Mathematics and Physics at the Missouri Western State University.

Congratulations to Jones, Gerry, and their supervisors.

Promotions & Tenure

This year two of our department members received promotions. **Dr. Majid Bani-Yaghoub** has been promoted to Associate Professor with tenure, and **Dr. Liana Segal** has been promoted to Full Professor. These awards follow on the heels of others in recent years: **Dr. Richard Delaware** was promoted to Teaching Professor in 2016. The department is fortunate to have faculty of such high caliber.



Top right: Dr. Richard Delaware; Top left: Dr. Liana Segal; Left: Dr. Majid Bani-Yaghoub

Join 2018-2019 Graduate Student Seminar Series! For more information visit <http://cas.umkc.edu/math/research/student-research/>

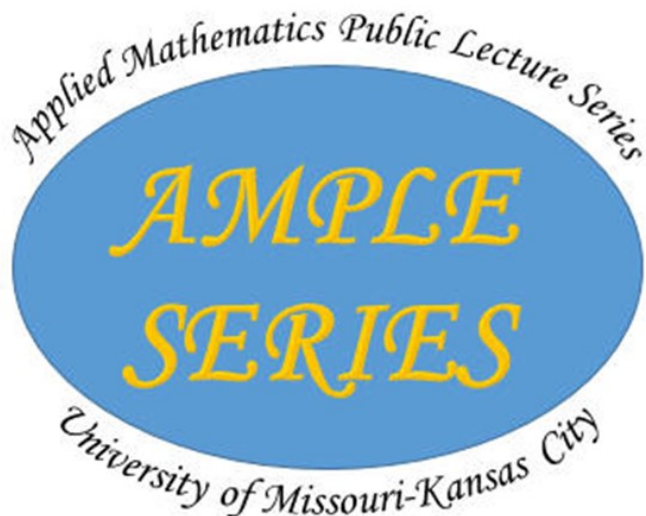
4th Annual Mathematics and Statistics Research Day, held on Friday, April 20, 2018

The Mathematics and Statistics Research Day is an annual event celebrating student and faculty research, creative, and scholarly activities. This event is open to the public and promotes research in mathematics, statistics, and applications in various fields. The UMKC Applied Mathematics Group (<http://cas.umkc.edu/math/amg/>) organized the fourth annual Mathematics and Statistics Research Day. To see the list of speakers, titles and abstracts, follow the link: <http://cas.umkc.edu/math/msrd18/> To learn about the activities organized by the UMKC Applied Mathematics, please visit <http://cas.umkc.edu/math/amg-act/>

Applied Mathematics Public Lecture Series: A great Success!

The Applied Mathematics Public Lecture (AMPLE) series is organized by the members of UMKC Applied Mathematics Group (AMG). The main goal of the AMPLE series is to illuminate the real-world applications of mathematics and to promote interdisciplinary applied mathematics research at UMKC. Visit <http://cas.umkc.edu/math/amg-act/> to see the schedule of Fall 2018 AMPLE series.

Several graduate students and faculty members have been pleased by the AMPLE series, since it provides a clear vision



of the current advances in different fields of applied mathematics in a language understandable for all students .

Two Math Majors Receive a Jedel Scholarship!

Source: <https://umkcfoundation.org/donors-dedication-to-art-and-business-inspires-giving/>

“Earlier this year, [The Jedel Family Foundation created by Harrison Jedel] established six non-endowed scholarships through the UMKC Foundation, three in art/art history and three in math. These scholarships provide \$2,000 per student, per semester, for a total of \$24,000...

“This scholarship was a huge stress relief,” says **Rachel Talmadge**, a Jedel scholarship recipient who is in her last semester studying math and statistics. “I did not have to spend so much energy worrying about day-to-day bills. I had time to devote to understanding the material and participate in study groups.” Talmadge was able to complete an internship in Kansas City with Novogradac & Company, a professional services company that offers accounting, valuation and consulting. The internship led to a part-time job while she’s been pursuing her degree. Talmadge will begin her career there when she graduates in May. “Before I received the scholarship, I was working part-time at a restaurant and had to work all weekend,” she says. “It really cut into my study time. This scholarship really made a difference.”

Fellow Jedel Scholarship recipient **Whitney White**, who is planning to graduate with a bachelor’s degree in mathematics and statistics and physics, agrees that her scholarship alleviates the financial stress of tuition, but for her the benefits go beyond that. “This scholarship enables me to be a good mother,” White says. “I work part-time now, but with my scholarship it’s easier to afford tuition. I don’t have to stress as much about child care and a work-life balance.”

White plans to pursue her master’s in electrical engineering upon graduation.

Big Congratulations to Recent Math and Stat Graduates

The Department of Mathematics and Statistics congratulates the following recent graduates with a degree in mathematics or statistics.

Fall 2017

Nguyen	Ngan
Monteleone	Michael
Jusic	Elmir
Little	Taylor
Moore	Rhiannon
Noory	Jasmine
Skidmore	Hugh
Richman	Michael
Thomas	Patrick
Reed	Ryan
Alharbi	Bedoar
Azeez	Ahmed
Uhl	Peter
Doddala	Mohan
Hou	Hongyan
Zhou	Mengru

Spring 2018

King	Peterson
Connor	McLeod
Ross	Monteleone
Shelby Lynn	Bell
Brittani	Keen
Callie	Lane
Rui	Li
Joseph	Lipoff
Honglan	J Reid
Bailey	Schumm
Brandon	Swanson
Alexandra	Watson
Garrick	Zinecker
Gerald	Baygents
Lamaas	T. Bey
Sara	Miller
Russell	Smedley

Kyle	Wright
Spencer	Smith
Stephen	Gardner
Coltharp	Jean
Kim	Hongkil
Mutua	Jones

High School Students participate in the 2018 Integration Bee and Recruitment Event

Thursday, April 27, 2018

The Integration Bee contest is an annual integral calculus competition pioneered in 1981 by the Massachusetts Institute of Technology. As organized by Mr. Baygents and members of UMKC Math Club, the Integration Bee was in two parts. The first part was a 10 minute multiple choice section of “easier” integrals to be done in 15 – 30 seconds.

This year, students of Winnetonka High School (North Kansas City School District) and Park Hill High School (Park Hill School District) joined the Bee.

The top finishers in the first part competed in the second part. There was a page of more difficult integrals, generally requiring techniques learned in Calculus II. Students had 30 minutes to work as many as possible. Following the Integration Bee, there was a Math information session presented by Dr. Majid Bani-Yaghoub, a presentation about the UMKC College of Arts and Sciences, and a campus tour.

Do you know about the Math and Stat Fast Track programs? Earn your bachelor's and master's degrees in 5 years.

<http://cas.umkc.edu/math/degree-programs/fast-track-programs/>

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Mid and End of the Fall Semester Departmental Gathering

The Math & Stat faculty and students gathered on Friday, December 15 in Haag 301 at 3:00 pm to enjoy and celebrate the end of fall 2017. The gathering was filled with the chair's remarks, light music, pizza, and faculty-student conversations.



Two Departures & Two Arrivals

It is a pleasure to announce that **Dr. Nadeesha Mawella** joined UMKC in Fall 2018 as an Assistant Teaching Professor, after completing her Ph.D. in Statistics from Kansas State University. Dr. Mawella's research was focused on developing a robust test of homogeneity under zero-inflated models for count data. She received her BS in Statistics and Operations Research from the University of Peradeniya, Sri Lanka. She has taught a wide variety of undergraduate Statistics courses during her time at K-State and also as an Instructor at the University of Peradeniya following her BS degree. She is enthusiastic about teaching and collaborating with other fields of Science through Statistics.



The other great addition to the department is **Dr. Said Shehab**, who completed his PH.D. in Pure Mathematics under a Protocol between Poitiers University, France and Ain Shams university, Cairo, Egypt (Channel System). The research had been done at Poitiers University. He started his career in teaching Mathematics at Poitiers University. Then, he joined the faculty of science at the United Arab Emirates University where he participated in developing programs and creating new curriculum. He wrote the book "Mathematics for Social Life". With his colleagues, they organized the Mathematical Olympiad in the U.A.E. sponsored by "Emirates Association for Talented", Dubai, United Arab Emirates. Dr. Said Shehab joined UMKC in August 2018.

We learned that **Dr. David Spade** has accepted a job offer at the University of Wisconsin-Milwaukee. Dr. Spade joined our department in January 2013.

Lastly, **Dr. Hristo Voulou** is on leave this year, and will retire at the end of that leave. He joined our department in 2003.

UMKC Math Competition Team Praised by Math & Stat Faculty and Students

Team members **Kevin Woods, Hope Mertz** and **John Dunz** were awarded certificates by the UMKC Math & Stat department for their courage and hard work in participating in the Missouri Collegiate Mathematics Competition, which is administered by the Missouri Section of the Mathematical Association of America. For more information please visit <https://www.math-cs.ucmo.edu/~hchen/contest/>



Blue Springs High School Students participate in the 2017 Math Recruitment and Student Showcase

Tuesday, October 31, 2017

The Fall 2017 student showcase was organized by the UMKC Department of Mathematics and Statistics and the UMKC Math club. Undergraduate students shared their regional experiences about math and stat internships, industrial and applied math jobs, and stat careers. This was followed by a presentation of math and stat degree and course offerings and three featured presentations of undergraduate students as follows.

1. **Mary Cox:** "The importance of summer internships"

11:20 – 11:40 AM

2. **Joseph Lipoff:** "Statistical modeling & data analytics"

11:40 – 12:00 PM

3. **Brandon Swanson:** "Industrial mathematics" 12:00 –

12:20 PM

Math and Stat degrees and course offerings at UMKC

12:20 – 12:30 PM



Celebrating Pi Day at UMKC

The Math Club and MSGSO organized and celebrated Pi Day on Wednesday (March 14) from 11:00 to 1:00 on the first floor of Manheim Hall.



PI DAY



Math Club provided Math Activities in a STEM night at the KC International Academy

November 28, 2017

Members of the UMKC Math Club volunteered at the STEM night event and helped K-8 students understand math concepts through STEM activities.

The event took place at the Kansas City International Academy (KCIA), formally Della Lamb Charter School, a Kindergarten through 8th grade Charter School located in the Kansas City Missouri School District. KCIA's focus is creating a world class school with an international focus. Many of KCIA's students are members of families who have immigrated to Kansas City from over 15 different countries, including Somalia, Vietnam, Kenya, Egypt, Turkey, Sudan, Burma, Thailand, Honduras, Mexico, Iraq, Saudi Arabia, Syria, Ivory Coast, Haiti, Congo, Tanzania, Ethiopia, Burundi, Cameroon, Chad, Cuba, Djibouti, Eritrea, and Yemen. In 2016, Kansas City International Academy became a separate organization focused exclusively on providing educational services to its students and families.

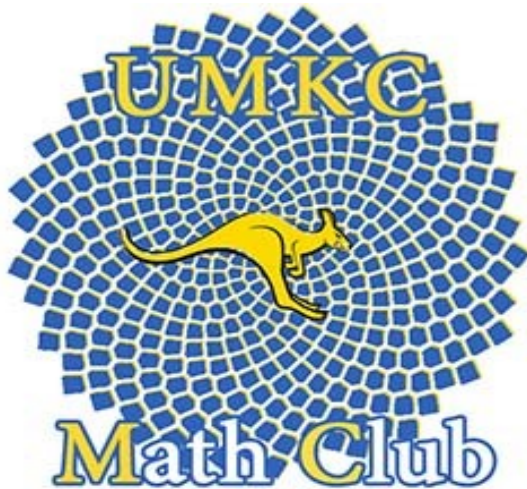


Student Organizations associated with the Department of Mathematics and Statistics



The purpose of the UMKC Chess Club is to provide a friendly environment in which its members may play, instruct, and discuss chess. The Chess Club will supply chess sets and clocks for its members. It also holds at least one open tournament annually, for all interested UMKC Students and future potential students. The Chess Club is dedicated to advancing chess by offering instruction to all UMKC students and future potential students.

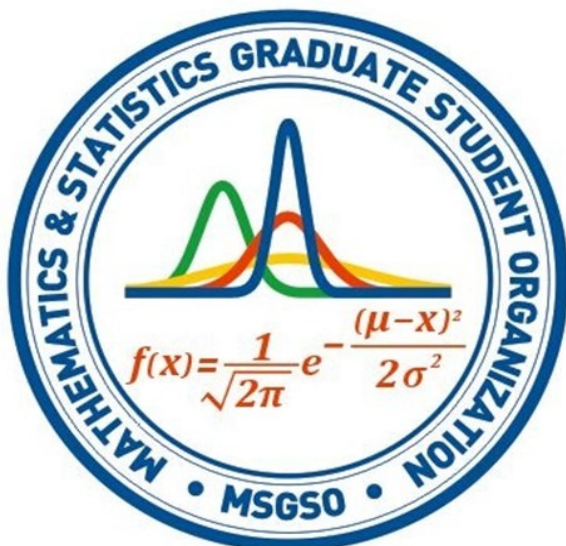
Find out Chess Club meetings and activities at: <https://roogroups.collegiatelink.net/organization/ucc/documentlibrary>



The UMKC Math Club promotes interactions between faculty and undergraduate students; provides math-related activities such as problem of the week, math movie nights, and math contests; invites math alumni and various employers to give insight into the current math job market; facilitates communication between math graduate and undergraduate students.

Location: Manheim Hall Room 205 C

You can learn about Math Club meetings and activities at <https://roogroups.collegiatelink.net/organization/umkcmc>



The purpose of MSGSO is to represent the graduate student body of the UMKC Department of Mathematics and Statistics; to provide a forum for graduate student opinion; to act as a voice for the graduate students in matters of mutual interest to graduate faculty and students; and to promote professional interest and fellowship among the graduate students.

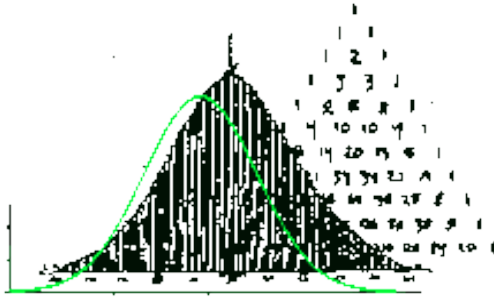
Location: Manheim Hall Room 205 C

You can learn about MSGSO meetings and activities at <https://roogroups.collegiatelink.net/organization/UMKCMMSGSO>

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Type address here or use Mail Merge
 to automatically address this
 publication to multiple recipients.



Visit our Website at <http://cas.umkc.edu/Mathematics>

Become a Member!

We encourage you to register as a member of the **UMKC Alumni Association**. Just go to the UMKC alumni website www.umkcalumni.com, click on the tab at the top of screen called "MY PROFILE/LOGON", and follow the instructions.

If you would like to donate to UMKC, please visit the **UMKC Foundation** web pages at <http://www.umkc.edu/umkc-foundation/>, where you will find links to Gift Planning, the Alumni Fund, creating a scholarship, and so on. **Our department is one of the few with no department scholarships for our undergraduate majors, and you might be the first to initiate one.**

Send Us Your News!

We're always happy to hear from you. Send a paragraph or two and let us know what you have been up to. Pictures are welcome.

Please include your name, mailing address, and email address so we can contact you.

Send to: Dr. Richard Delaware at delawarer@umkc.edu

or
 RooMath News, Dept. of Mathematics & Statistics, HH206, University of Missouri-Kansas City, 5100 Rockhill Rd, Kansas City, MO 64110

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