Letter from the Directors

We are pleased to issue our first MCFAM Newsletter. It has been three years since MCFAM (Minnesota Center for Financial and Actuarial Mathematics) was established, based on the common ground shared by the actuarial mathematics and quantitative finance fields in education, research and practice.

MCFAM houses the undergraduate Actuarial Mathematics and the Master of Financial Mathematics (MFM) programs. The Center also brings together students, academicians and practitioners by offering a variety of enriching experiences, such as Distinguished Lecture Series and Symposiums, the Financial Mathematics Friday Seminar Series, curriculum additions in both MCFAM programs, as well as many Industry and Career Events for students, faculty and industry. Many of those activities are highlighted in this issue.

MCFAM’s success results in large part from the enormous support from the School of Mathematics and the active collaboration with industry practitioners, who teach in MCFAM courses and workshops, generously donate funds to MCFAM, participate in the Actuarial Mentoring Program, Winter MFM Modeling Workshop and MFM Seminars, and serve on MCFAM Advisory Boards. We take this opportunity to thank you all as we kick off the 2013-14 Academic Year at the University of Minnesota.

Rina Ashkenazi, Academic Director – MCFAM
Laurie Derechin, Executive Director - MCFAM

http://www.math.umn.edu/mcfam/
MCFAM First Annual Summer Symposium – July 2013
Modeling Risk in Banking and Insurance: Catching the Next Crisis

During MCFAM’s first summer symposium, we created a forum for students, faculty and banking and insurance practitioners to learn about and exchange ideas on best risk modeling practices.

MCFAM was fortunate to receive a very generous gift from Securian Financial Group and part of the gift was used to fund the Symposium. We are grateful for the leadership role Securian took to help MCFAM spearhead what was a very collaborative and thought-provoking weekend.

The 75 participants of the symposium started with an overview of risk taxonomy and regulation on Friday afternoon and a reception followed with a keynote speech by Leslie Chapman, Chief Risk Officer and Chief Actuary for Securian. The sessions on Saturday and Sunday delved deeper into specific risk modeling areas for both banking and insurance. Risk leaders from Securian Financial Group, US Bank, The Travelers Companies and Allianz Life also participated in a panel discussion to pinpoint the impact of new regulation on their businesses.

Throughout the entire weekend there was a great dialogue between presenters and attendees. We are extremely thankful for the outstanding participation from so many local, national and international speakers who helped make the symposium such a success.

Link to full symposium details: 2013 MCFAM Summer Symposium – Modeling Risk in Banking and Insurance – Catching the Next Crisis
http://www.math.umn.edu/mcfam/summer-symposium/

MCFAM Distinguished Lecture Series: 2012–2013

A variety of students, faculty and industry professionals from around the Twin Cities attend this public lecture series. Our distinguished lecturers also meet with MCFAM administration and faculty to share their insights and support on the development of our Center.

- Dr. Peter Carr gave a lecture on Risk, Return and Ross Recovery on October 19, 2012.

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Hello, my name is Abby Truhler and I have the great pleasure of being the President of the Actuary Club for the 2013-2014 academic school year. A little background about myself: I am in my senior year pursuing a bachelor’s degree in Mathematics with an Emphasis in Actuarial Science. I have been a member of the Actuary Club since I was a sophomore, and have been an officer for the last two years as well.

Our main objective this year is to provide our members a window into all the careers available to them with a math and/or actuarial degree.

It was brought to my attention numerous times last year that students weren’t sure whether they wanted to actually become an Actuary and if they didn’t, where would that lead them? So this year we are going to not only educate our members on actuarial careers but other analytics positions that are also available to them. Our company information sessions have just begun and there is a lot of interest from many different firms this year. It is going to be a fantastic year!

Please contact me if you have any questions about the Actuary Club or for me specifically, at truhl007@umn.edu.

Thank you,

Abby Truhler – President,
Actuary Club at the University of Minnesota

A Note from The Club Presidents

Hi, I’m Yao Deng, the incoming President of the FMA. I am a second year MFM student. The FMA is an association of MFM and other interested quantitative students from around the University. We are excited to initiate some new FMA activities this year.

Our first Fall Quant Finance and Analytics Career Fair is on November 8 in the Mississippi Room in Coffman Union. As

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always, all interested MCFAM students are welcome.

We are also starting a bi-weekly meeting on Friday afternoons before the MFM seminar where quantitative finance professionals from local companies talk about their career tracks. Many of them are MFM alumni.

As well the FMA is organizing Chicago Trek for MFM students who will be graduating in May 2014. Our students will have the opportunity to meet with different firms on-site and get a feel for full time job opportunities in the Chicago area.

If you have any suggestions or you would like to participate in the FMA, please contact us at fma@umn.edu. Also please make sure to visit the FMA website: http://www.tc.umn.edu/~fma/

2013 Winter MFM Modeling Workshop with Industry Mentors

MCFAM held its annual 10-day Financial Mathematics Modeling Workshop in the winter of 2013 between fall and spring semesters. As is done every year students work in teams of up to 6 students under the guidance of a mentor from the financial modeling/trading sector. The mentor guides the students in the modeling process, analysis and computational work associated with a real-world financial modeling/trading problem. Each team makes a final presentation to all workshop participants and mentors and submits a written report at the end of the 10-day period. The team topics and mentors for the 2013 MFM Winter Modeling Workshop are listed below. For more detail on each project go to: http://www.math.umn.edu/finmath/modeling/

1. Financial Information Exchange – FIX: Mentor Chris Prouty (Cargill Exotics Trader/MFM Instructor – U of Minnesota)
2. Cash Flow At Risk For Non-Financial Corporations: Dr. Nelson Neale (Market Strategist, Land O Lakes)
3. Monte Carlo for Multi-Asset Options and Stochastic Volatility and Jumps Models: Dr. Zhen Liu, (MCFAM Assistant Professor, School of Mathematics – U of Minnesota)
4. Statistics and Optimization for High Frequency Data: Dr. Chris Bemis (Senior Portfolio Manager, Whitebox Advisors/Affiliated Faculty & MFM Instructor, School of Mathematics – U of Minnesota)
Student Club Career Fairs

Actuarial Club Career Fair

This year the Actuary Club is proud to be holding its 4th Annual Career Fair. The Actuary Club has been hosting a career fair, of some sort, since 2009. Over the years it has involved all kinds of students and employers from various companies.

The Actuarial and Financial Mathematics Career Fair will be held at TCF Bank Stadium, in the DQ Club Room, on Thursday, October 10th, 2013, from 12pm to 4pm. Continuing with our tradition, any student with a mathematical, statistical or economic background is invited to attend, regardless of where they attend school.

The goal of the fair this year, is to not only help students connect with and find internships and full time positions within actuarial firms, but also to help expand students options by exposing them to financial firms and corporations that have significant data analytics/ sciences departments.

For more information on the Fair or to register, go to http://www.tc.umn.edu/~actuary/career-fair.html

FMA Quant Finance & Analytics Career Fair

This will be the first annual Quant Finance and Analytics Career Fair sponsored by the students of the FMA. It will be held on November 8, from 6pm to 9:30pm in the Mississippi Room at Coffman Union. Many firms from the quantitative finance and analytics sectors in the Twin Cities are invited including Banking, Insurance investment, hedging and analytics groups, Hedge funds, Asset/Capital Management, Agribusiness, Investment Banks, Trading, and Data Analytics/ Business Intelligence.

University of Minnesota students from the following list will be attending the 2013 Quant Finance and Analytics Career Fair:

- MCFAM Financial Mathematics Master students and interested Actuarial Undergraduate students and recent alumni.
- Ph.D. candidates in Mathematics, Statistics, Economics at the University of Minnesota
- Members of the Financial Math Association at the University of Minnesota.

For more information on the fair or to register as an employer or a student, please go to: http://www.tc.umn.edu/~fma/careerfair.html
Actuarial Mathematics in Practice Case Problem Solving Course Offers Students Real-World Experience

Math 4067W, Actuarial Mathematics in Practice, allows students to try on a few actuarial hats before leaving their undergraduate experience behind. Three different case study modules, developed and taught by guest actuaries, are offered every semester as a part of Math 4067W. This course offers a tremendous opportunity for students to gain a higher level of professional communication experience while building practical technical knowledge that is widely used in the field today. Team participation skills are also a key component. Student teams use their emerging business knowledge and technical skills to build solutions to realistic problems presented by the guest actuaries.

The modules represent current scenarios relevant to actuarial practice in the Retirement, Life, Property & Casualty, and Health Care Insurance industries. We are very grateful to our actuarial partners who bring expertise and commitment to the program.

Actuarial Alum Profile: Claire Kingstad

Claire Kingstad graduated with a B.S. in Mathematics, Actuarial Specialization in May 2013. She is currently employed as an actuarial student within Aon Hewitt’s retirement consulting division in Minneapolis. She has passed the first three actuarial exams (P, FM, and MLC) and continues to work towards attaining her Fellow of the Society of Actuaries designation. She’s very busy with her new job and planning her wedding in November. Following is a little more information about Claire.

Describe your past internships or job experience: I had my first taste of real actuarial work during my 10-week internship here at Aon Hewitt last summer. Before that my only other work experience had been through various customer service-related jobs. While my initial actuarial experience has been most helpful in acclimating to my new full-time position, there is still a lot to be said for experience in a customer service field, especially for going into consulting.

Describe your current position: My current position is an actuarial student within Aon Hewitt’s retirement consulting division in Minneapolis. Our group works with clients to help them administer and manage their retirement benefits. Since I am in the student program, a large emphasis is placed on studying for and passing exams; the program supports me by providing all of my study materials and allotting a certain number of study hours for each exam/module.

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How did your education at the University of Minnesota help prepare you for your actuarial career?: I was in one of the first course offerings of the Actuarial Math in Practice class in my junior year and was exposed to real-world actuarial problems, taught by several local industry actuaries. Prior to this course, I hadn’t actually had any idea of what sort of day-to-day work actuaries did, so the experience really gave me a leg up going into my summer internship between my junior and senior year. A broad knowledge of Excel functionality is very important for new actuarial employees, and between the projects assigned in this course and the other actuarial courses in my major, I received a healthy overview that certainly contributed to my technical preparation.

In addition, the courses that were geared toward each of the preliminary exams I’ve taken (and passed!) thus far were amazingly helpful in my exam preparation.

What are your long-term career goals?: The main thing on the horizon is to obtain my FSA credentials, certainly within the next decade but ideally within the next five years. As an Aon colleague, I’m fortunate enough to be part of a professional growth structure that encourages associates to develop specialized skills based on our interests and talents.

What do you miss most about the University of Minnesota?: Well it is still sinking in that I am not a student anymore and that I’m not going back to school. Lately I’ve really been missing just being on the beautiful campus grounds, and especially being able to walk over to Raising Cane’s with my friends for an after-class snack!

As an Aon colleague, I’m fortunate enough to be part of a professional growth structure that encourages associates to develop specialized skills based on our interests and talents.

Current MFM Student Profile – Jinhua (Colin) Huang

Jinhua Huang is going into his second year of the full time MFM program. He is from Maoming in Guang Dong province in the South of China. He has a B.S. in telecommunications engineering. His interest in financial mathematics was sparked by a 10-month project he did for the Ministry of Education on the investment and financing of China’s Pension Plan. Jinhua has combined his programming and financial mathematics skills in two different internships here in the Twin Cities. In July he finished up a 4-month internship with DerivActiv, which does third party valuation of investment portfolios. He is now a quant software development intern for Open Access Technology Inc (OATI) where he is helping to create software infrastructure for energy trading.

What are the things that have most helped you in your first year of the program?

The teachers are great – as well as being professors, many of them are also practicing quants in the Twin Cities and Chicago. So you get both the theoretical and practical perspectives of financial mathematics. Also, my classmates in the program are excellent. Both the full time students and the part time students, who are working in the quant finance industry, take all courses together. It has allowed me to start interacting with industry people immediately. The career fairs, MFM seminars and networking events are helpful too. I actually found my first internship in the Twin Cities through a networking event.
During the 2012-13 school year MCFAM launched a pilot actuarial mentoring program. During the pilot we matched 37 pairs of mentors and mentees. The mentors were practicing actuaries from Twin City actuarial firms and the mentees were University of Minnesota Mathematics Majors with the Actuarial Specialization.

The pilot was a success. These mentoring relationships allowed actuarial students to learn more about the actuarial field, build their professional network, refine their communication skills, explore new areas of interest, and gain exposure to career advice. Additionally, the mentoring relationships allowed the practicing actuaries to guide prospective students and strengthen their ties with the actuarial program at the University of Minnesota.

We have expanded the program for the 2013/2014 academic year.

If you are interested in participating in the Actuarial Mentoring Program, additional information is available on the MCFAM website: http://www.math.umn.edu/actuarial/mentoring/
The Master of Financial Mathematics (MFM): Preparing Students for a Number of Different Jobs in Quantitative Finance

The study of Financial Mathematics within MCFAM at the University of Minnesota combines the mathematics of probability, stochastic processes and partial differential equations along with statistics, economic theory and computer programming. MFM students learn how to develop financial models and analytical techniques that help a variety of financial institutions make pricing, hedging, trading and portfolio decisions to manage risk and gain the best returns on their investments and operations.

MFM alumni go into many different careers: risk modeling and analytics, data analytics, quantitative financial software development, insurance hedging, portfolio management and derivative securities valuation, swaps and trading. Placement rates over the past three years have gone from 85% in 2011 to 95% in 2012 and just 5 months out from graduation almost 70% of our 2013 MFM alumni are already placed.

The chart below outlines the types of job offers our alumni receive after graduating from the program.

MCFAM's MFM program is ranked in the top 25 Financial Mathematics and Financial Engineering Programs in North America.

For more details go to: https://www.quantnet.com/mfe-programs-rankings/
Online P Exam Workshop – Coming Spring 2014!

Want to join a workshop for the P exam but can’t fit it into your schedule? This new online workshop will offer structured guidance supported by videos, short warm-up exercises and additional practice problems; the problems progress through basic material to more challenging problems, and a pen-and-paper practice exam at the end. The 10-12 week program will increase availability to students with restricted schedules, and will replace the classroom experience currently offered. It is not intended to substitute, but will support and enhance, a student’s own studying routine.

As we develop this online workshop, there will be various ongoing opportunities for students who have passed the P exam to be involved. Contact Doreen Vescelius (vesce003@umn.edu). You will be able to select a problem you are interested in from a predefined list. Everyone is encouraged to participate!

Sitting for and passing Actuarial exams is an integral part of an actuarial student’s educational career, and the typical student will take 2-3 exams before graduation. Both guided study sessions and a rigorous selection of course requirements help MCFAM students succeed. New students considering the workshop should be aware that Math 5651, Basic Theory of Probability & Statistics, is a prerequisite. Registration is free and open to all actuarial students in the area.

Information about signing up for the P Exam Workshop will come later in the semester.