

# μmätuary<sub>X</sub>

THE UNIVERSITY OF MANITOBA ACTUARIAL CLUB NEWSLETTER

ASNA ○ INTERNSHIPS ○ EXCEL WORKSHOPS ○ ASPER SCHOOL  
OF BUSINESS ○ UMAC CUP ○ FACULTY OF SCIENCE ○ MENTORSHIP ○  
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FEBRUARY 2018



# MESSAGE

*From Frederick Sackey, Communications Chair*



Hey everyone, I hope your Winter semester is going well and you had the chance to re-charge after a busy

and exciting Fall semester in UMAC. This edition of the *Umactuary* will be my last full-length publication as Communications Chair. I have truly enjoyed sharing stories with you and creating new topics to help students. I look forward to developing the financial report with our Treasurer this Spring and supporting my successor in further improving the newsletter. On that note, I would **strongly encourage** anyone interested in becoming the next Communications Chair to run in this year's UMAC elections (see pg. 7). Show off your creative side and have fun with the *Umactuary*, I sure did! Thanks everyone and have a wonderful 2018.

Sincerely,

*Frederick Sackey*

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*Tips and tricks shared by students on how to pass actuarial exams*

# Nov-Jan in Review

## UMAC Excel Workshop—Nov. 15

Recent UofM graduate Sean Seavers from Great-West Life provided students with hands-on experience in Microsoft Excel through a tutorial session in November. During this workshop, students were introduced to many basic, intermediate, and advanced excel functions, along with a few real-world applications of Excel.



## 3rd Annual UMAC Cup—Nov. 25

During this year's UMAC Cup, teams were challenged with developing a business strategy for a local clothing manufacturer on how it should handle a recent federally imposed carbon tax which would affect its production and transportation systems. The judges were delighted to see so many creative ideas from each team, given the limited time and resources students had to prepare their proposals.

**First Place**  
Kyra Lyle  
Abby Koots  
Christy Deo Natalie  
Thais Castillo



**Second Place**  
Takunda Taimu  
Frederick Sackey  
Nadia Lapteva  
Devon Molloy



**Third Place**  
AJ Ferens  
Rachel Reeves  
Gecelle Panganiban  
Kyle Palamar





## ASNA Convention—Jan 5-7

OTTAWA 2018

In January, UMAC traveled to Ottawa to attend this year's Actuarial Students' National Association conference for a weekend of networking, interviews, and various social events with other actuarial students and employers across Canada.



# Preparing to Predict

Frederick Sackey

**E**ffective July 2018, the Society of Actuaries (SOA) is updating its ASA curriculum to better align with the challenges facing the insurance industry today (Olsen). More specifically, students will now be required to learn various strategies used by insurers to overcome these issues, such as Predictive Analytics (PA). The following is a synopsis of this change described in the PA exam syllabus draft:

*The Predictive Analytics exam is administered as a five-hour project requiring analysis of a data set in the context of a business problem and submission of a report. Candidates will have access to a computer equipped*

*with Microsoft Word, Microsoft Excel, and RStudio. The report will be submitted electronically.*

...

*As outlined in the syllabus, the goal for this examination is to demonstrate the ability to employ selected analytic techniques to solve business problems and effectively communicate the solution.*

For many students, the addition of this subject is simply more work and a tactic to prolong an already endless path of exams and modules. However, by taking a more optimistic perspective, you may realize that learning about PA will prepare you for the road ahead as big data and

technological advancements continue to sweep the insurance industry and influence the day-to-day work of actuaries.

Predictive Analytics is used to determine the probability that a future event will occur (SAS). This is accomplished by applying statistical analysis, analytical queries, and automated machine learning algorithms to data sets to develop a predictive model consisting of multiple variables. The result of the model is a numerical value corresponding to the event and its likelihood of occurring. Through PA, new and historical data can be used to forecast future activities, behaviours, and trends (Rouse). The primary benefit of PA is that it provides more information to help with decision making for business leaders (Deloitte Consulting LLP). Furthermore, the value of PA is derived from its many applications which include detecting fraud by identifying patterns in criminal behaviour, analyzing customer interactions to improve marketing efforts, and reducing risk for creditors through credit score systems (SAS).

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In the insurance world, PA is applied most notably in underwriting and claims management. For instance, when reviewing insurance applications, PA allows underwriters to recognize cases of fraud (Delphie Technology). Through this, underwriters can reduce the possibility of accepting misleading or inaccurate information from customers and the risk of anti-selection (cases where individuals who are more likely to claim than most people will buy insurance). Furthermore, for property and casualty insurers, PA helps to develop more accurate predictions of loss ratios and loss relativities, along with enhancing the selection, segmentation, and pricing of policies to improve underwriting margins. Within claims management, PA is used to categorize property and casualty claims based on their complexity and distribute them for further

processing within an insurance company (Najim).

With this new assessment, it is clear the SOA wants students to be more analytical by applying course material to real-world scenarios. The PA exam (or project) will require students to understand data collection and validation, identify/analyze a business problem, and recommend a specific model to be used to resolve the issue (Society of Actuaries). Speaking from personal experience, skills such as these are important as most actuarial roles require employees to understand methodologies behind the collection of source data (such as claims information for reserves), as well as updating complex actuarial and financial models.

Within insurance, there is a constant push for innovation and creativity to meet the changing and diverse needs of new

generations of policyholders. As customers desire a simpler and faster purchasing process, automating insurance distribution will be a vital step for all companies. Therefore, with less underwriting and faster insurance pricing, exploiting the capabilities of PA will allow insures to manage any future risks caused by this shift in consumer expectations.

### Citations

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# Upcoming UMAC Events

## February—March

### Excel Workshop

*6pm, Drake computer lab, no registration required*

Mon, Feb. 12th

### First Annual Coding Competition

*Mar.1st—Project released to contestants, Mar.22nd—Winners announced (Cash prizes)*

Thurs, Mar. 1st/22nd

### Poker Night

*Off campus location*

Sat, Mar. 17th

## ELECTIONS (for the 2018-2019 UMAC Exec team)

### UMAC Town Hall

*5:30pm, Drake Centre (Rm. 107)—Current UMAC execs talk about their roles to anyone interested in joining the 2018-19 UMAC Exec team*

Mon, Mar. 5th

### Platforms Deadline

*Anyone running for a UMAC position must develop a platform outlining their plans/goals for next year and email it to [exec@lists.umanitoba.ca](mailto:exec@lists.umanitoba.ca). For more info about creating one feel free to email us as well.*

Thurs, Mar. 15th

### Election Day! & Social Event/Election Results

*Election: 4-6pm, Drake Centre (Rm. 122)—Candidates will make their final speeches for YOUR vote.  
Social Event/Election Results: 6:30-9pm, The Hub Social Club (University Centre)—Come play some pool, eat wings, and watch as the election results are released.*

Thurs, Mar. 22nd

Stay up to date on UMAC  
events by visiting our  
social media page!



@umactuarialclub 📸

# A Blend of Business and Technical

*David Deha, Wawanesa Mutual (Winnipeg, MB)*

**H**ello UMAC! My name is David Deha and I am a 4th year student majoring in Statistics and Actuarial Science. This past summer, I interned at Wawanesa Mutual, one of the largest mutual insurance firms in Canada. I was part of the Insurance Solutions department which is responsible for designing and pricing the products offered.

During their term, interns at Wawanesa Mutual each get assigned a project. My project consisted of automating the quote analysis process. A quote analysis is an exercise that helps assessing the competitiveness of the company and identifying areas that could be targeted for growth.

I learned a lot during my term, from familiarizing myself with programming languages and using them to solve problems, and more importantly, learning the mechanics of the insurance industry. There was a lot of help from everybody on my team, whether it was for explaining new concepts, writing and/or fixing code, or giving insights on how to better summarize results.

While working on this project, I was amazed by how much

ownership I got over my work and the amount of autonomy I had on some aspects of the project. Towards the end of the term, each intern presents their project to the actuarial team. This gives us the opportunity to present our work to a broader audience and also talk about the challenges we encountered while working on our projects. One of the biggest challenges I encountered was refining my communications skills to better convey my ideas given that English is my second language. This opportunity gave me a chance to step out of my comfort zone and learn to work well in a team. A few other skills I improved on included learning how to be concise and documenting technical processes.

Wawanesa is a friendly and diverse company and it is very easy to get along with the people around. Each intern gets assigned



a seasoned actuary to be their mentor and inform them about the different areas of the company outside their specific department.

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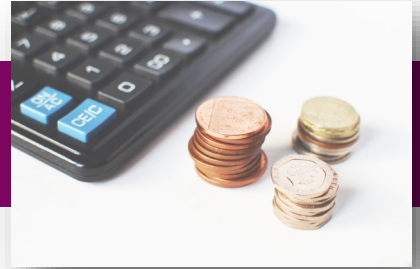


The actuarial group usually gets together for coffee breaks, lunches, after work drinks, games, etc. and we get to connect on a personal basis. We also hold a few traditions within the actuarial community, from playing pranks on new fellows to making interns take part in interesting activities.

The first few weeks of the internship are used for training as most of the courses offered in university are only focused on the theoretical aspects necessary to build a foundation for actuarial concepts. Wawanesa creates an open learning environment. I learned a great deal during my term, and I know I still have ways to go. This internship has also helped me to identify the areas where I was lacking in regards to my actuarial education. Many times during my term, I felt that I was not trained to practically approach problems, which made me understand the need to blend both technical and business skills in order to become a well-rounded actuary, geared to respond to the needs of our industry as it is currently undergoing many changes. As students, it is important to aspire to continuously improve ourselves, and take advantage of the resources offered by both tracks.

# Passing Actuarial Exams

*Tips and tricks shared by students on how to pass actuarial exams*



## Exam FM - Shaharyar Noordin

**Exam Date:** June 2017

### ♦ Opinion of exam difficulty

Okay, a few surprises but overall not too difficult.

### ♦ Study Strategy

I started studying for Exam FM from May 8th and wrote it on June 13th, 2017. The total duration was approximately 6 weeks and I was on a co-op work term during this time. For the first two weeks, I studied 3 hours a day. For the next two weeks, I studied 4 hours a day. In the last two weeks, I attempted 6 practice exams in total on Adapt and did revision of the new topics which were not covered in the Interest Theory course. The questions tested on the exam were similar to those from the ASM Manual.

### ♦ Relevant courses completed before exam

Interest Theory (ACT 2120), very helpful

### ♦ Study manual

ASM 9th Edition (Financial Math), very helpful.

### ♦ Online study software

Coaching Actuaries/Adapt (2-week subscription), pretty helpful. Earned level reached: 8. Also, the SOA's online question bank was useful because the questions were very representative of the real exam.

### ♦ General Advice

I would recommend taking Interest Theory (ACT 2120) before writing this exam. Some study tips I would suggest would be to practice as much as possible from the ASM Manual and check-mark the topics you have covered from the SOA's exam syllabus so that you don't miss out on anything. One advice I would like to share from my Interest Theory professor, Jeff Strong was "know what you know and know what you don't know" was very useful since I was pretty sure what to expect on the exam. Lastly, a study trick that works for me is preparing a sheet of all the important formulas and revising it everyday before the exam.

Lastly, a study trick that works for me is preparing a sheet of all the important formulas and revising it everyday before the exam. I'm also happy to share my summary notes and formula sheets with anyone writing the Exam FM. I can always be reached out at my email address shaharyar.noordin1995@gmail.com or on my number at 204-952-1785.

## Exam P - Corey Haverstick

**Exam Date:** September 2017

### ♦ Opinion of exam difficulty

Okay, a few surprises but overall not too difficult.

### ♦ Study Strategy

I started studying mid July, during the summer months there are a lot more things to drag you away from studying so I got a head start in the process. I studied about 10-15 hrs a week some weeks a little more than others. I did about 20-25 practice exams from adapt, the highest level I passed was a level 7. I did the TIA exams as well but in my opinion they were a lot more abstract.

### ♦ Relevant courses completed before exam

Probability 1 (STAT 2400). It definitely taught me a lot of the concepts, but more theory than what was needed.

### ♦ Study manual

Adapt P Manual and Actex Manual, very helpful

### ♦ Online study software

Coaching Actuaries/Adapt (30-day subscription). Earned Level: 10 (highest exam difficulty I attempted was a 7)

### ♦ General Advice

I thought the Adapt P manual taught me everything that I needed to know. The Actex was good as well, just a different style, but it also covered recursive expressions and a short cut for finding the variance for MGF's which I didn't find in the Adapt manual.



## Exam C– Maxine Labossiere

Exam Date: June 2017

### ♦ Opinion of exam difficulty

Challenging, I really had to think through most questions

### ♦ Study Strategy

I took the ACT 4630 class over the winter to learn the material for this exam. I thought the class did a good job of going over all the material but there are some tips and tricks in the ASM manual that you need to look over by yourself for the exam. For the class I did the questions from the "Loss Models, from data to decisions" manual and the SOA question bank. Once the class was done I took a few weeks off from studying to unwind and settle into my summer job then I got ADAPT. I started by reviewing each chapter and doing adapt quizzes. While reviewing the chapters I would also briefly skim the ASM manual to make sure I had covered all the material. I took about 4 weeks to do this. Two weeks prior to my exam I started doing ADAPT practice exams. After each exam I would correct and go over the questions I got wrong and after completing 3 or 4 exams I would again redo the questions that I got wrong for those 3/4 exams. If I noticed there was a particular section I was having trouble with I would take a break from practice exams and do quizzes on this section. I finished around 11 exams. The day prior to my exam I did quizzes on easier sections to boost up my confidence.

### ♦ Relevant courses completed before exam

Construction and Evaluation of Actuarial Models (ACT 4630), pretty helpful.

### ♦ Study manual

*Loss Models: From Data to Decisions* and ASM. Also, I used the SOA's online question bank.

### ♦ Online study software

Coaching Actuaries/Adapt (45-day subscription), very helpful. Earned Level: Around a 5 but was doing higher level exams on those last weeks.

## Exam C– Braeden Hamm

Exam Date: October 2017

### ♦ Opinion of exam difficulty

Standard, I expected it to be hard but doable

### ♦ Study Strategy

I started watching the TIA videos to learn the material about 4 months prior to the exam date. While going through them, I made notes on any formulas/explanations that would be helpful for reference later, but attempted no practice problems. At this point, I was only putting in a few hours a week so the videos took me 2 months to get through. After finishing them, I did practice problems from ADAPT, SOA 307, and Mahler (in that order) until my exam. By the end, I would estimate that I probably put around 150 hours of studying in.

### ♦ Relevant courses completed before exam

Did not take any classes however, ACT 4630 is available.

### ♦ Online study software

Coaching Actuaries/Adapt (90-day subscription) and TIA (6-month subscription), slightly helpful. Earned Level: 7.4 (though this number isn't very meaningful for Exam C)

### ♦ Other study material

SOA's 307 Sample C questions, Mahler Practice Exams

### ♦ General Advice

I want to begin this by saying that, in general, I don't believe ADAPT is the perfect study tool for this exam (at least not like it is for the other prelims). However, the flexible difficulty levels make it great when you are starting practice problems for the first time. When my exam was about a month away, I pretty much only used the SOA 307 problems and Mahler exams to study from. I feel like they were more representative of the real exam, as they expose you to a wide variety of topics and some trickier concepts (Mahler's questions are very difficult but conceptually useful in this regard). Higher level ADAPT questions tend to just have difficult/time-consuming algebra and this almost never happens on the real exam.

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## PASSING ACTUARIAL EXAMS

One tip I believe helped me immensely in my final week of studying was to make flash cards of every single weird formula/concept on the exam. There are a number of topics that have formulas with little to no justification (or no point in learning such justification) and the questions on them tend to be a free mark if you know the obscure formula. Finally, and most importantly, I would recommend doing every SOA 307 problem at least once. They are absolutely the best resource available to prepare for this exam. If anyone has questions about anything related to Exam C, I would love to help! Feel free to call, text, email (braedenhamm@gmail.com) or ask me in person if you see me.

### Links for Study Material

Online study software/subscriptions:

Coaching Actuaries (Adapt)

The Infinite Actuary (TIA)

Study manuals:

ACTEX Learning

Actuarial Study Manuals (ASM)



