

# AKTUA TIMES

## SECOND EDITION 2018

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# LETTER FROM THE EDITOR

I know that I am not the only one who thought that the end of this semester would never come! In more ways than one, this second semester is usually the one that teaches the most about perseverance, self-motivation and determination when the going gets tough. In the “My Semester Experience” section you will read more about how each year group found this second semester to be. Dr. Ouifki also gives valuable advice on how to be a more successful student and we learn more about him as linear algebra and differential equations lecturer.

Further in this issue, we look back on the year and reminisce about all the memories made: From career evenings to The Annual Aktua Ball which was a massive success. We look forward to all the next events in great anticipation! But first...a well-deserved holiday.

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*“No man ever steps in the same river twice, for it is not the same river and he is not the same man.”*  
*Heraclitus*

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## editorial

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*Interested in writing an article for our next issue? We would love to hear from you!*

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# A YEAR IN REVIEW

*Finishing this year on a good note would not have been possible without this dynamic group of people!*



## AKTUA EXECUTIVE COMMITTEE 2018:

*From Left to Right:* Bryan Smith (Vice-Chairperson, Marketing); Marguerite Lamey (Aktua Times Editor); Kunj Desai (Vice Academics, Vice-Treasurer); Alex Bruhns (Treasurer); Lilitha Maboza (Vice-Marketing); Ipeleng Kutumela (Chairperson, Clothing); Katekani Nyamandi (Secretary); Monja Nortjé (Social); Megan Tolmay (Vice-Social); Obey Maluleke (Transformation, First-year Representative); Ebrahim Ahmed (Charity); Dani Simeonov (Academics).

## CAREER EVENINGS:

This year, interesting career evenings were presented by FNB and the FirstRand group respectively. Insightful introductions to the banking sector and Big Data analytics were given: especially what the roles of actuaries and statisticians are in these contexts. We also received plenty of helpful information regarding their graduate programs, such as: what would make you a good candidate; and why the banking sector provides numerous opportunities for students in mathematics.

We look forward to learning more about our future workplace industries next year!

# AKTUA BALL 2018

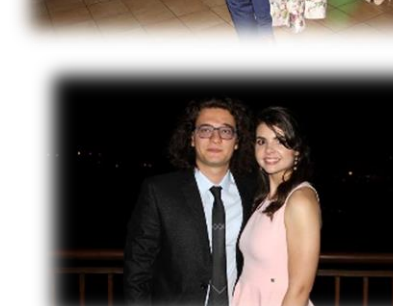
## *A night under the stars...*

MONJA NORTJE AND MEGAN TOLMAY

On a warm summer's night in September, in the quiet nature reserve of the Voortrekker Monument, you could hear the loud laughter of the Actuarial Students gathering inside the walls of Ford Schanskop. Ice cold strawberries and champagne were a delight under the night stars of Pretoria.

At the beginning of the evening fruit punch and a delightful three-course meal was enjoyed. From the balcony a breathtaking view of the Pretoria night lights was cherished in the company of good friends. It was also an opportunity to celebrate and say goodbye to the soon-to-be graduating final years!

As the night progressed the shyness on the dancefloor disappeared and the night was danced away. This night was definitely one for the books!



**Chairperson: Bryan Smith**



**About me:**

- I am 21 years old and in 2019 I will be a third year Actuarial Science student.
- My interests and hobbies include: gaming, scuba diving and fishing.
- I have a love of animals and as a result I volunteer at times at the SPCA to assist when needed.
- I prefer living on campus as it gives me more opportunity to engage in student life.
- I think it is important to use one's mistakes as an opportunity to grow and improve and to be passionate about what they do.

**Vision for Aktua:**

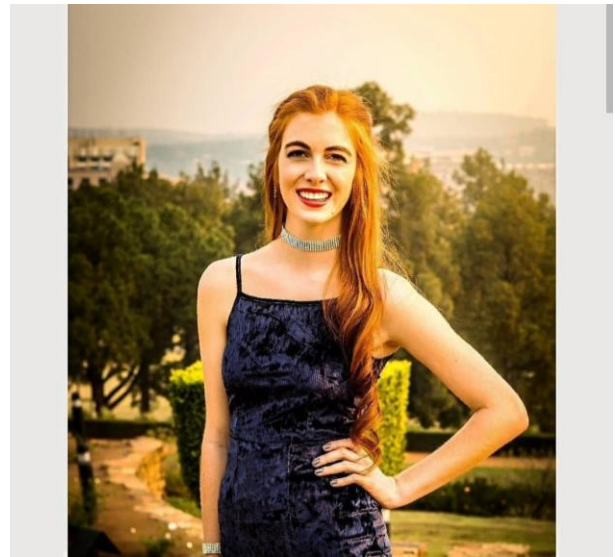
- Increase Aktua's social interaction and make the events something to look forward to.
- Improve our overall productivity to have a more successful subhouse.
- To grow our societal impact through more outreach events.
- Creation of a comfortable environment for students in the subhouse to share their thoughts and concerns.
- Availability of academic support to students of the subhouse when needed.

I am optimistic and excited in another successful year for our subhouse!

# WHAT'S NEXT FOR AKTUA?

WE ARE PLEASED TO INTRODUCE OUR NEW SUBHOUSE LEADERS FOR THE 2018-2019 TERM:

**Vice- Chairperson: Megan Tolmay**



**About me:**

- I'm 20 years old
- I'm originally from Durban
- I was head girl at my school
- My first language is Afrikaans
- I lived in England for 2 years
- I'm a people's person
- Love working with children and doing charity work
- I have a bit of a hockey obsession
- I laugh a lot
- Maths is in my blood (obviously!)

**My vision for Aktua in 2019:**

- To put Aktua on the map so that more students will know about what we do and to get them more involved
- Transformation in Aktua to be more of a support base for students
- Helping Aktua grow into something memorable



FIRST YEAR

# MY SECOND SEMESTER EXPERIENCE

OBEY MALULEKE

The second semester of my first year was the busiest and shortest part of the academic year. This is when I began to realize how quick so much time flew in such a short period of time. Thanks to the midyear recess following the first semester, that afforded me an opportunity to do a self-introspection to reflect on my academic experiences. Through it, I enabled myself to identify what worked and what did not. So, going into the new semester meant I had to make room for improvement where it deemed fit.

I did not think there would be much of a big change in the second semester. I thought the first one had prepared me sufficiently, but to my astonishment, I was wrong. The workload was a nightmare, let alone the challenge that came with the content itself. I had to devote more time to studying to keep abreast of the work.

Now that I had worked on my time management skills, it was not a daunting task to do. However, it wasn't easy. The fatigue from sleepless nights was just unbearable. I had to sacrifice some of my sleep because that was the only way I could allow more time for my studies. Other university related hardships were not factored into my life anymore. I knew what was right. The real challenge came in after thoroughly preparing for tests and performing poorly. I overlooked the importance and relevance of past papers, but after the first quarter, I did everything from studying and treating different past questions.

I improved and look forward to the next academic year.



ALEX VAN HEERDEN

And just like that you've only got one year left. 2<sup>nd</sup> year is truly a hurdle you have to work hard to get through. You quickly learn that time is not on your side, apart from the time constraints introduced in tests to the short amounts of time you have to finish projects and assignments you also have to deal with the immense stress of trying to get exemptions.

Overall 2<sup>nd</sup> year was a challenging yet rewarding year. The best way to handle this year is to simply get down to work and don't stop till you've finished everything off and to make sure that you have friends that can help you out in a pinch should you not fully understand the work (this particularly holds true for IAS 282 and WTW 220).

But overall: make the best of this year, because before you know it, it will be the final day of your exams.

## LILITHA MABOZA

Wow! Third year... What a journey it's been. I've reached the end of the three years and can't help but feel like it's been such a rollercoaster ride. Some days were amazing and some not so great.

To focus on my third year specifically...

I would love to say that this year was a breeze and that I had everything all figured out and all study methods intact. However, that is not entirely the case. Yes, this year I was at a point where I was better equipped to handle the pressure, I was able to not sulk but move forward when things did not go my way, I had improved my study skills, but boy oh boy, it was not always smooth sailing.

Although tough at times, it was an enjoyable year. The work was a lot more interesting than the previous two years, especially because more of the real world was featured. Academically, one of my highlights of this year is the Vac Work programme I was part of at FirstRand. I found it to be a wonderful learning experience and would encourage every third year to get involved in such programmes.

Apart from the academic knowledge acquired, I do feel that this year has taught me a lot. Perseverance and self-motivation being two of some of the valuable lessons I had to actively practice. I have also learnt that apart from this degree, I also need to live and make the most of each day, opportunity and interaction with others.

With all its ups and downs as well as good times, this year will go down as one of the years to remember! Next year, I plan to be back for an Honours degree and cannot wait to see what the future holds, beyond my studies.



## Interviewing

# Dr. Rachid Ouifki

BY MARGUERITE LAMEY AND ELZÉ VAN ZYL

○ *Where did you grow up and study?*

I am originally from Morocco and I completed my Master's and Doctorate degrees in Marrakesh and partly in Paris where I also taught Biostatistics for a year before coming to South Africa in 2004.

○ *What is your field of specialization?*

I specialize in differential equations and dynamical systems. But most of my research centres on mathematical modelling of communicable and non-communicable diseases such as HIV, tuberculosis, malaria and cancer.

○ *What do you enjoy the most about your job?*

As a lecturer, I enjoy the interactions with students.

○ *What are the most common mistakes that you see students make?*

In terms of learning, students sometimes make studying way harder for themselves without realizing it. Attending lectures and tutorials and making use of the consultation hours can certainly contribute to more insightful studies! Students do not need to think that they have to do everything by themselves.

○ *What advice would you give to students who are wondering whether to pursue a career in mathematics?*

You can never go wrong with maths as it provides you with powerful analytical skills. It teaches you how to frame problems and (possibly) solve them. In a way or another, you will find maths applied in almost every career.

Students who are interested in applied maths are more than welcome to come and talk to me about all the possibilities!

○ *What would you say is your personal motto or mantra?*

Respect and hard work. Respect your job and work hard and it will pay you back.



# JOB COMPARISON

A side-by-side comparison of the three most prominent careers you can pursue with a statistics, mathematics or actuarial science degree.

## ACTUARY

## STATISTICIAN

## DATA SCIENTIST

	ACTUARY	STATISTICIAN	DATA SCIENTIST
<i>In Short</i>	An actuary determines the probability of an event occurring and its financial implications by using statistics and mathematical techniques.	A Statistician collects, studies and interprets quantitative data	A Data Scientist finds creative solutions to problems by analyzing and interpreting raw data, thereby helping organisations expand and become more competitive.
<i>What do they do?</i>	<ul style="list-style-type: none"> <li>Analyse data</li> <li>Create statistical models from which predictions are made</li> <li>Communicate findings through presentations and reports</li> <li>Ensure accuracy of premium rates and reserve amounts (insurance)</li> </ul>	<ul style="list-style-type: none"> <li>Design of data acquisition trials</li> <li>Assessment of results</li> <li>Analysis of trends</li> <li>Design and implementation of statistical computer software</li> </ul>	<ul style="list-style-type: none"> <li>Problem-solving by combining computer science, mathematics and statistics</li> <li>Extraction of data from a variety of different sources</li> <li>Analysis of data from all possible angles</li> <li>Recommendations to improve business strategy</li> </ul>
<i>Common Employers</i>	Insurance Companies, Pension Funds, Banks, Consultancies, Healthcare Providers	Government, Market research companies, Pharmaceutical companies, Hospitals, Research Councils	Big Data Companies, Banks, Airlines, Government, Large Retailers, Marketing agencies
<i>Critical skills required</i>	<ul style="list-style-type: none"> <li>Analytical skills</li> <li>Numerical skills</li> <li>Written and verbal communication</li> <li>Understanding of economics and finance</li> <li>Detail-orientated</li> <li>Computer literacy</li> </ul>	<ul style="list-style-type: none"> <li>IT Skills</li> <li>Self-confidence</li> <li>Analytical and numerical skills</li> <li>Written and verbal communication</li> <li>Interpersonal skills</li> </ul>	<ul style="list-style-type: none"> <li>Innovative mindset</li> <li>Critical thinking and Problem-solving</li> <li>Teamwork</li> <li>Communication skills</li> <li>Excellent IT skills</li> <li>Interest in statistics and recognizing and foreseeing trends</li> </ul>

# TOP 10 MATH-RELATED MOVIES

▶▶ A Beautiful Mind (2001)

*Drama inspired by true events: A mathematical genius makes an incredible discovery at the start of his career and is on the brink of international fame but has to first undertake a rough journey to self-discovery.*

▶▶ Good Will Hunting (1997)

*With Matt Damon and Robin Williams. The hidden talents of a janitor at MIT with a genius-level IQ is discovered when he solves a graduate-level math problem.*

▶▶ The Imitation Game (2014)

*Set in 1936, Alan Turing and other Cambridge mathematics alumni are recruited by MI6 to decipher Nazi codes during World War II, including Enigma, which was thought to be unbreakable. Based on true events.*

▶▶ The Man who Knew Infinity (2015)

*The story of Srinivasa Ramanujan: the brilliant mathematician from South India who travels to England's Trinity College in 1913 to work alongside Prof. G.H. Hardy.*

▶▶ Hidden Figures (2016)

*Behind the scenes of astronaut John Glen's launch into orbit: How Katherine Johnson, Dorothy Vaughn and Mary Jackson (three African-American women at NASA) served as the brains behind the event that turned around the Space Race.*

▶▶ 21 (2008)

*An MIT student joins his unorthodox professor and a group of students in using their mathematical abilities to succeed in winning greatly in Las Vegas.*

▶▶ The Big Short (2015)

*How a group of Wall Street professionals take advantage of the 2008 financial crisis by betting against the housing market, after Michael Burry became aware that many subprime home loans were in danger of defaulting.*

▶▶ Moneyball (2011)

*The manager of a baseball team realises that the conventional wisdom behind baseball is wrong. By outsmarting richer clubs, Billy Beane must reinvent his team together with Peter Brand, an Ivy League graduate.*

▶▶ An Invisible Sign (2010)

*A 20-year-old mathematics teacher helps her students through personal difficulties as mathematics was her salvation through challenging times during her childhood.*

▶▶ Fermat's Room (2007)

*Four mathematicians are summoned to solve complex riddles in a remote warehouse where the walls literally start to close around them as they try to find out why they are there.*

# References

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