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Volume 4, Issue 3

PSSA News

Newsletter of the Physiology Society of Southern Africa (PSSA)

Focus on PSSA 2007 (Part 2)

In this edition of the newsletter we continue with our features on the prize winning students.



Mr Wayne Smith (Biomedical Sciences, Stellenbosch University) winner of the Wyndham competition striking a pose with his supervisor Jos DuToit. Title of presentation: The Peroxisome Proliferator – Activated Receptor Alpha Agonist, K-111, Provides Cardioprotection From Ischaemia/Reperfusion Induced Injury In A Rodent Model Of The Metabolic Syndrome. (Wayne Smith, Amanda Lochner, Eugene F. du Toit)

Wayne's Word:

Hello everyone. Firstly I would like to thank all the organizers of this year's PSSA meeting for a really great conference. Everything ran extremely well. It was nice to meet up with some old friends and colleagues from the other institutions and share some thoughts and laughs.

The work I presented in my poster forms the beginning of my PhD. I'm investigating the effects of obesity/the metabolic syndrome on the heart in a rodent model. In conjunction with this I want to determine whether chronic treatment of these animals with a PPAR alpha agonist will prevent the detrimental effects associated with ischaemia/ reperfusion injury in the heart. Well let me say that this work has been keeping me really busy so it's nice to see that all the hard work paid off, by winning the poster prize. Most of this year and the latter part of last year has been spent on finding an optimum drug dosage with which to treat the animals. What I showed in my poster was that chronic treatment of these obese rats with a PPAR alpha agonist was able to reduce the size of infarction in the heart. I can now move on to look at the substrate metabolism in these hearts, which will provide some interesting information, and I will hopefully be able to share this information next year.

I thought I'd also just share a humorous moment together with some sound advice for future conference attendees. When attending conferences, always choose your room mate very wisely. (By sharing this story I indirectly answer any awkward questions related to photos which may appear on talks next year ☺). One evening at the conference, I got the fright of my life at about 1am, (I was sound asleep), when my room mate unlocked the door and 2 girls from the Sperm lab promptly jumped onto my bed, one on either side. The first thing I realized was two camera flashes going off, followed by a very ecstatic laugh and grin on the face of my room-mate. The moral of the story is to choose your room mate wisely as you never know when you will be blackmailed.

Lastly I would just like to thank LASEC for the prize money they gave. This will go towards a de-stressing holiday to the Drakensberg at the end of the year. See you all next year. Wayne

President's Corner:

It is with great pleasure that I pre-read this issue of the Newsletter, so I had better explain what provided me this good feeling:

The postgraduate student cohort in the various Physiology Departments around the country provide the permanent staff with a fair share of the incentive to remain in the academic arena and to work so hard towards bettering the infrastructure and running expenses available for research. When their work culminates in an advanced degree or prizes at the national conference, we can also feel a sense of pride at having shaped these events in some ways. But, of course, we must be provided with the bright young minds who want to achieve these goals! So, we are dedicating much of this Newsletter to hearing how they have experienced their successes at the recent PSSA.

Read on to find out:

Who likes culinary experimentation as much as laboratory experimentation....

Who had the erroneous idea that "life is nice and slow at the coast"....

Who feels it is all our duties to generate more interest in the poster sessions as a valuable platform to trial ideas and get feedback....

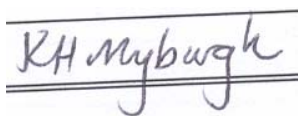
Who has their eyes set firmly on gaining the laboratory skills needed to become a researcher....

Who thinks it is an important issue to choose your conference room-mate well....

Who needs to de-stress in the Drakensberg....

Finally, I am grateful for the first Newsletter contribution focused on serious aspects of Undergraduate Teaching. We look forward to further submissions on this theme from around the country.

Good luck to all for the November, December rush.

A handwritten signature in cursive script, reading "Kathy Myburgh". The signature is written in black ink and is positioned above two horizontal lines that serve as a separator.

Kathy

Maritza Kruger (Dept Physiological Sciences, Stellenbosch University)

Title of presentation: Antioxidant (Oxiprovin™) Supplementation And Muscle Recovery From Contusion Injury – An *In-Vivo* Study.

(Maritza J. Kruger, Robert M. Smith, Kathryn H. Myburgh, Carine Smith)

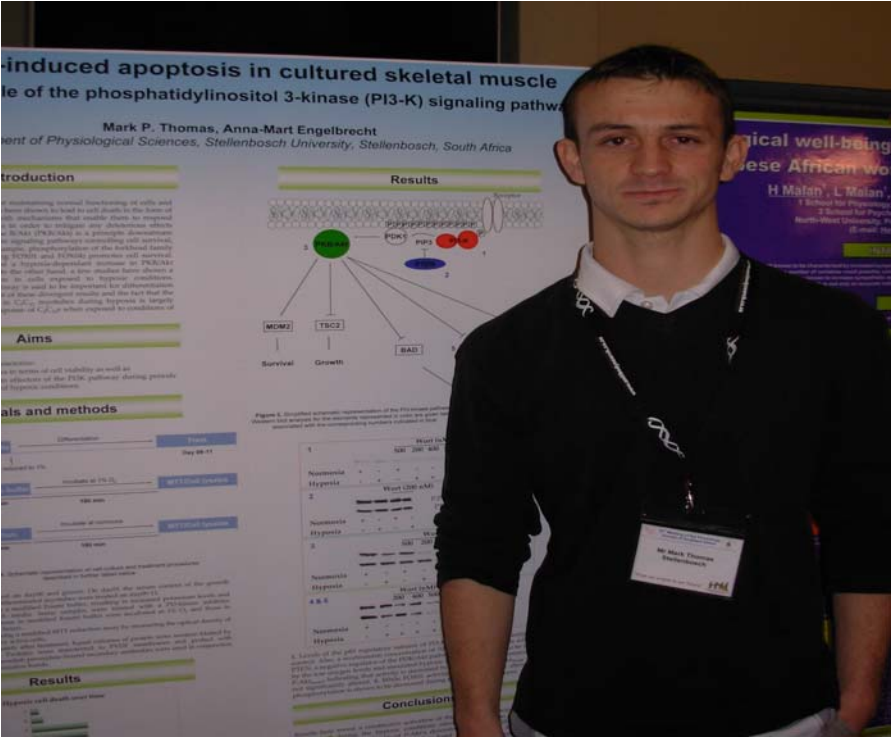


Kathy, Carine, Maritza and Rob.

It was an honor to be part of the 35th PSSA conference held at the Cradle of Humankind, Muldersdrift in September this year. Being awarded the runner-up position for the Johnny van der Walt Poster competition for the second year in a row also came as a great surprise, and I am very grateful for the recognition of the research we are involved in, in the Department of Physiological Sciences at Stellenbosch University. My masters project entitled “Antioxidant (Oxiprovin™) supplementation and muscle recovery from contusion injury – an *in vivo* study” enabled me to investigate the effect of a contusion injury and long-term Oxiprovin™, a natural grape seed extract supplement on muscle fibre ultrastructure and recovery time following such an injury. Furthermore, this study allowed me to work independently and develop more laboratory skills a researcher might need. However, I could not have done this without the help of my supervisors, Drs Carine and Rob Smith. I also wish to acknowledge Prof Kathy Myburgh for her guidance and all my colleagues at the Department of Physiological Sciences. Next year I am planning to start with a PhD, which would allow me to investigate other important contributors in the recovery phase following a contusion injury in more detail.

Mark Thomas (Dept Physiological Sciences, Stellenbosch University)

Title of presentation: Hypoxia-Induced Apoptosis In Cultured Skeletal Muscle Cells: The Role Of The Phosphatidylinositol 3-Kinase (Pi3-K) Signaling Pathway.
(Mark P. Thomas, Anna-Mart Engelbrecht)



"I am a new student here at Stellenbosch University currently enjoying my first year of the masters program. At present, my academic interests lie in the fields of cell death and its associated signaling pathways, particularly in deficient oxygen states.

I had a terrific first experience at the PSSA conference, and Wits medical school must be commended for hosting an informative few days that were of a high standard. The quality of the presentations, particularly of those involved in the Wyndham competition was both impressive and inspiring.

It was a privilege to represent the Physiological Sciences department of Stellenbosch University at the PSSA 2007, and I was incredibly flattered and grateful to be awarded 3rd prize in the poster competition beside some deserving competitors. At the same time 3rd place clearly demands more of me and I hope to improve on that next year.

The poster sessions are a valuable platform to trial ideas as well as to gain important feedback for both students and more senior academics alike. I believe that it is all of our duty to generate greater interest in this aspect of the conference, and I look forward to many more poster entries and a lot more questions next year!"

Nontuthuko Chamane (Stellenbosch University Medical School)

Title of presentation: *Cardiac Enos: A Comparative Study Between Whole Hearts And Cardiac Cells*

(Nontuthuko Z.L. Chamane, Amanda Lochner, Hans Strijdom)



I am an MSc student at Stellenbosch University under the leadership of Dr Hans Strijdom. I am a graduate of the University of Pretoria. Our area of interest is eNOS and Nitric Oxide. My abstract entitled: "Hypoxia-induced regulation of cardiac eNOS: Do whole hearts behave differently to isolated cardiac cells?" has been accepted for an oral presentation at the MRC Research Day 2007.

In real life, I am a Christian and a member of the Anglican Student's Federation and was the president for the year 2006/2007. I hail from PMB where I got my matric at The Wykeham Collegiate. I am a fun loving person, I love spending time at home- in the kitchen running some culinary experiments. I have a passion for young people and love spending time with them.

I would love to thank my Supervisor for his faith in me, for teaching me the skills that got me to the PSSA and beyond! Thanks Supervisor! And to all the people in the department, thanks for the warm welcome I received and for assisting me in my learning curve.

God bless!"

Derik van Vuuren (Stellenbosch University Medical School)

Title of presentation: Postconditioning In The Isolated Rat Heart: Characterization And Implementation

(Derick van Vuuren, Sonja Genade, Johan A. Moolma).



I did my undergraduate and honours degrees at North-West University, whereafter I felt the need for a change of scenery. So, I am currently finishing up (hopefully...) with my Masters at Stellenbosch University (Tygerberg). While living in the “interior” I always had the idea that life is nice and slow at the coast – but I was a bit disappointed, since the past two years of my Master’s have been quite hectic and busy (although I have learned a LOT). Which makes it a bit of an anti-climax, when you can actually fit a large part of it into the short period of a ten minute talk (although, not all of it).

I would definitely like to remain in an academic and research milieu, since it is stimulating and it offers the opportunity to have a positive influence in society (through teaching and relevant research). This of course means that a PhD is still somewhere in my future. Although, at least only after a lengthy, restful and unproductive December. This was only my second year at the PSSA congress, but I found it very stimulating and it is excellent that so much attention was given to young researchers. On that note: thank you to the sponsors and the organisers for giving us the platform to gain some experience in publicly presenting our work.



Practicals in Physiology at the North-West University (Potchefstroom campus)

By Carla Fourie

When I was a student and doing my practicals our group had a **ceremonial burial for our frog**. We were caught in the middle of the ceremony and were asked to leave the practical laboratory. Practical was serious business.

Today I am, together with my colleague Riaan Booysen, responsible for the organisation and co-ordination of the first year practical work at the NWU. We still believe that practicals are serious business.

The practical work is focussed on physiological processes and **supports the theory** modules. Our aim is to optimise the degree of **active learning** by the **acquisition of skills** (communication skills, computer skills, use of laboratory equipment). Practical should help students to understand abstract concepts by **forming mental images** and should enhance the ability of the students to utilise cognitive skills like **creative thinking, interpretation, judgement, problem-solving** skills as well as scientific writing skills.

Recently we had a sharp rise in our student numbers. Fortunately **two new practical laboratories have been built**, which we started to use at the beginning of 2007. Practical should be “hands on” for the student to really benefit. Therefore we create smaller groups of students and the greater interaction with fellow students then helps to strengthen the link between theory and practice. Because of smaller groups we have **parallel practical sessions** and make use of our honours students to facilitate the sessions.

Experience taught us that **intensive student facilitator training is indispensable**. We therefore place a lot of emphasis on the training of our facilitators and rely on them to follow the **strict practical rules** to ensure professional practicals. For the facilitators it is usually a very good experience and although it is hard work, they tend to enjoy the facilitation a lot.

Continued on page 8



Practicals in Physiology at the North-West University..... continued from page 7

Experiments must meet the aim of the practical work. We use old reliable experiments, but also put a lot of thought and energy into development of new experiments.

Digestion: Students in 4 groups determine their blood sugar levels: each group consumed either Coca Cola, Coke Light, white bread with syrup or brown bread with peanut butter. Students are asked to fast and after taking fasting blood sugar levels, they consume one of the four options mentioned above. Their blood sugar levels are then taken with regular intervals during the following two hours and graphs are drawn of the averages of the different groups in class. This experiment is usually a great success and enjoyed by the students, although they complain a lot about their fingers being sore.

Haematology: Students observe red blood cells under a microscope after cells have been placed in either an isotonic, hypertonic or hypotonic solution for 30 minutes. They then centrifuge the red blood cell solutions and determine degree of haemolysis with spectrophotometers. This experiment is very visual and explains the abstract concepts of crenation and cell lysis.

Practical work is very time consuming and mostly the students would have liked to be elsewhere. This inspired us to try and make the practical work as interesting and applicable as possible. We do get a lot of positive comments, but you will always have those students being creative with stuff that is not really part of the practical work for instance ceremonial burials.

Editorial team

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Dear PSSA member
 This Newsletter
 desperately needs your
 input to be sustainable.
 Please send us articles
 of interest to other
 members. E.g. notices
 promotions, awards,
 research, teaching
 innovations, conference
 feedback etc.

PSSA on the Web!

Visit:
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PHYSIOLOGY SOCIETY OF SOUTHERN AFRICA

Who said marking was not a joke ?

Students can bring some humour into the mundane task of marking assignments, tests and exams, a couple of examples from exam scripts follow.

Q: Name a major disease associated with cigarettes.

A: Premature death.

Q: Why does kwashiorkor occur?

A: Humans are proteins so when they do not eat enough proteins they get Kwashiorkor.

For all the teachers/lecturers out there who think life is tough nowadays maybe you will take solace in the fact that you were not a teacher in 1872, read on:

Rules for Teachers, 1872

1. Teachers each day will fill lamps, clean chimneys.
2. Each teacher will bring a bucket of water and a scuttle of coal for the day's session.
3. Make your pens carefully. You may whittle nibs to the individual taste of the pupils.
4. Men teachers may take one evening each week for courting purposes, or two evenings a week if they go to church regularly.
5. After ten hours in school, the teachers may spend the remaining time reading the Bible or other good books.
6. Women teachers who marry or engage in unseemly conduct will be dismissed.
7. Every teacher should lay aside from each pay a goodly sum of his earnings for his benefit during his declining years so that he will not become a burden to society.
8. Any teacher who smokes, uses liquor in any form, frequents pool or public halls, or gets shaved in a barber shop will be given reason to suspect his worth, intention, integrity, and honesty.
9. The teacher who performs his labor faithfully and without fault for five years will be given an increase of twenty-five cents per week in his pay, providing the Board of Education approves.

Accessed at http://theteacherspot.com/resources/rules_for_teachers.html