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- Wyndham
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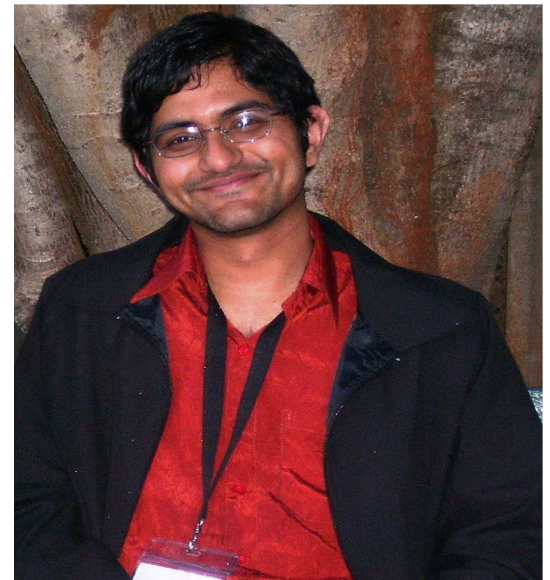
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Focus on PSSA 2006

The next two editions of the newsletter will focus on PSSA 2006. In this edition we focus on the Wyndham competition and profile some of the keynote speakers. *Editors.*

And the winner is..... Mr Sarin Somers!!!!

"Wow. I must say that I was surprised when I heard my name announced as this year's Wyndham winner. I believe that it was a strongly competitive day and that every student gave it their best to produce great presentations. It felt good to win the award in my hometown albeit representing Cape Town. I cannot take full credit and owe a debt of gratitude to my excellent supervisor; Dr. Sandrine Lecour, as well as the rest of my colleagues in the cardioprotection group. I am really fortunate to work alongside such remarkable people at the Hatter Heart Research Institute that I can also call friends.



Mr Sarin Somers; winner of the Cyril Wyndham competition.

I'd also like to thank the organizers of the PSSA for putting together a brilliant congress. Postconditioning was the subject of my talk and represents a novel way to potentially treat patients with acute myocardial infarction. For my PhD study, I am interested in understanding the exact mechanisms that are involved in this phenomenon. I look forward to next year's event with the anticipation of presenting new and exciting discoveries in this stimulating field of research". - Sarin Somers

The Wyndham Competition

Runner up: Mr Benjamin Loos

Ben speaks out:

“Being awarded for the Runner Up in the Wyndham competition has two-fold consequences for me, but first of all I would like to thank everyone, who considered my work for the prize. It is a great honour to receive such recognition from so many experienced researchers in the field. At the same time the second prize clearly demands for more and can therefore only be seen as an *achievement in progress* and I am highly motivated to drive that progression further. The conference PSSA 2006 in Durban was great fun, and despite this underlying question prior to my talk of “why am I doing this to me and to my adrenal gland every year...?” provided lots of time and opportunities for socializing and networking. The final dinner was fantastic and set in a great atmosphere. My future plans? I am interested in the decision making process of cellular death of highly susceptible cell types and would like to apply

The clinical relevance combined with the passion for the work makes up a perfect PhD. So I hope to contribute to exciting future work, shared at the conferences to come.

Until then best wishes,

Ben “



Benjamin Loos, Ms Du Toit and Dr Engelbrecht (Ben's supervisor), relaxing for the camera during the conference dinner.

Nb. Third Place: Mr Wayne Smith will be featured in the next edition of the newsletter

Special mention for Cyril Wyndham Award (in alphabetical order)

J.L duToit (Stellenbosch)

Title of presentation: The modulation of various signal transduction pathways in colorectal carcinoma cells by docohexaenoic acid

D. Moodley (UKZN)

Title of Presentation: Lymphocyte apoptosis and intra-cellular antigen expression in black South African rheumatoid arthritis patients

G. Skinner (Wits)

Title of Presentation: Behavioural and febrile responses of rats to different subcutaneous doses of lipopolysaccharide

M. Zungu (Hatter Institute)

Title of presentation: Identification of a novel cardioprotective program sustaining right ventricular function in response to chronic hypobaric hypoxia

From the President

To all who attended the 34th PSSA Meeting in Durban, thank you for supporting our society and showing that Physiology is a strong and vibrant discipline in South Africa. Thanks to all the old members who have paid their memberships this year and welcome to all the new members. We hope you all stay connected to the PSSA for years to come. In this day and age of Departmental mergers, the PSSA should be our discipline-specific anchor.

Having said that, it is also important to realize how much we as physiologists can gain from the current multidisciplinary nature of biological sciences. The “Cutting Edge Technology in Physiology Research” invited talks were certainly one of my personal highlights of the meeting. On the opposite side of the spectrum, it was pleasing to see several talks and a poster dedicated to issues around the teaching of physiology. I would like to encourage the PSSA members, even those who did not attend this year, to continue with this trend. Just as we continually update our research skills, we need to ensure that our teaching and testing methods adequately prepare our students for productive careers in the knowledge environment in industry, academia or community.

I would like to share a little feedback with you:

Dr Nick Ashton: “I was pleasantly surprised by the quality of the science presented. I especially enjoyed talking to the students entered in the poster competition. The top 3 chosen for prizes were of a very high standard indeed.”

Prof Kani Mubagwa: “I want to say thank you [Prof Cephas Musabayane and the LOC] for the invitation to attend the PSSA meeting, for the nice stay and visits you organized for us, for everything. Our stay in SA was so wonderful that I certainly think of coming back on my own.”

Prof Leana van der Spuy acknowledged the central role of physiology in all the medical and paramedical disciplines and expressed the hope that we would reach out to sister-societies for joint workshops in the future.

Prof Helen Laburn: [re: Honorary Fellowship and Lifetime Membership]: “The award came as a complete surprise, which made it even more special. I found I was somewhat overcome with your tribute to my career and what it was all about... You mentioned a lot of things I have achieved it seems to me that it was not arduous to achieve them, and actually the years have just flown by and in that time I have had a lot of fun “doing” physiology and meeting up with friends at PSSA meetings for a dozen or two or more years, and having the privilege of knowing something about how the body “works”. All that is reward enough...so I am all the more appreciative of the Fellowship, and it means a lot. I am still enjoying the moment!”
(See next page for copies of framed souvenir given to Helen).

Finally, on behalf of the PSSA I'd like to acknowledge Angela Woodiwiss and Kennedy Erlwanger for their service as Council Members of PSSA. Kennedy, you have done sterling work on the Newsletter and we all appreciate it! A word of welcome to Jos du Toit and Alta Schutte, are the new Council Members.

Greetings and strength for the last quarter's hard work before a well-deserved summer break.

Kathy Myburgh
PSSA President

Honorary Membership of PSSA

Prof Helen Laburn

Below is a copy of the framed gift that Helen can place strategically in her new office to remind her of her roots in Physiology and in the Physiological Society of Southern Africa:

Helen at the Potchefstroom PSSA Meeting (2004) and a younger Helen, holding the first neonatal animal (anywhere in the world) to be born alive with an implanted radiotransmitter, which had been inserted when the animal still was in utero.

Kathy Myburgh



Prof Laburn enjoying the "fruits" of the PSSA, 2003



Prof Laburn with a "World First" - the first neonatal animal to be born alive with an implanted radiotransmitter

Presented to
Prof Helen Laburn
To mark the award of
**Honorary Fellowship of the
Physiology Society
of Southern Africa**
September 2006

Focus on Keynote speakers PSSA 2006

Dr Rob Smith

Physiological Sciences, University of Stellenbosch.

I joined the Department in July 2004, having spent six years at the University of Cape Town. Since joining the Department I have become interested in the role played by cytokines and growth factors in the activation, proliferation and differentiation of muscle stem (satellite) cells. We use several models in the department, including cells, animal models and human models, to look at these processes and increase our understanding of how, exactly, satellite cells behave under so-called normal conditions and in response to injury in the muscle. A second area of research concerns both the primary and secondary effects of photo-bio-stimulation on cells and tissue, with emphasis on metabolism and effects on growth, proliferation and differentiation.

In addition I have an interest in live cell imaging and how this technique can be applied to any area of physiology to give us a greater understanding on how cells function. In this regard I manage the Live Cell Imaging facility at Stellenbosch University, which is open to anyone from across the country.



Dr Rob Smith

I strongly believe that techniques that allow us to investigate what is happening in real time in living tissue are the way forward for cellular physiology. In addition, with the technology now available a number of techniques that have to date been performed routinely without much consideration for the validity of the results (eg using overlay data to make assumptions about co-localization) can now be phased out and the correct technique(s) employed.

The Johnny van der Walt poster competition

Winners for 2006:

1. L.Chang (Hatter Institute)
2. M. Kruger (Stellenbosch)
3. J. Weber (Wits)

Look out for special focus on the abovementioned triumphant participants in the next issue of the newsletter!

*** PSSA 2007 ***

For your diary:

When: 9-12 September 2007

Where: Glenburn Lodge
"Cradle of Humankind"

Organisers: School of
Physiology, Wits

Focus on Keynote speakers PSSA 2006

Dr Rama Dwiveldi Northwestern University Medical School, USA

Recent work in our laboratory is focused on a novel mechanism of gene expression and regulation involving the role of '**epigenetic modifiers**' in reversal of disease progression and treatment of neuroblastoma - a childhood tumor. The DNA methylation and acetylation, the post replicative phenomenon that epigenetically modify DNA, functionally inactivate or activate the tumor suppressor and cell cycle genes or the transcriptional machinery in whole in a number of tumors.

Epigenetic alterations thus are considered to be an integral part of tumor initiation and progression events causing an **alteration of chromosomal material leading to chromosomal instability and pathogenesis of untreatable tumors**. For example, aberrant expression of the k-ras oncogene and bcl-2 anti-apoptotic genes have been attributed to altered promoter methylation in human neuroblastoma. The data from our study may be utilized as prognostic markers and designing effective treatment for neuroblastoma.



Dr Rama S. Dwiveldi

To understand and unravel the mechanism(s), how epigenetic modifiers such as **DNA methylation and acetylation** alter the expression patterns of genes and thereby the gene products at molecular and genetic level in **stem cell model** may provide a more effective approach to circumventing the progression and reversal of human diseases. Results of these studies may lead to the development of more effective therapeutic measures in the treatment of tumors and reversal of the progression of commonly untreatable diseases.

In addition to this our laboratory is also involved in studying the underlying mechanism(s) in alteration of the gene expression, LOH, chromosomal rearrangement that can be used as effective diagnostic and prognostic markers for a number of tumors.

"When solving problem, dig at the roots instead of just hacking at the leaves"

Anthony J. D'Angelo

Focus on Keynote speakers

Dr Ed Ojuka. University of Cape Town.



Dr Ed Ojuka.

Born in Uganda in 1957, he obtained a bachelor of science degree in physics and mathematics from Makerere University, Uganda, and worked as a high school teacher for three years. Received a scholarship to the University of Western Australia where he obtained a diploma in health and physical education in 1980. In Australia he became aware of, and fascinated with, the scientific discipline of exercise physiology. Returned to Uganda and worked as a sports tutor at Makerere university between 1981-1988. During this time as an employee of Makerere university, he obtained a diploma in education and a master of education degree. Left for further studies in the USA in december 1988 where six years later he obtained a Ph.D. in exercise physiology from Brigham Young university. Was employed for three in the department of Exercise and Sports Science at the university of Arizona in Tucson as a lecturer.

Ed then joined Washington university school of medicine in St. Louis where he trained as a postdoctoral fellow for four years. At Washington university he became fascinated with the mechanisms by which regular physical exercise protects individuals from type II diabetes and why physical inactivity is so bad for health. The two most influential persons in his research career were/are Professors Will Winder of Brigham Young University and John Holloszy of Washington university school of medicine. The manner in which these great scientists make complicated concepts understandable to readers/students is what impresses him the most.

He was offered a post as a senior lecturer at UCT in 2002 and has been serving at that post since. He teaches physiology to undergraduate science and medical students and to students enrolled in the honours program in exercise and sports science and leads an active research group consisting of honours, masters, Ph.D. and postdoctoral students. His laboratory is located at the Sports Science Institute of South Africa in Newlands. The focus of their research continues to be the mechanisms responsible for the health benefits of exercise. At the moment they are looking at the role of Ca^{2+} in regulating the expression of glucose transporters and mitochondrial proteins.

At the recent PSSA conference he gave a presentation on the use of ChIP on Chip to elucidate physiological mechanisms. In this lecture he described the superiority of the ChiP assay over EMSA in assessing binding activity of transcription factors and gave examples of how they have used this assay in studying the binding of MEF2 to the GLUT4 promoter in response to exercise. He emphasized that the technique is straight forward and does not require specialized equipment or reagents but can reveal valuable information when conducted carefully and thoughtfully. Edward enjoys his work as a research scientists and hopes that he will continue to inspire students, especially those from disadvantaged backgrounds, to pursue careers in science.

Ms Zungu was runner up in the Johhny van der Walt poster competition last year and this year she entered the Wyndham competition and her presentation was amongst those given honourable mention. She had this to say:



Ms Makhosi Zungu. University of Cape Town.

"I would like to extend my sincere gratitude to the adjudicators who deemed my presentation worthy of receiving an Honourable Mention. It really is an honour for me and serves as an excellent motivation to continue to thrive in my academic endeavours. The highlight of this meeting for me was the positive feedback I received after delivering my presentation and the opportunity to network with my peers and the pioneers in the field of Cardiovascular research.

This years meeting was special since it was the last time I attended as a graduate student and I will always treasure the memories of enthusiastic debate that the sessions usually attract."

From the organizers of PSSA 2006

The Physiological Society of Southern Africa (PSSA) held its annual scientific meeting from 26 to 29 September 2006 in an effort to report and exchange ideas on current research and teaching methods. All major South African Universities were presented.

Given the theme "Cutting Edge Research in Physiology", the 34th Meeting, which was hosted by UKZN on the Howard College campus, discussed a range of topics represented by the various divisions of the Physiological Society of Southern Africa. The presentations focused on cardiovascular physiology, physiological genomics, medicinal plants and alternative medicines, exercise science and sports medicine, physiology education, molecular and cellular biology, drug delivery, nutrition, and all other health related aspects also formed part of the discussion.

"The conference also attempted to attract some of young African academics and students to join physiology as both students and academics as there is gross shortage in this area," said Professor Cephas Musabayane, Head of UKZN Physiology

Keynote guest speakers were Professor Kanigula Mubagwa who is a leading researcher in cardiovascular diseases from the University of Leuven in Belgium, and Dr Nick Ashton who is an eminent researcher in renal function from the University of Manchester in the UK.

The conference was a huge success as it received positive responses from high flying people who attended and provided insightful information in the field. Members of the Local Organizing Committee worked tirelessly to ensure the conference was a success. It also provided an opportunity and exposure to eight postgraduate students who presented their research papers at this multidisciplinary meeting. Two of the students from UKZN, Ms Natisha Dukhi and Mr Delvin Moodley who entered for Wyndham Competition for Young Scientists were commended for their excellent work. The conference exposed delegates to some of the modern techniques in international research presented by top class scientists. It further provided new avenues of collaborative research which may be explored in the near future.

Professor Musabayane commended the Deputy Vice-Chancellor Professor Leana Uys and the Dean Professor Sabiha Essack for their support for the conference.

From Prof Cephas Musabayane

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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. Explain how lack of exposure to sunlight can result in hypocalcaemia

A1. The sun synthesizes Vitamin D which is received by the skin so lack of exposure to sun results in calcium deficiency.

A2. The sun converts Vitamin D to calcium so reduced sunshine = hypocalcemia.

A3. The osteoclasts in the bone are not warmed enough by the lack of sun so they cannot breakdown the bone to release calcium.

Please send any of the editorial team some of the gems you pick up as you mark over the next couple of weeks.

UP FOR GRABS:

During the Wyndham session a student presented data on the effect of diet, obesity and metabolic syndrome on reproduction in male rats. At the end of his presentation the student was asked :

”were the rats less fertile than normal?”

but he did not hear the question clearly. The editorial team is offering a prize of **\$1 000** (Zimbabwe Dollars) to the first person to correctly identify the person who tried to clarify the first question by piping out

“Did YOU breed with them successfully?”

PHYSIOLOGY SOCIETY OF SOUTHERN AFRICA