Non-Communicable Diseases in Developing Countries

October 15 - 19 2012

Cape Town, South Africa
WELCOME TO
CAPE TOWN

Venue
The Commodore Hotel
Portwood Road, V & A Waterfront
www.thecommodore.co.za

Course organizer
Luiz F. Zerbini, PhD

ICGEB Cancer Genomics
Cape Town, South Africa
Dear Participants and Faculty,

As the Program Chair, it is my sincere pleasure to welcome you to the “Non-Communicable Diseases in Developing Countries”, Cape Town, South Africa – October 15th-19th 2012 sponsored by the International Centre for Genetic Engineering and Biotechnology (ICGEB), the International Union of Biochemistry and Molecular Biology (IUBMB) and TWAS Academy of sciences for the developing world.

Prevention of heart disease, cancer, diabetes and respiratory diseases needs to be made a priority or their prevalence will increase in low- and middle-income countries and disproportionately affect the poor. Based on the World Health Organization (WHO) report, NCDs had emerged as one of the twenty-first century’s major development challenges. Non-communicable diseases accounted for an estimated 55 million deaths annually and over 90 per cent of those deaths occurred in developing countries and among the poorest populations. In Africa alone, deaths are estimated to grow by 20 per cent by 2015.

In this course, students will be introduced to basic and molecular aspects of the disease in the context of several non-communicable diseases. The aim is to give an overview of the current scenario of these important diseases, how to obtain valuable information from them and how to teach this information to others.

We have a line-up of outstanding speakers and the week-long lecture course is an excellent opportunity for you to meet with exceptional investigators from all over the world, and create an opportunity for networking and collaboration.

The beautiful city of Cape Town provides a setting for many scenic wonders, magnificent seascapes and panoramic vistas. The beautiful coastal areas of Camps Bay, Clifton, Bantry Bay and Hout Bay surround the breathtaking tranquility of the winelands, Constantia, Stellenbosch, Paarl and Franshoek. Highlights include Table Mountain Cable Way, Victoria & Alfred Waterfront, Kirstenbosch National Botanical Gardens, Robben Island, Cape Point Nature Reserve, the Cape of Good Hope and the Stellenbosch wine route.

I am very excited to welcome you to this stimulating event!

Luiz F Zerbini, PhD
Group Leader, Cancer Genomics
International Centre for Genetic Engineering and Biotechnology (ICGEB)
Cape Town, South Africa
Monday, October 15th 2012

08:30 - 09:15   Arrival and Registration
09:15 - 09:30   Welcome – Luiz Zerbini
09:30 - 10:00   “The ICGEB” & NCDs in Africa” M Iqbal Parker
10:00 - 11:00   “The hallmarks of cancer” Georgia Schäfer
11:00 - 11:30   Tea/Coffee break
11:30 - 12:30   “Epidemiology of cancer in developing countries” Imran Parker
12:30 - 13:30   Lunch
13:30 - 14:30   “Nutrition and Cancer” Jin-Rong Zhou
14:30 - 15:30   “The role of NF-κB in tumorigenesis and cancer therapy” Neil Perkins
15-30 - 15:45   Tea/Coffee break
15-50 - 17:00   “Good cop, bad cop: integration of NF-κB signalling with the p53 tumour suppressor pathway in cancer” Neil Perkins
Tuesday, October 16th 2012

**Diabetes**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>09:00 - 10:00</td>
<td>“Basic and Molecular aspects of Diabetes” Barbara Huisamen</td>
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<td>10:00 - 11:00</td>
<td>“Epidemiology of diabetes mellitus in developing countries” Andre Kengne</td>
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<td>11:00 - 11:30</td>
<td>Tea/Coffee break</td>
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<td>11:30 - 12:30</td>
<td>“Nutrition and diabetes” Jin-Rong Zhou</td>
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<td>12:30 - 13:30</td>
<td>Lunch</td>
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<td>13:30 - 14:30</td>
<td>“Liver glycogen and Diabetes” Joan Guinovart</td>
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<td>14:30 - 15:00</td>
<td>Tea/Coffee break</td>
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<tr>
<td>15:00 - 16:00</td>
<td>“Tungstate: an experimental anti-diabetic agent” Joan Guinovart</td>
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<td>16:00 - 17:00</td>
<td>Meet the expert section</td>
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Thursday, October 18th, 2012

Chronic Respiratory Diseases

09:00 - 10:00  “The mysterious epidemiology of allergy and asthma”  Rodney Ehrlich
10:00 - 11:00  “Epidemiology of chronic obstructive pulmonary disease - more than tobacco”  Rodney Ehrlich
11:00 - 11:30  Tea/Coffee break
11:30 - 12:30  “Exercise in management of chronic diseases”  Vicky Lambert
12:30 - 13:30  Lunch
13:30 - 14:30  “Global, national and inter-sectoral actions to prevent and manage NCD's”  Vicky Lambert
14:30 - 15:00  Tea/Coffee break
15:00 - 16:00  “The Connectivity Map Approach”  Luiz Zerbini
Friday, October 19th 2012

Cardiovascular Diseases

09:00 - 10:00  “Ischemic heart disease and cardiac signalling”  
               Sandrine Lecour
10:00 - 11:00  “Biomaterial therapy for myocardial induced heart failure”  
               Neil Davies
11:00 - 11:30  Tea/Coffee break
11:30 - 12:30  “Cardiovascular disease risk evaluation” Andre Kengne
12:30 - 13:30  Lunch
13:30 - 14:30  “Gene therapy for cardiovascular disorders” Mauro Giacca
14:30 - 15:00  Tea/Coffee break
15:00 - 16:00  “Stem cells for cardiac regeneration” Mauro Giacca
16:00 - 17:00  Meet the expert section
Dr Davies obtained his PhD in Biochemistry from the laboratory of Prof Claus von Holt at the University of Cape Town. After that he carried out a post-doctoral fellowship in Prof George Brownlee’s laboratory at the Sir William Dunn School of Pathology, Oxford University. He is presently a senior lecturer at the Cardiovascular Research Unit, Department of Surgery, University of Cape Town. He is co-director of the MRC Inter-University Cape Heart Research Unit. His research group has focussed for the last 8 years on engineerable biomaterials and their use in angiogenesis and myocardial infarction therapies. This period of research has thus far resulted in 18 publications, 5 of which are in the top journal in the field, “Biomaterials” (IF 7.8). He is also co-inventor on 2 international patents stemming from this work. His laboratory has received grants from the Wellcome Trust, MRC, Centre for High Performance Computing and NRF. He is on the editorial board of Journal of Biomaterials and Tissue Engineering and reviews for all the major biomaterial oriented journals.
Rodney Ehrlich, MBChB FCPHM PhD

Professor - School of Public Health and Family Medicine, Department of Medicine
University of Cape Town
Senior Specialist (Consultant), Occupational Diseases Clinic, Groote Schuur Hospital, and Department of Health, Provincial Government of the Western Cape.
Email: Rodney.Ehrlich@uct.ac.za

Prof. Rodney Ehrlich trained at the University of Cape Town (UCT), University of the Witwatersrand, Mount Sinai Medical School, New York, and Columbia University, New York. He is specialised in both Public Health Medicine and Occupational Medicine, and holds joint appointments in the School of Public Health and Family Medicine and the Department of Medicine at the University of Cape Town. His research interests include occupational and environmental disease; tuberculosis, asthma and chronic obstructive pulmonary disease more generally; social epidemiology and compensation systems.

He has been Director of the Occupational Medicine Clinic at Groote Schuur Hospital since 1990, enabling him to combine clinical medicine with public health. He has held adjunct faculty appointments at the Mount Sinai School of Medicine and the Mailman School of Public Health, Columbia University, New York, and is currently Deputy Editor of the American Journal of Industrial Medicine. He convenes the MPH programme at UCT, including the Non Communicable Disease Epidemiology course, and is co-editor of a widely used South African textbook on research methods in Epidemiology.
Mauro Giacca, MD PhD

Director - ICGEB Trieste
Head - Molecular Medicine Laboratory
Padriciano, 9934149
Trieste, Italy
E-mail: giacca@icgeb.org

Talk Schedule: Friday, October 19 / 13:30 – 14:30 & 15:00 – 16:00

Mauro Giacca obtained his Degree in Medicine from the University of Trieste, Italy in 1984 and in 1989, his Ph.D. in Microbiology and Virology from the University of Genoa, Italy.

Since 2004, he is Director of the Italian Component of the International Centre for Genetic Engineering and Biotechnology (ICGEB), Trieste, Italy; where he coordinates 16 research groups, involving over 210 people from 29 different countries (www.icgeb.org). He was Founder and first Director of the Molecular Biology Laboratory of the Scuola Normale Superiore in Pisa, Italy, one of the leading academic institutions in Italy, from 2000-2004.

His current research interests focus on two major topics in the field of Molecular Medicine: The first is the development of viral vectors for human gene therapy, with special emphasis on vectors based on the adeno-associated virus (AAV) and their application for gene therapy of cardiovascular disorders. The ultimate purpose of these studies is the induction of new blood vessel formation and cardiac regeneration in patients with myocardial infarction or heart failure. The second concerns several aspects of the molecular biology of HIV-1 infection with particular reference to the study of the interactions of some viral proteins (Tat, integrase) with cellular factors.
Dr. Guinovart is a Professor of Biochemistry and Molecular Biology at the University of Barcelona and Director of the Institute for Research in Biomedicine, an independent research institute affiliated to University of Barcelona that performs multidisciplinary research of excellence.

Dr. Guinovart’s research focuses on glycogen metabolism, with special attention to the study of the alternations in carbohydrate metabolism in diabetes and Lafora disease.

Dr. Guinovart is Treasurer and member of the Executive Committee of the International Union of Biochemistry and Molecular Biology (IUBMB), Chief Editor of SEBBM magazine and Editor of IUBMB Life.

He has received the Federation of European Biochemical Societies (FEBS) Diplôme d’honneur, among many other awards, and is a Member of the Spanish Royal Academy.
Dr. Huisamen currently holds a post as chief specialist scientist with the MRC and has an associate professorship with the University of Stellenbosch. She has been studying the changes in myocardial functioning and the associated glucose utilization and signal transduction induced by obesity, insulin resistance and type 2 diabetes for the past 15 years.

This has given rise to 35 publications in peer reviewed journals, about 40 international conference presentation and 95 national presentations of results. She has used the animal models that her research group has characterized in the laboratory as platforms to test various anti-diabetic substances, both plant based and pharmaceutical substances under development or in clinical trial for the treatment of type 2 diabetes.
Andre Pascal Kengne, MD PhD

Internist, Director South African MRC’s National Collaborative Research Programme on Cardiovascular and Metabolic Disease, Cape Town, South Africa
E-mail: Andre.Kengne@mrc.ac.za

Talk Schedule: Tuesday, October 16 / 10:00 – 11:00
Friday, October 19 / 11:30 – 12:30

Dr Kengne earned his M.D. degree from the Faculty of Medicine and Biomedical Sciences, University of Yaounde 1, Cameroon. He did his residency training in internal medicine at the Yaounde University Teaching Hospitals. In 2009, he obtained a PhD in Medicine from the University of Sydney, Australia, with major focus on cardiovascular epidemiology and prevention.

Dr Kengne is a Fellow of the International Society of Hypertension, The George Institute for Global Health, The Julius Centre for Health Sciences and Primary Care – The Netherlands, member of the American Society of Hypertension, High blood pressure Council of Australia and many other local/regional societies. He is on the editorial board of the Pan-African Medical Journal and Cardiovascular Journal of Africa, and serves as reviewer for several additional medical Journals. He has authored about 100 articles and book chapters in the areas of cardiovascular diseases, diabetes and chronic diseases in Africa, and clinical decision making. He has lectured in Cameroon and abroad on topics in those fields. He has been involved in many research projects in those fields in Cameroon and in Australia, including the ADVANCE trial and the Asia Pacific Cohort Studies Collaboration.

Dr Kengne is currently the Director of South African MRC’s National Collaborative Research Programme on Cardiovascular and Metabolic Diseases, and holds conjoint appointments at the Department of Health sciences of the University of Cape Town, and the Department of Medicine of the Groote Schuur Hospital, Cape Town.
**Professor Estelle V. Lambert, BS MS PhD**

UCT/MRC Research Unit for Exercise Science and Sports Medicine, Department of Human Biology, Faculty of Health Sciences, University of Cape Town
PO Box 115, Newlands 7725
South Africa
E-mail: vicki.lambert@uct.ac.za

**Talk Schedule: Thursday, October 18 / 11:30 – 12:30 & 13:30 – 14:30**

Professor Estelle Lambert is working in the UCT/MRC Research Unit for Exercise Science and Sports Medicine, Department of Human Biology, Faculty of Health Sciences, University of Cape Town. She is author or co-author on over 120 peer-reviewed scientific publications. She is an NRF B-rated scientist, and is actively involved in research on the impact of physical activity/inactivity and obesity on public health purposes in South Africa, and has acted as a consultant to the United States Centers for Disease Control and World Health Organization (WHO) on issues related to the Role of Diet and Activity in the Prevention of Non-Communicable Diseases, and Developing a Global Policy for Promoting Physical Activity for Health. She currently serves on the executive council of the International Society for Physical Activity and Health. She leads the efforts in South Africa, as PI on the NIH-funded, 5-country study entitled: Modeling the Epidemiological Transition study (METS), and the Vitality Insured Persons (VIP) cohort. She is a co-principal investigator for WDF-funded, school-based intervention, Health Kick, as well as the South African principal investigator for the ISCOLE study (International Study on Childhood Obesity, Lifestyle and Environment).
Sandrine Lecour PharmD PhD

Associate Professor
Deputy Director - Hatter Cardiovascular Research Institute
Faculty of Health Sciences
University of Cape Town
E-mail: sandrine.lecour@uct.ac.za

Sandrine Lecour PharmD, PhD, trained at the University of Burgundy, France. She is an Associate Professor at the University of Cape Town and Leader of the Cardioprotection group at the Hatter Cardiovascular Research Institute for Africa, Department of Medicine, University of Cape Town. Her research group focuses on the delineation of novel cardioprotective signaling pathways.

She has published over 45 papers in peer-reviewed journals (h index = 23). She is on the Editorial Board of Basic Research in Cardiology (impact factor = 6.0), Journal of Molecular and Cellular Cardiology (impact Factor = 5.1), and on the Editorial Advisory Panel of Clinical Science (impact factor = 4.2).

With the recent discovery of a novel cardioprotective signaling pathway that she has termed the SAFE (Survivor Activating Factor Enhancement) pathway, she has been invited to give lectures to international meetings such as the International Society for Heart Research meeting and the American Heart Association meeting.

In 2009, she initiated the creation of the South African Cardiovascular Research Society (SASCAR) as part of an interest group of the South African Heart Association. As the Chairperson of SASCAR, she intends to promote the research and training of students in the cardiovascular field in South Africa.

Sandrine is aFellow of the European Society of Cardiology and she is currently a listed grade B scientist of the South African National Research Foundation.
Dr. Parker completed secondary education at Livingstone High School in 1996 and commenced with undergraduate training in 1997 at the University of Cape Town in Health Sciences Faculty. After completing my MBChB degree in 2002, he relocated to Pietermaritzburg in 2003 for internship training and then returned to Cape Town for Community Service in 2004. He then joined the Oncology Department at Groote Schuur Hospital in 2005 as a registrar and completed specialist degree in 2009, qualifying as a Radiation Oncologist. He was appointed as Clinical Head of the Breast Cancer Clinic in 2010 managing the comprehensive care of breast cancer patients. During this time, he was also involved with teaching of undergraduate medical students as well as post-graduate oncology registrars; and between 2005 and 2012, was the sub-investigator and principal investigator on multiple breast cancer clinical trials. In 2012, he accepted a post as the resident Oncologist at Melomed Gatesville Hospital, managing the Oncology unit.
Professor Parker is the Director of the Cape Town Component of the International Centre for Genetic Engineering and Biotechnology (ICGEB). Prior to accepting this position, he was the Head of the Division of Medical Biochemistry and Director of Research for the Health Science Faculty at the University of Cape Town. He obtained his PhD in Biochemistry in 1979, completed a postdoctoral fellowship with Gary Stein in the USA and returned to join the Department of Medical Biochemistry in 1981 where he was eventually appointed as the DG Murray Chair of Cancer Research. He was also promoted Ad Hominen to full Professor in Medical Biochemistry. He has been Director of the MRC Oesophageal Cancer Research Unit since 1998 and was awarded the DST/NRF Research Chair in Cancer Biology in 2007. He was President of the South African Society of Biochemistry and Molecular Biology (SASBMB) between 1998 and 2001, is founder Secretary General of FASBMB (the Federation of African Societies of Biochemistry and Molecular Biology) and served in this capacity between 1996 and 2003. He is a founder member of the Academy of Science of South Africa and served as General Secretary from 2000-2004. He was appointed onto the 14-member international jury panel for the Loreal/UNESCO Awards for Women in Science for the period 1997-2002. He serves on the Executive Committee of the International Union of Biochemistry and Molecular Biology (IUBMB) as the Chair of the Committee on Symposia and Chair of the Wood/Whelan Travel Fellowships Committee. In 2003 he was awarded National Science and Technology Forum (NSTF) award for "Outstanding Contributions in Science, Engineering and Technology" and in 2004 he was awarded the South African Society for Biochemistry and Molecular Biology Gold Medal for his contributions to biochemistry. His research areas include molecular carcinogenesis, connective tissue gene regulation during invasion and metastasis and drug development.
Neil D. Perkins, PhD

Institute for Cell and Molecular Biosciences (ICaMB)
Newcastle University
Catherine Cookson Building – Framlington Place
Newcastle upon Tyne
Email: n.d.perkins@ncl.ac.uk

Talk Schedule: Monday, October 15 / 14:30 – 15:30 & 15:50 – 17:00

Neil Perkins completed his Ph.D. in Graham Goodwin's laboratory at the Institute of Cancer Research, London, UK. This work concerned the investigation of chicken beta globin gene expression and resulted in the identification of the transcription factor that later became known as GATA1 (known as EF1 in the Goodwin lab). From 1990 to 1996 he was a postdoctoral researcher in Gary Nabel's laboratory, at the Howard Hughes Medical Institute at the University of Michigan, where his interest in the NF-κB transcription factor family began. Much of this work concerned the ability of NF-κB to function as a regulator of human immunodeficiency virus (HIV) 1. This interest in NF-κB continued when he became a principal investigator at the University of Dundee, UK, in 1996. His laboratory relocated to the University of Bristol, UK, in 2008 and again in 2010 to the University of Newcastle, UK, where he is now. The Perkins lab is interested in how NF-κB subunits are regulated by oncogenes, tumour suppressors and stimuli associated with cancer development and therapy.
Georgia Schäfer, PhD

Research Officer
Division of Medical Biochemistry
University of Cape Town
Wernher & Beit Building South, Room S2.20,
Anzio Rd, Observatory, 7925
South Africa
Email: georgia.schafer@uct.ac.za

Talk Schedule: Monday, October 15 / 10:00 – 11:00

Georgia Schäfer obtained her PhD from the Humboldt University Berlin, Germany, in 2003 in Molecular Biology. She then moved to South Africa and completed a postdoc in Prof. Hugh Patterton’s group at the University of Cape Town (2003-2005) followed by a second postdoc in Prof Gordon Brown’s laboratory at the Institute of Infectious Diseases and Molecular Medicine (IIDMM), UCT (2005-2009). Her research focused on the innate immune receptors involved in infection with Mycobacterium tuberculosis.

Since 2010, Georgia Schäfer has been working as a research scientist at the ICGEB Cape Town in Prof Iqbal Parker’s laboratory focussing on the link between HPV associated inflammation and its relevance for the development of oesophageal cancer.
Dr. Luiz Zerbini received a Ph. D. from University of Sao Paulo, Brazil in 1999. His Ph. D. work focused on developing new gene therapy strategies in order to generate adenoviral vectors that could be specifically targeted to certain cell types. He joined Dr. Libermann's laboratory as post-doctoral scientist at Beth Israel Deaconess Medical Centre (BIDMC) and Harvard Medical School in September 1999 where he worked on defining the mechanisms involved in the deregulated function of malignant cells with specific focus on transcription factors.

He was promoted to Instructor Faculty position at Harvard Medical School in 2004. At the same year, Dr. Zerbini became the Associate Director of Research Proteomics, Dana Farber Harvard Proteomics Core. Furthermore, he was awarded as an independent investigator with two long-term Department of Defense (DoD), Cancer Program projects and co-investigator in a NIH R01 Research grant. He was also award two research grants from the Special Program for Research Excellence (SPORE) through the Dana Farber Harvard Cancer Center, funded by the National Cancer Institute (NCI).

Dr. Zerbini joined the International Centre for Genetic Engineering and Biotechnology (ICGEB), located in Cape Town, South Africa in March 2009. Dr. Zerbini currently serves as the head of the Cancer Genomics Group. The overall goals of the Group are to utilize genomics and proteomics tools and signal transduction resources to accelerate comparative analysis of aberrant gene expression in carcinogenesis and to study alterations in signal transduction pathways during development of cancers.
Dr. Zhou is an Associate Professor of Surgery, Harvard Medical School, and is the Director of Nutrition/Metabolism Laboratory at Department of Surgery, Beth Israel Deaconess Medical Center. He received a Ph.D. degree in Nutritional Sciences from University of Illinois at Urbana-Champaign, a postdoctoral training at Beth Israel Deaconess Medical Center/Harvard Medical School and a National Research Service Award from National Institutes of Health.

His research priority is to investigate the complex issues dealing with nutrition and health. The long-term goal of his research is to identify dietary and nutritional components and bioactive natural components in Chinese herbal medicines for the prevention and treatment of chronic diseases, such as cancer and metabolic disorders. Dr. Zhou’s research has been widely supported by several funding organizations, such as National Institutes of Health, Department of Defense, Susan Komen Breast Cancer Foundation, American Institute for Cancer Research, and Cancer Research and Prevention Foundation.

Dr. Zhou has been the members of grant review panels at National Institutes of Health, the Susan G. Komen Breast Cancer Research Foundation, the United States Department of Agriculture, Florida Department of Public Health, National Science Foundation of China, Italian Association for Cancer Research, and Singapore National Medical Research Council. He has published over 60 peer-reviewed publications and book chapters, served as the ad hoc reviewer for over 30 scientific journals and the editorial member/guest editor/scientific advisor for several journals.
The organizers sincerely thank our sponsors

International Center for Genetic Engineering and Biotechnology

Irene Muriuki, Administrative Officer / ICGEB Cape Town
Leticia Adams, Administrative Assistant / ICGEB Cape Town
Elisabetta Lippolis, Head Conferences Unit / ICGEB Trieste

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