



# **Symposium** "Diabetes - a Threat to Mankind"

7-8 June, 2013 in Helsinki, Finland



## The Finnish Diabetic Nephropathy Study

Folkhälsan Institute of Genetics, Folkhälsan Research Center  
Biomedicum Helsinki 1, room C318  
Haartmaninkatu 8  
FI- 00290, Helsinki  
[www.finndiane.fi](http://www.finndiane.fi)

### Local Organizing Committee

Per-Henrik Groop	<a href="mailto:per-henrik.groop@helsinki.fi">per-henrik.groop@helsinki.fi</a>	tel. +358 9 191 25459
Carol Forsblom	<a href="mailto:carol.forsblom@hus.fi">carol.forsblom@hus.fi</a>	tel. +358 40 5559556
Asta Mustonen	<a href="mailto:asta.mustonen@helsinki.fi">asta.mustonen@helsinki.fi</a>	tel. +358 44 7883743
Maikki Parkkonen	<a href="mailto:maikki.parkkonen@helsinki.fi">maikki.parkkonen@helsinki.fi</a>	tel. +358 9 19125387



## Dear Participants,

It is my great pleasure and honor to welcome you all to the “*Diabetes – A Threat to Mankind*” symposium held in Helsinki on June 7-8, 2013. This symposium will include presentations by a roster of award winning keynote speakers exploring both type 1 and type 2 diabetes and covering topics ranging from disease pathogenesis to diabetic complications. This symposium was made possible by an unrestricted educational grant from the Wilhelm and Else Stockmann Foundation. Established in 1953 with the goal of promoting research that aims to prevent or ease the suffering caused by common complex diseases, the Wilhelm and Else Stockmann Foundation has played a major role in supporting diabetes research in Finland. This symposium will serve to highlight both the 60th anniversary of the Foundation as well as the 15th Anniversary of the Finnish Diabetic Nephropathy Study.

My sincere thanks go to all invited speakers and chairmen who, despite their busy schedules all agreed to come to Helsinki to share their knowledge and expertise with us. I am also indebted to all of you who accepted the invitation to take part in this event. You represent the world leaders in the race to find the reasons why some people develop diabetes and why a subset of the people with diabetes will develop the devastating microvascular complications and eventually succumb to the consequences of macrovascular disease. Your work is important and gives patients hope that in the future, diabetic complications, or even diabetes itself, will be preventable.

Finally, I would like to thank all the members of the organizing committee for their devotion and hard work to make this event a memorable one. Their efforts will give all of us an opportunity to experience science, music and Helsinki.

Welcome to Helsinki!

**Per-Henrik Groop**, professor  
Principal investigator  
FinnDiane Study

# Wilhelm and Else Stockmann Foundation

Wilhelm Heinrich Hermann Stockmann was born in 1868 in Helsinki, Finland. He was the fourth child of Councilor of Commerce G.F. Stockmann, a business magnate. He studied science and medicine at the University of Helsinki and graduated with Master's Degree in Philosophy in 1890 and a Bachelor's Degree in Medicine in 1893. He continued his medical education at the Surgical Hospital of Helsinki and thereafter started his own practice.



Although he was running a successful medical practice, his true passion was to become a military physician to help the nation. Fortunately for the medical community, he was unable to secure a position in the military. He thereafter threw himself more fully into his medical practice, specializing in dermatology and venereal diseases and, in 1904 earned his PhD. Despite his successful career, he also served as a personnel doctor as well as a member of the board for the family business, G.F. Stockmann Ltd., from 1902 until his death in 1932.

Else von Undritz was the first born child of Colonel Gustaf Alexander Frantz von Undritz and Ida Augusta Alexandrine. In 1897 Else von Undritz married young Wilhelm Stockmann and in 1898 gave birth to a daughter, Else Margit. In respect to the lifework of her spouse, Else established a foundation to support the ideals Wilhelm Stockmann had worked for. She used the foundation to help families, who had lost their main source of income due to sickness or death. Else's last wish was that the mission of the foundation would be to support medical and academic research and aiming at relieving human distress and focus on preventing common complex diseases.



Later, the main focus of the foundation has shifted to support medical research. The foundation has supported studies regarding cancer, rheumatoid arthritis, arthrosis, fractures, dementia, infections, cardiovascular, pulmonary, mental, nephrology, and diabetes. From 1953 to 2012, the foundation distributed 10.7 million euros in research grants.

# "DIABETES – A THREAT TO MANKIND"

Symposium on diabetes and its complications,  
7-8 June 2013, Biomedicum 1 in Helsinki, Finland

## PROGRAM

### Friday 7 June 2013

- 07.00 – 08.00      Registration  
08.00 – 08.15      Opening of the symposium, Per-Henrik Groop

#### TYPE 1 DIABETES (Chair: Johnny Ludvigsson)

---

- 08.15 – 08.45      Mikael Knip: Advances in our understanding of the pathogenesis of type 1 diabetes  
08.45 – 09.15      John Todd: From genetics to etiologically-targeted therapeutic strategies in autoimmune diabetes  
09.15 – 09.45      Coffee and posters

#### TYPE 2 DIABETES (Chair: Ulf Smith)

---

- 09.45 – 10.15      Emmanuel van Obberghen: Contribution of microRNAs to the risk type 2 diabetes after unfavorable in utero conditions  
10.15 – 10.45      Leif Groop: Missing heritability – are we missing the genes or the disease?  
10.45 – 11.15      Mark McCarthy: Diamonds in the dirt: from type 2 diabetes genetics to biological inference

## MICROVASCULAR COMPLICATIONS (Chair: Giancarlo Viberti)

---

- 11.15 -12.00 Michael Brownlee: Pathogenesis of the diabetic complications – an update on the unifying hypothesis
- 12.00 – 13.00 Lunch and posters

## NEPHROPATHY (Chair: Merlin Thomas)

---

- 13.00 – 13.30 Thomas Coffman: Animal models and diabetic nephropathy
- 13.30 – 14.00 Mark Cooper: New targets for diabetic nephropathy
- 14.00 – 14.30 Per-Henrik Groop: Diabetic nephropathy – environment or genes
- 14.30 – 15.00 Coffee and posters
- 15.00 – 15.30 Karl Tryggvason: Search for susceptibility genes for diabetic nephropathy
- 15.30 – 16.00 Assam El-Osta: Will the epigenetics explain the enigma of diabetic nephropathy?
- 16.00 – 16.30 Discussion

## RETINOPATHY (Chair: Ron Klein)

---

- 16.30 – 17.00 Hans-Peter Hammes: Pathogenesis of diabetic retinopathy
- 17.00 – 17.30 Tien Wong: New approaches for diagnosis, monitoring and treatment of retinopathy
- 17.30 – 17.45 Closure of the day
- 19.30 – 24.00 GALA DINNER

## Saturday 8 June 2013

- 08.00 – 08.30 Registration  
08.30 – 08.45 Opening of the day, Per-Henrik Groop

### NEUROPATHY (Chair: Solomon Tesfaye)

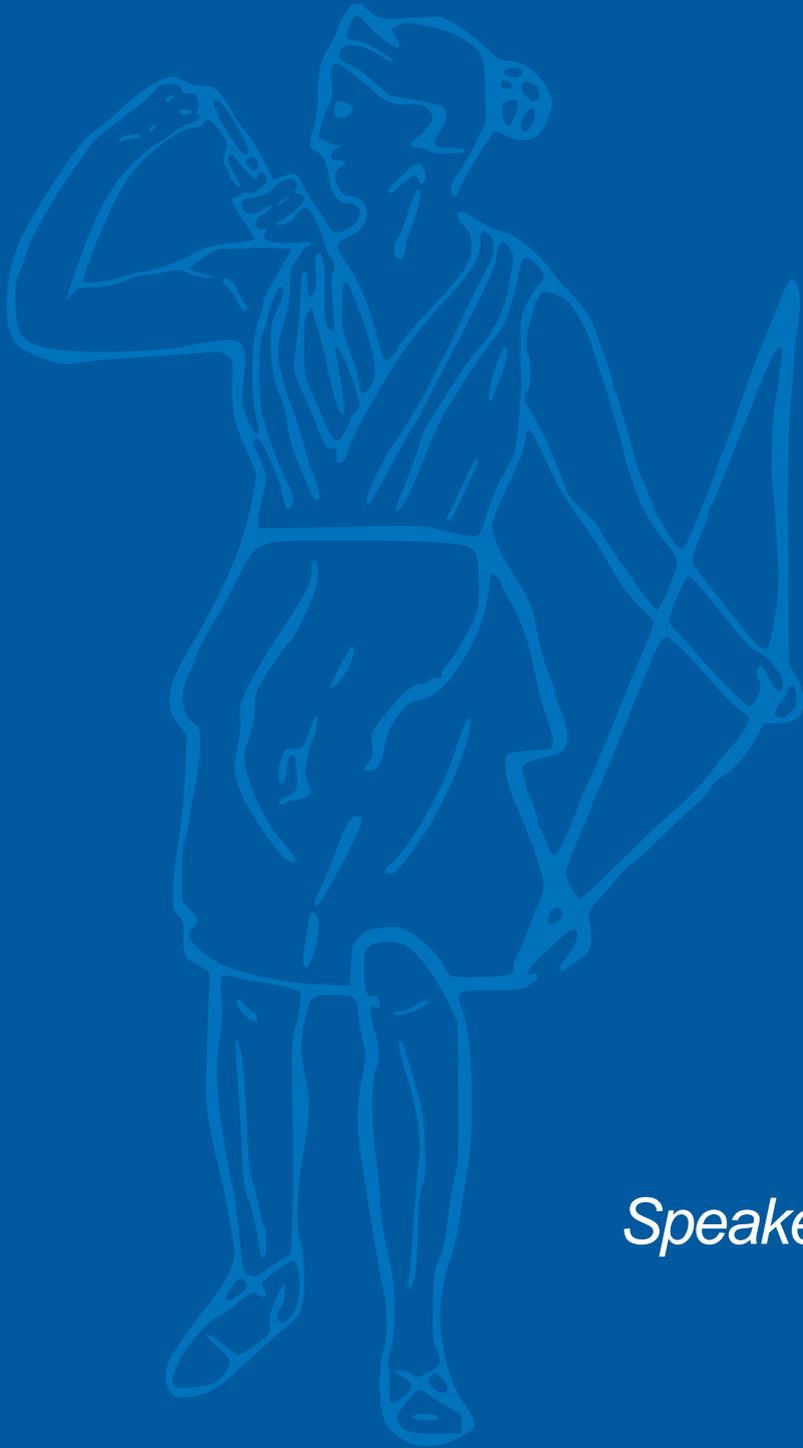
---

- 08.45 – 09.15 Rayaz Malik: Recent advances in the understanding of diabetic neuropathy  
09.15 – 09.45 Luciano Bernardi: Autonomic neuropathy – an organic or reversible disorder?  
09.45 – 10.15 Coffee and posters

### MACROVASCULAR COMPLICATIONS (Chair: Jan Borén)

---

- 10.15 – 10.45 Markku Laakso: Glucose Metabolism in the Ischemic Heart  
10.45 – 11.15 Marja-Riitta Taskinen: Derangement of hepatic lipid metabolism – a novel target  
11.15 – 11.45 Michael Roden: Mitochondrial plasticity in obesity and diabetes mellitus  
11.45 – 12.45 Lunch and posters  
12.45 – 13.15 Seppo Ylä-Herttua: Genetic engineering and macrovascular disease  
13.15 – 13.45 Sek Kathiresan: Dissection of the genetics of diabetic macrovascular disease  
13.45 – 14.15 Awards for the best posters  
14.30 – 15.00 Closure of the meeting, Per-Henrik Groop



*Speakers*



## Luciano Bernardi

MD

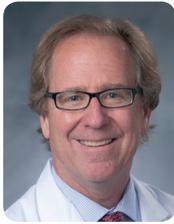
Luciano Bernardi, MD (born in Verona, Italy, in 1950) is full professor of Internal Medicine at the University of Pavia, Italy. His main research interests focus on the integrated control mechanisms of the cardiovascular and respiratory systems. In this context he has done extensive research work in relevant diseases like heart failure and heart transplantation, hypertension, chronic obstructive pulmonary diseases and obstructive sleep apnoea, and diabetes (the latter in collaboration with the FinnDiane Study Group in Helsinki since 2008). He also studied the effects of special respiratory adaptations during sports and exposure to high altitude hypoxia, taking part or leading seven high altitude stages, in the Himalayas (including the 2004 Italian expedition to Everest and K2 “50 years later”) and in the Andes, and during simulated experiments in hypobaric chambers. He also studied the cardio-respiratory effects of listening to music, praying and chanting and the physiologic effects of yoga. His research work results from collaboration with numerous research Institutions in Europe (Finland, UK, Germany, Switzerland, Austria, Ukraine, Russia), India and United States and Peru. His work is published in more than 180 research articles appeared in peer-review journals.



## Michael Brownlee

Professor and Director, Biomedical Sciences,  
Diabetes Research Center

Professor Michael Brownlee holds the Anita and Jack Saltz Chair of Diabetes Research at the Albert Einstein College of Medicine in New York, where he is also Associate Director for Biomedical Sciences at Einstein's Diabetes Research Center. His career has been devoted to understanding the molecular basis of diabetic complications, so that new pharmacologic approaches can be developed to prevent and treat these devastating problems. Dr. Brownlee received his medical degree from Duke University, where he also completed the Medical Research Training Program. After completing his internal medicine residency at Stanford, he joined the Joslin Diabetes Center and Harvard Medical School, where he was a Research Fellow in Biological Chemistry. He then moved to Rockefeller University, where as Assistant and then Associate Professor of Medical Biochemistry he worked on the role of advanced glycation endproducts (AGEs) in the pathogenesis of diabetic complications and discovered that aminoguanidine blocks advanced glycation endproduct formation. At Einstein Dr. Brownlee discovered that most known mechanisms underlying diabetic complications share a common link – hyperglycemia-induced overproduction of superoxide by the mitochondrial electron transport chain. In recognition of his research, Professor Brownlee has received many scientific awards. These include the Juvenile Diabetes Research Foundation's David Rumbough Award for Scientific Excellence, both the American Diabetes Association's Banting Medal and its Outstanding Scientific Achievement Award, the European Association for the Study of Diabetes' Claude Bernard Medal, Columbia University's Naomi Berrie Award for Outstanding Achievement in Diabetes Research, the Barbara Davis Center for Childhood Diabetes' Davis Award, The Japan Society of Diabetic Complications' Outstanding Foreign Investigator Award, and Duke University Medical School's Distinguished Alumnus Award.



## Thomas Coffman

Chief, Division of Nephrology, Duke University

Dr. Thomas Coffman is James R. Clapp Professor of Medicine, Chief of the Division of Nephrology, Senior Vice-Chair in the Department of Medicine, and Founding Director of the Duke Cardiovascular Research Center at Duke University Medical Center. He also serves as Director of the Cardiovascular and Metabolic Disorders Signature Research Program at the Duke-NUS Graduate Medical School in Singapore. A national leader in the field of nephrology, Dr. Coffman is Past-President of the American Society of Nephrology. He currently serves as Treasurer of the International Society of Nephrology. He is a member of the American Society for Clinical Investigation and the Association of American Physicians, and served on the Nephrology Subspecialty Board of the American Board of Internal Medicine (ABIM). He is an Associate Editor for the Journal for the American Society of Nephrology and Journal of Clinical Investigation, and serves on a number of editorial boards for scientific journals including Physiological Reviews and Cell Metabolism. Dr. Coffman has a long-standing interest in diabetic nephropathy and was a member of the NIH Animal Models of Diabetic Complications Consortium. In the course of this work, his laboratory has accumulated substantial experience with various models of diabetes in the mouse, perfecting phenotyping procedures for sensitive assessment of kidney injury in diabetic mice with a particular interest in using mouse models to understand genetic susceptibility to diabetic nephropathy.



## Mark E. Cooper

MB BS, PhD, FRACP, FAHA, FASN, Chief Scientific Officer, Baker IDI Heart & Diabetes Institute, Melbourne, Australia Director, JDRF Centre for Diabetes Complications, Melbourne, Australia

Mark Cooper is the Chief Scientific Officer of the Baker IDI Heart & Diabetes Institute as well as the Director of the JDRF Centre for Diabetes Complications at the Baker IDI Heart & Diabetes Institute. He is Head of the Diabetes Division which encompasses not only diabetic complications but also laboratories studying metabolism and epigenetics. He holds honorary appointments as a Professor of Medicine at both Monash University and University of Melbourne. He is a trained endocrinologist with an appointment at the co-located Alfred Hospital. Dr Cooper studied medicine at the University of Melbourne and then completed his physicians training at the Austin Hospital as well as his PhD under Dr George Jerums and Professor Austin Doyle in the University of Melbourne, Department of Medicine, Austin Hospital. Dr Cooper has successfully competed for a large number of peer reviewed grants over the last 15 years from a range of organizations including not only JDRF but also the National Health & Medical Research Council of Australia, National Institutes of Health, National Heart Foundation of Australia, Diabetes Australia and Kidney Health Australia. In 1999, Dr Cooper was awarded the Eric Susman prize from the Royal Australasian College of Physicians for his research in the field of renal and vascular complications of diabetes. In 2005, he was awarded the Australian Diabetes Society (ADS) Kellion Award for outstanding contribution to diabetes research in Australia. In 1999, he was awarded a Centre Grant from JDRF which was subsequently renewed in 2003. He was recently awarded a five year scholars award by JDRF, one of only 2 awarded worldwide. He is the first non-North American to receive this highly prestigious award. This work has now been further supported by a 5 year Australia Fellowship awarded by NHMRC in 2009. Dr Cooper is currently Co-Chair of the JDRF Medical Science Review Committee (Complications Panel). He is regularly invited to international meetings and has over 400 peer reviewed publications.



## Assam El-Osta

Professor, Epigenetics in Human Health and Disease, BakerIDI Heart & Diabetes Institute

Sam is a Senior Research Fellow, Head of the Epigenetics in Human Health and Disease Laboratory, and, Preclinical Head of the Diabetes Division. He is Head of the Epigenomics Profiling Facility and Professor of Medicine, Monash University. He is regularly invited to speak at many national and international meetings. His groups productivity in publishing original and advances in diabetes and epigenetics, as well as his track record in obtaining peer reviewed grants has allowed him to build a multidisciplinary team focused on innovative research to foster collaborative projects in Australia and with major international groups. He is internationally recognised with more than 100 articles published. His research output and leadership are reflected by prestigious awards which include the Australian Society for Medical Research (ASMR-AMGEN) “Australian Medical Researcher of the Year” and the Early Career Researcher - Juvenile Diabetes Research Foundation & MacQuarie Group Foundation “Diabetes Research Innovation Award”. He has a sustained track record of high scientific significance identifying determinants responsible for the persistence of gene expression changes implicated in hyperglycemic memory. He has developed a training program for PhD students in the major technologies critical for contemporary epigenetic research and a major objective is his supervision of national and international scientists. His commitment to innovation have been critical to developing scientific excellence in the epigenomics profiling facility, a contemporary site of research at the highest international standard with highly influential research published in prestigious journals.



## Leif Groop

Prof, MD, PhD, Clinical Science Malmö,  
Lund University Diabetes Centre

Leif Groop, M.D., Ph.D. is since 1993 Professor in Endocrinology at Lund University and Director of Lund University Diabetes Centre. He received his MD at University of Berne, Switzerland and PhD at University of Helsinki, Finland. After a PostDoc period at Yale University he devoted his research to dissection of the heterogeneity of diabetes but also to explore the pathogenic events leading to type 2 diabetes. As an important tool to achieve this goal, he initiated the Botnia Study at the west coast of Finland, one of the world's largest family studies on type 2 diabetes. The research group has been involved in many of the genetic discoveries on type 2 diabetes during the past 15 years, including one of the first whole genome association studies for type 2 diabetes. Leif Groop is a member of the Swedish Royal Academy of Science, he has served on numerous editorial boards and achieved several international recognitions, including the Claude Bernard and Anders Jahre awards.



## Per-Henrik Groop

MD, DMSc, FRCPE, MSc, Professor of Nephrology,  
Principal investigator of FinnDiane

Professor Per-Henrik GROOP, MD, DMSc graduated from the University of Helsinki in 1982. He defended his thesis on “The relationship between GIP and beta-cell function in man” at the same university in 1989. After postdoctoral studies at the Guy’s Hospital, University of London under Professor Giancarlo Viberti he returned to Helsinki as Consultant of Nephrology. He is Professor of Nephrology (Chair) at the University of Helsinki, Chief Physician at the Division of Nephrology, Helsinki University Central Hospital and Principal Investigator of the Finnish Diabetic Nephropathy (FinnDiane) Study at the Folkhälsan Research Center in Helsinki, Finland. He is also Professor at the Baker Heart & Diabetes Institute in Melbourne, Australia. His research is focused on the dissection of the pathogenesis of diabetic complications with special emphasis on diabetic nephropathy. In order to provide a unique set of clinical resources with high power to identify genes and genetic variants associated with diabetic complications, professor Groop initiated the large, nation-wide FinnDiane Study in 1997. To date this landmark study comprises 5000 patients with type 1 diabetes and their family members recruited via a comprehensive network of 92 hospitals and health care centers throughout Finland. His FinnDiane Research Group represents an inter-disciplinary team of 38 scientists, post-graduate students and personnel. Professor Groop served as Associate Editor of the *Diabetologia* 2005-2007, and as member of the Advisory Board 2008-2011. He also served as Associate Editor of *Kidney International* and *International Diabetes Monitor* 2007-2011. He is Chairman of the EASD Scientist Training Course, and was President of the European Diabetic Nephropathy Study Group (EDNSG) 2008-2010. He is Chairman of the Signe and Ane Gyllenberg Foundation since 2011. He was awarded the prestigious EASD Castelli Pedroli Prize – 24th Camillo Golgi Lecture in 2009 as well as the Novo Nordisk Foundation Prize in 2012.



## Hans-Peter Hammes

MD

Professor Hans-Peter Hammes, MD, completed his medical studies at the University of Münster in 1980 and his doctoral thesis on “Insulin allergy in Diabetes mellitus” in 1983. He received his clinical training at the University of Giessen, 3rd Medical Dept. with Konrad Federlin, and Reinhard G. Bretzel. He is Professor of Internal Medicine, Endocrinology and Diabetology, and Head of the Section of Endocrinology at the University of Heidelberg, Medical Faculty Mannheim, Germany.

His research is about the pathogenesis, biochemistry, and cell biology of diabetic complications, in particular diabetic retinopathy. Beyond this, the general role of the retinal vasculature as a “window to vascular health and disease” is his main clinical interest. As part of the Mannheim Medical Faculty, he co-developed a training program for medical students (Junior Scientific Masterclass) and he is spokesperson of two International Research Training Groups at the University of Heidelberg in collaboration with the University of Groningen, the Netherlands.

Professor Hammes received several awards and held the 2012 Eva Kohner Lecture at the Annual Meeting of the EASDEC. Her founded the chapter for eye complications in the national diabetes association in Germany. He is on AdvisoryBoards of national and international journals, and serves as ad-hoc chairperson for review committees at international foundations including the EFSD.



## Sekar Karthiresan

Associate Professor of Medicine, Harvard Medical School  
Director, Preventive Cardiology Massachusetts General  
Hospital Associate Member, Program in Medical and Popu-  
lation Genetics, Broad Institute

Sekar Kathiresan, a clinical cardiologist and human geneticist, is the director of preventive cardiology at Massachusetts General Hospital and a genetics researcher in the Broad Institute's Program in Medical and Population Genetics. Dr. Kathiresan seeks to discover the genes responsible for inter-individual differences in risk for heart attack and use this information to understand biologic mechanisms and to improve preventive cardiac care. His scientific contributions have been four-fold. First, through genetic studies in populations, he and collaborators have discovered 45 gene regions related to risk for heart attack and 95 gene regions related to risk factors for heart attack including blood cholesterol and triglycerides. Second, through genetic studies in families, he has identified a gene responsible for extremely low levels of LDL cholesterol. Third, he has utilized gene variants to show that some means of raising HDL cholesterol may not lower risk for heart attack. Finally, he has identified a panel of gene variants that can be used to assess future risk for heart attack. Dr. Kathiresan is an associate professor of medicine at Harvard Medical School. He received his B.A. in history and graduated summa cum laude from the University of Pennsylvania in 1992. He received his M.D. from Harvard Medical School in 1997. Kathiresan completed his clinical training in internal medicine and cardiology at MGH. He served as Chief Resident in Internal Medicine at MGH in 2002-2003. Kathiresan pursued research training in cardiovascular genetics through a combined experience at the Framingham Heart Study and the Broad Institute of MIT and Harvard. In 2008, he joined the research faculties of the MGH Cardiovascular Research Center and the MGH Center for Human Genetic Research.



## Mikael Knip

Professor, MD, PhD

Mikael Knip, MD, PhD is Professor of Pediatrics at University of Helsinki. His research focuses on type 1 diabetes and other immune-mediated diseases in children and adolescents. He has published more than 450 original papers and close to 140 other scientific articles. Currently he is the Principal Investigator for two extensive international multicenter studies. One is TRIGR (Trial to Reduce IDDM in the Genetically at Risk) testing the hypothesis that weaning to an extensively hydrolyzed formula will reduce the frequency of beta-cell autoimmunity and type 1 diabetes in children at risk. This trial is mainly funded by NIH. The other study, i.e. DIABIMMUNE funded by the EC 7th Framework Program, tests the hygiene hypothesis in type 1 diabetes and other immune-mediated diseases. Dr. Knip is or have been on the editorial board of a series of international journals, such as Journal of Clinical Endocrinology and Metabolism, European Journal of Endocrinology, and Pediatric Diabetes. Dr. Knip functioned as the Director of the National Graduate School of Clinical Investigation in 2003-2008. He has been on the Scientific Review Board of the Juvenile Diabetes Research Foundation (JDRF) 2005-2008, and functioned as the Vice-Chair of the Research Council for Health, Academy of Finland 2010-2012.



## Markku Laakso

MD, PhD

Markku Laakso, MD, PhD, is Professor of Medicine at the Department of Medicine, University of Eastern Finland, Kuopio and Chief Physician of the Department of Medicine, Kuopio University Hospital since 1995. He was working as a visiting scientist at the Department of Medicine, Veterans Administration Hospital, University of Southern California, San Diego, in 1987-1989 (Research Fellowship from the Fogarty International Center, NIH), and at the Department of Medicine, Division of Medical Genetics, University of Washington, Seattle, in 1993-1994. Since 2005 he has been Academy Professor at the Academy of Finland and at the University of Eastern Finland, Kuopio. He has been Associate Editor for *Diabetologia* in 1997-1999 and 2008-2013, and a member of Editorial Board for *Diabetes Care* in 1997-1999 and the *Journal of Clinical Endocrinology and Metabolism* in 2007-2010. His main research interests are cardiovascular complications of type 2 diabetes and genetics of insulin resistance, type 2 diabetes and cardiovascular disease. He has received several international awards, including Novo Nordisk Foundation Award in 2003, Castelli Pedrolì Prize (the European Association for the Study of Diabetes) in 2006, and Kelly West Award (American Diabetes Association) in 2008. He has published 570 original articles and 98 reviews or book chapters. His publications have been cited > 44 000 times and his h-index is 96.



## Rayaz A. Malik

BSc. (Hons), MSc., MB ChB, PhD, FRCP

Rayaz Malik was appointed as a Professor of Medicine and Consultant Physician in Manchester Royal Infirmary and the Centre for Endocrinology and Diabetes, University of Manchester (2008 to present). He has clinical responsibility for Internal Medicine and a weekly general medical and diabetes outpatient clinic.

His research focuses on the pathogenesis, assessment and treatment of diabetic neuropathy and cardiomyopathy, which is funded by the NIH, JDRF and DUK.

He was the Chairman of Neurodiab (2009-2012), the diabetic neuropathy study group of the EASD. He is an associate editor for Diabetic Medicine (2006 to present); Journal of Brachial Plexus and Peripheral Nerve Injury (2005 to present); BMC Neurology (2009-2012) and Advances in Therapy (2009-2012). He is on the Juvenile Diabetes Research Foundation Complications and Clinical Investigation Research Committee (2005-present).

He has been appointed to the Medical Research Council's Development Pathway Funding Scheme/Developmental Clinical Studies Panel (2013-2015).



## Mark McCarthy

Professor

Mark McCarthy is Robert Turner Professor of Diabetes at the University of Oxford and Consultant Endocrinologist at the Oxford University Hospitals Trust. His research team, based at the Oxford Centre for Diabetes, Endocrinology and Metabolism, and the Wellcome Trust Centre for Human Genetics has a long-standing interest in the genetics of complex traits including type 2 diabetes, obesity and growth. In recent years, his group has played a leading role in international efforts to apply genome wide association approaches to study type 2 diabetes, obesity and related traits. The research work of his team has, with collaborators, identified at least 40 new regions involved in susceptibility to type 2 diabetes, and a similar number impacting on other traits including risk of obesity, fasting glucose levels and birthweight. This work has provided novel biological insights into the pathogenesis of these conditions and underpins future efforts to translate genetic findings into clinical practice. He plays a leading role in several international consortia including DIAGRAM, GIANT, MAGIC, EGG, CEED3, ENGAGE, EA-GLE and the Global Diabetes Consortium. He currently serves on the council of HUGO, the Human Genome Organisation



## Michael Roden

Professor Dr. med. univ.

Michael Roden, Professor Dr. med. univ. is Chair of Endocrinology and Metabolic Diseases, Director of the Department of Endocrinology and Diabetology at Heinrich-Heine University Düsseldorf, and the Scientific Executive Officer of the German Diabetes Center (DDZ), Leibniz Center of Diabetes Research, Düsseldorf, Germany. He is also one of the speakers of the National German Centres for Health/Diabetes Research. Dr. Roden graduated from University of Vienna, Austria, where he completed his residency and was Associate Professor at the Department of Medicine III, General Hospital and Medical University of Vienna. He also spent a Max-Kade Fellowship at Yale University, New Haven, Connecticut. Later, he became the Head of the First Department of Medicine at Hanusch Hospital, Teaching Hospital of Medical University of Vienna.

Professor Roden's research interests comprise insulin resistance, fatty liver and mitochondrial function, which he addresses by multitracer dilution and magnetic resonance spectroscopy. He contributed concepts to nutrient-induced insulin resistance and to energy metabolism in (pre)diabetes. Professor Roden is (co) author of more than 300 papers in peer-reviewed journals, including *N Engl J Med*, *Nature Genet*, *PLoSMed*, *J Clin Invest*, *Gastroenterology*, *Hepatology*, and *PNAS*. He received several awards, including the International Novartis Award (2004), the ESCI-Award (2006) and the Oskar-Minkowski Prize by EASD (2006) and serves as Associate Editor of *Diabetologia* and *J Mol Med* and on other editorial boards, including *Diabetes*, *Endocrinology* and *Am J Physiol*. He is currently the President of the Central European Diabetes Association (CEDA-FID) and Honorary Treasurer of European Association for the Study of Diabetes (EASD).



## Marja-Riitta Taskinen

Emerita Professor

Marja-Riitta Taskinen is Emerita Professor of Medicine at the Cardiovascular Research Group, Heart and Lung Centre, Helsinki University Central Hospital. Currently she leads her research team at Biomedicum Helsinki focusing on lipoprotein kinetics in health and lipid disorders and genetics of familial dyslipidemias. Prof Taskinen's team is a member of Research Program Unit, Diabetes & Obesity Research program, University of Helsinki. Professor Taskinen has worked as a Nordic Professor in University of Gothenburg 2000-2004. Her main research interest has been lipid and lipoprotein metabolism. Her contributions include long series of original and important observations that have contributed significantly to the understanding of lipoprotein abnormalities, genetics and pathophysiology of Type 2 diabetes, insulin resistance, the metabolic syndrome and genetics dyslipidemias (low HDL syndrome and familiar combined dyslipidemia). Prof. Taskinen has nearly 500 original publications and over 100 reviews and chapters. Her achievements have been recognised by several international honours and awards including Castelli Pedrolì Prize (EASD, European Association for the study of Diabetes 1996), The Hippocrates Prize (2000), the Claude Bernard Award (EASD 2002), the Edwin Bierman Award (ADA, American Diabetes Association 2004), Novartis Award for longstanding achievements in diabetes (2006), Grand award of the Finnish Foundation for Cardiovascular Research award (2011) and the Pohjola and Suomi medical award (2012) for outstanding services. She has received Doctor Honoris Causa by University of Gothenburg. She has been involved in activities of EAS (European Atherosclerosis Society) and IAS (International Atherosclerosis Society) as well as of the EASD and IDF (International Diabetes Federation). She has served the President of EAS between 2006-2008. Currently prof. Taskinen's is a member of EAS/ESC Guidelines committee on Management of dyslipidemias and a member of EASD/ESC Guideline committee on Prevention of CVD in diabetes. Dr Taskinen is a member of SAB for Summit (EU –project: IMI – SUMMIT, IMI\_Call\_2008\_1\_08) and

ISAC-CVON (International Scientific Advisory Committee of the CardioVasculair Onderzoek Nederlande). Prof. Taskinen's group is currently a partner in a new EU-project RESOLVE (FP7-HEALTH-2012-INNOVATION-1) started 2013. Professor Taskinen is also a member of NIH (1R01HL113315-01) funded consortium "Genomic and Metabolomic Profiling of Finnish Familial Dyslipidemia Families" started 2012.



## John Todd

Professor, FRS, FMedSci, PhD

John Todd FRS, FMedSci, PhD is Professor of Medical Genetics at Cambridge University and Director of the JDRF/Wellcome Trust Diabetes and Inflammation Laboratory in the University's Cambridge Institute for Medical Research. Todd's researches type 1 diabetes genetics and disease mechanisms and clinical intervention, in collaboration with Linda Wicker, Chris Wallace and Frank Waldron-Lynch. He was a founder member of the consortia, the Wellcome Trust Case Control Consortium and the Type 1 Diabetes Genetics Consortium. Previously, Todd was a JDRF Career Development Fellow, Professor of Human Genetics at Oxford University and a Wellcome Trust Principal Research Fellow. He received his B.Sc. First class from Edinburgh University in Biological Sciences, and his Ph.D. from Cambridge University in Biochemistry. Post-doctoral training was undertaken at Cambridge and Stanford in genetics, molecular biology and immunology. He has over 420 publications, 288 of which were peer-reviewed with over 27,000 citations and H-index = 84, and has received several awards and honours for his research. He has trained so far 27 PhD students and many more research assistants and postdoctoral fellows. His main goal is to provide knowledge based on genetic aetiological findings that can inform in the prevention of autoimmunity in type 1 diabetes and in other immune-mediated diseases.



## Karl Tryggvason

MD, PhD

Karl Tryggvason, MD, PhD, is Professor of Medical Chemistry at Karolinska Institutet in Stockholm, and Tanoto Professor in Diabetes Research at Duke-NUS in Singapore. His research concerns the molecular nature, biology and diseases of a connective tissue called basement membranes (BM). Dr. Tryggvason's main research focus is the kidney filtration system and its diseases. He has determined the causes of kidney diseases like Alport and congenital nephrotic syndromes, but also of BM diseases junctional epidermolysis bullosa and congenital muscular dystrophy. Tryggvason currently applies systems biology and genetics approaches to diseases of the renal filter including identification of novel glomerular proteins, molecular signatures of disease processes and identification of susceptibility genes for diabetic nephropathy. Another main theme is specific BM proteins called laminins and their roles in stem cell biology. Tryggvason has published over 380 research articles. He is a member of the Finnish Academy of Sciences and the Swedish Royal Academy of Sciences, and member of the Nobel Assembly at the Karolinska Institute. He has received several international awards primarily for his kidney research, including the American Society of Nephrology Homer Smith Award, and the Louis Jeantet and Anders Jahre awards. Tryggvason is founder of four companies including NephroGenex, Inc. (USA) that develops a drug for diabetic kidney disease.



## Emmanuel Van Obberghen

M.D. - Free University of Brussels, (Vrije Universiteit, Brussel), Belgium. 1971, summa cum laude. Ph.D. - Free University of Brussels, (Vrije Universiteit, Brussel), Belgium. Degree in Medical Sciences, 1975. Certificate of the Educational Council for Foreign Medical Graduates (E.C.F.M.G.) 1972

**PROFESSIONAL EXPERIENCE:** 1971-1975: Laboratory of Experimental Medicine, Free University of Brussels, Medical Faculty, Brussels, Belgium: Scientist of the Belgian National Foundation of Scientific Research, 1975-1980: Diabetes Branch, National Institute of Arthritis, Metabolism and Digestive Diseases, National Institutes of Health, Bethesda, Maryland, USA: Postdoctoral Fellow (1975-76), Visiting Associate (1977-80), 1980-1985: INSERM Unit 145, Medical Faculty, Nice, France, Senior Scientist INSERM (French National Institute for Health and Medical Research), 1985-1987: Laboratory of Molecular Genetics, National Institute of Neurological and Communicative Disorders, and Stroke; NIH, Bethesda, Maryland, USA: Visiting Scientist, NIH, 1986-2007: Head, INSERM Unit 145, Medical Faculty, Nice, France, 2008- 20-: Group Leader, UNSA-INSERM Unit 907, Medical Faculty, Nice, France, 2012- 20-: Group Leader, Aging and Diabetes team, IRCAN, Medical Faculty, Nice, France, 1995-20-: Chief, Clinical Chemistry, University Hospitals, Nice

**UNIVERSITY TITLES:** Professor ("Classe Exceptionnelle") and Chairman, Department of Biochemistry/Molecular Biology, Medical Faculty Nice, since 1995, Visiting Professor: Université Libre de Bruxelles, Belgium, 1992; Vrije Universiteit Brussel, 1992-1994 ; Medical School II, Naples, Italy, 1993-94

**AWARDS:** Specia Award, Brussels, Belgium, 1971, Victor Lange Award, Free University of Brussels, Belgium, 1975, Triennial Auguste Slosse Award, Biochemical Sciences, Free University of Brussels, Belgium, 1975, Endocrinology Award, French Foundation for Medical Research, 1984, Award of the French Endocrine Society, 1985, G.B. Morgagni Award, Silver Medal, Faculty of Medicine, University of Padua, Italy, 1985, Oskar Minkowski Award, European Association for the Study of Diabetes, 1985, G.B. Morgagni Award, Gold Medal, Faculty of Medicine, University of Padua, Italy, 2000, D. Hermann Award, Fondation Recherche Cardiovasculaire, Institut de France, 2005, Claude Bernard Award, European Association for the Study of Diabetes, 2007, Jacobeus Award, NovoNordisk Foundation, Denmark, 2008



## Tien Y. Wong

Professor

Professor, MBBS, MMED, FAMS, FRCSE, FRANZCO, FAFPHM, MPH, PhD Executive Director, Singapore Eye Research Institute, Singapore National Eye Centre Provost's Chair Professor and Head, Department of Ophthalmology, National University of Singapore Senior Consultant and Chief of Ophthalmology, National University Hospital Group Director (Research), Singapore Health Services Professor Wong is Executive Director of the Singapore Eye Research Institute; Group Director, Research, Singapore Health Services; Professor and Head, Department of Ophthalmology, National University of Singapore; and Senior Consultant and Chief of Ophthalmology at the National University Hospital and Singapore National Eye Centre. He is a Singapore Translational Researcher Award (STaR) recipient and balances clinical work focused on retinal and macular diseases, including diabetic retinopathy and age-related macular degeneration, and a broad-based research program concentrating on the epidemiology and clinical trials on retinal vascular disease. Prof Wong completed medical school from the National University of Singapore, clinical ophthalmology training at the Singapore National Eye Centre, and obtained his PhD from the Johns Hopkins University School of Public Health, Baltimore, USA. He completed post-doctoral research fellowships at the Johns Hopkins University and the University of Wisconsin, Madison, USA and a clinical medical retinal fellowship at the Westmead Hospital, University of Sydney. He holds honorary fellowships from the Royal Australian and New Zealand College of Ophthalmologists (FRANZCO). Research areas include diabetic and hypertensive retinopathy, age-related macular degeneration, retinal vein occlusion and the use of ocular imaging technologies to predict cardiovascular risk. He has published more than 600 peer-reviewed papers and given more than 150 invited plenary, symposium and named lectures around the world. He is the Principal Investigator of multi-center projects in the US, Australia and Singapore and have received more than US\$20 million in peer-reviewed grant funding. Professor Wong is the Executive Editor of the American Journal of Ophthalmology, and on Editorial Board of three other journals, Investigative Ophthalmology and Visual Sciences

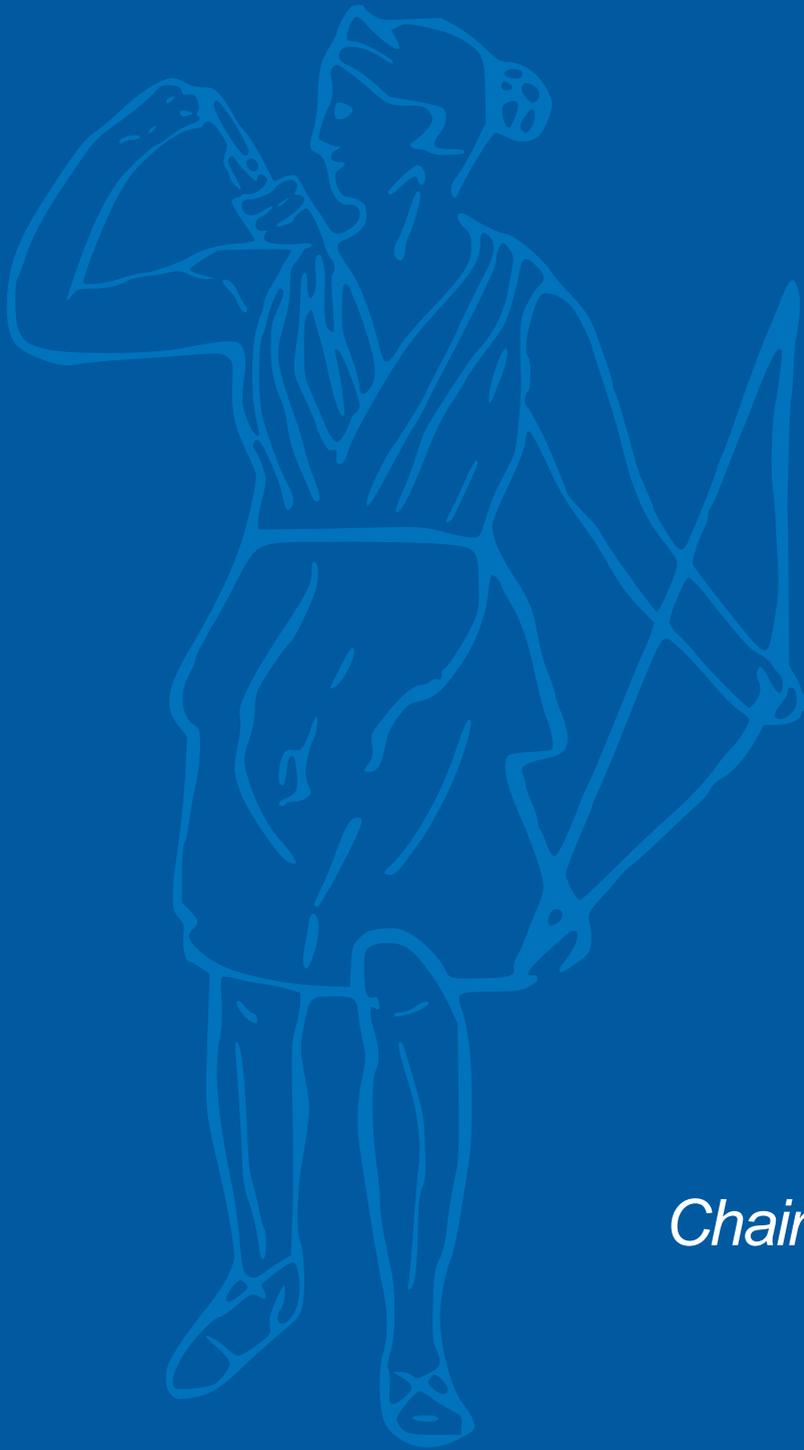
(2005-present), Ophthalmic Epidemiology (2006-present), having completed terms on the Editorial Board of the British Journal of Ophthalmology and Diabetes Care. For his academic work and research, Prof Wong has been recognised nationally and internationally with numerous awards. He has been recognised as the top researcher in any field from two leading Universities in consecutive years: the Outstanding Researcher Award from the National University of Singapore in 2004 and the Woodward Medal from the University of Melbourne in 2005. In 2010, he was awarded the National Clinician Scientist Award in Singapore and the President's Science Award.



## Seppo Ylä-Herttuala

Professor, FRS, FMedSci, PhD

Academy Professor Seppo Ylä-Herttuala is a pioneer in gene transfer technology. Under his leadership the first adenovirus gene transfer in the world was made in human arteries in Kuopio in 1995. Since then he has developed both gene transfer methods and production systems (which have become National Virus Vector Laboratory) and a highly successful research team focusing on atherogenesis, VEGF biology and its clinical applications, which has acquired Academy of Finland Centre of Excellence status. He has long experience in leading both Centre of Excellence composed of several PIs and research groups (since 2002) and National Virus Vector Laboratory with several vector production activities leading up to eight phase I/phase II/phase III clinical trials with vectors produced in National Virus Vector Laboratory in Kuopio. He is currently President of the European Society of Gene and Cell Therapy, Board Member of the European Society of Cardiology and Board Member and Chairman of the Biocenter Oulu. He is also Chairman of the Biocenter Kuopio.



*Chairs*



## Jan Borén

Professor

Jan Borén is Chair of the Department of Molecular and Clinical Medicine, Institute of Medicine at the Sahlgrenska Academy; Director of the strategic research center Sahlgrenska Center for Cardiovascular and Metabolic Research (CMR), and consultant physician, Department of Clinical Chemistry, Sahlgrenska University Hospital. Professor Borén's long-term research interests are focused on defining the mechanisms that regulate secretion and metabolism of atherogenic lipoproteins and clarifying their atherogenicity. His interests also include the development of strategies to prevent retention of atherogenic lipoproteins in the arterial wall; and elucidation of how cardiac uptake of lipoproteins induces lipotoxicity and insulin resistance.



## Ronald Klein

M.D., M.P.H.

Ronald Klein is a Professor in the Department of Ophthalmology and Visual Sciences at the University of Wisconsin-Madison School of Medicine and Public Health.

Dr. Klein is an epidemiologist and practicing retinal specialist. He received an MD degree from the New York University School of Medicine in 1969 and an MPH degree from the University of North Carolina in 1973. Dr. Klein's research is focused primarily on the epidemiological study of eye disease with the goal to decrease the burden of visual impairment and blindness due to diabetic retinopathy, age-related macular degeneration, and cataract. Along with Dr. Barbara E. K. Klein, he co-directs the University of Wisconsin-Madison Ocular Epidemiology Reading Center. He is involved with developing and implementing protocols to grade ocular photographs for the severity of age-related macular degeneration and other eye diseases, and data analyses and paper writing from many large ongoing cohort studies and collaborations worldwide.

Additionally, Dr. Klein is co-principal investigator of two population-based epidemiological studies, the Wisconsin Epidemiologic Study of Diabetic Retinopathy (WESDR, begun in 1979) and the Beaver Dam Eye Study (BDES, begun in 1988). The findings of both studies have been instrumental in improving medical and ophthalmologic care for persons with diabetes and for persons with age-related eye diseases.



## Johnny Ludvigsson

Professor

Johnny Ludvigsson is professor of Pediatrics and head physician at the div of Pediatrics, Linköping University hospital, Sweden, and chairman of the Diabetes Research Centre, Linköping university. 1985-1991 he was Secretary General of ISPAD and now he is chairman of IDF Expert working group for diabetes in children and adolescents.

His research has been on many different aspects of Type 1 diabetes, and he has published some 400 original scientific papers. Thus he showed the world's until then best results in prevention of diabetic nephropathy (N Engl J of Med 1994). He performed the world's first immune intervention at onset of diabetes in children (Plasmapheresis BMJ 1983). The plasmapheresis led to that the substance 64kD was found (Nature 1982), later shown to be GAD. GAD has been tried for preservation of beta cell function (N Engl J Med 2008; N Engl J 2012). JL is now PI for a new combination therapy (GAD + Vitamin D + Ibuprofen), as intervention, but also involved in other intervention projects with antiCD3 and also planning to use other autoantigens together with IL-10.

JL is also leading several studies on etiology of T1D in ABIS (All Babies in South-east Sweden), a prospective cohort study of 17 000 children born 1997-1999, which JL initiated and still is the leader of.

JL received 2001 the inaugural ISPAD Award for Science, Education and Advocacy in the care of diabetes in children and adolescents, and is since then Honorary member of ISPAD. 2012 he became Honorary Member of EASD, the first pediatrician ever.



## Ulf Smith

MD, PhD, FRCP

Ulf Smith MD, PhD, FRCP is professor of Internal Medicine at University of Gothenburg, Gothenburg, Sweden. He was Chief-of-Medicine at the Sahlgrenska University Hospital and Executive Medical Director of the same hospital 1994-1999.

He was President of the European Association for the Study of Diabetes (EASD) between 2008-2011 and is currently Chairman of the European Foundation for the Study of Diabetes (EFSD). Prof Smith is much involved in European research policies and President of the Alliance for Biomedical Research in Europe representing around 400 000 European scientists.

The main focus of his research has been on pathogenesis and treatment of Type 2 diabetes and related metabolic disorders. He has published around 400 original publications in the research fields and has received many awards and honors for his scientific achievements.



## Solomon Tesfaye

MB ChB, MD, FRCP

Solomon Tesfaye is a Consultant Physician/Endocrinologist at the Royal Hallamshire Hospital, Sheffield, and Honorary Professor of Diabetic Medicine at the University of Sheffield, UK. He qualified as a doctor from University of Bristol in 1984 and trained in diabetes and diabetic neuropathy under Professor JD Ward. His research projects include the epidemiology, risk factors, pathogenesis, central nervous system involvement and treatment of diabetic neuropathy and neuropathic pain. He has published a book, over 150 original articles, reviews and book chapters in the field of diabetic neuropathy including a landmark study in the *New England Journal of Medicine*. He has received research funding from Diabetes UK, the US National Institute of Health, Juvenile Diabetes research Foundation, European Foundation for the Study of Diabetes and the UK National Institute for Health Research.

Professor Tesfaye was Chairman of the International Expert Group on Diabetic Neuropathy that has published 7 consensus recommendation papers in 2010/11. He is the immediate past Chairman of NEURODIAB, the diabetic neuropathy study group of the European Association for the Study of Diabetes. He is the current Vice Chairman of the Science and Research Committee of Diabetes UK; a Board Member of the Global Quantitative Sensation Testing Society; a member of the Advisory Council of the Neuropathy Trust and a trustee of International Insulin Foundation. He was involved in the development of National Clinical Practice Guidelines for glycaemic control in type 2 diabetes by the Glycaemic Control Working Group, and took part in the UK Department of Health Medical Research Council Review for Diabetes Research. He is Associate Editor of *Experimental Diabetes Research*, *Frontiers in Endocrinology*, *European Endocrinology and Diabetes Management* and was previous Associate Editor of *Diabetologia* and a member of a Diabetes & Neuropathic pain Review Group for the National Institute for Clinical Excellence (NICE).



## Merlin Thomas

MBChB, PhD, FRACP

Professor Merlin Thomas MBChB, PhD, FRACP is a diabetologist, working at the Baker IDI Heart and Diabetes Institute in Melbourne, Australia. He is a consultant physician in endocrinology and nephrology, who also runs a basic science laboratory. His research has been widely published with two hundred and twenty papers in peer-reviewed journals including Diabetes, The Lancet, Diabetes Care and FASEB. His ongoing research focuses on understanding the mechanisms of vascular damage in diabetes, with a particular focus on renin angiotensin system and metabolic memory.



## Giancarlo Viberti

MD, FRCP, King's College London School of Medicine,  
Guy's Campus, London UK

Giancarlo Viberti is Emeritus Professor of Diabetes and Metabolic Medicine from October 2009. He was Professor of Diabetes and Metabolic Medicine since 1987 and Director of the Unit for Metabolic Medicine, Cardiovascular Division, King's College London School of Medicine, London, UK since 1990. He obtained his MD in 1968 at the University of Milan and specialized in Endocrinology at the University of Turin in 1971. In 1975 he joined the Unit for Metabolic Medicine in the Division of Medicine at Guy's Hospital Medical School, London University and in 1978 was awarded a Wellcome Senior Research Fellowship in Clinical Science. In 1984 he was appointed Senior Lecturer and Honorary Consultant in Medicine and in 1985 was awarded the Membership of the Royal College of Physicians because of academic distinction. He became a Fellow of the Royal College of Physicians in 1990.

Giancarlo Viberti has been, inter alia, in 1986 the Robert Campbell medal winner of the Ulster Medical Society, and Camillo Golgi Lecturer and Pedrolì Prize winner of the European Association for the Study of Diabetes (EASD), 2000 Banting Lecturer of the British Diabetic Association (now Diabetes UK), 2003 Areteus Lecturer, Pan Hellenic Diabetes Society, 2004 Ruth Østerby Lecturer of the European Diabetic Nephropathy Study Group (EASD), 2006 Alan Nabarro Lecturer of the International Diabetes Federation, 2009 18th Servier Lecture Philippine Center For Diabetes and Diabetes Philippines Society and Visiting Professor to universities around the world. He speaks frequently at national and international meetings and is an active researcher, clinician and teacher with major research interests in the study of kidney disease and vascular complications in diabetes. He has published more than 240 original papers and 160 reviews, editorials and book chapters on these topics.

## Information

Biomedicum Helsinki 1  
Haartmaninkatu 8  
FI- 00290, Helsinki

Meeting will take place at the lecture hall 1.

## WLAN

Username: FDS2, Password: 65436543  
Username: FDS7, Password: 678776536

## Hotel Crowne Plaza

Mannerheimintie 50,  
FI- 00260 Helsinki  
+358 (0)9 2521 0000

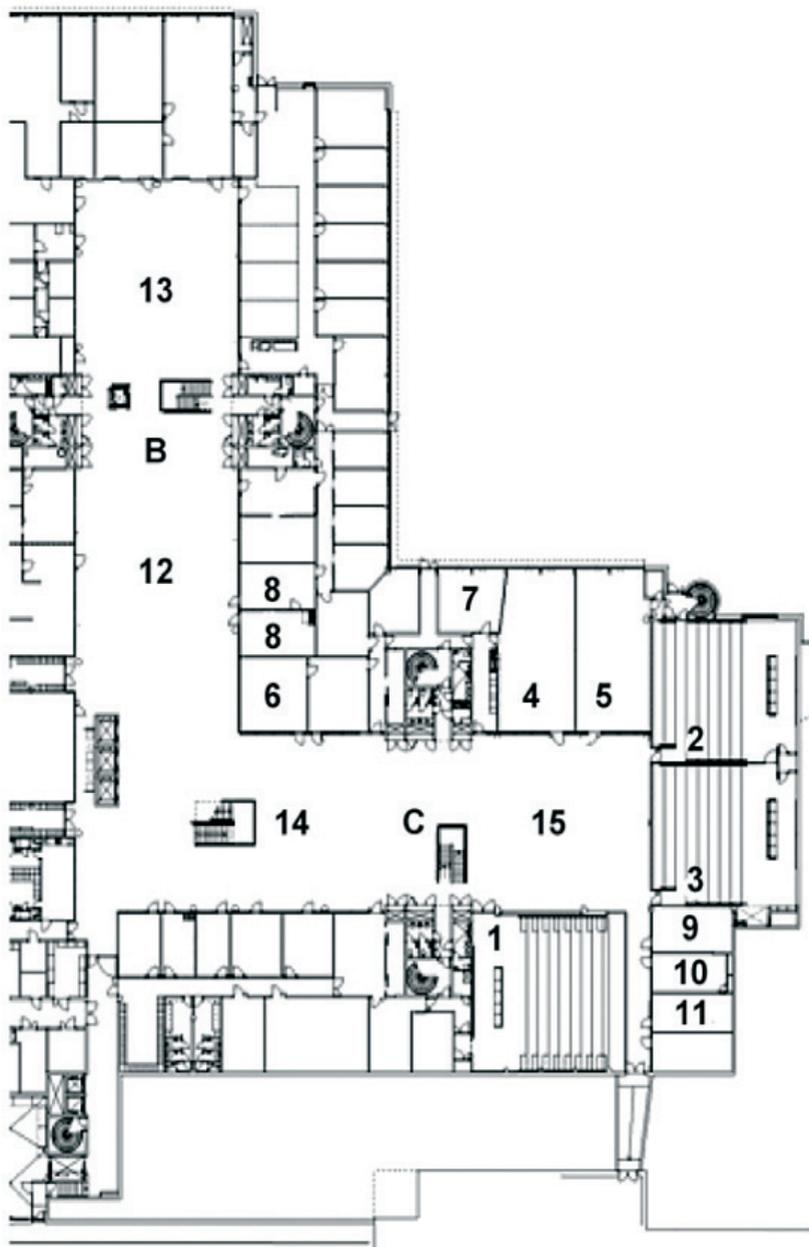
## Hotel Scandic Continental

Mannerheimintie 46,  
FI- 00260 Helsinki  
+358 9 4737 1

## Contact information

Asta Mustonen  
symposium@finndiane.fi  
+358 44 7883743  
www.finndiane.fi

Biomedicum Helsinki 1



*Notes*





# FinnDiane

Folkhälsan Inst of Genetics  
Folkhälsan Research Center  
Biomedicum Helsinki  
Haartmaninkatu 8  
FI-00290 Helsinki

