

**Healthcare SIG****Unlocking 'remote monitoring' for effective diabetes care**

20 June 2017

**Hosted by Cambridge University Health Partners**

This SIG is championed by Peter Ferguson of **ARM**, Collette Johnson of **Plextek Consulting**, David Walker of **Philips Research Laboratories** and Paul Winter of **TTP Group**

**Venue: William Harvey Lecture Theatre, School of Clinical Medicine,  
Addenbrooke's Hospital, Cambridge, CB2 0SP**

**AGENDA****13:00** Registration and networking with lunch**13:30** Introduction to Healthcare from **Paul Winter, TTP Group****13:40** Welcome from event supporter, **Dr Hans Hagen, Cambridge University Health Partners****13:50** **Dr Tony Coll, Wellcome Trust-MRC Institute of Metabolic Science****Diabetes in the 21st century; still exploring uncharted seas**

The principle of overcoming a hormone deficiency with replacement therapy is a simple one and remains at the heart of diabetes care. However, to do this safely over a long period of time remains difficult for many patients. In particular, there remains the challenge of balancing the avoidance of long term complications of poor glucose control with the need to minimise iatrogenic harm from therapies. In trying to tackle these problems, the diabetes community has always been a ready embracer of technology, both in terms of drug delivery apparatus and biochemical monitoring systems. In this session, I will give a brief overview of both type 1 and type 2 diabetes mellitus and consider some of the medical and financial issues that diabetes care continues to face.

**14:10** Q&A**14:15** **Melissa Holloway, INPUT Patient Advocacy and Speaking Diabetes Ltd****Remote Continuous Glucose Monitoring (CGM)**

This talk will provide a whirlwind overview of current diabetes technologies that allow for remote data access, including continuous glucose monitoring, flash glucose monitoring, blood glucose meters with Bluetooth, and cloud-based diabetes data management systems.

**14:35** Q&A**14:40** **Henrik Norström, Brighter****Be all you can be, Always! - integrated mobile connected hardware and software as a service to improve quality of life for people with diabetes**

Brighter has sought to use state of the art technological solutions - such as blood sugar monitors and insulin pens - for diabetes care integrated into a single device, logging the data and transmitting this through a global mobile connection to its platform to close the loop to the different stakeholders in the care chain. With the patients at the epicentre, enabling a higher motivation to adhere to the treatment, we also create the opportunity to empower the patients in relation to the medical condition and the costs. Adherence is low, costs of complications are high. By reducing barriers to effective direct care, adherence should increase and costs of complications should be reduced, resulting in a lower lifecycle cost and high quality of life - Be all you can be, Always!

**15:00** Q&A**15:05** **Refreshments and networking**

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**15:30 Dr Roman Hovorka, University of Cambridge Metabolic Research Lab**

**Artificial pancreas – the next step in connectivity and digital treatment of type 1 diabetes**

Rapid progress over the past decade has been made with the development of the 'Artificial Pancreas', also known as the closed-loop system, which emulates the feedback glucose-responsive functionality of the pancreatic beta cell. The recent FDA approval of the first hybrid closed-loop system makes the Artificial Pancreas a realistic therapeutic option for people with type 1 diabetes. The introduction of the artificial pancreas into clinical practice represents a milestone towards the goal of improving the care of people with type 1 diabetes. There remains a need to understand the impact of the technology, its data remote monitoring capabilities, and implication on current diabetes management and care.

**15:50 Q&A**

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**15:55 Dr Sufyan Hussein, Royal Free Hospitals Trust**

**Disrupting the diabetes integrated care pathway**

This talk reviews the current response ecosystem and how technology advancements, integration and data analysis may better support stakeholders and impact care pathways.

**16:15 Q&A**

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**16:20 Panel session with all speakers chaired by SIG Champion, Paul Winter, TTP**

**Extra Panellist - Stuart Stafford, AstraZeneca**

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**16:50 Event closes**

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With the permission of the speakers, presentations will be loaded to the CW website on the day following the event

## Profile of organisers

### Cambridge Wireless (CW)

CW is the leading international community for companies involved in the research, development and application of wireless and mobile, internet, semiconductor and software technologies. With over 400 members from major network operators and device manufacturers to innovative start-ups and universities, CW stimulates debate and collaboration, harnesses and shares knowledge, and helps to build connections between academia and industry. CW's 19 Special Interest Groups (SIGs) provide its members with a dynamic forum where they can network with their peers, track the latest technology trends and business developments and position their organisations in key market sectors. CW also organises major conferences and start-up competitions along with other high-quality industry networking events and dinners. With headquarters at the heart of Cambridge, UK, CW partners with other international industry clusters and organisations to extend its reach and remain at the forefront of global developments and business opportunities. [www.cambridgewireless.co.uk](http://www.cambridgewireless.co.uk)

## Profile of host

### Cambridge University Health Partners

Cambridge University Health Partners (CUHP) is one of six Academic Health Science Centres in England whose mission is to improve patient healthcare by bringing together the NHS, industry and academia. By inspiring and organising collaboration, CUHP aims to ensure patients reap the benefits of the world class research, clinicians and industry which are based in Cambridge. The Partners include: University of Cambridge, Cambridge and Peterborough NHS Foundation Trust, Cambridge University Hospitals NHS Foundation Trust and Papworth Hospital NHS Foundation Trust. [cuhp.org.uk](http://cuhp.org.uk)

## Profile of SIG Champions

### Peter Ferguson, ARM

Peter is Director for Healthcare Technologies in ARM. Peter has lived in Cambridge for 15 years. He has a MSc and PhD in Medical electronics. Peter has held key Technical and management responsibility for development projects including the world's first Self-Adhesive Physiological monitor and the delivery of over 20 Global Smartphones. In

his recent career Peter has provided mobile technology consulting for the NHS, UK Health research and government hospitals in China. As a Champion of the Cambridge Wireless Healthcare SIG Peter's objective is to demonstrate and present the application of Global Mobility Health for ARM and its partners. [www.arm.com](http://www.arm.com)

#### **Collette Johnson, Plextek**

Collette works for Plextek Consulting in medical business development, helping companies with their strategic positioning relating to product development. Previous to working at Plextek she worked at NHS innovations with a lead role in bringing together industry and clinical organisations for product adoption and also was the programme lead for the national SBRI healthcare programme, whilst in this role she focussed on the mHealth and telehealth space and developed a network bringing together, industry, clinical and academic stakeholders. She also worked in a strategic role in healthcare at Cambridge Consultants for world leading corporate organisations and highly innovative start-ups. [www.plextek.com/design-services/medical](http://www.plextek.com/design-services/medical)

#### **David Walker, Philips Research Laboratories**

David is a Senior Scientist with Philips Research Labs. David has worked on a variety of projects beginning over 25 years ago with expert systems for compact disc based multimedia systems. He went on to work on projects for Philips Consumer Communications and first-generation internet browsers for cell phones. This included the development of novel mobile applications for education and entertainment. More recently David has worked on home healthcare and developed next generation telehealth and telecare systems. And all these interests are now brought together with participation in projects in mobile health monitoring. Throughout his career David has pushed for user centred design and delivered systems that are sensitive to the needs and abilities of the end user. He is especially interested in novel technologies that can improve the user experience and is currently exploring use case scenarios for NFC (Near Field Communications) [www.philips.com](http://www.philips.com)

#### **Paul Winter, TTP Group**

Paul Winter is a programme manager and RF engineer in the Communications and Wireless group at TTP. He has led numerous projects in commercial, industrial and healthcare sectors developing connected devices and precision instrumentation. Paul has a heritage in developing products integrating multiple wireless standards including GPS, GPRS, Wi-Fi, Bluetooth and proprietary ISM band radios, deployed within multi-sensor systems for in-home and on-body applications, often coupled to 'Cloud' based analysis and visualisation services. In healthcare Paul has applied aspects of wireless, antennas and electronics to a number of medical devices including inhalers, glucose testing and point of care diagnostic instruments. Paul has also led several incubation projects for TTP's Carbon Trust Incubator, covering a wide range of cutting edge technologies. Paul joined TTP in 2006; prior to this he worked as a radio engineer for Global Communications developing high volume consumer in-home satellite and digital TV distribution equipment, as well as portable equipment for the 'on-location' broadcasting industry. Paul has a Masters degree in Electrical & Electronic Engineering from the University of Wales, Cardiff. He is a member of the Institute of Engineering and Technology, the Royal Academy of Engineering and is a Chartered Engineer. [www.ttpgroup.com](http://www.ttpgroup.com)

### **Profile of speakers**

#### **Dr Tony Coll, University Lecturer/Honorary Consultant Physician, Wellcome Trust-MRC Institute of Metabolic Science**

Dr Tony Coll is an Honorary Consultant Physician (Addenbrooke's Hospital, CUHFT) and a University Lecturer in Metabolic Medicine at the University of Cambridge (Clinical Biochemistry). He is based within Wellcome Trust-MRC Institute of Metabolic Science (IMS), a purpose-built centre on the Addenbrooke's Biomedical Campus dedicated to research, education, prevention and clinical care in the areas of obesity, diabetes and related diseases. In collaboration with colleagues in the IMS (O'Rahilly, Yeo) he has active research group working on disorders of energy homeostasis, with a particular interest on how the brain controls food intake and energy expenditure. He is also clinically active, leading the diabetic foot service based within the Wolfson Diabetes and Endocrinology Centre.

#### **Dr Hans Hagen, Chief Operating Officer, Cambridge University Health Partners**

Hans was trained as a parasitologist and medical entomologist at the Liverpool School of Tropical Medicine, UK, and the University of Tübingen, Germany, where he received his PhD in 1992. During his research career in the field of infectious tropical diseases, he undertook substantial field research on the transmission of river blindness, in mainly Francophone West and Central Africa. Hans has also worked in a number of laboratories in Brazil, USA, France, Sweden, Germany, Hungary, and the UK. In 1999, Hans decided to switch careers, and started his new post at the Wellcome Trust, mainly working with science communities outside the UK (India, Central Europe, sub-Saharan Africa,

and Latin America). In 2006, Hans was recruited by the Royal Society, originally to develop the Society's capacity strengthening programme for sub-Saharan Africa. This programme was initially focussed on Ghana and Tanzania, resulting in the Leverhulme - Royal Society Africa Award scheme, which was successfully launched in October 2008. This was followed by a more ambitious pan-sub-Saharan Africa programme, launched in November 2012, after obtaining substantial funding from the Department for International Development (DFID). In 2014 he was promoted to Head of Grants of the Royal Society, and in August 2015, Hans took on the post of Chief Operating Officer for Cambridge University Health Partners. [cuhp.org.uk](http://cuhp.org.uk)

**Dr Roman Hovorka, Director of Research, University of Cambridge Metabolic Research Lab**

Roman Hovorka PhD FMedSci is Director of Research at the Institute of Metabolic Science and Department of Paediatrics, University of Cambridge, UK. Roman's main interest is diabetes technology including the "artificial pancreas", a device that delivers insulin in glucose responsive fashion using continuous glucose monitor, insulin pump, and control algorithm. [www.mrl.ims.cam.ac.uk](http://www.mrl.ims.cam.ac.uk)

**Melissa Holloway, INPUT Patient Advocacy and Speaking Diabetes Ltd**

In her role as Chief Adviser with INPUT Patient Advocacy, Melissa corresponds with people who contact INPUT seeking advice on access to diabetes technology and structured education. Her company Speaking Diabetes provides training and consulting for healthcare stakeholders and companies on aspects of diabetes technology and treatment. She is also a freelance medical copywriter for healthcare specialist advertising agencies. Diagnosed with type 1 diabetes aged 12, Melissa has used an insulin pump for over 21 years and continuous glucose monitoring for over 10 years. She came to the UK in 2001 to pursue postgraduate studies in history at Oxford University. In 2003, she joined Close Concerns and began her career in the diabetes care industry. She lives in central London with her husband and son. [inputdiabetes.org.uk](http://inputdiabetes.org.uk)

**Dr Sufyan Hussein, Consultant, Royal Free Hospitals Trust**

Dr Sufyan Hussain is currently a locum consultant physician in diabetes and endocrinology at Royal Free Hospital in London. He has over 25 years personal experience of living with type 1 diabetes and is passionate about improving care for diabetes. He graduated in medicine from the University of Cambridge and undertook his post-graduate clinical training in London teaching hospitals. He was a visiting scholar at Joslin Diabetes Centre, Harvard Medical School and completed his PhD in diabetes and obesity at Imperial College London. His research work with Sir Professor Stephen Bloom (2009-13) discovered a key brain mechanism regulating glucose appetite. He has received several training awards and prizes. He was appointed as a Darzi fellow in Clinical Leadership in 2014-15 where he undertook several large-scale innovative projects aimed at implementing new models of care and telemedicine in diabetes. He is a course organiser and lecturer on a range of diabetes courses at Imperial College. His current interests include type 1 diabetes, technology in diabetes, transitional diabetes, complex type 2 diabetes, population health and general endocrinology. He has authored a number of publications and books in the field of endocrinology, including "Insulin pumps and continuous glucose monitoring made easy" book for health professionals. He has helped develop several technology platforms for self-management in diabetes. Outside work, he loves spending time with his three young children and playing tennis.

**Henrik Norström, COO, Brighter**

Education: Uppsala University History: Extensive international experience in starting and developing companies (Swifler.com, Verajuan.pe, Casa Cor and others), in addition to heading up ABB Equity Ventures' establishment and investment in Brazil from 1996 to 2002. Current assignments: Chairman of Swifler Holding AB and Adstring AB. Advisor to Allone AB. [brighter.se](http://brighter.se)

**Dr Stuart Stafford, Functional Project Manager, AstraZeneca**

Stuart is a Project Manager for pharmaceutical research and development projects in Innovative Medicines and Early Development, AstraZeneca. He has a BSc and PhD in Pharmacology with 15 year's pharmaceutical research experience, including leading drug discovery projects in type 2 diabetes and obesity. More recently he has been involved in understanding the impact and utility of digital therapeutics in pharmaceutical research and development. On a personal level, Stuart has been living with type 1 diabetes for 25 years and has experience using various technologies to monitor and inform treatments such as insulin pump, flash glucose monitoring and CGM. Thus he has a vested interest in how digital technologies, particularly analytics and algorithmic intelligence, could be applied to type 1 diabetes. [www.astrazeneca.co.uk](http://www.astrazeneca.co.uk)