LUNCH & LEARNING

During lunch, you may discuss topics of current interest with the researchers identified below. There is a $78 fee (price in U.S. Dollars, includes 20% UK Value Added Tax) to cover the cost of lunch and attendance will be limited to 10 persons per table, including the speaker. Assignments will be processed on a first-come, first-served basis.

THURSDAY, JULY 26, 2018
12:45 p.m. – 2 p.m.  NOTE NEW TIME

Table #1: Investigating the Link Between Dental Caries, Saliva and Type 2 Diabetes
Speaker: Aylin Baysan (Queen Mary University of London, England)
Sponsoring Group/Network: Cariology Research

Description: Diabetes mellitus is a chronic metabolic disorder, over one-eighth of the population are undiagnosed. The number of people with diabetes has risen from 108 million in 1980 to 422 million in 2014. Prevalence of diabetes in adults worldwide was estimated to be 4.0% in 1995 and to rise to 5.4% by the year 2025. Reported oral health complications associated with diabetes that is encountered by dental practitioners include xerostomia, dental caries, tooth loss, periodontal disease, denture intolerance and soft tissue lesions of tongue and oral mucosa.

The reduction in saliva flow rate and therefore subsequently diminished buffering capacity, result in a decrease of the oral pH that contributes to loss of minerals from the tooth surface and the development of dental caries. Lack of saliva is one of the major risk factors for dental caries and tooth loss, as well as increasing mucosal dryness which will compromise denture retention, increasing the risk of malnutrition, and ultimately compromising the patients’ quality of life.
According to the US data between 1971 and 2012, the proportion of people with diabetes retaining at least 21 natural teeth was only 69%, whilst 87% of people without diabetes had the same number of teeth. The fact was that adults with Diabetes experienced about twice the tooth loss, as did those without Diabetes.

This lunch and learning aims to provide factual reasons to establish a possible link between dental caries, quality of saliva and Type 2 Diabetes. The participants will also receive further clinical research plans in this topic.

**Table #2: Genomic Approaches for Personalizing Caries Risk Determination**
**Speaker:** Alexandre Vieira (University of Pittsburgh, Pennsylvania, USA)
**Sponsoring Group/Network:** Cariology Research, Clinical and Translational Science Network

**Description:** With the mapping of the human genome, the science of genomics is contributing to the production of innovative medical research, particularly applied to pharmaceutical discovery tailored to oncology. Our group has applied these principles to cariology research and has described the first potential targets that can potentially be incorporated in the arsenal to be use for risk determination. In this section, we will discuss these findings.

**Table #3: Determining the Biocompatibility/Activity of Biomaterials for Tissue Engineering**
**Speaker:** Vinicius Rosa (National University of Singapore)
**Sponsoring Group/Network:** Dental Materials Research

**Description:** Biomaterials are used in cell-based tissue engineering and regeneration of soft and hard tissues. The aim is to discuss the key biological aspects of biomaterials that can be characterized to determine their biocompatibility, bioactivity and the potential to induce cell differentiation and promote tissue regeneration.

**Table #4: Advanced Bonding Approaches and Materials for Long-lasting Restorations**
**Speaker:** Salvatore Sauro (CEU Carndenal Herrera University, Valencia, Spain)
**Sponsoring Group/Network:** Dental Materials Research

**Description:** Dental adhesive systems have improved considerably over the last ten years, although shortcomings such as post-operative sensitivity, premature bond reduction, interface and marginal degradation, and biocompatibility are still considered important issues with such materials.

Enzymatic degradation of collagen fibrils within the hybrid layer and hydrolysis of polymers are the major factors thought to destabilise the resin-dentine interface. However, “smart” resin-
based materials that can interact therapeutically with dental hard tissues and reduce the degradation of the mineral-depleted resin-dentine interface can improve the durability of resin-based restorations. Innovative bonding approaches may protect hybrid layers from different types of degradations over time, and have a therapeutic role in caries prevention. Moreover, Experimental adhesive systems containing ion-releasing fillers with advanced remineralising properties and matrix metallo-proteinases (MMP) inhibitors have been developed and used in combination with resin primers containing Ca-sequestering polyanion acids poly(aspartic acid) (PASA) or poly(acrylic acid) (PAA) and biomimetic analogues of collagen phosphoproteins such as sodium trimetaphosphate to remineralise resin-dentine interfaces. This biomimetic approach is able to evoke a “bottom-up” remineralisation that restores the original stiffness (i.e. Young’s Modulus) of water-rich/resin-poor dentine-bonded interfaces. It will interesting to consider such “smart” adhesive systems containing biomimetic reagents that can remineralise and prevent degradation of resin-dentine bonds to enhance the clinical longevity of composite restorations.

Table #5: Titanium Implant Surface – From Micro to Nano
Speaker: Katarzyna Gurzawska (Birmingham University, England)
Sponsoring Group/Network: Implantology Research

Description: This presentation aims to discuss issues related to the novel surface modification of dental implants with organic micro- and nanoparticles. Available methodology in designing experiments for in vitro and in vivo models to study surface characterization will be explored.

Table #6: Teaching Oral Hygiene – Where We Are and Where We Go
Speaker: Renate Deinzer (University of Giessen, Germany)
Sponsoring Group/Network: Oral Health Research

Description: Evidence regarding oral hygiene effectiveness, oral hygiene behavior, the meaning of oral hygiene devices and brushing techniques will be reviewed. Open research questions will be identified and strategies to answer them will be discussed. Consequences of current evidence for daily dental practice will be discussed.

Table #7: Disease Severity Scores and Clinical Outcomes in Oral Medicine
Speaker: Stephen Challacombe (King’s College London, England)
Sponsoring Group/Network: Oral Medicine & Pathology Research

Description: Very few treatments in oral medicine are evidence based or quantified. Assessment of clinical outcomes requires a disease severity score which measures disease severity both before and after treatment. Oral disease severity scores (ODSS) must be reproducible, should be easy to use, should be widely applicable and should be objective. They
can indicates the severity of disease, distinguish between subgroups, may assist in deciding to implement treatment but most importantly are essential to indicate the efficacy of treatment. Every patient treated in oral medicine should be part of continuous clinical audit and this requires ODSS for every condition. In this lunch and learning session ODSS and their use for audit and research in aphthous stomatitis, lichen planus, bullous diseases and OFG will be discussed.

**Table #8:** Nonsurgical Treatment for Periodontitis: Perspectives From Clinical Trials  
**Speaker:** Danae Apatzidou (Aristotla University of Thessaloniki, Greece)  
**Sponsoring Group/Network:** Periodontology Research

**Description:** Controversies and modern trends in non-surgical periodontal therapy – such as quadrant-wise versus one-stage full-mouth treatment approaches, hand- versus power-driven instrumentation, significance of plaque control measures in single-visit treatment protocols, will be discussed. Treatment outcomes following different approaches, in addition to cost-effective benefits of non-surgical modalities will be critically reviewed.

**Table #9:** Oral Treponemes: Diversity and Distributions in Periodontal Health and Disease  
**Speaker:** Rory Watt (The University of Hong Kong)  
**Sponsoring Group/Network:** Periodontology Research

**Description:** This session will give an overview of the different ‘species’ of oral treponeme (spirochete) bacteria that commonly inhabit the oral cavity. It will explicate molecular approaches that may be used to survey oral treponeme populations. It will explore current thinking on the etiological associations between oral treponemes and periodontal disease.

**Table #10:** Wound Healing Process in Peri-implant Versus Periodontal Tissues  
**Speaker:** Binnaz Leblebicioglu (The Ohio State University, Columbus, USA)  
**Sponsoring Group/Network:** Periodontology Research

**Description:** Wound healing response of peri-implant tissues following implant placement and any corrective surgeries performed to treat peri-implant tissue breakdown differs from the healing response around surgically manipulated teeth.

**Table #11:** Effective Periodontal Treatment for Subjects with Type 2 Diabetes  
**Speaker:** Hatice Hasturk (The Forsyth Institute, Cambridge, Mass., USA)  
**Sponsoring Group/Network:** Periodontology Research

**Description:** This session will focus on the systematic reviews and RCTs that provide strong evidence on the most effective therapies for periodontitis in patients with type 2 DM.
Table #12: Host Genetics & Periodontitis: How Do we Make The Step From the Lab to the Clinic?
**Speaker:** Luigi Nibali (Queen Mary University of London, England)
**Sponsoring Group/Network:** Periodontology Research

**Description:** The session will review the evidence for the role of host genetic variants in periodontal disease. An attempt will be made to correlate findings from genetic studies with clinical management including prevention, screening and periodontal treatment.

Table #13: Protein Biomarker Discovery and Validation for Periodontitis
**Speaker:** Melissa Grant (University of Birmingham, England)
**Sponsoring Group/Network:** Periodontology Research

**Description:** Accurate detection of periodontal disease will be of great use to the general practitioner and to non-specialists such as medical practitioners and pharmacists who may encounter patients at risk of periodontal disease, eg those with chronic inflammatory disorders. Discovery of protein biomarkers by targeted and non-targeted approaches is a popular route and can be made by myriad ways. Validation of the putative biomarkers is essential before mainstream use. This lunch and learning will explore methods for protein biomarker discovery and validation.

Table #14: Novel Nicotine Products and the Periodontist: e-Cigarettes and Beyond
**Speaker:** Richard Holliday (Newcastle University, Tyne, England)
**Sponsoring Group/Network:** Periodontology Research

**Description:** Novel Nicotine Products such as electronic cigarettes (e-cigarettes) have become very popular with smokers and former smokers in recent years. Given the fundamental role of smoking cessation in periodontal therapy it is important we are aware of and contribute to the developing evidence base in this field.

Table #15: The Pro’s and Con’s of Saliva Collection Devices
**Speaker:** Toon Ligtenberg (Academic Centre for Dentistry Amsterdam (ACTA), Netherlands)
**Sponsoring Group/Network:** Salivary Research

**Description:** Salivary diagnostics has several benefits. The procedure is non-invasive, painless and fast. In addition, saliva collection has a low risk of transmission of disease. Saliva collection does not require medically trained personnel and even self-collection is possible. In addition samples can be collected frequently. Collection methods is an essential part of salivary diagnostics. The shape may influence patients’ comfort and acceptance. The material of the collection device can have dramatic effects on
subsequent biochemical assays of the collected saliva, as some saliva constituents may adhere to the material from which certain devices are made. After following this Lunch & Learn, the participants will be familiar with the limitations and advantages of the different types of saliva collection devices.

**FRIDAY, JULY 27, 2018**
**12:30 p.m. – 1:45 p.m.**

**Table #16: The Mouth and Maltreatment: Safeguarding Issues in Child Dental Health**  
**Speaker:** Jennifer Harris (Sheffield Teaching Hospitals, England)  
**Sponsoring Group/Network:** Behavioral, Epidemiologic, and Health Services Research, Pediatric Oral Health Research

**Description:** Dental professionals need evidence so they can contribute effectively to safeguarding children at risk of maltreatment: for recognising signs of abuse and neglect in those receiving dental care, for assisting with assessing needs when child protection concerns have been raised and for providing rehabilitation after dental neglect or oral injury.

**Table #17: Caries Diagnosis and Treatment Planning**  
**Speaker:** Rahena Akhter (The University of Sydney, New South Wales, Australia)  
**Sponsoring Group/Network:** Cariology Research

**Description:** The aim of this lunch and learning session is to provide an overview of the caries diagnostic methods, on presenting the links between caries diagnosis and subsequent treatment decisions and their effect on the treatment outcomes. The variation among dentists in diagnosing (small) caries lesions and in treatment decision making is considerable. This has been explained by the imperfection of caries decision making tests, but also by making incorrect treatment decisions due to incorrect or partial understanding of diagnostic test parameters. The Caries Management System (CMS) comprises a set of protocols covering risk assessment, diagnosis, risk management, monitoring, and recall that bring together evidence based caries preventive methods in a systematic framework. It specifies how they should be delivered to patients who are at different levels of caries risk. Treatment set out in the protocols is risk-specific; therefore, each patient’s caries risk must be determined at the outset. The CMS focus is on the management of patient behavior change (oral hygiene coaching, selection of healthy diet components, and encouragement to restrict between-meal exposures to sugar-containing foods and beverages) and the nonsurgical clinical treatment of noncavitated lesions.
**Table #18:** We Need Durable Adhesion in Dentistry  
**Speaker:** Jukka Matinlinna (University of Hong Kong)  
**Sponsoring Group/Network:** Dental Materials Research

**Description:** The clinical success depends on the adhesive strength between resin composites, indirect restorations, and tooth tissues. Adhesion and micromechanical retention are vital factors. Affinity between dissimilar materials, e.g., inorganic and organic, is initially very weak. Tooth tissues need to be conditioned after cavity preparation. How do we ensure durable clinical bonding?

**Table #19:** Reverse Silica-coating for Y-TZP Restorations  
**Speaker:** Susana Salazar Marocho (University of Mississippi, Oxford, USA)  
**Sponsoring Group/Network:** Dental Materials Research, Dental Materials Group

**Description:** The moment and the particle size for silica-coating is preponderant on the final topography, surface roughness, phase transformation and bonding of the Y-TZP surfaces. Silica-coating prior to final sintering produced a Y-TZP topography that is rougher, less prone to stress concentration and decreased to zero the monoclinic fraction.

**Table #20:** Digital Dentistry is Here to Stay  
**Speaker:** James Kit-Hon Tsoi (The University of Hong Kong)  
**Sponsoring Group/Network:** Dental Materials Research

**Description:** Digital dentistry involves a new concepts and challenges to new development of dental materials / equipments, and also affects clinical practices e.g. workflow and patient communication. So, what's the current situation and what's next?

**Table #21:** High-density and High-performance Polymers for Implant-supported Reconstructions  
**Speaker:** Burak Yilmaz (The Ohio State University, Columbus, USA)  
**Sponsoring Group/Network:** Implantology Research

**Description:** Computer Assisted Design- Computer Assisted Manufacturing (CAD-CAM) high-density polymers (HDPs) and high-performance polymers (HPPs) have been introduced as alternative interim/definitive prosthetic materials for implant-supported reconstructions. The HDPs and HPPs are heavily marketed in CAD-CAM block forms. This presentation aims to review scientific evidence in relation to CAD-CAM blocks' biochemical properties specifically their response to occlusal loads as well as their color stability.
**Table #22:** Practice-based Studies in Restorative Dentistry  
**Speaker:** N.J.M. Opdam (Radboud University, Nijmegen, Netherlands)  
**Sponsoring Group/Network:** Network for Practice-based Research

**Description:** Randomized clinical trials in restorative dentistry are difficult to design and expensive to run. The need for more information on long term results of restorative work that can be achieved in general practices has resulted in more practice based studies being published. These studies have potentially major flaws and several types of bias and need a different approach compared to RCTs. This session will address problems and opportunities in designing practice based studies in restorative dentistry.

**Table #23:** The Revised Common Rule: What Clinical Research Investigators Need to Know  
**Speaker:** Patricia Lenton (3M, Minneapolis, Minnesota, USA)  
**Sponsoring Group/Network:** Oral Health Research

**Description:** This presentation will provide a high-level overview of the major revisions made to the Common Rule that will go into effect in early 2018 and the considerations for clinical research investigators.

**Table #24:** Application of MOPs in Orthodontics  
**Speaker:** Sarah Alansari (Consortium for Translational Orthodontic Research, Hoboken, New Jersey, USA)  
**Sponsoring Group/Network:** Orthodontics Research

**Description:** To understand and utilize the application of Micro-Osteoperforations (MOPs) in orthodontic clinical practice. We will review the biological response to orthodontic forces and how MOPs can increase the rate of tooth movement. In addition, we will discuss how to incorporate MOPs to aid different types of difficult orthodontic and orthopedic movements, biological anchorage, tooth movement in dense cortical bone and other challenges in Orthodontics.

**Table #25:** Periodontitis and Cardiovascular Diseases: Evidence From National Surveys  
**Speaker:** Georgios Tsakos (University College London, England)  
**Sponsoring Group/Network:** Periodontology Research

**Description:** This session will review evidence from large epidemiological studies on the association between periodontal conditions and cardiovascular diseases (CVD), including CVD outcomes but also markers such as high blood pressure. The strength of the evidence and the nature of the associations will facilitate interpretation and policy implications will be discussed.
**Table #26:** Resilience of the Salivary Microbiome in Response to Antibiotics  
**Speaker:** Egija Zaura (Academic Centre for Dentistry Amsterdam (ACTA))  
**Sponsoring Group/Network:** Periodontology Research  

**Description:** Oral ecosystem is highly stable and resilient to perturbations. One example of such perturbation is exposure to antibiotics. In this session we will discuss the potential mechanisms behind this resilience and address the question: does it make sense to use antibiotics in oral health care?

**Table #27:** Periodontitis and Systemic Diseases: Association or Causation  
**Speaker:** Gerard Linden (Queen's University of Belfast, Northern Ireland)  
**Sponsoring Group/Network:** Periodontology Research  

**Description:** There has been an explosion in research that has identified possible associations between periodontitis and various systemic diseases and conditions. However, do these associations indicate a role in causation? The session will examine the limitations of observational studies and probe study designs that can test causality.

**Table #28:** Association Between Overweight/Obesity and Increased Risk of Periodontitis  
**Speaker:** Jeanie Suvan (UCL Eastman Dental Institute, London, England)  
**Sponsoring Group/Network:** Periodontology Research  

**Description:** Obesity has been shown to affect immune response through various immune mediators resulting in increased susceptibility to infections. Secretions from adipose tissue defines this role in inflammation and immunity. This session will discuss current evidence of the association between periodontitis and obesity and explore implications for further research and clinicians.

**Table #29:** Role of Macrophages in Periodontal Health and Disease  
**Speaker:** Elisabeth Boström (Karolinska Institute, Solna, Sweden)  
**Sponsoring Group/Network:** Periodontology Research  

**Description:** The phenotype and function of myeloid cells in gingival tissue in healthy condition and in periodontal disease is not fully explored. In this session we will discuss aspects of innate immunity focusing on current knowledge of macrophages and their subsets as well as related factors and mediators in periodontal inflammation and tissue repair.
Table #30: Design of Clinical Trials in Periodontology and Implant Dentistry
Speaker: Niklaus Lang (University of Bern, Switzerland)
Sponsoring Group/Network: Periodontology Research

Description: This lunch and learning session will provide the learner with the opportunity to discuss issues related to the design and conduction of clinical trials in the areas of periodontology and Implant dentistry. Using published clinical trial descriptions, the participants will learn steps to successful trial implementation.

Table #31: Minimally Invasive Single-Tooth Replacement in the Esthetic Area Without Implant
Speaker: Matthias Kern (Christian-Albrechts University, Kiel, Germany)
Sponsoring Group/Network: Prosthodontics Research

Description: Single missing anterior teeth are often caused by trauma or because they are congenitally missing. Single retainer resin-bonded fixed dental prostheses (RBFDPs) made from zirconia ceramic present a minimally invasive treatment modality with an excellent clinical outcome. Indication and basic clinical and laboratory procedures are critically discussed.