

ISOCS Online Short Course Summer 2021 - 26-28 May 2021

# Smelling COVID-19: Biomarkers, Olfaction and a Pandemic Agent

## Program

May 26th, 2021


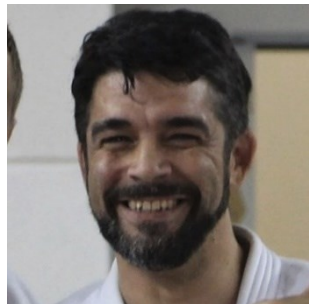
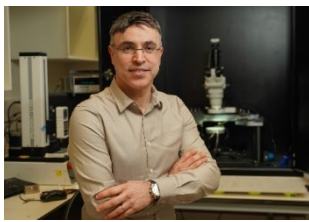
TIME	LECTURE	DURATION
10:00 BST	<b>Opening Session (J.A. Covington – ISOCS President, S. De Vito - ISOCS Educational Chair)</b>	30 Mins
10:30 BST	<b>Thierry Thomas Danguin (INRAE)</b> The impact of COVID-19 on olfaction: what do we know after 18 months of international research effort.	45Mins + 15Mins Q&A
11:30 BST	<b>Dominique Grandjean (ENVA)</b> COVID-19 detection dogs; an international update	45Mins + 15Mins Q&A
12:30 BST	Lunch Break	1 Hour
13:30 BST	<b>Giuseppe Lippi (University of Verona)</b> Sniffer dogs and diagnosis of SARS-CoV-2 infection	45Mins + 15Mins Q&A

May 27th, 2021

TIME	LECTURE	DURATION
10:00 BST	<b>Wrap Up and Networking Time: Students Fast Poster Session</b>	30 Mins (5mins each)
10:30 BST	<b>Eugenio Martinelli (University of Rome – “Tor Vergata”)</b> Artificial olfaction: bio-inspiration, sensors and data analysis.	45Mins + 15Mins Q&A
11:30 BST	<b>Corrado Di Natale (University of Rome – “Tor Vergata”)</b> Electronic Nose for Medical Diagnostics: opportunities for COVID-19	45Mins + 15Mins Q&A
12:30 BST	<b>Lunch Break</b>	1 Hour
13:30 BST	<b>Networking Time: Students Fast Poster Session</b>	30 Mins (5mins each)
14:00 BST	<b>Hossam Haick (Technion)</b> Wearable Sensing Arrays for Diagnosis and Monitoring in Pandemic Era	45Mins + 15Mins Q&A

May 28th, 2021

TIME	LECTURE	DURATION
10:00 BST	<b>Wrap Up and Networking Time: Students Fast Poster Session</b>	30 Mins (5mins each)
10:30 BST	<b>Emma Broderick (IMSPEX)</b> IMS for COVID Detection	45Mins + 15Mins Q&A
11:30 BST	<b>Networking Time: Students Fast Poster Session</b>	1 Hour (5mins each)
12:30 BST	Lunch Break	1 Hour
13:30 BST	<b>Pierluigi Barbieri</b> (University of Trieste) Aerosol science and environmental chemistry drivers of the COVID19 pandemic	45Mins + 15Mins Q&A

<p><b>Thierry Thomas Danguin (INRAE)</b></p>		<p>Thierry Thomas-Danguin is senior research scientist at INRAE (France's National Research Institute for Agriculture, Food and Environment), a specialist of chemosensory perception in humans. He has a background in chemistry enriched by an expertise in psychophysics, psychophysiology and neurobiology of the chemical senses and a Habilitation in Food Sciences. For more than twenty years, he has been conducting research on the chemosensory and neurophysiological aspects of olfaction, gustation and chemesthesis. The central aim of his research is to understand the role of perceptual interactions, induced by odor mixtures processing or cross-modal integration, in odor objects and food flavor coding and perception. At the Centre for taste, smell and Feeding Behavior in Dijon, he leads a research team focusing on Flavor, Food Oral Processing and Perception, which endeavor to unravel the chemical and biological mechanisms of food flavor construction and perception in order to develop a healthier diet, but nonetheless tasty, which may be better appreciated by consumers and therefore contribute to their health and wellness in a sustainable way.</p>
<p><b>Pierluigi Barbieri (University of Trieste)</b></p>		<p>Pierluigi Barbieri is Associate Professor of Environmental Chemistry at the Dept. of Chemical and Pharmaceutical Sciences of the University of Trieste (Italy). Background in analytical chemistry and chemometrics, Ph.D. in Commodity Sciences, research experiences at Vrije Univeriteit Brussels (lab. Prof. D.L.Massart, R.I.P.) Bruxelles (Belgium) and at National Institute of Chemistry (lab. Prof. Jure Zupan) in Ljubljana (Slovenia). His research activity is mainly focused on development and application of tools for air quality and risk assessment, with emphasis on organic pollutants characterization. Founder and former member of the academic spin off ARCO Solutions srl, handling extensively odour issues. Coordinating a multi-disciplinary research group at the University of Trieste, dealing with characterization of SARS-CoV-2 in both indoor and outdoor environments, with attention to sampling, detection and infectivity assessment. (Scopus ID: 7006755861 )</p>
<p><b>Hossam Haick (Technion)</b></p>		<p>Hossam Haick is a Full Professor in the Technion – Israel Institute of Technology and the Dean of Undergraduate Studies. He is the founder and leader of several European consortiums for the development of advanced generations of nanosensors for disease diagnosis. His research interests include nanomaterial-based chemical (flexible) sensors, electronic skin, nanoarray devices for screening, diagnosis, and monitoring of disease, breath analysis, volatile biomarkers, and molecular electronic devices. Prof. Haick has received more than 72 prizes and recognitions and included in more than 42 important ranking lists, such as the of the world's 35 leading young scientists by MIT Magazine (2008), top-100 innovators in the world (2015-2018) by various international organizations, etc.</p>

**Dominique Grandjean (ENVA)**






Dominique Grandjean (DVM, PhD, HDR) is a Professor at the national veterinary school of Alfort (France), where he works as Head of the equine and carnivores clinical sciences department, and of the canine breeding and sport medicine unit. As a faculty in Alfort he has been focussing most of his work on dog's nutrition and working dogs's performance for the last 30 years, with a special attention to oxidative stress prevention and consequences. He is also a colonel veterinarian for the Paris Fire Brigade (military unit, 8500 firefighters), in charge, among other tasks, of the canine search and rescue teams, of the management of dangerous animals, and of biological hazards. Dominique is also national and regional technical advisor of the civilian security for cynotechnics and biological hazards, and national advisor for civilian security working dogs (Ministry of the Interior). He created in 1999 and then developed a national post-graduated diploma on disaster and environment veterinary medicine, and is also Professor at the national superior school for firefighters officers. He is the actual President for the National Association of Firefighters Veterinarians. His unit at the vet school works on a daily base with national police and French armies canine units. As a researcher his works are focussed on the consequences of stress and hostile environments (warm, cold, altitude) in the working dog, with a deep involvement in sled dog long distance races since 1980, and in search and rescue dogs since 1990. His unit (Unite de Medecine de l'Élevage et du Sport –UMES-) also includes a physiotherapy service (including a specialization diploma on the subject) and a dedicated sub-unit for canine collectivities veterinary problems. Dominique already published more than 100 scientific papers on working dog physiology, nutrition and medicine, and a total of 29 books all related to this area. He is a board member for the International Working Dog Breeding Association and a founding member of the International Sled Dog Veterinary Medical Association. He was Race Director for “la Grande Odyssée” sled dog race till 2014, is now Race Director for Lekkarod international Sled dog race, has been an Iditarod veterinarian from 1983 to 1995, as well as chief vet for the late Scandream, Nenana Come Back, Alpirod and numerous European and World championships. He and his team have been training handlers and veterinarians of Canine Police, Army and Civilian Security Units in a lot of countries, including Canada, Argentina, Chile, UAE, Romania, Mexico, Brasil, Russia, Spain, Portugal, Tunisia, Algeria, Poland, Vietnam, China, Iceland and Malta.

**Emma Brodrick (IMSPEX)**



Emma Brodrick is the Systems Application Manager for IMSPEX Diagnostics based in South Wales, UK. Using gas chromatography – ion mobility spectrometry (GC-IMS) their devices have a wide range of applications including those for health and life sciences. Emma has extensive analytical and clinical experience in the translation of GC-IMS technology from the laboratory into the clinical setting. She was the Project Co-Ordinator for the Breathspect Project – a H2020 funded project in the fight against antimicrobial resistance via improved antibiotic stewardship using breath analysis for bacterial v viral respiratory tract infections. She is currently driving forward the use of GC-IMS for COVID detection in the UK and worldwide.

<p><b>Giuseppe Lippi</b> (University of Verona)</p>	 <p>Giuseppe Lippi was born in Padova (Italy) on October 4th, 1967. He has taken the degree in Medicine in 1992 and the specialization in Clinical Biochemistry and Laboratory Medicine in 1996. He currently serves as Full Professor of Clinical Biochemistry and Molecular Biology at the University of Verona (Italy) and Director Laboratory Service of the University Hospital of Verona (Italy). He has published over 1800 articles in peer-reviewed journals, his total Impact Factor is 6900 and the Hirsch Index (H-index) is 106. He has participated to more than 600 national and international congresses and has given more over 300 lectures to national and international meetings. In 2017 he has been appointed as Secretary of the European Federation of Clinical Chemistry and Laboratory Medicine (EFLM) and he currently chairs the Task Force on COVID-19 of the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC). He has been awarded with the 2014 Management Sciences and Patient Safety Division Award of the American Association for Clinical Chemistry (AACC) for outstanding contributions in the field of patient safety in the clinical laboratory/healthcare industry, and with the 2015 Outstanding Speaker Award by the AACC. He has also received research grants from the European Community and from Regional Health Care Services. Giuseppe Lippi is Editor in Chief of “Annals of Translational Medicine” and “Journal of Laboratory and Precision Medicine” and also serves as Associate Editor of the journals “Clinical Chemistry and Laboratory Medicine”, “Seminars in Thrombosis and Hemostasis” and “Diagnosis”, is National Representative of the Italian Society of Clinical Biochemistry and Laboratory Medicine (SIBioC) and member of the European Federation of Laboratory Medicine (EFLM) Working Group on Preanalytical Variability (WG-PRE). The main fields of research include pre-analytical variability, analytical and clinical validation of phenotypic and molecular biomarkers, diagnostics of thrombotic and hemorrhagic disorders and relevant assay methods.</p>
<p><b>Corrado Di Natale</b> (University of Rome “TorVergata”)</p>	 <p>Corrado Di Natale is currently a Full Professor of electronics with the Department of Electronic Engineering, University of Rome Tor Vergata, Rome, Italy, where he teaches courses on electronic devices and sensors. His current research interests include the development and application of chemical and bio-sensors, artificial sensorial systems (olfaction and taste), and the optical and electronic properties of organic and molecular materials.</p>
<p><b>Eugenio Martinelli</b> (University of Rome “TorVergata”)</p>	 <p>Eugenio Martinelli is an associate professor at the Department of Electronic Engineering of the University of Rome Tor Vergata where he teaches courses on fundamentals of electronics, Sensors and Pattern Recognition. His research activity is mainly focused on the development of sensors and their interface, lab-on-chip, and pattern recognition algorithms for medical and space applications. He authored more than 200 papers on international journals and conference proceedings. He was member of the organizing committee of national and international conferences in sensors.</p>