

UNICA EURLO & UNICA RESEARCH WEBINAR

“Remote and Virtual Labs”

Promoted by Middle East Technical University (METU) in collaboration with Ankara University

3 March 2021 | 2:00 PM – 4:00 PM (CET)

Biographies and abstracts

Welcome addresses



Mustafa Verşan Kök, President, Middle East Technical University (METU)

Prof. Dr. Mustafa Verşan Kök was born in 1960. He attended the *International School of Prague* in the Czech Republic for his primary education. Upon graduation from Ankara Atatürk High School in Turkey, he was admitted to Petroleum and Natural Gas Engineering program at METU where he received his B.Sc. degree in 1983 and his Ph.D. degree in 1990.

Dr. Kök worked for SHELL Petroleum company as a well-site operation engineer between 1986-1987. He joined CNRS-INSA de Lyon, France (Institut National Des Sciences Appliquées, Laboratoire de Thermochimie Minérale) in 1993 and ELF Petroleum company research center in 1994. Dr. Kök worked as a Visiting Professor in the UK, Germany and Hungary for more than 1.5 years between 1995 and 2000.

Between 2001-2006, Dr. Kök served as the adviser to the President of TÜBİTAK (The Scientific and Technological Research Council of Turkey). His position at TÜBİTAK included Turkey's membership related to the EU's 6th Framework Programme (FP6), which is listed under the priority of Sustainable Development, Global Change and Ecosystems (SUST) and Joint Research Center (JRC). Dr. Kök worked for CNRS-ICARE of France in Orleans as a Visiting Professor from December 2015 to May 2016.

Dr. Kök's more than thirty years of academic life is devoted to energy, drilling and production technologies as well as the enhancement of oil recovery techniques and fossil fuel characterization. Dr. Kök's academic works included 203 articles in SCI journals and 73 international conference papers. These papers received more than 4400 citations and his *Web of Science* (WoS) h-index is 42. Dr. Kök has been involved in more than 35 national and international projects, through which Dr. Kök received 2 Science, 20 Research, Achievement and Promotional awards granted by several national and international institutions. These achievements and awards include *National Foundation for Development of Mining Science Award* in 2007 and *Prof. Dr. Mustafa Parlar Foundation Science Award* in 2008. In the same year, Dr. Kök was awarded *the International Leader Scientist and Engineer* by OIC.

On February 28, 2019, Kazan Federal State University bestowed on Dr. Kök an *Honorary Doctorate* title.

Dr. Kök worked as the Chair of the Petroleum and Natural Gas Engineering Department at METU in 2015 and was selected the Dean of the Faculty of Engineering in November 2015. Dr. Mustafa Verşan Kök was appointed the President of Middle East Technical University in July 2016 and continues to serve in this role.

Dr. Kök is a Principal Member of Turkish Academy of Science (TÜBA).



Sibel Süzen, former Vice-Rector for International Relations and Projects, University of Ankara and Member of the UNICA Steering Committee

Professor Sibel Süzen was Vice-Rector for International Relations and Projects at Ankara University in 2019-2020 and is a Member of the UNICA Steering Committee since 1 January 2020. She graduated from Ankara University Faculty of Pharmacy in 1985.

After completing her Master's Degree in Pharmaceutical Chemistry at the same university in 1989, she received her doctorate in 1997 from the University of Swansea, UK, Department of Chemistry. She continued her research at Swansea University in various years. She has been a member of European Pharmacopea expert in Group (Semi synthetic and synthetic compounds) since 2011.

In the last 10 years, she has been working as Institutional Erasmus Coordinator, Internationalization and Foreign Relations Coordinator of Ankara University. She has been coordinating the opening of English taught programs as well as international projects, internship agreements and educational programs of the EU.

She carried out numerous projects supported by Tübitak and University resources. She is the author of more than 100 scientific articles and many chapters in various books both in Turkey and abroad. She worked as project manager and organized several scientific meetings. She has been a member of the Editorial Board of various scientific journals. Since 2008, she is full Professor at the Department of Pharmaceutical Chemistry, Faculty of Pharmacy of Ankara University.



Luciano Saso, President of UNICA

Prof. Luciano Saso (Faculty of Pharmacy and Medicine, Sapienza University of Rome, Italy) received his PhD in Pharmaceutical Sciences from Sapienza University in 1992. He is author of more than 220 scientific articles published in peer reviewed international journals with impact factor (SASO-L in www.pubmed.com, total impact factor > 500, H-index Google Scholar 45, Scopus 37). He coordinated several research projects in the field of pharmacology and has been referee for many national and international funding agencies and international scientific journals in the last 30 years. Prof. Saso has extensive experience in international relations, and he is currently Vice-Rector for European University Networks at Sapienza University of Rome. In the last 15 years, he participated in several projects including IMS2020, EGRACONS, IMOTION, BUCUM, UZDOC, TRAIN and has been speaker and chair at many international conferences organised by UNICA and other university networks. He coordinates the Sapienza team in the European University CIVIS (www.civis.eu). Prof. Saso has been Member of the Steering Committee of UNICA for two mandates (2011-2015) and in November 2019 he has been re-elected President of UNICA for the second mandate (2019-2023).

Moderators



Mehmet T. Zeyrek, Vice President for Research, Middle East Technical University (METU)

Mehmet Zeyrek (born May 13, 1960, Ankara) is a Turkish Professor of Physics at Middle East Technical University (METU). He is still working as the vice-rector of METU (since 2016) and he was the ex-chair of the Physics department of METU. Mehmet Zeyrek, who is a graduate of METU Physics department (1982), completed his doctoral research at CERN (1991) as a TÜBİTAK scholar. He then continued his post-doctoral studies at CERN. He worked as a visiting researcher at Nagoya University in Japan and as visiting professor at Texas Tech University in the USA. He is still working on LHC-CMS in CERN, KEK Belle II in Japan and TEXONO experiments in Taiwan and he is the country representative in ECFA. His areas of interest are experimental and phenomenological high energy physics, particle detectors and medical applications.

**Sibel Süzen, former Vice-Rector for International Relations and Projects,
University of Ankara and Member of the UNICA Steering Committee (see
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Speakers



Kürşat Çağiltay, Professor, Distance Education Research and Application Center, Middle East Technical University (METU)

Kürşat Çağiltay has BS from METU Mathematics, MS from METU Computer Engineering and PhD from Indiana University, Instructional Systems Technology and Cognitive Science (Double Ph.D.) with a minor in Information Science.

Research areas: Cognitive Aspects of Human Learning System, Technology Enhanced Learning and STEAM Education, Educational Technology in Special Education, Human-Computer-Interaction, Human Performance Technology, Electronic Games and Simulations, Educational Neuroscience & Neurotechnology, Distance Education and OER/OCW, Social Informatics, Telecommunications and the Internet.

Abstract

How to Conduct Laboratories in the COVID-19 Period: Solutions from METU

During the COVID-19 pandemic period, the majority of universities had to hold their face-to-face lectures online. Despite the various difficulties in the lessons made with synchronous and asynchronous online methods, the teaching could still be continued. However, many of the courses with laboratory practice could not be carried out because they required students to come to the campus and do experiments. This has emerged as a much bigger problem, especially in the basic chemistry and physics courses that many students take. In this presentation, information will be given about what kind of solutions are offered in METU for teaching laboratory lessons during the pandemic period and new solutions that are planned to be developed in the future.



Naci Gündoğan, Executive Board Member of the Council of Higher Education (YÖK) & Faculty Member at Anadolu University

Naci Gündoğan has BS from Political Sciences, Ankara University, MS and Phd from Anadolu University in Social Policy and Labor Economics. He served as vice rector and rector of Anadolu University between 2010 and 2018. He is currently a member of the Executive

Board in Council of Higher Education. He was elected to full membership of Turkish Academy of Sciences (TÜBA) in 2017. For his contributions to distance learning around the world, he was awarded the title of honorary doctorate by the University of Colombia's Open and Distance Learning (Universidad Nacional Abierta y a Distancia) in 2017.

Research Areas: Labor Economics, Youth Unemployment, Income Distribution, Poverty, Working Poverty, Trade Unions.

Abstract

A Solution to Laboratory Applications During the COVID-19 Pandemic Period: YÖK Virtual Laboratory Project (YÖK SanLab)

Due to the Covid-19 pandemic, with the transition to distance education in our universities in March 2020, solutions to the courses requiring laboratory applications began to be sought. In this process, a project was developed by the Council of Higher Education (YÖK), in which two laboratory courses (general chemistry and general physics) with the most intense laboratory applications were determined.

With this project developed by YÖK in cooperation with the Scientific and Technological Research Council (TÜBİTAK), it was aimed to conduct general chemistry and general physics laboratory courses through virtual laboratory platform in various programs of our universities, especially in science and engineering faculties and vocational schools. Academicians in chemistry, physics and distance education from Turkey's leading universities took part in the project. The academicians and software developers having participated in the project have worked entirely on a voluntary basis. It is planned that approximately 15 thousand students studying at various faculties of 18 universities, including the universities that are involved in the digital transformation project, will benefit from the virtual laboratory courses that started on October 26. Starting from the spring semester of the 2020-2021 academic year, with the inclusion of 30 state universities in the project, the number of universities benefiting from the virtual laboratory will be increased to 48 and the number of students to 50 thousand.



Elif Sürer, Professor, Graduate School of Informatics, Middle East Technical University (METU)

Elif Sürer received her Ph.D. in Bioengineering in 2011 from the University of Bologna. She received her M.S. and B.S. degrees in Computer Engineering from Boğaziçi University in 2007 and 2005, respectively. She joined METU Graduate School of Informatics' Modelling and Simulation Department in 2015 and is currently working as an Assistant Professor at the METU Graduate School of Informatics' Multimedia Informatics program. She collaborates with several interdisciplinary national and EU-funded projects. Her research interests are serious games, virtual/mixed reality, reinforcement learning, and human and canine movement analysis.

Abstract

Recent Practices, Opportunities, and Challenges in Virtual Reality and Mixed Reality Research

Virtual reality (VR) and mixed reality (MR) applications are recently widely used together with serious games for rehabilitation, education, and training purposes. In this talk, firstly, a thorough survey of these standard technologies' opportunities and challenges will be summarized. For example, despite their common usage, a generative application framework where the key summary of the scenario is used to create VR- or MR- based serious games or training material automatically for highly structured training is still missing. A new scenario-based video game generation framework for VR environments, which was developed for the EU H2020 project European Network of CBRN Training Centers (eNOTICE), will be explained in detail. Finally, our recent collaborations and project outcomes with METU Department of Civil Engineering on a virtual laboratory, our MR- and VR-based serious games developed together with METU Department of Mining Engineering, and our performative architectural design tool developed jointly with METU Department of Architecture, will be exemplified in detail.



Bernhard Hirt, Director, Institute of Clinical Anatomy and Cell Analysis, University of Tübingen

Prof. Bernhard Hirt is a W3-professor for Clinical Anatomy at the University of Tübingen, Germany. Therefore, he represents a modern and innovative area of anatomy, which aims at bringing anatomic expertise into the context of diagnostic and therapeutic (surgical) use.

Prof. Hirt has been a researcher and teacher of anatomy since 1999.

Additionally, he has more than ten years of work experience as an ENT-surgeon (also as consultant) at the University Hospital Tübingen. In accordance with his qualification, his main interest is the translational research in the fields of experimental macroscopy and cellular biology.

Abstract

Sectio chirurgica – Digital and Interactive Enhancement of a Traditional Teaching Method

Transferring the teaching of practical knowledge is a challenge. In the field of medicine, one has to be aware that a complete transference is impossible. However, there are still good and proven methods to bridge that gap as much as possible, one being Tübingen's Sectio chirurgica.

Sectio chirurgica is a digital live lecture at the Institute of Clinical Anatomy and Cell Analysis of the University of Tübingen, invented in 2008. Since then, it has been under constant development, catering to changing needs in medical teaching. In each episode, surgeons demonstrate their skills

by performing surgery on an anatomic specimen, while anatomists, radiologists and other experts discuss the presented case from different angles.

This concurs with traditional classroom concepts, with the teacher(s) speaking to the class. Only, in this case, the class is watching in front of their computers, since the episodes are streamed live on the lecture's own website. Aside from the digital expertise used to create Sectio chirurgica, what makes it unique are its interactive features. These features are the key to transferring practical knowledge to a broad and remote audience. They allow the audience members to become a part of the surgery, independent of their own location; either by interacting directly with the surgeon using chat and video call, or by being given the ability to vote on the next step to be performed by the surgeon. One aspect of acquiring practical knowledge is using that knowledge and getting the right or wrong result. In certain surgeries of Sectio chirurgica the audience has the ability to vote on how the surgeon should proceed. While not performing these steps themselves, the audience members become crucial to the practical performance. If they voted right, the surgery would go on as planned, if they voted for the wrong next step, the surgeon would have the ability to explain or even show, why that decision was false and possibly detrimental to the patient. Right and wrong decisions have a huge impact on the students' ability to acquire practical knowledge and especially making the wrong decisions can have an impact on the take-away lesson; not every surgery is performed textbook perfect, knowing the consequences of wrong actions may help in reducing the risk of making them.

The second aspect, in which Sectio chirurgica supports practical learning at a distance, is focused on the demonstrated surgeries themselves. By streaming the surgeries there is no limitation in the amount of people being able to watch the surgeries, allowing students to follow procedures they would not be able to see otherwise, e.g. rare or high-risk surgeries. In addition, due to Sectio chirurgica's interdisciplinary and almost more importantly its interprofessional character, students are provided with the means to understand not only the surgical aspects, but also the procedure as a whole: Starting with the patient's first visit to the physician, then a specialist, the performing of the surgery and the follow-up treatment by physiotherapists. One episode of Sectio chirurgica offering a great example follows the case a COVID-19 patient. Students would not be able to follow that case without it being digitalized, since they are not allowed to enter the COVID intensive care unit. Watching the episode enables them to acquire practical knowledge by actually seeing experts demonstrate the practical use of that knowledge. Still, with all the advantages, digital teaching methods can always just enhance and add to actual practical teaching, be it classroom based or bedside teaching, but never replace it.



Paolo Carafa, Professor of Classical Archaeology, Sapienza University of Rome

Paolo Carafa is Full Professor in Sapienza University of Rome. His main scientific interests have been devoted to Roman topography, Etruria during Etruscan and Roman times, Basilicata, Calabria (ancient Sibaritide), the Suburbium of ancient Rome, and analysis of monumental complexes in various towns of Roman Italy (Rome, northern slopes of the Palatine, Volterra, Pompeii, Veii). In 2005 he created a (patented) Archaeological Information System. Since then he has coordinated research projects dedicated to Roman urban architecture and landscapes of ancient Latium. As well as fieldwork, he has been coordinating scientific research teams since 1986 with the aim of reconstructing the topography and landscapes of ancient towns and their territories. He also has interests in artistic production of the Hellenistic era, Latin epigraphy, Archaic architecture in mid-Tyrrhenian Italy, the Romanization of Campania, mainly at Pompeii, and of Magna Graecia, archaeological computing, Geographical Information Systems, landscape archaeology: field survey, methods and theory.

Abstract

Grooving (virtually) together. Archaeology in Sapienza during the COVID-19 Pandemia.

The aim of the paper is to present the gradual evolution of standard operating procedures applied both in research and teaching during the “pandemic year” by the Chair of Archaeology and History of Greek and Roman art, University of Rome “La Sapienza”. In particular, IT tools and GIS applications we developed during the last twenty year to manage large quantities of records and data-sets from wide area stratigraphical excavations and archaeological surveys are briefly presented as a possible solution to remote supervision and cooperation of didactic and operating archaeological units.