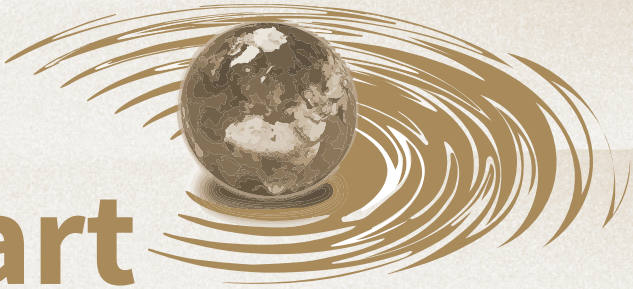
programme booklet

RLS-SCIENCES / SEPTEMBER 2020



Smart Region 2020

VIRTUAL SYMPOSIUM ON COVID-19

Regional Leaders' Summit

Bavaria | Georgia | Québec | São Paulo | Shandong | Upper Austria | Western Cape

WELCOME!

© Joachim Haslinger

THOMAS STELZER
LANDESHAUPTMANN
VON OBERÖSTERREICH

DEAR PARTNERS OF THE REGIONAL LEADERS´ SUMMIT NETWORK!

The global COVID-19 pandemic has posed and continues to bring dramatic challenges for us and the regions we live in. Therefore it is time to further strengthen our traditional cooperation and promote the specific exchange of knowledge transfer across our respective regions, countries and continents.

As the 10th Regional Leaders' Summit had to be postponed to 2021, we and RLS-Sciences want to invite you this September to a virtual symposium on COVID-19. Our common scientific program is currently adressing on socio-political developments based on the global pandemic and the major questions of today´s world.

A joint round table ensures a science- and practice-oriented exchange between political representatives and the scientific network. Following up on Bavarian suggestion, the RLS-Sciences Network is launching the "Digital Health Initiative", a new topic within the RLS-Sciences framework.

Therefore experts and scientists from all seven regions are on board and provide their expertise from all four RLS-Sciences project themes for the benefit for our regions and our citizens, during the COVID-19 pandemic and after.

I am looking forward welcoming you all in Upper Austria next year to continue our goals to „connect the best"!

Yours sincerely

Thomas Stelzer
Governor of Upper Austria

POLITICAL STATEMENTS

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Markus Söder,
Prime Minister of Bavaria

"Corona is a game-changer. Never before have politics and science been that interdependent."

Brian Kemp,
Governor of Georgia

"Home to global health organizations like the U.S. Centers for Disease Control and Prevention (CDC) and the Task Force for Global Health, renowned research institutions like the Georgia Institute of Technology, and nearly 700 research testing and medical labs, the effects of innovation in Georgia are felt around the world. The state's global partners, in both the private and public sectors, fuel this innovation and progress."

Nadine Girault
Minister of International Relations and La Francophonie,
Minister of Immigration, Francization and Integration of Québec

"Building bridges between the scientific and political spheres is essential, not only to improve the quality of life of our respective societies, but also to develop sustainable policies for future generations. Quebec, like the other partner regions, is working tirelessly in this direction. Let's all continue to make a difference!"

Ambassador Affonso Massot,
Executive Secretary of International Affairs of São Paulo

"São Paulo: measures to combat the Coronavirus and to foster the post pandemic sustainable recovery."

REN Airong,
Vice Governor of Shandong

"友城结同心，科技助战疫"
"Strengthen Solidarity and Defeat the Virus with Technology."

Alan Winde,
Premier of the Western Cape

"The Western Cape Government's response to COVID-19 has been data led and evidence based. We have throughout our response, used the science and learning available to us from the experiences of other countries, while also making use of the depth of expertise that exists in our own public health system. We have also partnered with the citizens of the Western Cape, and various groupings including business, civil society, NGOs and across party-political lines to ensure that we bring about behaviour change that not only flattened the curve, but has helped us to save lives."

WELCOME RLS-SCIENCES

The COVID-19 pandemic has caused unprecedented challenges for our countries. Governments around the world are searching for fast and effective policy responses to the crisis while facing emergency, uncertainty and the pangs of communication needs.

Regional and local authorities, which are at the forefront of the fight against the pandemic, are being called upon to deliver emergency services, inform in real-time on how to contain the spread of the disease, coordinate efforts, and mitigate as far as possible the impact on economies during and after the crisis.

The role of science and science advice has never been as tangible as in the pandemic, when providing evidence-based information to decision makers, and coordinating complex science initiatives across jurisdictions, became critical to slowing the spread of the virus. At the same time, the rapid deployment of novel technologies in response to COVID-19 has raised major social, legal, regulatory and ethical issues that governments need to take into equal consideration.

The RLS-Sciences network is committed to working closely with the RLS governments, and helping to inform their actions and decision-making during the COVID-19 pandemic and after.

Bringing science and expertise across disciplines in four major fields of activity over seven regions in long-term collaborations, our four RLS-Sciences research groups address the major questions of today's world for the benefit of our regions. International science cooperation as practiced in the RLS-Sciences network is a powerful way to advance science and policy at the regional level.

A science-policy dialogue would be nothing without trust. Where trust is high, clear and direct communications from scientists are likely to be most effective in terms of policy, and build public acceptance. Together, the seven regions can create the right framework conditions.

We are looking forward to the RLS-Sciences round table on "Regional crisis management, challenges, best-practices and exit strategies for the COVID-19 pandemic".

Dr. Florence Gauzy, RLS-Sciences Lead Management Partner and
Dr. Sebastian Goers, RLS-Sciences President

PROGRAMME

TUESDAY, 15TH SEPTEMBER, 2020
"ROUND TABLE ON COVID-19"

13:30 CEST – 15:45 CEST
07:30 Georgia/Québec time
08:30 São Paulo time
13:30 Bavaria/Upper Austria/Western Cape time
19:30 Shandong time

Moderation: Nora Mack, Business Upper Austria,
www.medizintechnik-cluster.at

13:30 - 13:35 | OPENING

Dr. Florence Gauzy,
RLS-Sciences Lead Management Partner and
Dr. Sebastian Goers,
RLS-Sciences President

13:35 – 13:40 | OFFICIAL WELCOME

by Thomas Stelzer,
Governor of Upper Austria

13:40 – 14:10 | POLITICAL STATEMENTS OF PARTNER REGIONS
“Regional challenges in the global pandemic“

Bavaria	Florian Herrmann, *Head of State Chancellery and Minister of Federal and European Affairs and Media*
Georgia	Geoff Duncan, *Lieutenant Governor*
Québec	Éric Marquis, *Deputy-Minister, Bilateral Relations*
São Paulo	Ambassador Affonso Massot, *Executive Secretary of International Affairs*
Shandong	REN Airong, *Vice Governor*
Upper Austria	Thomas Stelzer, *Governor*
Western Cape	Alan Winde, *Premier*

14:10 – 14:25 | KEYNOTE

“Managing Digital Identities - from Contact Tracing in the Crisis to Future Virtual Passports“

Univ.-Prof. Dr. René Mayrhofer,
Head of Christian Doppler Laboratory for Private Digital Authentication in the Physical World and Head of Institute of Networks and Security, Johannes Kepler University (JKU).

Digital identity will be key to many future services in the digital, but also in the physical “real” world. Not only well-known messaging and social network services require a notion of a person’s identity at their core – opening doors with electronic locks, using public transport, opening a bank account, or manifold manufacturing processes all rely on some digital attributes to perform an action. The COVID-19 pandemic highlights that required or useful attributes for a specific use case can be highly diverse: while it is important if two persons have been in close proximity to each other and may have passed on an infection, the absolute location where this contact occurred and at which time of the day is irrelevant. On the other hand, both absolute location history and relative contact with other people can be highly sensitive from a privacy – and even safety – point of view. An interesting and pressing question is what we can learn from dealing with the current crisis for future uses of digital identity, including virtual passports and other government-issued documents. How can we balance usability, security, and privacy requirements of digital identity?

https://jku.at/ins/ ; *www.digidow.eu*

14:25 – 15:25 | RLS-SCIENCES ROUND TABLE DISCUSSION

Regional crisis management, challenges, best-practices and exit strategies for the COVID-19 pandemic. Insights from the RLS-Sciences projects "Energy Network, Global Aerospace Campus, Small Satellites and Expert Dialogue on Digitization".

Energy Network

Title: "Approaches for navigating the RLS regions' energy transitions during and after the COVID-19 crisis"
Speaker: *Dr. Sebastian Goers (Energieinstitut at the Johannes Kepler University)*

Global Aerospace Campus

Title: "Global Aerospace Campus – Connecting Regions through Education during Covid-19 and beyond"
Speaker: *Prof. Klaus Drechsler (Global Aerospace Campus; Technical University of Munich)*

Small Satellites

Title: "Earth Observation with CubeSats in Times of COVID-19: Perspectives from the Telematics International Mission (TIM)"
Speaker: *Prof. Klaus Schilling (Zentrum für Telematik; Julius-Maximilians-University Würzburg)*

Expert Dialogue on Digitization

Title: "Working and Learning from Home in a Digital Era"
Speaker: *Prof. Thierry Karsenti (Université de Montréal)*

15:25 – 15:45 | DIGITAL EXCURSION (VIDEO & TALK) “Smart MedTech Upper Austria“

Univ.-Prof. Dr. Andreas Gruber,
Professor and Chairman, Department of Neurosurgery,
Johannes Kepler University, Kepler University hospital, Neuromed Campus, Linz

Dr. Michael Giretzlehner,
Head of Research Department, RISC Software GmbH,
Research Unit Medical Informatics, Johannes Kepler University Linz

Dr. med. Lukas Drabauer, MBA,
CEO alpha medical concepts e.U.

Mag. Albert J. Ortig,
CEO Netural Group GmbH

MEDUSA (**M**edical **EDU**cation in **S**urgical **A**neurysm clipping)

MEDUSA is a Flag-Ship research project funded by the government of Upper Austria in the scope of the Medical Upper Austria pillars “Medical engineering” and “Digital health and medical materials”. The aim of MEDUSA is to combine real (touchable) haptic and virtual models to create a most realistic simulation environment for surgeons. In contrast to a usual medical simulators the surgeons will get the „real-live“-feeling of touchable medical phantoms – just like in front of the real patient. The developed medical simulator will be used for education and training, especially in very complex surgical procedures like Aneurysm clipping and to reduce the time to perfection which usually takes 20 years. It will be used to perform the surgical procedure in the simulated environment, to select the optimal trajectory and to test and select the best clip for the individual patient. MEDUSA is carried out by seven research departments and six companies, to combine and strengthen the existing competences in Upper Austria. In the long term we plan to build up a Simulation and Cooperation-Center in Upper Austria to transfer and further develop the core technologies to a broad area of Med-Tech applications.

https://medusa.health/en

COVIDOOR – THE SMART COVID-19 DOORMAN
FROM LINZ, UPPER AUSTRIA

The new web app "Covidoor" relieves workloads at Covid-19 entrance locks of public and private facilities, especially in high-risk environments such as hospitals or nursing and retirement homes, by issuing a free-of-charge QR code ticket for screen or paper printout scanning at entrance gates.

Covidoor invites those who intend to enter the premises of companies, organizations or service facilities to take a critical look at the Covid-19 infection risks they might pose. Honest self-disclosure will objectively reduce the risk to everyone - staff, patients and, of course, the visitors themselves – while subjectively conveying a rewarding spirit of solidarity.

Legal data recording requirements for contact tracing purposes will take the practical value of Covidoor to the next level, because the app comes with an integrated logbook that supports quick responses in case of infections.

Of particular importance in this context is the fact that Covidoor is 100% GDPR-compliant. Bulletproof data protection demands “privacy by design”: The log registers only admission events – i.e. who gained, or was refused, entrance - but no self-disclosure details. After a 4-week period, the system will automatically delete the stored data.

Covidoor was designed and programmed as a cloud service by Upper Austrian eHealth-savvy digital services specialist Netural, in close cooperation with internationally recognized patient safety expert Dr. med. Lukas Drabauer, founder of Alpha Medical Concepts.

https://covidoor.com/organisations

PROGRAMME

WEDNESDAY, 16TH SEPTEMBER, 2020
LAUNCH OF THE DIGITAL HEALTH INITIATIVE

13:30 CEST – 16:30 CEST
07:30 Georgia/Québec time
08:30 São Paulo time
13:30 Bavaria/Upper Austria/Western Cape time
19:30 Shandong time

REPORTS FROM THE REGIONS

"How can AI support approaches to slowing and ending the Covid-19 pandemic"

13:30 – 13:40 | WELCOME

Sebastian GOERS, PhD,
Energieinstitut an der JKU Linz, RLS-Sciences president

LAUNCH OF THE SESSION

Head of the State Chancellery and minister of Federal and European Affairs and Media, Dr. Florian HERRMANN,
Bavaria (video)

Vice Governor , Christine HABERLANDER,
Upper Austria (video)

13:45 | OPENING KEYNOTE

Jama NATEQI, MD, PhD,
Founder and CEO Symptoma,
Upper Austria

Symptoma is your digital health assistant.
It helps you understand what might be wrong if you are feeling unwell. Simply state your symptoms and answer questions to find possible diagnoses.
Symptoma is based on 14 years of scientific research by medical doctors and data scientists to help patients receive their right diagnosis and treatment.

Today, Symptoma is the most used symptom checker worldwide among both doctors and patients with millions of users and searches per month. Its diagnostic accuracy is raising the bar in its industry and has been validated in internal, external, and peer-reviewed scientific publications comparing up to 107 solutions worldwide where Symptoma clearly ranked as #1.

For COVID-19 Symptoma has established the first and (probably still) only AI-based Chatbot screening citizens for COVID-19 risk while comparing to 20,000 other possible diseases. Certified as medical product. Scientifically validated in two studies (currently under peer-review). Tasked by the European Commission, Austrian government, City of Vienna, hospitals, companies, and insurers. +40 million tests conducted.

https://www.symptoma.at/de/about

14:15 | PRESENTATIONS, PART ONE

Chair: Carole JABET, PhD, Scientific Director of the Québec Research Fund – Health
Introductory Remarks and Moderation

SPECIAL KEYNOTE TALK
Luiz Eugênio MELLO, MD, PhD, Scientific Director, FAPESP, São Paulo
Digital Health Research and Innovation in São Paulo

14:45 | QUÉBEC
Michaël CHASSÉ, MD, PhD, Centre Hospitalier de l'Université de Montréal (CHUM), CHUM Research Center, Montréal
Big Data in Clinical Research

Simon DE MONTIGNY, PhD, University of Montréal's School of Public Health, CHU Sainte-Justine Research Center, Montréal

Potential Use of Artificial Intelligence for Modeling Epidemics in Real Time

15:00 | GEORGIA

Tiffany WILSON, CEO, Global Center for Medical Innovation, Atlanta
The Global Center for Medical Innovation and Georgia's Response to the Pandemic

Q&A | Break

15:30 | PRESENTATIONS, PART TWO

Chair: Euclides de MESQUITA NETO, PhD, FAPESP, RLS-Sciences vice-president
Introductory Remarks and Moderation

SHANDONG
Yue CHEN, PhD, Deputy General Manager of International Cooperation Department of iFLYTE
IFLYTEK's *AI Actions when Confronted with COVID-19 Epidemic*

15:45 | WESTERN CAPE
Andrew BOULLE, MD, PhD, Western Cape Department of Health and Professor in Public Health Medicine at the University of Cape Town
COVID-19 in the Western Cape Province of South Africa: enriching data to answer simple questions

16:00 | BAVARIA
Volker TRESP, PhD, Professor at Ludwig Maximilian University Munich, and Distinguished Research Scientist at Siemens AG
AI in Healthcare in times of COVID-19

Christian Ludwig HINSKE, MD, PhD, University Hospital Munich, Ludwig Maximilian University Munich

Q&A

16:20 | CLOSING REMARKS ON DIGITAL HEALTH AND NEXT STEPS

Euclides de MESQUITA NETO, PhD; Sebastian GOERS, PhD; Florence GAUZY, PhD
Digital Health in RLS-Sciences

DESCRIPTIONS

RLS-Sciences

RLS-Sciences is a scientific and research network operating under the framework of RLS. It seeks to leverage the unique composition and strengths of the RLS regions to support scientific research within and between the RLS members. We work to generate and support academic, scientific, and technological exchanges, and the initiation of multilateral and sustainable research and innovation projects. The project themes were chosen based on the areas with greatest potential for innovation and cooperation, and the shared strengths of the regions. The four projects are: the RLS-Energy Network, the RLS-Global Aerospace Campus, RLS-Small Satellites and the RLS-Expert Dialogue on Digitization including the newly launched Digital Health Initiative.
The RLS-Sciences framework consists of three levels of coordinators in each region: Political Coordinators, Scientific Coordinators, and Administrative Coordinators. These coordinators are the first point of contact in their regions for RLS- Sciences, and are partners in the drive to launch multilateral projects and integrated scientific networking activities. The existing resources of RLS-Sciences include its scientific network of 140 academic researchers, 60 young researchers, the bilateral relationships between the RLS members, an online research and training infrastructure, and established mechanisms of multilateral cooperation. In our multilateral research projects, graduate students and young researchers have the opportunity to deepen their academic knowledge in a global environment that is interdisciplinary, international, and practice oriented. In the four research areas as well as at the overall coordination level of RLS-Sciences, promotion of multilevel cooperation with public sector stakeholders is key to foster regional development and international leadership.

RLS-Energy Network

The RLS-Energy Network was initiated as a result of the 6th RLS meeting in São Paulo in 2012. It was agreed amongst the participants that the development of renewable sources of energy is a crucial issue that requires extensive research. Due to their unique geographical composition spanning over four

continents, and in accordance with their research profiles, the RLS regions represent a strong potential in this field. Together, the RLS regions cover all aspects of energy, from production to usage, monitoring to efficiency. The RLS-Energy Network is used as a means to bring together complementary strengths in energy research to be shared and further developed in a joint effort. These efforts, guided by the joint roadmap - the Regional Renewable Alliance - generates insights which may be useful for further developments renewables and their role in regional energy systems' transformation, including policy.

Lead Scientists and experts of the RLS-Energy Network postulate that it is fundamental to design and implement the post-COVID-19 recovery keeping in mind the importance of a sustainable and resilient energy system and infrastructure, capitalizing and building on the results already achieved by the energy transitions of the RLS regions.

RLS-Global Aerospace Campus

In the RLS-Global Aerospace Campus, experts of today share their insights to train virtually and in-person the aerospace experts of tomorrow based on the most recent research achievements available in the regions. They prepare the next generation of engineers to be operational in a context of increased, fast evolving technological competition, and socially expected sustainable developments.

In the COVID-19 crisis, the need for innovative online education platforms has led to a significant increase in the number of users on the virtual Global Aerospace Campus training platform and especially in the number of registrations to the first online course on "Digitalisation in Aeronautics and Space", which includes speakers from the different RLS regions. In response to the physical distancing, and the temporary closure of higher education institutions, the group further developed its online courses offer to address the new e-educational demand. In August 2020, the first online course was released as Massive Open Online Course (MOOC).

RLS-Small Satellites

With a smart formation of small satellites for telecommunication and earth observation, the RLS-Small Satellites project is demonstrating technology leadership out of the regions in the new space research. The project builds upon and goes beyond current state-of-the-art in pico-satellite research, using expertise available in the regions on pico-satellites, space communication (navigation, guidance, control), miniaturization, and mechatronics, the RLS research group will work on an empowered model of a formation of pico-satellites in orbit, and deliver new applications.
The group will show examples of situations in which satellites proved useful to collect worldwide information about the exact spread of the COVID-19 pandemic, and the responses provided (closures, isolation, border controls, etc.) as reflected by movements of persons or vehicles on sites.

RLS-Expert Dialogue on Digitalization

During the 2016 RLS Summit in Munich, science, business, and public sector representatives from across the regions decided to initiate a regular dialogue on the potentials and risks of digital technologies. Based on different digital strategies, the regional governments implement policies to enable and sustain the digital transition in industry, science, academia, and public administration as new investments secure the necessary digital infrastructure. In the COVID-19 crisis, the group focused its attention on the major changes that were happening in the world of work, and analyzed new patterns of working in the digital area, including the cybersecurity aspects. Following a Bavarian survey, the seven regions reflected on their regional specificities regarding working from home.

RLS-Digital Health Initiative

On September 16, following a recommendation of the Bavarian Minister-President, a special session specifically on Digital Health and COVID-19 will take place. Digital Health is a new and vast area of research. For this first edition,

the Expert Dialogue on Digitalization group agreed to investigate the topic of Digital Health in exploring the role of artificial intelligence (AI). They approached high-level scientists and experts in the seven regions who will share their insights on “How can AI support approaches to slowing and ending the COVID-19 pandemic: reports from the regions”.
Speakers are experts in AI, epidemiology, medical statistics, clinical research, drug development, ethics, law, and public health as well as representatives of public health authorities from across the regions.
For this launch session, the Upper Austrian MedTech Cluster successfully approached the Upper Austrian innovative company Symptoma (www.symptoma.at). Symptoma will present their EU-awarded digital health assistant and symptom checker. Dr. Jama Nateqi, Symptoma CEO, will give the inaugural presentation.

Acknowledgments

RLS-Sciences work is teamwork. Sebastian Goers and Florence Gauzy express their gratitude to the 21 permanent regional coordinators and 28 lead scientists for their constant cooperation during the COVID-19 pandemic. Fiona Rumohr in the Bavarian group deserves a special mention.