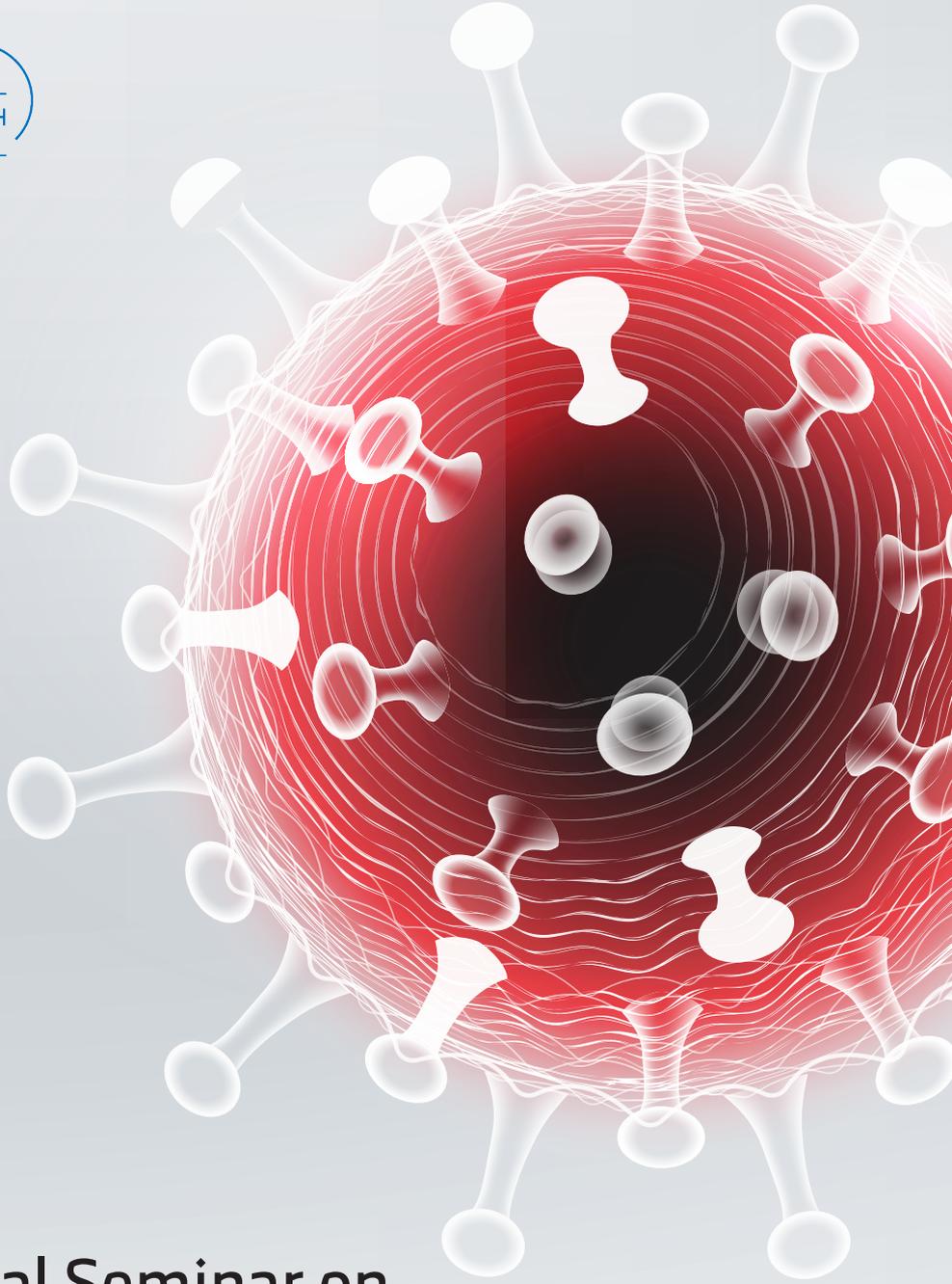




مدينة الملك عبدالعزيز
للعلم والتكنولوجيا KACST



The GRC Virtual Seminar on Covid-19 in the Middle East and North Africa (MENA) Region

Riyadh - Saudi Arabia

16-17/12/2020



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مؤسسة الكويت للتقدم العلمي
Kuwait Foundation for the Advancement of Sciences



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The GRC Virtual Seminar on Covid-19 in the Middle East and North Africa (MENA) Region

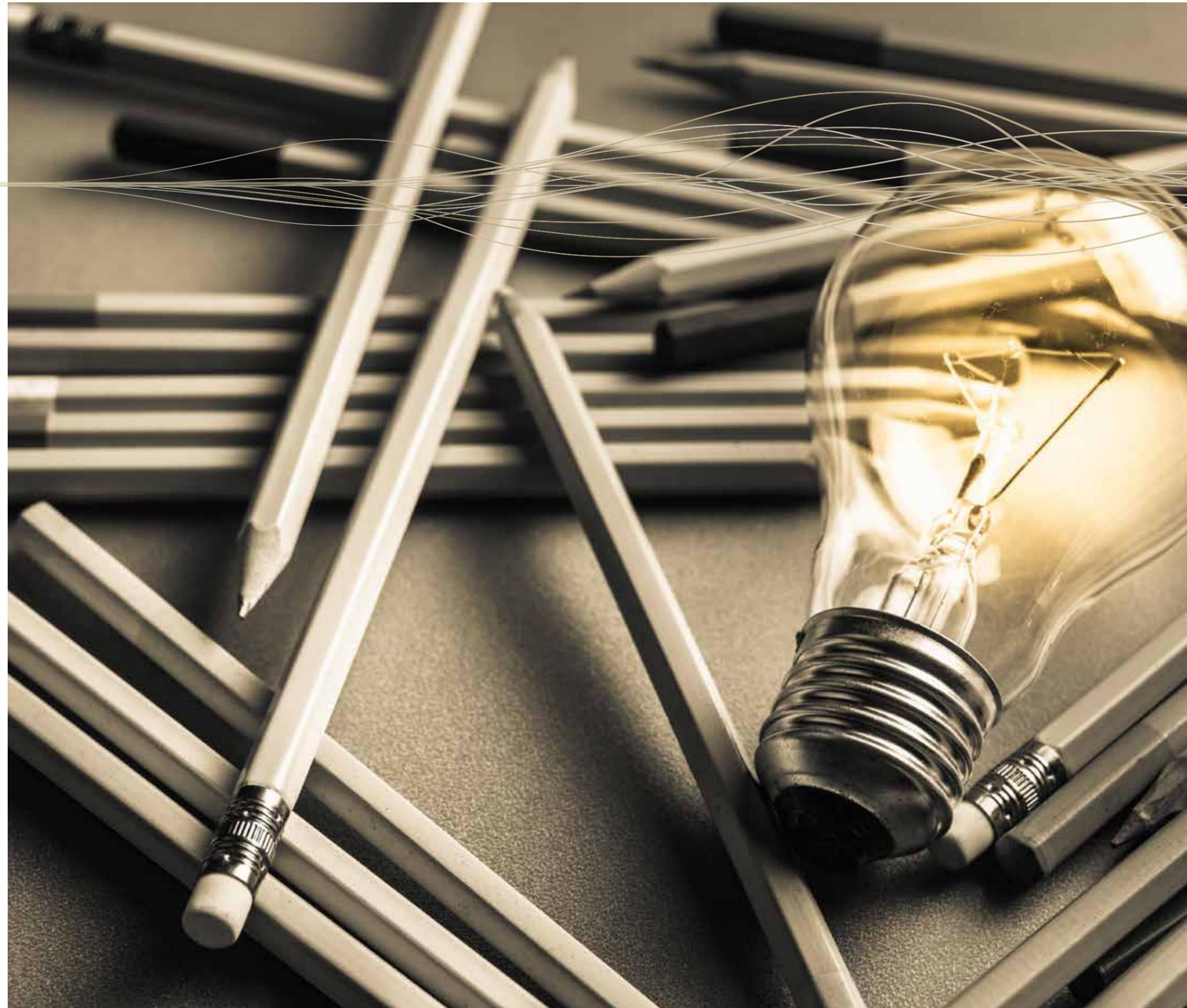
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MESSAGE FROM THE SEMINAR CHAIR

It is my utmost pleasure to welcome you all to the GRC virtual seminar on CoVid-19 in the MENA Region that is hosted by King Abdulaziz City for Science and Technology of Saudi Arabia in cooperation with the Global Research Council (the GRC), for two days 16-17 Dec. 2020.

This year has been indeed an extraordinary one, with lots of lessons learned, dexterous actions taken, and agile practices becoming the norm. Nevertheless, amongst all other aspects, this year has taught us the most about ourselves, instigating confidence and trust in our higher leaderships, policymakers, and more importantly, our community. As the President of KACST, I speak on behalf of my colleagues with pride. Over the past months, in response to the COVID-19 pandemic, we have assembled a strategic response plan to allow clinicians, scientists, and authorities to make informed decisions by establishing research support services and accelerated funding programs. We have worked closely with the Ministry of Health, the Saudi Health Council, and the Saudi Center for Disease Prevention and Control, and other stakeholders to collaboratively establish the "COVID-19 Research Grant Program". This program has successfully enabled us to better understand and elucidate the Coronavirus pandemic and its impact, and to design evidence-based policies and programs to counter face it.

The National Committee of Bioethics released and published new guidelines for research in epidemics/pandemics and emergencies. The policies established do take into account the situation of uncertainty, time constraints, and strong pressure to address health care needs.

The Saudi Research & Innovation Network (MAEEN) has successfully established multiple information technology solutions to address the increased demand in cloud network space and bandwidth capacities.

In the area of medical devices and theranostics, KACST has initiated the design of multiple prototypes of low-cost pulmonary ventilation devices, Full Body Sanitizing Systems, such as the Micro-Nano-Bubbles (MNB®) technology that dispenses a nano-bubble mist on surfaces and objects, such as skin, clothes, or other materials. KACST will boost the ability of small and 2

medium-sized enterprises to produce medical supplies, by providing them with support and consulting services, additives manufacturing; and digital high-precision manufacturing services.

As the main role of KACST in monitoring and observing all national research, development, and innovation activities, KACST stands as the central organization to provide a complete and comprehensive view on all national activities related to the COVID-19 pandemic within the scope of research, development, and innovation.

KACST also had a role in the development and local manufacturing of diagnostic tools and products required for early SARS-CoV-2 detection. Such efforts are expected to help achieve sustainability in providing in-country, readily available, and reliable diagnostics, which are used to identify COVID-19 presymptomatic, symptomatic, and previously exposed patients.

- COVID-19 IgM/IgG test: a single-use rapid device

for qualitative detection.

- Single-tube one-step diagnostic tool for the detection of SARS-CoV-2.
- Colorimetric test by developing a sialic acid conjugated gold nanoparticles.
- Diagnosis of SARS-CoV-2 with the use of a modified real-time PCR technique.

KACST is also actively participating with reputable organizations across the Kingdom working on vaccine development. In the field of genomics, KACST aims to establish a National Host Genetics Consortium that will generate, share, and analyze data to learn the genetic determinants of COVID-19 susceptibility, severity, and outcomes. We have also partnered with International Host Genetics COVID19hg Consortium. These efforts will lead to discoveries that could help generate hypotheses for drug repurposing, identify individuals at unusually high or low risk, and contribute to global knowledge of the biology of SARS-CoV-2 infection and disease.

AI, Data Analytics, and Statistics are to augment, represent, and project the country's data as needed by epidemic models to simulate possible stochastic dynamics of infectious diseases, and hence to support decision-making processes. KACST is providing the MoH and COVID-19 crisis centers a daily analysis of tweets across the Kingdom that could help them to determine the impact of their campaigns, whether related to health or economic behaviors. In addition, an analytic front-end for these analytics will be developed to create a Policy Support and Recommendation System. This will test the implementation of different prevention policies and examine their effects on a 3

country scale; however, the system will be based on a generalized model, which can simulate any disease that may cause an outbreak.

Examples of systems implemented:

1. An AI-based platform to collect data from drones with various variables of interest, such as time of the day, crowd size, and body temperatures.
2. Integrated Unmanned Aerial Vehicle (UAV) systems for thermal detection.

To assist the Ministry of Health's (MoH) 937 Call Center, which receives more than one million calls per month, KACST is developing a 937 chatbot that will help answer some of these calls automatically and alleviate the load on MoH medical services. The chatbot system has a classification of around one thousand COVID-19 questions based on 10,000 tweets from the SaudiMOH937 account.

With such determination coupled with your indispensable contribution and support, KACST looks forward to continuing what it has started decades ago carrying on its mission as an institutional leader in the fields of Research, Development, and Innovation and fulfilling the aspirations of the ambitious Vision2030. Once again, I welcome you to this great gathering of minds and I personally look forward to your invaluable contribution.

Anas F. Al-Faris Ph.D.
The GRC Governing Board Member
MENA Region.

INTRODUCTION

King Abdulaziz City for Science and Technology (KACST) in collaboration with the Global Research Council (GRC) had delivered the GRC Virtual Seminar on CoVID-19 in the MENA Region on 16-17 December 2020 aiming to:

1. Share and exchange experience and knowledge on how GRC-MENA participating organizations responded to the CoVid-19 pandemic,
2. Explore and discuss potential collaboration opportunities between GRC-MENA's national research funding agencies, particularly in areas related to pandemics preparedness, and
3. Bring together a range of GRC-MENA participants, together with wider expertise and stakeholders, to ensure effective knowledge sharing and mutual learning.

Throughout the virtual seminar, representatives from the key national research funding organizations in the MENA region and other eminent keynote speakers from national and international organizations globe (annex 1: participants list) had thoughtfully shared their experiences, exchanged views and expertise about the sessions' themes of the seminar.

A HORCS high-level roundtable session had set the scene of the seminar and triggered the discussion on substantive issues related to COVID-19 in the region, namely:

1. The actions were taken by the national research funding organizations in the MENA region to

respond to Covid-19, and

2. The potential collaboration among the national research funding organizations in the MENA region during a global pandemic.

Another (6) Interconnected thematic sessions had been implemented to structure the seminar, including:

1. The UN's Research Roadmap for the Covid-19 recovery/ the WHO's Global Research Roadmap
2. Response measures, research priorities, and approaches towards addressing the Covid-19 pandemic.
3. The GRC – 2021 Statements of Principles
4. The impact of the Covid-19 pandemic on the global research and innovation system, and the implications for future international collaboration
5. Scientific Research Ethics in Response to Global Pandemic.
6. The future perspectives to combat global pandemics.

This report is intended to highlight the main issues discussed through the seminar (annex 2: the seminar agenda) and to summarize the main concluding remarks for further possible discussions among the concerned decision-makers, stakeholders, officials, researchers, and others.

SEMINAR DELIBERATIONS

Welcoming remarks: Dr. Anas Al-Faris - KACST president

KACST in response to COVID-19:

- Allowing clinicians, scientists, and authorities to make informed decisions by establishing research support services and accelerated funding programs.
- We are working closely with the Ministry of Health, the City Health Council, and the center for disease prevention and control.
- Releasing and publishing new guidelines for research in epidemics, pandemics, and emergencies.
- We are successfully establishing multiple information technology solutions by addressing the increased demand in cloud network space and bandwidth capacities.
- Initiating the design of multiple prototypes of low cost and pulmonary ventilation devices full-body sanitizing systems.
- We provide comprehensive reports and national activities related to COVID-19 pandemics within the scope of research, development, and innovation.
- Developing local manufacturing of diagnostic tools for COVID-19 detection.
- Generalizing model that can simulate future diseases that may cause outbreaks.
- Providing daily analysis to the Ministry of Health and the COVID-19 crisis centers.

Words of the GRC: Dr. Michael Bright - GRC Executive Secretary

Some background on the Global Research Council (GRC):

- An informal, virtual organization made up of the heads of research councils from around the world.
- Established following a global summit on merit review, organized by the US National Science Foundation back in 2012.
- Providing a forum by which funding agencies could come together to facilitate greater international research collaboration.
- Improving communication and cooperation between research councils.
- Identifying best practices and agree on common principles to support the establishment of World Class funding organizations.

Impact of COVID-19 on GRC business:

- Much of the GRC plan work and activities for 2020 were subsequently re-orientated.

GRC in response to COVID-19:

- Very quickly put out a statement on the activity confronting the pandemic.
- Sharing research findings and data which will help ensure diagnostics and vaccine.
- Developing a library on GRC participants' responses issues and initiatives set up to address the crisis.

- Establishing several virtual events to ensure that the exchange of information and the connection between GRC participants.

Session I: HORCs High Level Roundtable

Dr. Anas Al-Faris - KACST president, Saudi Arabia

The Actions were taken across the entire RDI system:

- Research Support.
- Technology Development.
- Innovation.

KACST in response to COVID-19:

- KACST has developed a website named the KACST-COVID-19, including all activities regarding COVID-19.
- Developed research guidelines for conducting research during times of emergencies and pandemics.
- Published a full detailed report on COVID-19 activities and updating those reports regularly.
- Supporting the academic and hospital institutions and their virtual activities.
- Establishing a fast-track funding program in partnership with the Ministry of Health as well as the CDC.
- Using mathematical models to assess and predict the impacts of different lockdown policies on the propagation of the disease.

- Developing several medical diagnostic platforms and funding them.
- Utilizing the Saudi Genome Project to deploy a lot of activities in host genetics.
- Deployed a lot of IT capabilities.
- Providing chatbots to help deal with the large amounts of inquiries that the Ministry of Health has been receiving throughout the pandemic.
- Deployed several low-cost ventilator prototypes and supporting them and their manufacturing.
- Full body sanitization systems, which utilize Patented technology.

Dr. Mouin Hamze - Secretary General (CNRS-L), Lebanon

- The National Council for scientific research. It is a public institution in charge of research and a member of the GRC.
- The research and innovation are undergoing a fundamental transition.
- CNRS-L launched in March 2020, the CNRS-L flash code for COVID-19 management in Lebanon, which focused on services to the whole community, was well received by the Lebanese researchers 29 projects out of 147 were selected for funding.
- Outputs need to be rationalized into an initiative to overcome COVID-19 in the region.
- It is important to keep up with supporting research and researchers requiring urgent actions that ensure the scientific response

and the strengthening of the local scientific capacities to be able to actively contribute to reducing vulnerabilities, mitigating impact, and improving resilience.

- Strongly believing that science and research will always remain the cornerstone of progress and development in our societies through privatizing social impact, attracting active partnership, and adopting the universal scientific standards of excellence.

Dr. Amani Albedah on behalf of Dr. Adnan Shihab-Eldin - Director General, (KFAS), Kuwait

KFAS in response to COVID-19:

Specified six goals:

1. Leading by example, in the digital transformation.
2. Providing knowledge to the public.
3. Supporting the continuing of education by supporting an online education platform.
4. Slowing the rate of infections.
5. Increasing survival by enabling related programs with the Ministry of Health.

In the health area:

- The program helped create content for public health briefings to validate Daily News and expand government decisions.
- Engaging the business community and donating in-kind or cash for resilience efforts.
- Engaging the business community and donating in-kind or cash for resilience efforts.
- Offered online training and lectures to specialized health communities and the public to help recover from the pandemic.
- Supporting request from MOH and health providers.
- Sequencing the full genome of the virus at the

very early stages.

- The creation of homegrown diagnostic testing kits in the early days when the markets were tight.
- The procurement of medical supplies and supportive MOH efforts.
- Centers to support the production lines of PPE's.
- The development of three patented mechanical ventilators.
- The completion of a series of COVID-19 projections for Kuwait with interdisciplinary teams from different departments.
- Commissioning a COVID-19 projection study with IHME, which had produced a wider range of interest in the community of mathematicians and engineers to look at the health sector as an application for smarter projections models.
- Combination of KFAS weekly reports on the latest on COVID-19 to decision-makers.
- The completion of the update of the health portal on the KFAS website for the public.
- The development of a social distancing app that was based on Bluetooth technology.
- Supportive telehealth and digitization of health services.
- Engaging with international expertise for webinars on the latest developments and management strategies.
- Addressing the mental health aspects of the pandemic.
- Addressing the special challenges that the pandemic has posed for the disabled communities and children with learning difficulties.
- The support of an educational program for this year refugees in Lebanon and Syria.
- The funding for the zillions of efforts among the refugees.

Q&A

What was Saudi Arabia's research engine's output, and what do you think the long-term impact of that output on the country's readiness to combat future pandemics?

Dr. Anas Al-Faris "I think. No doubt there have been lots of lessons learned throughout this process and we have learned a great deal of how we approach it again from a research perspective, at least we have learned where are the gaps. Where are we missing several issues? Where are some of the major problems we have within the Kingdom? If you may. That said, we are. I think from a publication's perspective, outside with that, I think we have been productive in the Kingdom and producing publications and research. I think we started in June or so we were ranked I think 25th we have moved since that worldwide. We have moved since then to be in the top 20 and in our research output with over 1200 I think publications. As well, so we have since again, continued growing, so I think currently we are in the top 20 producers of publications in that regard and per capita, I think we even much higher in per capita. I think we had one of the tops. We are getting close to one of the top 10 producers of knowledge, or at least publications, so that is in regard to publications in regard to other activities that we have. We have deployed in the Kingdom and not necessarily through KACST, but generally in the Kingdom. There were several clinical trials we have I think we have deployed over 25 clinical trials in that regard as well. so, we have been active, and again, there have been significant lessons learned throughout to help us even design and engineer our new programs for looking at how we treat and combat infectious disease in the future. So, we'll see."

What were the most pressing challenges you faced addressing the pandemic, and how did your research institutions help your country cope with the pandemic?

Dr. Mouin Hamze "looking at the media in Lebanon,

you can see there is only one actor to face and to treat the challenges of COVID-19 which is the Ministry of Finance. This is true, but this is not enough because there is a lot of actors working seriously. Through the whole National Commission. The commission for informing the public for preparing the data, analyzing the data, and more specifically, the role of the medical staff in Main University Hospital of Lebanon. You are playing a very significant role in this. The main role of medical researcher is to apply all new information, medical information for the best practices in COVID-19 and they are using the resources. Which make available for them from CNRS as well from their University. We do not have unfortunately any direct support to researcher in this tough time to develop their knowledge or their practices their medical practices for COVID-19 I would like to mention the main constraint facing researcher and especially medical researcher, in importing the microbiological and serological product from outside, which is not as easy as we are getting the PCR are available, and Lebanon is testing daily in average of 15 thousand tests for PCR, but to do research, we are having a lot of problem to import from outside, I think the role of researchers will not appear in short term, but we will see it and medium term specially we are going to a new era in the treatment of COVID-19."

What do you think of the potential themes for future collaboration between National Research councils and councils in the region?

Dr. Amani Albedah" Some of the lessons that we have learned during the COVID-19 should be guiding principles for future collaborations regionally and an international event. And if you would allow me to just list a few of those really, I think would make good material for conversation during this webinar. 1st is the interdisciplinarity of research and how research calls and research collaborations should focus on the interdisciplinarity. That is not only in different fields of inquiry, but also in different background.

So, combining researchers with practitioners and decision makers. In that interdisciplinary research, teams would add a lot of value to the outcomes of this research, so this is something that we might want to look at more carefully in the future. The 2nd is there is in the Middle East. In general, there is the youth bulge, and this expresses itself in business and in research, just the same. And it would be valuable for us to look at the connection between the younger generation and the seasoned scholars and in the context of MENA and as part of that interdisciplinarity, because it gives it that much more depth and that much more know how that I think the younger generation has lost. The 3rd element is to target the softer and more dicey areas of research, which are the ethics of practice. The priority of the social good, the access to information and specially the ethics of deployment of digitized tools, and these are things that we kind of turn a blind eye to because we look at the hard Sciences more. I think these are areas that we need to look at very carefully moving forward as guiding principles for future collaborations."

Concluding Remarks:

Along with the rest of the globe, our countries have been and are still experiencing the catastrophic effects of Covid-19. The covid-19 pandemic has spotlighted the importance of international, regional, and cross-border scientific collaborations. These collaborations should be supported, and policies and regulations that could promote this cooperation and exchange should be implemented.

Another lesson learned from Covid-19 was the importance of evidence-based real-time science communication, which has emerged as a powerful tool for managing public health. Communication of the latest research developments is vital and also requires national, regional, and global collaboration.

Pandemics do not respect geopolitical boundaries; solutions to combat them can only be achieved through research collaboration and open knowledge.

Session II: The UN's Research Roadmap

Dr. Ziad Mimeish - Ministry of Health, WHO Collaborating Centre for Mass Gathering Medicine

As part of the UN initiative to look at the research priorities or roadmap for research in the future has addressed five main pillars:

1. Addressing health system services.
 - They looked at supporting and maintaining essential health services.
2. Addressing the social protection and basic services.
 - Need to scale up and expand social protection and maintaining essential food and nutrition.
3. Addressing the economic response and recovery from the COVID pandemic.
 - Introducing a new fiscal policy to stimulate the economy.
 - Produce immediate physical services of support to small businesses.
4. The macroeconomic policies and multilateral collaboration.
 - To assess the scope and the scale of economic impact.
5. Addressing social cohesion and community resilience.
 - Need to foster social dialogue and empower country resilience.

Dr. Gina Elfeky - The scientific and cultural relations at ASRT, Egypt

The Academy of Scientific Research and Technology (ASRT):

- Working as the house of expertise for research in Egypt.
- Working with specialized scientific councils that

represent a think tank and house of experts in the academy.

- They are responsible for the preparation of strategic studies and roadmap.
- Providing insights to support national goals and enable achieving the Egypt version.
- The ASRT host 20 specialized scientific councils in different disciplines.

After the pandemic, they came out with a strategic plan on the priorities and preparedness.

Dr. Salah Al Zidgali - The Ministry of Higher Education, Research and Innovation, Oman

1. Working on clinical field.
 - Focused on the clinical presentation of the disease itself and its progress regarding the expected outcomes.
 - Focusing on diagnostics, therapeutics, and all telemedicine as an alternative to providing face to face services.
 - Addressing psychological aspects as well as preventive strategies.
2. Working on non-clinical field.
 - Focusing on developing mathematical modeling simulation and predictive analytics.
 - Emphasizing the use of new technologies such as tracking and monitoring technologies, artificial intelligence, developing decision support systems, and recommender systems.
 - Studying the impact on the economy and businesses.
 - Addressing the shifting to E-learning.
 - Studying crisis management and the relevant environmental issues in the country.

Q&A

What is the strategy to secure the food in case of any pandemic?

Dr. Ziad Mimeish "The cities ensure there is availability of transport of food, so we make sure that there is enough time period where the stores and the food chains will be open and to provide the food to the people who are wanting the food. It is not a complete lockdown 24/7, but it was certain times a day, making sure that during the certain hours of the day that the stores are available. In addition, I think a lot of effort was done by the Ministry of Trade to try to prove the availability of ordering system. I know it is available in the big cities that we want to make sure that even in the small cities across the country, there is a way that the food can be delivered to the house so if I am a person in need of food and I can't physically go to buy the food, or at least my family members will not be able to come and provide the food for me. There will be a service available where you can actually call in a number and then they will bring you the food to the house. These are very critical because as you know, in a community there are the healthy young people but also there are the elderly who are not able to move up mobilize and they rely on the support of the family or friends who can bring them foods and support. So, we wanted to make sure that this is available and that is one of the big deficiencies in a lot of countries across the globe where they had issues where food could not be delivered to certain population, especially population which are sort of having difficulty."

You mentioned that there is some sort of gender-based violence. Are there any studies to state the model this problem?

Dr. Ziad Mimeish" Well, I'm sure that over the last few years. Just called family. One program, which has been a state in the country and there is a network of

support that is available to women and children who are being abused or having violence against them. But also, what is interesting that during the early tank there was a lot of reports of violence against healthcare workers. Almost every single region of the world. I think it out to the frustration of people trying to get to the health care services and they were not able to either because hospitals were full or because there were no opportunities for appointments or because of the lockdown and the restriction of health care facilities for only COVID patients or people who are quite sick and require intensive care services. The ones who have chest pain or have asthma or CLPB another common illnesses did not have the opportunity to handle or to get to the health care facility. In addition, I think some of the frustration of the people were due to the fact that all the hospitals are across the whole world, due to the directions of the WTO in the healthcare facilities, and that is because of the ability of the virus spread within the healthcare facility. So, we wanted to make sure that there is the minimal from by the United nation."

what is the most risk factor associated with COVID-19? and how would you use this information to prevent this in the future?

Dr. Ziad Mimeish" When it comes to emerging diseases, mostly there are viruses that we have had many diseases emerge over the last 20 or 30 years. You know, we had the large pandemic in 2009 with the influenza H1N1. We also had the emergence of Zika virus, which is a new virus affecting adults and causing congenital problems for the babies born from pregnant ladies. We have had, you know, concerns about Ebola and Ebola did come back very aggressively and caused thousands of infections in East Africa with a lot of mortalities. So, these viruses tend to emerge. And they tend to come in waves. They are related to the Co inhabitation of the of between animals and humans, and then these viruses start in animals and once they become very close to the

humans, they adapt themselves to infect humans and then from there they can actually adapt further. And then they come, they become able to spread from human to human. And that is the concern with these coronaviruses, coronaviruses are have been around since the 1960s. They are common cause of gastritis. Dinalisten. Respiratory illness which is mild. But then over the last 20 years we have had three different coronaviruses emerged that are cause of a global concern. We have had this SARS one which appeared in China and spread to many countries across the globe and apparently disappeared within 6 to 8 months and nobody knows how it disappeared and then we had the MARS Virus which started in 2012 in KSA and some of the Gulf countries like Kuwait, UAE upper and Oman and then Although it continued for eight years. But in eight years or so, we have only had 2500 cases compared to what we are seeing now with COVID-19. Now of course, since December 2019, we have seen this. You covered vaccine covered virus, which is sort of have its own characteristic, but again. We think the origin is probably bats, and then there is an intermediate host that we still have not been able to identify. So to answer the question is how to prevent future pandemics and emergence of new viruses. I'm not sure that we can to be honest, as long as there is continuous contact between animals and humans, we're going to continue to import the viruses from animals into human population and then these viruses sort of mutate, tend to adapt itself to transmission within humans, so I think experts across the Globe OP report that are proposing a one health approach where we deal with the animal health and human health in a parallel way and have a good collaboration between the Ministry of Agriculture and animal husbandry with administrative health so that the testing and the follow up and the surveillance will be continuous and we will not be surprised by huge outbreaks and the cases."

Dr. Salah Al Zidgali" Yes, if we think about this question from a different angle and at the level of

visuals. Then for me, the most important risk factors that can affect or make me susceptible to get infected by COVID-19 first being exposed to a positive case and 2nd the level of my immunity and if we want to help communities and individuals in the future or at present help them and protect them from acquiring these infections. Then we need to work on these two factors. First, elimination of exposure and 2nd improving and acquiring higher immunity levels and this can be achieved by, for example, taking care of your diet. Well, exercising on a regular basis as well as by controlling appropriately any chronic conditions the individual might be suffering from."

Session III: Response measures, research priorities, and approaches towards addressing the Covid-19 pandemic

Dr. Salah Al Zidgali - The Ministry of Higher Education, Research and Innovation, Oman

- Having a total of around 15 experts representing 10 research organizations in the country.

Two main domains:

1. Clinical and public health aspects.
2. Focused on several other fields.

DR. Elise Noujeim - Director of the Grant Research Program, CNRS-L, Lebanon

- 143 proposals.

Main Thematic:

- Microbial coinfections in the context of SARS-CoV-2.
- COVID-19 pandemic and the cardiovascular System.
- Retrospective descriptive study.

- Development of new machine based on purifying natural air.
- CoVID-19 pandemic and olfactory disorders.
- Mental well-being of healthcare workers.
- Immunology, diagnostic and biosensing.
- Decision making and App development.
- COVID-19 immunity passports.
- Molecular diagnostic and absolute quantification of COVID-19.
- Molecular Biology and Genetics.
- Clinical trial and antibodies and treatment.
- Host responses and possible therapeutic approaches.
- Multidisciplinary: infection disease, psychiatry and immunology.
- Involving in the DRM (Digital Rights Management).

Dr. Mohammad AlFageeh - Director of General Directorate for Funds & Grants

KACST is responsible for creating and developing policies and national plans for science, technology, and innovation.

- Providing scientific research, support, and Grants.
- Investing in R&D commercialization.
- Providing advice and innovative solutions to the government, public, and private sectors.

KACST in response to COVID-19:

- Updating its research guidelines.
- Increased Network Bandwidth.
- Fast track funding.
- Observatory activities.
- Establishing programs to support private sectors.

CONCLUDING REMARKS

Based on the thoughtful presentations and insightful discussions among distinguished HORCS, keynote speakers, panelists, and guests the following non-exhaustive recommendations of the seminar had been identified:

1. The COVID-19 pandemic has brought into sharp focus the need for ambitious plans that reimagine and rebuild health, social and economic systems so that they leave no one behind.
2. The emergence of the COVID-19 pandemic and its inverse consequences has emphasized the urgency of scientific coordination and collaboration at national, regional, and international levels.
3. Coordination, collaboration, and communication of the latest scientific developments at national, regional, and international levels have the potential to represent an important vehicle to overcome the COVID-19 pandemic inverse consequences
4. Lessons learned during the COVID-19 pandemic should be envisaged as a guideline for the future collaboration among the national research funding organizations in the MENA region in areas of common interests such as Interdisciplinary research, paying special attention to the early career researchers, to help the young researcher to develop their research skills.
5. The national research funding organizations should sustain funding and consider the priority

of funding allocation to scientific collaboration during pandemics, paying more attention to the fast track funding approach to expedite solutions to pandemics and to overcome the emerged challenges encountering researches and performing research organizations.

6. The UN's research roadmap for the Covid-19 recovery should be envisaged as constructive guidelines for researchers and research organizations to determine how COVID-19 socio-economic recovery efforts can be purposefully designed to stimulate equity, resilience, sustainability, and progress towards the Sustainable Development Goals (SDGs).
7. The inclusivity of scientific efforts would represent the world's best opportunity for better recovery from the COVID-19 pandemic.
8. The adoption of mathematical modeling, foresight studies, and socioeconomic analysis is of great importance to combating the global pandemics, which require more surveys and statistical data collection to support the reliability and efficiency of the achieved solutions.
9. The Covid-19 pandemic has a great impact on the global research and innovation system and in turn, has great implications for future international scientific collaboration.
10. There is a vital role of public engagement in enhancing confidence and the relationship between science and society during the global pandemic.

11. Also, the role of the national funding organization is vital to further support and facilitate wider public engagements with science.
12. There is a vital role of mission-oriented research that encompasses the full spectrum of scientific disciplines to overcome the COVID-19 pandemic, provided the considerations of commonalities and diversities of countries in the design and implementation of missions.
13. Gender-related issues are of concern to the whole research community, thus, there is a need to scale-up good practices and suggest more by funding agencies towards a more equitable, resilient, and sustainable future for all talented researchers.
14. The Research & Innovation system is undergoing a fundamental transition, where Quick Results, Open Science, and Wide Engagement, are essential for ensuring uptake of research, speeding up innovation, encouraging collaborations, and involving civil society for improved transparency; all while adopting measures to ensure quality, efficiency, ethics, and integrity of scientific research endeavors.
15. Previous research priorities need to be addressed by researchers and not ignored because of the covid-19 to be more prepared for future diseases.
16. Appropriate oversight and training in research ethics and integrity continue to be an urgent need in improving research ethics and integrity, especially during global pandemics.

Day two:

Theme: GRC - Statements of Principles (SoP)

Three substantive issues of the GRC business had been overviewed and discussed, namely, the GRC Public Engagement Statement of Principles, the GRC Mission-Oriented Research Statement of Principles, and the GRC Gender Working Group (GWG).

The main highlights of the session are as follows, among others:

1. The vital role of public engagement in enhancing confidence and the relationship between science and society.
2. The overarching considerations and principles of public engagement including the potential roles of the national funding organization to further support and facilitate wider public engagements with science.
3. The principles and approach of mission-oriented research that encompasses the full spectrum of scientific disciplines
4. The considerations of commonalities and diversities of countries in the design and implementation of missions.
5. The journey of the GRC Gender Working Group since its inception in 2016.
6. The importance of the gender-related issues to the whole research community.
7. The progress in gender-related topics via case studies & surveys, and the need to scale-up good practices and suggest more by funding agencies towards a more equitable, resilient, and sustainable future for all talented researchers.

Session II Theme: The impact of COVID-19 pandemic on the global research and innovation system, and the implications for future international collaboration.

Dr. Hanan Balkhy, Co-Chair of National Research Foundation

- Whole genome sequencing and sharing of data has major impact on how we progressed to this pandemic and allowed extraordinary speed of handling the pandemic.
 - o 31 December- first pneumonia case
 - o 11 January- genetic sequencing was shared
 - o 12 January- WHO had the very first teleconference with diagnostic lab network
 - o 13 January- the first protocol of PCR assay
 - o 20 January- WHO manufacturers produced the diagnostic kits.
 - o 2 February- the first dispatch of PCR kits to regional and country offices took place.
 - o 3 March- several UN agencies and private partners collaborated together to establish 3 consortiums: 1) Diagnostics, 2) PPE and oxygen, 3) Medical equipment.
 - o 24 April- Announcement of the establishment of ACT Accelerator.
- International Monetary Fund (IMF) predicts dire COVID-19 consequences: 4.4% economic growth downturn, 90 Million people at risk of falling into poverty in 2020, 11 trillion (by the end of 2021 and 78 trillion in lost output by the end of 2025 if we do not revert this.
- One of the major unique areas of the pandemic is that it affected high, mid and low-income countries together at the same time.

Vaccine Development:

- The traditional vaccine development has a total timeline of 7-20 years while the COVID-19 vaccine development took 12-18 months.

However, there is still a huge knowledge gap of the immune response to the COVID-19 vaccine and whether we will need booster doses.

ACT-A Goal:

- Collaboration is important for science to identify supply chain market readiness and ensuring countries are well prepared (by manpower or by the logistic needs) to establish the proper testing, tracing and treatment.
- ACT-A is an accelerated global access to tools that rapidly reduce the risk of severe disease and end the acute phase of the pandemic:
 - o Vaccines- to protect from disease, death and transmission
 - o Diagnostics- to enable rapid case isolation and targeted treatment
 - o Health systems- to provide PPE to reduce transmission, supply oxygen for severe disease and support the delivery of safe and basic services
 - o Therapeutics- to prevent and provide treatment for all forms of the disease
 - o Access and allocation- to ensure global equitable access to these tools
- The most effective investment to address COVID-19 and its consequences, as it offers comprehensive public health tool box, reduces R&D risks, mitigates operational risks and has a unique global reach.
- Its critical path uses accelerated and parallel workstreams to rapidly achieve its goal: R&D, manufacturing, procurement, delivery and launching.
- ACT-A rapidly achieved key landmarks in its start up phase- The new rapid antigen test where WHO worked with Global Fund and Find to ensure a volume guarantee of 120 million doses at a price of \$3-5.

- ACT-A will help save 3,000 lives per day and restore the global economy.

Open panel session - Regional experiences

Lebanon:

- First, there were collaborations with scientists but that was not enough, so researchers collaborated with universities.
- Later on, scientists collaborated with decision makers, which enabled them to join committees (ministry of public health and ministry of tourism) for decision making.
- However, that was also not enough, therefore collaborations with other regions were needed. They contacted Jordanian and Egyptian researchers and will have a webinar with Egypt in January to connect the research done in Lebanon with results in Egypt to avoid duplications.

KACST (KSA):

- The first case was discovered 4 March and afterward was immediate lockdown for Hajj and Umrah.
- KASCT response was focused in all areas of the innovation ecosystems: Research- by funding and by updating the bioethics national system to ensure that everyone is following the guidelines. Development- medical diagnostic, there was a shortage of the diagnostic kit so they had to do their own kits in KACST. There were many developments for the kits: PCR kits, serology kits and more innovative kits using CRISPR approach.
- KACST utilized some of the infrastructure that they already have, like Saudi Human Genome to study host genetics
- KACST has low fatality rate (1.5%) in comparison to Italy, which has a fatality rate of 15%.

Question

How did the pandemic impact International collaboration for Saudi Arabia?

International collaborations were progressing well until the pandemic hit, which resulted in significant delay. Clinical trials for therapeutics also ended because of COVID-19. Moreover, it was impossible for staff to leave the country and contribute in other labs because of the curfew and lockdown.

What is the experience from the Middle East regarding respiratory syndrome?

The take home message is that we need to control the problem at early stages. Advance countries need to look carefully and consider investing in finding solution vaccine for MERS-CoV. They are working closely in KSA with Oxford to develop MERS-CoV vaccine. The first clinical trial is being conducted at a national hospital, KAIMRC in SA with very promising results.

Dr. Hani Temsah:

They were able to collaborate with researchers and conduct a research group about MERS-CoV anxiety. Even though the pandemic had harsh consequences but this pandemic got researchers closer together despite all the challenges and lockdown.

Question

Did you manage to collaborate with any other regions?

Part of the team was among the first to describe the genetic variants for COVID-19 with collaboration with France and the US.

Conclusion:

COVID-19 has greatly wounded the world with serious consequences impacting all communities and individuals. Even though many countries continued growth in R&D, the level is still low especially in the MENA region, its still limited. Its crucial to reinforce

the commitment to collaborate at a regional level in order to protect investment in research. If there are more collaboration, duplication of effort can be reduced and COVID-19 pandemic could be tackled better.

Session III Theme: Scientific Research Ethics in Response to Global Pandemic.

Dr. Muhammad Alkawi, Director, Research Ethics Monitoring Office- The National Committee of Bioethics- Saudi Arabia

- Researchers should be encouraged and supported to initiate research proposals that have substantial scientific value, valid scientific methods, address national priorities, and establish national and international partnership.
- Research activities in epidemics shall be planned, prioritized, coordinated and facilitated in an efficient and responsive manner.
- Rights of individual participants should not harbour risks to public.
- Confidentiality respected by either anonymization or coding of data.
- For large-scale surveillance, waiver of informed consent can be granted
- In highly contagious diseases, proper consent can be obtained verbally, it has to be witnessed and consenting process have to be documented in the consent form

Dr. Abdullah Adlan, Head of Bioethics Section -KAIMRC

- In pandemic or epidemic situations, its important to have the wisdom/resilience in not hindering research which is highly needed to survive and at the same time not jeopardize patient's safety, as with pandemics, the luxury of time is not available.
- The value system that was used ensured that:
 1. Human dignity is respected at all times, no human

- should be undignified in the process of research.
- 2. A balancing of benefit and harm should be presented
- 3. Respect of vulnerability.
 - The different themes of ethical responsibility are as follows:
 1. Health care system- unify a governmental person (CDC) to deal with patients, samples and data.
 2. Research institutions- have to be ready by SOPs and a specific design to accommodate any kind of research that deals with COVID-19.
 3. Better collaboration system
 4. IRB- every IRB should have SOPs to deal with emergency research
 5. Institute of health care delivery- regulation of compassion utilization of medication and the off-label medication utilization has to be transparent with an approved protocol and with a SOP, that will be assessed in a quick manner.

Questions:

What were the necessary changes that happened in the pandemic from the usual ethical standard principles?

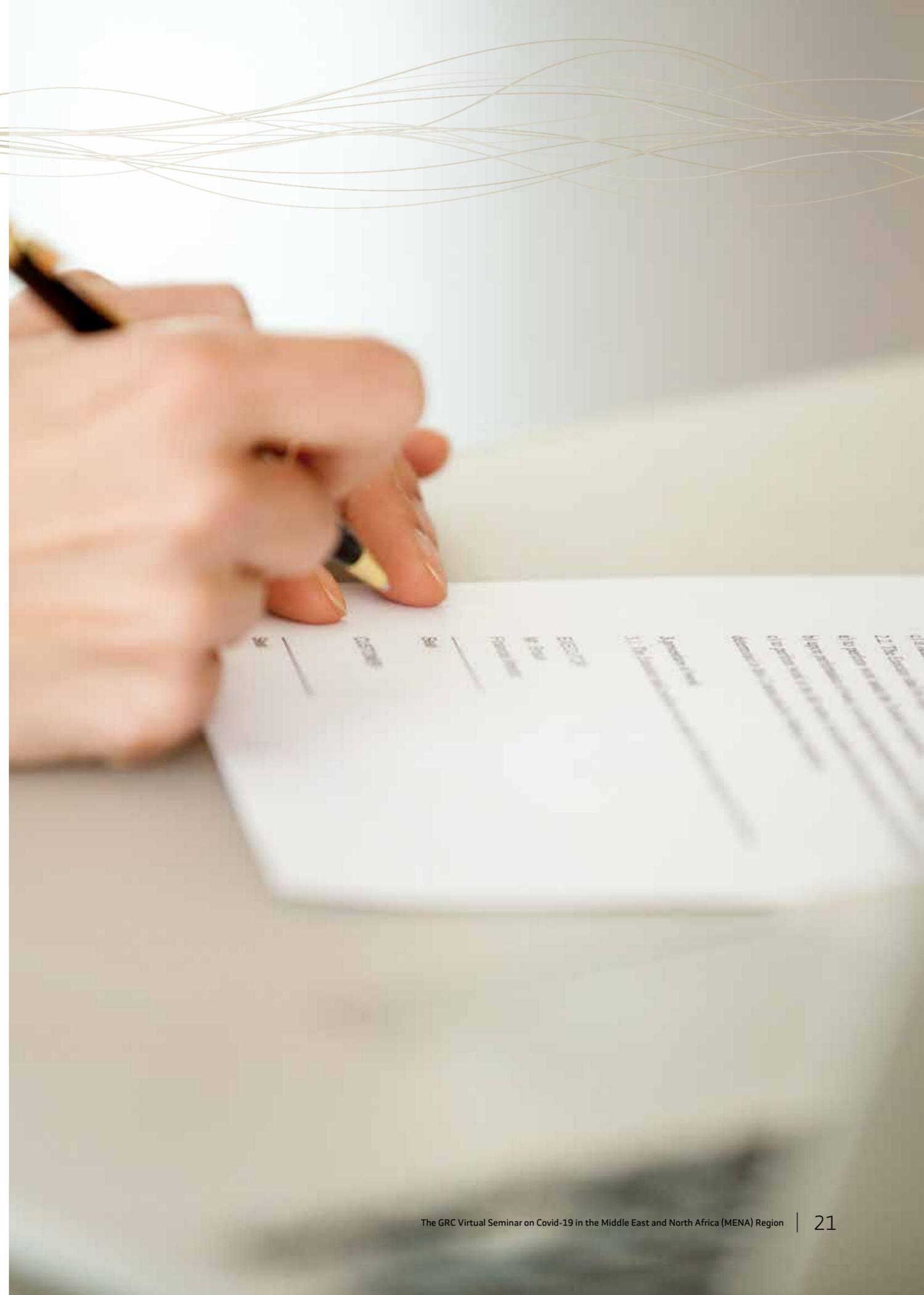
1. Time- In regular setting, meetings should be done physically and documented in a specific way. With pandemic, it is understood that this could be problematic because of social distancing
2. Getting informed consents from a contagious person

Anything happened in the MENA region for a unified protocol in different countries?

No, but there is an invitation to a MENA region webinar headed by Egyptian bioethics to talk about how COVID-19 was being handled.

Would IRB be sufficient in such cases and not individual patient consent?

For high-risk research, its not wise for the IRB to waive the consent. However, if there is a specific situation, it can be discussed in the committee.



SEMINAR OUTPUT TEMPLATE

Out of responsibility of KACST as a representative of the MENA region at the GRC governing board, has initiated a process to prepare a report that documents all the efforts exerted by the research funding organizations and councils in the MEAN region about the CoVID-19 pandemic aiming to share this document with a wide range of GRC-MENA participants, experts and stakeholders all around the

globe.

Accordingly, KACST has invited the research funding organizations and councils in the MENA region to contribute to this regional effort by completing the following template (annex 3: output template).

Potential deadline: 15 January 2021.

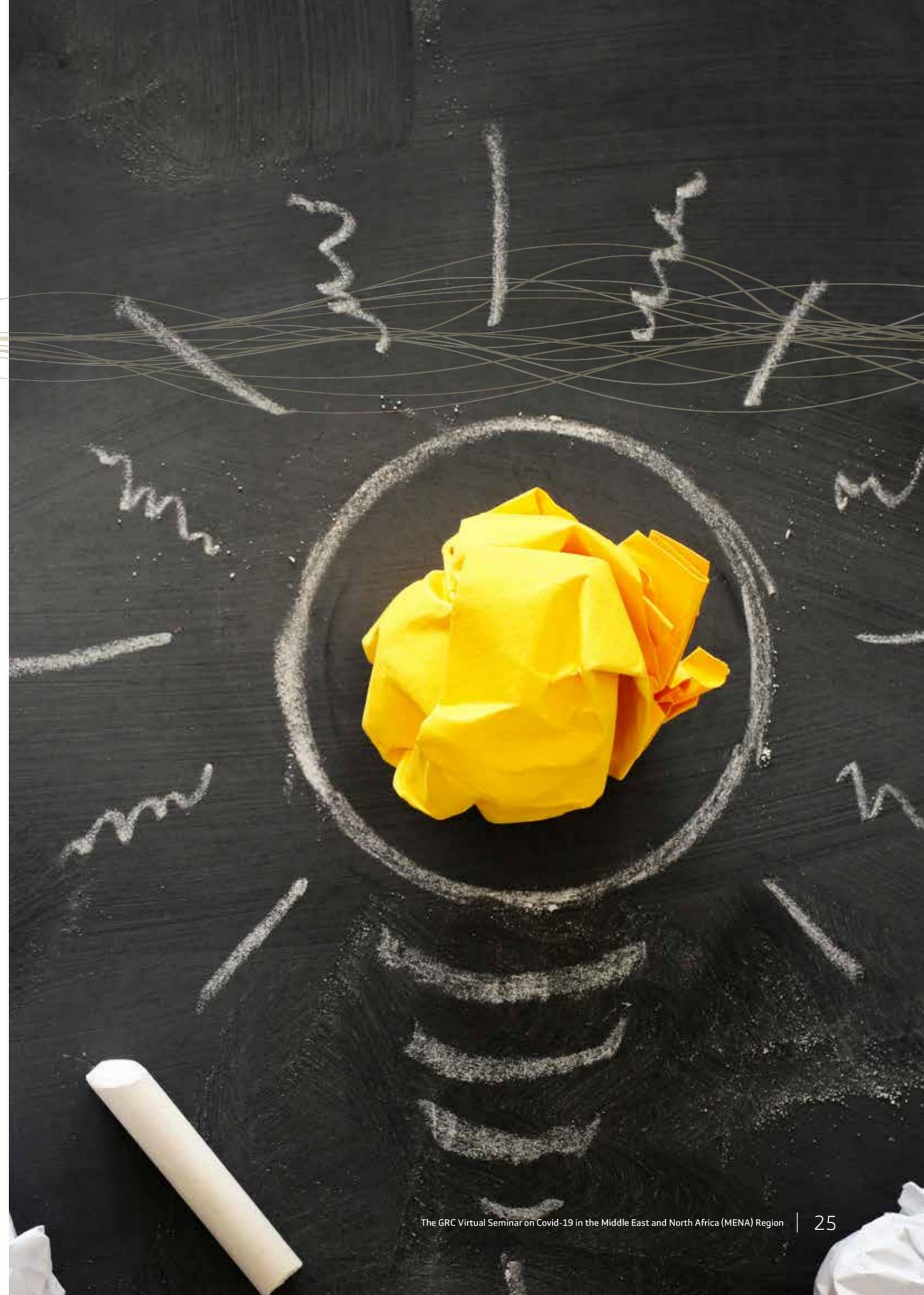


SESSION CONCLUSIONS

Concluding Remarks for day one:

The countries who introduced the experience in the post-pandemic response. They had fast-tracked funding, so it was a current practice of almost every research Funding Agency. They all had that fast-track funding call in order to come up with solutions to overcome the impact of the pandemic as quickly as possible and in order to try to find solutions for the virus. Again, adopting mathematical modeling and forecasting studies were of common interest

to everyone, and I think we need more surveys and statistical reliable data to support this kind of study. I think this is the kind of study the future needs for the upcoming period of time whether for the coronavirus or whatever would emerge or even in the ongoing future or response is considered that social-economic impacts of the pandemic and this is very important in order that R&D has to have a scope to the social-economic impact of the pandemic investments to support the whole or in the R&D ecosystem.



ANNEXES

Participant list

Name	Position	The entity	email
Dr. Anas Al-Faris	KACST president, GRC – GoB member MENA region	King Abdulaziz City for Science and Technology, Saudi Arabia	aalfaris@kacst.edu.sa
Dr. Michael Bright	GRC Executive Secretary	Global Research Council	Michael.Bright@ukri.org; GRC@ukri.org
Dr. Mouin Hamze	Secretary General (CNRS-L), Lebanon	National Council for Scientific Research, Lebanon	mouinhamze@gmail.com
Dr. Amani Albedah on behalf (Adnan Shihab-Eldin)	Director General, (KFAS), Kuwait	The Kuwait Foundation for the Advancement of Sciences	aalbedah@kfas.org.kw
Dr. Ziad A. Memish	Director of WHO Collaborating Centre for Mass Gathering Medicine		zmemish@yahoo.com
Dr. Gina El-Feky	The scientific and cultural relations	Academy of Scientific Research and Technology, Egypt	gelfeky@hotmail.com
Dr. Salah Al Zadjali		Ministry of Higher Education, Oman	salah.alzadjali@trc.gov.om
Dr. Elise Noujeim	Director of the Grant Research Program	National Council for Scientific Research, Lebanon	enjeim@cnrs.edu.lb
Dr. Mohammad AlFageeh	Director of General Directorate for Funds & Grants	King Abdulaziz City for Science and Technology, Saudi Arabia	mfageeh@kacst.edu.sa
Dr. Aldo Stroebe	Executive Director: Strategic Partnerships Strategy, Planning and Partnerships	National Research Foundation, South Africa	aldo.stroebe@nrf.ac.za
Dr. Michael Bright	Deputy Director, International (Global Partnerships)	UK Research and Innovation, UK	Michael.Bright@ukri.org , GRC@ukri.org

Name	Position	The entity	email
Dr. Maha Khayatt	GRC-Gender Group	King Abdulaziz City for Science and Technology, Saudi Arabia	mkhayatt@kacst.edu.sa
Dr. Hanan Balkhy	Assistant Director-General for Antimicrobial Resistance	World Health Organization	Balkhyh@who.int; balkhyh@hotmail.com
Dr. Abdallah Adlan	Head of Bioethics Section	King Abdullah International Medical Research Center, Saudi Arabia	AdlanA@NGHA.MED.SA; aadlan@hotmail.com
Dr. Yaseen Arabi	Director of Respiratory services	King Abdul Aziz Medical City in Riyadh, Saudi Arabia	arabi@NGHA.MED.SA

Seminar agenda

Provisional Agenda

GRC Virtual Seminar on Covid-19 in the MENA Region
16-17 Dec. 2020

King Abdulaziz City for Science and Technology (KACST)

Saudi Arabia – Riyadh

Registration link: https://maeen.zoom.us/webinar/register/WN_0cUWYkWVR6iFT_PG9uJiKA

Aims of the Seminar:

1. Share experiences of and approaches to the

Covid-19 pandemic between GRC-MENA participating organizations.

2. Discuss potential collaboration between the GRC-MENA's national research funding agencies to learn from their evidence-based response to the pandemic.
3. Bring together a range of GRC-MENA participants together with wider expertise and stakeholders to ensure effective knowledge sharing and mutual learning.

Day One: Wednesday 16/12/2020	
Opening Ceremony (11:00-11:20)	
11:00 – 11:10	Welcoming remarks Dr. Anas Al-Faris GRC – GoB member of MENA region, KACST president
11:10 – 11:20	Words of the GRC Dr. Michael Bright GRC Executive Secretary
Session I: HORCs High Level Roundtable (11:20 – 12:20) Moderator: Dr. Abdulaziz M. Almalik - KACST Vice President for Scientific Research Support Potential Themes: 1. Actions taken by the national research funding organizations and councils in the MENA region to respond to Covid-19. 2. Potential collaboration among the national research funding organizations and councils in the MENA region during global pandemic.	
11:20 – 11:30	Dr. Anas Al-Faris GRC – GoB member of MENA region, KACST president, Saudi Arabia
11:30 – 11:40	Dr. Mouin Hamze Secretary General (CNRS-L), Lebanon
11:40 – 11:50	Dr. Amani Albedah on behalf of Dr. Adnan Shihab-Eldin Director General, (KFAS), Kuwait
11:50 -12:05	Concluding remarks/ Q&A
12:05 – 12:20	Break for Prayer
Session II: (12:20 – 13:30) Theme: The UN's Research Roadmap for the Covid-19 recovery/ the WHO's Global Research Roadmap Moderator: Dr. Maha Khayyat, GRC-Gender Working Group, KACST – Saudi Arabia.	
12:20 – 12:25	Introduction by session moderator
12:25 – 13:25	Open panel session - Regional experiences - Saudi Arabia Dr. Ziad Mimeish, Ministry of Health, WHO Collaborating Centre for Mass Gathering Medicine. - Egypt Dr. Gina Elfeky, The scientific and cultural relations at ASRT. - Oman Dr. Salah Al Zidgali, The Ministry of Higher Education, Research and Innovation
13:25 – 13:45	Concluding remarks/ Q&A
13:45 – 14:30	Break (Virtual lunch)

Session III: (14:30 – 16:10) Theme: Response measures, research priorities, and approaches towards addressing the Covid-19 pandemic. Moderator: Dr. Gina Elfeky, The scientific and cultural relations (ASRT-Egypt).	
14:30 – 14:35	Introduction by session moderator
14:35 – 15:50	Open panel session - Regional experiences - Lebanon DR. Elise Noujeim, Director of the Grant Research Program, CNRS-L. - Oman Dr. Salah Al Zidgali, The Ministry of Higher Education, Research and Innovation. - Saudi Arabia Dr. Mohammad AlFageeh, Director of General Directorate for Funds & Grants. - Egypt Dr. Gina Elfeky, The scientific and cultural relations at ASRT.
15:50 – 16:10	Concluding remarks/ Q&A
16:10	Day one adjourn
Day Two: Thursday 17/12/2020	
Session I: (11:00 – 12:10) Theme: GRC – Statements of Principles (SoP) Moderator: Dr. Ahmed M. Alabdulkader – GRC ESG – MENA Region	
11:00 – 11:05	Introduction by session moderator
11:05 – 11:20	Key note speaker 2020 GRC Public Engagement Statement of Principles Dr. Aldo Stroebel, Executive Director: Strategic Partnerships Strategy, Planning and Partnerships, National Research Foundation (NRF), South Africa
11:20 – 11:35	Key note speaker 2020 GRC Mission-Oriented Research Statement of Principles Dr. Michael Bright GRC Executive Secretary Deputy Director, International (Global Partnerships), United Kingdom Research and Innovation (UKRI)
11:35 – 11:50	Overview about the GRC Gender Working Group (GWG) status quo and future road-map. Dr. Maha Khayyat GRC-Gender Working Group, KACST – Saudi Arabia.
11:50 – 12:10	Concluding remarks/ Q&A
Session II: (12:10 – 13:50) Theme: The impact of the Covid-19 pandemic on the global research and innovation system, and the implications for future international collaboration. Moderator: Dr. Elise Noujeim, Director of the Grant Research Program, National Council for Scientific Research, Lebanon	

12:10 – 12:15	Introduction by session moderator
12:15 – 12:20	International Key Note Speaker Dr. Hanan Balkhy, Assistant Director-General for Antimicrobial Resistance, World Health Organization.
12:20 – 13:20	Open panel session - Regional experiences: - Oman Dr. Salah Al Zidgali, The Ministry of Higher Education, Research and Innovation - Egypt Dr. Gina Elfeky, The scientific and cultural relations at ASRT.
13:20 – 13:35	Concluding remarks/ Q&A
13:35 – 13:50	Break for Prayer
Session III: (13:50 – 14:55) Theme: Scientific Research Ethics in Response to Global Pandemic. Moderator: Dr. Muhammad Alkawi Director, Research Ethics Monitoring Office- The National Committee of Bioethics- Saudi Arabia	
13:50 – 13:55	Introduction by session moderator
13:55 – 14:45	Open panel session - Regional experiences - Saudi Arabia Dr. Abdallah Adlan, Bioethics Consultant, National Institute of Health Research, Chairman of the advisory committee
14:45 – 14:55	Concluding remarks/ Q&A
Session IV: (14:55 – 16:00) Theme: The future perspectives to combat global pandemics Moderator: Dr. Malak Althagafi Consultant physician subspecialty in molecular and neuropathology and Director of satellite research administration, Chair of the genomics research department, Primary investigator of the Saudi Human genome lab at King Fahad medical city (KFMC)	
14:55 – 15:00	Introduction by session moderator
15:00 – 15:50	Open panel session - Regional experiences: - Saudi Arabia. Dr. Yaseen Arabi, chairman of the intensive care department and the medical director of respiratory services King Abdul Aziz Medical City in Riyadh (KAMC-R).
15:50 – 16:00	Concluding remarks/ Q&A
Session V: (16:00 – 16:30) Theme: concluding session Moderator: Dr. Ahmed M. Alabdulkader – GRC ESG – MENA Region	
16:00 – 16:30	Regional recommendations
16:30	Seminar wrap up - Adjourn

Thanks**Correspondence: Mr. Rayan Y. Booq (rbooq@kacst.edu.sa)****Output template****Outputs Template****The GRC Virtual Seminar on CoVid-19 in the MENA Region 16-17 Dec. 2020**

King Abdulaziz City for Science and Technology (KACST) in collaboration with the Global Research Council (GRC) delivered the GRC Virtual Seminar on CoVID-19 in the MENA Region on 16-17 December 2020 aiming to:

1. Share and exchange experience and knowledge on how GRC-MENA participating organizations responded to the CoVid-19 pandemic,
2. Explore and discuss potential collaboration opportunities between GRC-MENA's national research funding agencies, particularly in areas related to pandemics preparedness, and
3. Bring together a range of GRC-MENA participants, together with wider expertise and stakeholders, to ensure effective knowledge sharing and mutual learning.

In this regard, KACST has initiated a process to prepare a report that synthesizes all the efforts exerted by the research funding organizations and councils in the MEAN region on the CoVID-19 pandemic, aiming to increase the visibility of the GRC MENA regional efforts to all GRC participant organizations and the international research and innovation community. This synthesized report is intended to be circulated among a wide range of GRC-MENA participants, experts, and stakeholders all around the globe.

Accordingly, KACST invites the research funding organizations and councils in the MENA region to contribute to this regional effort by completing the following template.

Potential deadline: 21 January 2021.

I thank you for your continued support.

Organization name:

Country:

1. Please describe briefly the country/ organization's response measures/ initiatives towards addressing the CoVid-19 pandemic, including, type, objectives, expected benefits, KPIs, web page, etc. ...

2. The country/ organization research priorities towards addressing the CoVid-19 pandemic.

3. Scientific Research Ethics in Response to Global Pandemic

4. The potential impact of the CoVid-19 pandemic on your country's research and innovation system, and the implications for future international collaboration.

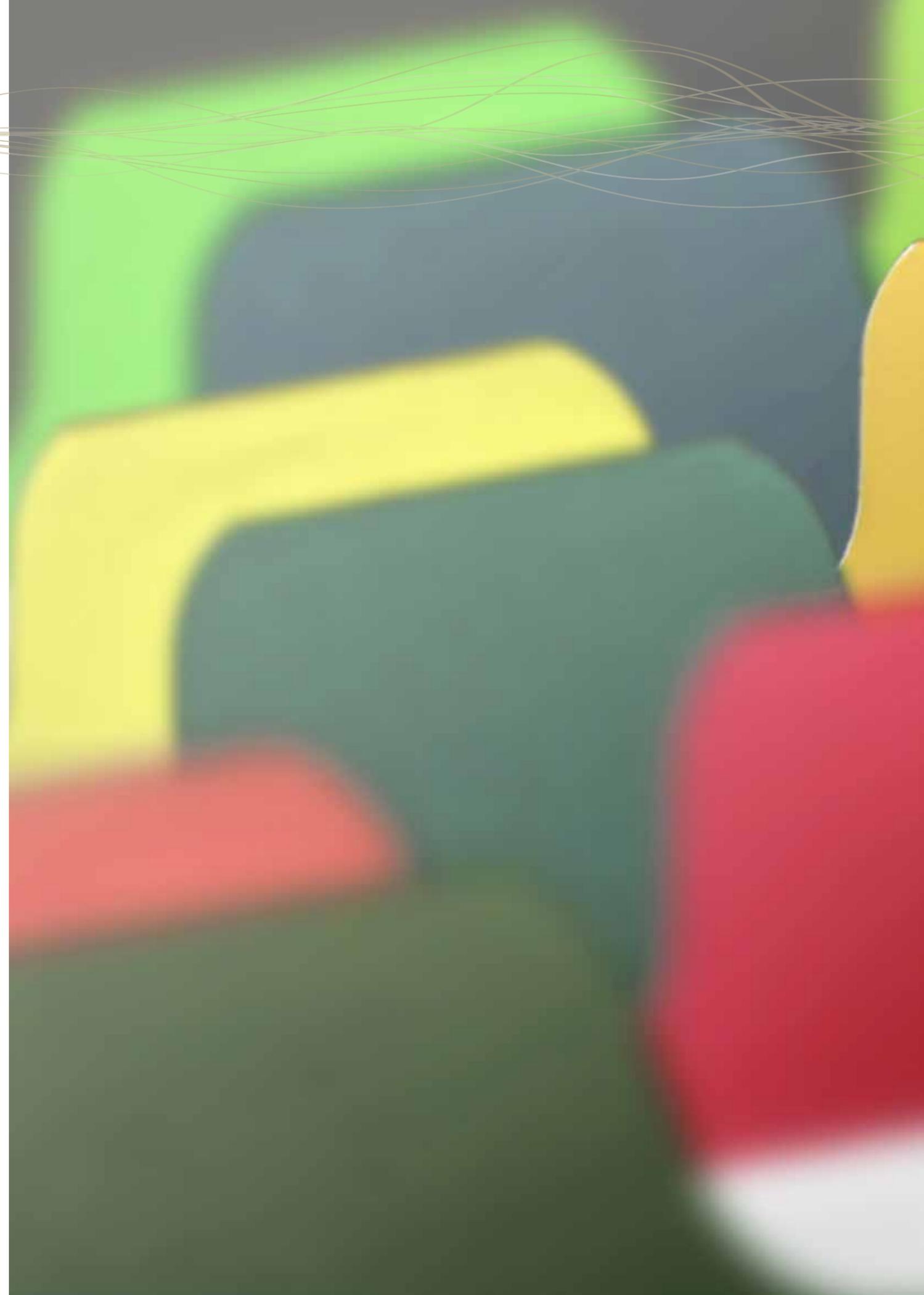
5. The future perspectives to combat global pandemics.

6. Barriers of implementation and how encountered.

7. Other information..

Please send your contribution to:

GRC-MENA@kacst.edu.sa



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