



3rd Conference of the Arab Association of Genetic Research (AAGR), "Virtual Conference"

# Leveraging Omics and Computational Analysis in Genetic Research and Precision Medicine

November 29-30, 2020

Smart Health Initiative

King Abdullah University of Science and Technology,  
Thuwal, Kingdom of Saudi Arabia

Registration: [https://kaust.zoom.us/webinar/register/WN\\_paTWwEqaQG-Eo654haHz4A](https://kaust.zoom.us/webinar/register/WN_paTWwEqaQG-Eo654haHz4A)

**3rd Conference of the Arab Association of Genetic Research (AAGR), "Virtual Conference"**

**"Leveraging Omics and Computational Analysis in Genetic Research and Precision Medicine"**

**King Abdullah University of Science and Technology, Smart Health Initiative  
Thuwal, Kingdom of Saudi Arabia, November 29-30, 2020**

## Conference Program AST Arabic Standard time

**Nov 29, Sunday, Day 1**

**Registration**

08:00 All day

**Opening Remarks**

09:00 Professor Mubarak Mohamed Ali Magzoub,  
Secretary General of Federation of Arab Scientific Research Councils

09:10 Professor Khalid Al-Ohaly, President, Arabian Gulf University, Bahrain.

09:20 Professor Moiz Bakheit, Head, AAGR, Conference Co-Chair  
Director & Chairperson - Princess Al-Jawhara Center for Molecular Medicine, Genetics and  
Inherited Disorders

09:25 Professor Ghada Al-Kafaji, Coordinator AAGR, Conference Co-Chair, Princess Al-Jawhara Center for Molecular Medicine, Genetics and Inherited Disorders

09:30 Professor Samir Hamdan, Dean, BESE Division, KAUST

09:40 Professor Pierre Magistretti, Director, Smart Health Initiative, KAUST

10:00 Break

## **I Personalized and Predictive Medicine**

Moderator Professor Fowzan AlKuraya, KSA

10:30 Prof. Malak AlGhamdi, KSA **The contribution of molecular autopsy by proxy in preconception genetic diagnosis**

11:00 Prof. Majid Alfadhel, KSA **How Artificial Intelligence is Changing Drug Discovery for Rare Genetic Disorders**

11:30 Break

12:30 Prof. Joachim Schultze, Germany **Swarm Learning: to democratize AI for precision medicine**  
13:00 Dr. Ibrahim Sahin, Turkey **Non-Invasive Cancer Genotyping (Liquid Biopsy, Plasma genotyping) and Clinical Applications**

13:30 Prof. Mo Li, KAUST **Long-read individual-molecule sequencing reveals CRISPR/Cas9 on-target mutations in human ESCs and mtDNA heterogeneity in single mouse oocytes**

14:00 Prof. Ghada El-Kamah, Egypt **Micro RNA and HbF induction in beta thalassemia**

14:30 Panel Discussion

15:00 Break

## **II Immunogenetics and Cancer**

Moderator Professor Moiz Bakhet, Bahrain

15:30 Dr. Amani AlHajeri, Bahrain **Oncogenomics in Bahrain's National Genome Project.**

16:00 Prof. Malak AlThagafi, KSA **Towards Realizing the Dream of Precision Medicine for Meningiomas**

16:30 Prof. Musa Mhlanga, USA, NL **Epigenetic mechanisms of trained innate immunity**

17:00 Prof. Alex Shalek, USA **Identifying And Rationally Modulating Cellular Drivers Of Tumor Responses**

17:30 Panel Discussion

18:00 Break

### **III      Neurogenetics**

Moderator Professor Ghada Al Kafaji and Sami Al Garawi

18:30 Prof. Yehia Gad, Egypt    **Germline NF1 mutations in Egyptian patients with Neurofibromatosis Type 1**

19:00 Prof. Pierre Magistretti, KAUST    **Neuron-glial metabolic coupling: relevance for neuronal plasticity and neuroprotection**

19:30 Prof. Arnold Kriegstein, USA    **Genomic insights into human brain development, evolution, and disease**

20:00 Panel Discussion

**End Day !**

**November 30, Monday, Day 2**

### **Registration**

09:00 All Day

### **IV      Genetics of Covid-19**

Moderator Sami Al Garawi, KAUST

09:30 Prof. Ghada Al-Kafaji, Bahrain    **Host Genetic and Epigenetic Factors Associated With Covid-19**

10:00 Prof. Partha Majumder, India    **Selective Sweep of a SARS-CoV-2 Mutant: the Role of Host-Virus Genomic Interactions**

10:30 Prof. Takashi Gojobori, KAUST    **COVID-19 Mutation Tracker**

11:00 Dr. Anna Aschenbrenner, Germany    **Bulk and single cell transcriptomics to better understand COVID-19".**

11:30 Prof. Muzlifah Haniffaa, UK **Multi-omics profiling of COVID-19 patients' blood cells**  
12:00 Break  
13:00 Prof. Xin Gao, KAUST **A Rapid, Accurate and Machine-agnostic Segmentation and Quantification Method for CT-based COVID-19 Diagnosis**  
13.30 Panel Discussion

#### **IV Computational Analysis (AI) Genome Data and Imaging**

Moderator Professor Yehia Gad

14:00 Prof. Mark Daly, USA, Finland

14:30 Prof. Satoshi Habushi, KAUST **Single molecule/cell imaging of cellular interactions**

15:00 Prof. Malak AlThagafi, KSA **Saudi Human Genome Project**

15:30 Dr. Noora Al Snan, Bahrain **Proposal of ArabGen Database**

#### **16:00 Panel Discussion**

16:30 Break

#### **17:00 Concluding Remarks**