PROGRAM SCHEDULE
Precision Medicine and Functional Genomics 2021 – Virtual Meeting (PMFG21)

In our quest to make Qatar a leading hub for research and innovation and building on the success of our previous six cycles, Sidra Medicine is excited to announce that its annual flagship conference, Precision Medicine and Functional Genomics (PMFG21), is scheduled to take place on December 4-6, 2021 in Doha, Qatar.

As part of its National Vision 2030, Qatar is committed to establishing a knowledge-based economy in the biomedical and health sciences. Sidra Medicine supports this goal by actively engaging clinical and scientific expertise to become a leading model for Precision Medicine in the region. In line with this vision, PMFG21 will bring together nationally and internationally recognized researchers, healthcare professionals, policymakers, and community members to explore the latest developments and innovations in biomedical research and how they translate into precision medicine solutions.

If you are interested in large-scale genomics, advanced diagnostics, bioinformatics, biomarker discovery, and personalized treatment approaches, mark your calendar to attend PMFG21.

PMFG21 is a two-day event with post-event Satellite Symposium, centered around four themes:

- Future of Pediatric Genomic Medicine
- Large Scale Genomes and Data: From Discovery to Health
- Precision Care in Maternal and Child Health
- Advances in Innovative Therapies for Precision Medicine

Target Audience

- Researchers
- Physicians
- Bioinformaticians
- Clinician-researchers and scientists
- Nurse practitioner and physician assistants
- Genetic counselors
- Students
- Lab professionals
- Pharmacists
- Allied Health
- Public Health
- Public Policy
- Biotech Industry

At the end of the Conference, the participants will be able to:

- Find out how making genomic discoveries is fundamental first step toward identifying targets for precision treatments
- Understand the genetic causes and underlying mechanisms of several complex pediatric disorders, and learn methods for precision medicine to treatment and discovering new therapeutic options Learn how large-scale human genomic and health data are transforming medical care
- Appreciate how evidence-based treatments, innovative translational research combined with providing extra o ordinary care will improve outcomes and aid establishing therapeutic approaches for children with critical, rare, and chronic diseases
- Describe the recent applications of precision medicine in maternal, fetal and child health
- List examples of the translational applications of precision medicine for different types of DiseasesInvolved in the field of maternal and child health.

PROGRAM SCHEDULE
**TRACKS 1 & 2 WILL RUN IN CONCURRENT SESSIONS

Day 1: Saturday 4th December 2021 - TRACK 1 "FUTURE OF PEDIATRIC GENOMIC MEDICINE"			
14:00	14:10	**Opening Remarks** Dr. Khalid Fakhro- Chief Research Officer Dr. Ammira Akil – Organizing Chair of Track 1 Dr. Younes Mokrab – Organizing Chair of Track 2 Sidra Medicine, Qatar	
Session 1: Genomic landscape in complex pediatric disorders and its impact on research and medicine Objectives: • To understand the recent developments in genomics and related 'omics' and evolving research areas contributing to advancing pediatric disorders targeted medicine • To Improve the quality of care through molecular diagnostics and disease subtyping • To learn about strategies to overcome obstacles of implementing precision therapies for patient care			
14:10	14:40	**Opening Keynote Speaker:** **Dr. Hakon Hakonarson** Children's Hospital of Philadelphia, USA	Precision Medicine Approaches in the Diagnosis and Treatment of Complex Pediatric Disorders
14:50	15:00	**Session Keynote Speaker:** **Dr. Adam Jaffe** University of New South Wales, UK	Precision Medicine in Cystic Fibrosis
15:00	15:20	**Dr. Theodore Laetsch** Children's Hospital of Philadelphia, USA	Pediatric Precision Oncology: TRKing the Lessons Learned
15:20	15:40	**Dr. Amel Hassan** Sidra Medicine, Qatar	Precision Medicine and its 3 dimensional effect on the outcome of children with Immunodeficiency
15:40	16:00	**Dr. Struan F.A. Grant** Children's Hospital of Philadelphia, USA	Variant-to-gene mapping for common complex traits
16:00	16:15	BREAK	

Session 2: Precision Medicine in Pediatric Disorders: Opportunities for Improved Patient Care

Objectives:

- To provide a balanced perspective on the utility of genomic medicine in the field of complex pediatrics disorders
- To better predicting the disease risk, understanding how diseases occurs, and finding improved diagnosis and treatment strategies
- To learn how to expand and advance patient outcomes by conducting the execution of precision medicine in clinical practice

16:15	16:35	**Session keynote Speaker:** **Dr. Stephen Scherer** The Hospital for Sick Children, University of Toronto, Canada	Precision Medicine Landscape in Canada
16:35	16:55	**Dr. Ma'n Zawati** McGill University, Canada	Future of Paediatric Genomic Medicine: Ethical, Legal and Policy Issues
16:55	17:15	**Dr. Mustafa Khokha** Yale School of Medicine, USA	Precision Medicine Role in Critical Illness in Infants and Children
17:15	17:35	**Dr. Christian P. Schaaf** University of Heidelberg, Germany	Genetic causes of neurodevelopmental and neuropsychiatric disorders
17:35	17:50	**BREAK**	

Session 3: Integration of personalized medicine into complex diseases prevention

Objectives:

- To identify approaches to integrating genetics and genomics into disease prevention
- To learn about revised approaches to prevention, diagnosis, and treatment of pediatrics complex disorders
- To enhance the understanding about the impact of genetic and the environment in order to accelerate the progression from research innovation to development and delivery of targeted patient's care

17:50	18:10	**Session keynote Speaker:** **Dr. C Thomas Caskey** Baylor College of Medicine, USA	Precision medicine for disease prevention
18:10	18:30	**Dr. Carmella Evans-Molina** Indiana University, USA	Precision approaches to disease modifying therapy in type 1 diabetes
18:30	18:50	**Dr. Richard Oram** Exeter University, UK	The role of genetic screening in type 1 diabetes prediction
18:50	19:20	**Closing Keynote Speaker:** **Dr. Robert Green** Harvard Medical School, USA	Newborn Sequencing with its Implications for lifelong Precision Care
19:20	19:25	**Closing Remarks by Dr. Ammira Akil**	

PROGRAM SCHEDULE
**TRACKS 1 & 2 WILL RUN IN CONCURRENT SESSIONS

Day 1: Saturday 4th December 2021 - TRACK 2 "LARGE SCALE GENOMES AND DATA: FROM DISCOVERY TO HEALTH"			
14:00	14:10	**Welcome Note** Dr. Younes Mokrab Sidra Medicine, Qatar	
Session 1: Data Resources Enabling Genomic Medicine Objectives: • Illustrates the use of large-scale resources in driving precision medicine research • Learn about the latest success stories from landmark projects • Appreciate the importance of population diversity genomics to reach outcomes in the local and global context			
14:10	14:40	**Opening Keynote Speaker:** **Dr. John Mattick** University of New South Wales Sydney, Australia	Transforming healthcare with genomic information
14:50	15:00	**Dr. Dave Brown** Qatar Precision Medicine Institute, Qatar	Federation of case reference data is vital for precision medicine
15:00	15:20	**Dr. Ingrid Scheffer** University of Melbourne, Australia	Precision Medicine n Epilepsy
15:20	15:40	**Dr. Joel Dudley** Mount Sinai, USA	Large Scale Genomics Studies in Under-studied Populations
15:40	16:00	**Dr. Michelle Trenkmann** Springer Nature, UK	The role of journals in supporting translational research in understudied populations
16:00	16:15	BREAK	
Session 2: Impact of Large Sequencing Consortia Objectives: • Understand how large-scale genome sequencing efforts are changing medicine • Learn about efforts being conducted in the Arab and Middle Eastern region • Appreciate the impact of specific examples from advanced international efforts			
16:15	16:35	**Dr. Said Ismail** Qatar Genome Program, Qatar	Qatar Genome; Spearheading Qatar's Precision Medicine Agenda
16:35	16:55	**Dr. Fowzan AlKuraya** King Faisal Specialist Hospital and Research Centre, KSA	Large scale Mendelian genomics programs as enablers of precision medicine
16:55	17:15	**Dr. Christopher Mason** Weill Cornell Medicine NY, USA	Global and space station mapping of emerging viruses
17:15	17:35	**Dr. Michele Ceccarelli** University of Naples Federico II, Italy	Large scale computational systems biology in cancer genomics
17:35	17:50	BREAK	

Session 3: Actionable Genome and Phenome			
Objectives: • Understand the value for combining genomic and phenotypic data • Appreciate the efforts driven by industry in specific disease areas • Learn about the latest outcomes in the field and future directions and challenges			
17:50	18:10	**Dr. Laura Addis** GSK, UK	Recall-by-genotype studies in genetics-driven drug discovery
18:10	18:30	**Dr. Rafael Rosengarten** Genialis, USA	A Million to One: Bridging the Biomarker Chasm from Discovery to the Clinic
18:30	18:50	**Dr. Habiba Alsafar** Khalifa University, UAE	Making medicine personal in the Middle East
18:50	19:20	**Closing Keynote Speaker:** **Dr. Nancy Cox** Vanderbilt University, USA	Integration of Genetics, EHR and BioBanks to Drive Precision Medicine
19:20	19:25	**Closing Remarks by Dr. Younes Mokrab**	

PROGRAM SCHEDULE
**TRACKS 3 & 4 WILL RUN IN CONCURRENT SESSIONS

Day 2: Sunday 5th December 2021 - TRACK 3 "PRECISION CARE IN MATERNAL AND CHILD HEALTH"			
14:00	14:10	**Welcome Note** Dr. Souhaila Al Khodor Sidra Medicine, Qatar	
Session 1: Precision Medicine for Successful Pregnancy Outcomes Objectives: • Define the role of male obesity and aging effects on sperm epigenome. • Describe the role of pre-implantation genetics in improving fertility outcomes • Demonstrate the need for pre-natal genetic counselling and precision medicine in utero			
14:10	14:30	**Dr. Nady El Hajj** Hamad Bin Khalifa University, Qatar	Male Obesity and Aging Effects on the Sperm Epigenome and Possible Consequences for the Next Generation
14:30	14:50	**Dr. Johnny Awwad** Sidra Medicine, Qatar	Pre-implantation genetic testing for the selection of the best embryo: A critical appraisal and future directives
14:50	15:10	**Dr. Tawfeg Ben-Omran** Sidra Medicine, Qatar	Prenatal Genetic Counselling
15:20	15:40	**Keynote Speaker: Dr. Anna David** University College London, UK	Precision Medicine in Utero
15:40	16:00	BREAK	
Session 2: Early Diagnosis and Treatment of Pregnancy Complications -Focus on Preterm Objectives: • Explain the changes of the immune system during pregnancy • Describe the different ways to predict preterm birth • Demonstrate how extracellular vesicles can reduce the risk of preterm birth			
16:00	16:20	**Dr. Nima Aghaeepour** Stanford University, USA	Machine Learning for Multiomics Analysis of the Immune System during Pregnancy
16:20	16:40	**Dr. Rachel Tribe** King's College London, UK	Preterm Birth Risk Prediction and the need for Clinically Useful Biomarkers to Predict PTB
16:40	17:00	**Dr. Ramkumar Menon** University of Texas Medical Branch, USA	Delivery of Anti-Inflammatory Drugs Using Extracellular Vesicles to Reduce the Risk of Preterm Birth
17:00	17:20	BREAK	

Session 3: Covid- 19 in Pregnancy and lessons learned from Big Data			
Objectives: • Describe the clinical aspects of Covid-19 in pregnancy • Explain whether vertical transmission for Covid-19 takes place in pregnancy • Outline the recent statistics about Covid-19 in pregnant women living in Qatar Learn about the use of big data to predict health and disease			
17:20	17:40	**Dr. Valeria Savasi** University of Milan, Italy	SARS- COV 2 infection and pregnancy from the first trimester to the delivery
17:40	18:00	**Dr. Albert Adu Opoka** Hamad Medical Corporation- Al Wakra Hospital, Qatar	COVID-19 in pregnancy- experience from Al Wakra Hospital, Qatar
18:00	18:20	**Dr. Claudio Fenizia** University of Milan, Italy	Covid-19 and Pregnancy: is there a vertical transmission?
18:20	18:50	**Closing Keynote Speaker:** **Dr. Michael Snyder** Stanford University, USA	Big data and Health
18:50	19:00	**Q&A**	
19:00	19:05	**Closing Remarks by Dr. Souhaila Al Khodor**	

PROGRAM SCHEDULE
****TRACKS 3 & 4 WILL RUN IN CONCURRENT SESSIONS**

Day 2: Sunday 5th December 2021 - Track 4			
"ADVANCES IN INNOVATIVE THERAPIES FOR PRECISION MEDICINE"			
14:00	14:10	**Welcome Note** Dr. Cristina Maccalli Sidra Medicine, Qatar	

Session 1: The New Dimension of Clinical Care: Prospects and Challenges in Gene Therapy and Immune Related Disorder			
Objectives: • Describe different strategies of gene therapies currently used for clinical interventions. • Explain the potential impact of genomic data on healthcare. • Identify examples of precision medicine approaches for disorders caused by chronic inflammation.			
14:10	14:40	**Keynote Speaker: Dr. Alessandro Aiuti** San Raffaele Hospital Milan, Italy	Hematopoietic stem cell gene therapy for inborn errors: turning blood (stem) cells into a medicine
14:40	15:00	**Dr. Holm Uhlig** University of Oxford, UK	One gene has many phenotypes - understanding the complexity of IL6 cytokine family signaling through monogenic disorders
15:00	15:20	**Dr. Mamoun Elawad** Sidra Medicine, Qatar	Precision medicine in VEO-IBD
15:20	15:40	**Dr. Ronald Crystal** Weill Conell Medicine-NY, USA	Gene Therapy for Neurodegeneration
15:40	16:00	BREAK	

Session 2: The Promise of Precision Medicine: From Bench to the Bedside			
Objectives: • Present the latest advances of targeted therapy for inflammatory and autoimmune diseases. • Illustrate novel applications of genomic knowledge to inherited metabolic diseases. • Explain the process of the translation of research investigations from the bench to the bedside.			
16:00	16:20	**Dr. Massimo Gadina** National Institutes of Health-Bethesda MD, USA	JAKPOT! JAK Inhibitors as a Therapeutic Strategy for Inflammatory and Rheumatic Diseases
16:20	16:40	**Dr. Paolo G.V. Martini** Moderna Therapeutics, USA	mRNA Therapy for Inborn Error of Metabolism Disorders
16:40	17:00	**Dr. Eliana Ruggiero** San Raffaele Hospital Milan, Italy	Gene Editing for Improving Safety and Efficacy of Cancer Adoptive Immunotherapy
17:00	17:20	BREAK	

Session 3: Advances in Cancer Cell Therapy and Gene Editing: Paving the New Era in Patient Centric Care			
Objectives: • Classify the types of cell therapy for cancer treatments and the mechanisms of resistance • Describe how the immune system can improve cancer patients' survival • Estimate the potential of gene editing for patient care			
17:20	17:50	**Keynote Speaker: Dr. Steven A. Rosenberg** National Cancer Institute, USA	Cell Therapy for Metastatic Cancer
17:50	18:10	**Dr. Adrian Bot** Kite Pharma, a Gilead Company	Approaches to Define and Overcome CAR T Cell Treatment Resistance
18:10	18:30	**Dr. Stanley Qi** Stanford University, USA	Programmable Genome Engineering for High-Precision Gene Therapy
18:30	18:50	Dr. Francesco Marincola Kite Pharma, a Gilead Company	Next generation CAR therapies for Cancer Therapy: Making it better rather than easier
18:50	19:00	**Q&A**	
19:00	19:05	**Closing Remarks by Dr. Cristina Maccalli**	

PROGRAM SCHEDULE

Day 3: Monday 6th December 2021- Satellite Symposium "UNLOCKING THE FULL POTENTIAL OF PRECISION MEDICINE: OVERCOMING THE CHALLENGES AND THE GEOGRAPHICAL DISTRIBUTION OF ADVANCED THERAPIES."			
13:30	13:40	**Welcome Note** Dr. Cristina Maccalli Sidra Medicine, Qatar	
Session 1: The state of the art in Qatar of the translational application of Precision Medicine Objectives: • Describe examples of therapeutic approaches of Precision Medicine ongoing in Qatar. • Learn about interest, state of the art and the major challenges for the development of the clinical application of Precision Medicine. • Appreciate how the local health care can benefit from innovative translational applications of Precision Medicine.			
13:40	14:00	**Prof. Khaled Machaca** Weill Cornell Medicine-Qatar	What are the opportunities for personalized medicine application in Qatar?
14:00	14:20	**Dr. Khalid Ibrahim** Sidra Medicine, Qatar	Spinal Muscular Atrophy; The Search for a Cure
14:20	14:40	**Dr. Kakil Ibrahim Rasul** NCCCR/HMC, Qatar	Personalizing mCRC Therapy with Novel Biomarker-Driven Treatments
14:40	15:00	**Dr. Nahla Afifi** Qatar Biobank Director, Qatar	The impact of Qatar Biobank on Precision Medicine Initiative "Opportunities and Challenges"
15:00	15:20	BREAK	
15:20	15:40	**Dr. Hadi Mohamad Abu Rasheed** Qatar Cancer Society, Qatar	How could the Cancer Civil Society Organizations play a catalyst role in Precision Medicine?
15:40	15:50	**Introduction to the panel discussion**	

PROGRAM SCHEDULE

Panel Discussion: "ADVANCED THERAPIES IN QATAR: MORE TO COME"		
15:50	17:00	**Sheikh Dr. Mohamed Bin Hamad Al-Thani** **Ministry of Public Health, Qatar** **Dr. Nahla Afifi** **Qatar Biobank Director, Qatar** **Dr. Ayman Saleh** **Sidra Medicine, Qatar** **Dr. Salha Bujassoum** **NCCCR/HMC, Qatar** **Dr. Dave Brown** **Qatar Precision Medicine Institute, Qatar** **Dr. Khalid Fakhro** **Sidra Medicine, Qatar** **Dr. Rayaz A. Malik** **Weill Cornell Medicine-Qatar**
17:00	17:05	**Closing Remarks by Dr. Cristina Maccalli**

"This activity is an Accredited Group Learning Activity Category 1 as defined by the Ministry of Public Health's Department of Healthcare Professions - Accreditation Section (DHP-AS) and is approved for a maximum of 12 hours."

"This activity was planned and for the healthcare team, and learners will receive 12 hours Interprofessional Continuing Education (IPCE) credits for learning and change"

In support of improving patient care, Sidra Medicine is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.
The Scientific Planning Committee has reviewed all disclosed financial relationships of speakers, moderators, facilitators, and/or authors in advance of this CPD activity and has implemented procedures to manage any potential or real conflicts of interest.

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