مركز الشيخ زايد للأبحاث الجينية
SHEIKH ZAYED GENETIC RESEARCH CENTER

جمعية الإمارات للأمراض الجينية
UAE GENETIC DISEASES ASSOCIATION
EDUCATE · NURTURE · PREVENT
تثقيف · تأهيل · وقاية

Under the Patronage and Presence of

H.E. Sheikh Nahayan Mabarak Al Nahyan

UAE Cabinet Member and Minister of Tolerance and Coexistence
President of UAE Genetic Diseases Association

The 8th International Genetic Disorders Conference 2024
UAE International Genomics Awards

المؤتمر الدولي الثامن للإضطرابات الجينية ٢٠٢٤
جائزة الإمارات للحد من الاضطرابات الجينية

Core Themes for 2024:

- Genomic Medicine
- Microbiome Discoveries
- Genomics of Mental Health
- Global Health AI
- Longevity & Regenerative Medicine

26-30 MAY 2024
United Arab Emirates
www.uaegda.ae
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٢٠ عاماً من العطاء و الريادة في المبادرات النوعية للارتقاء بجودة الحياة الصحية
20 years of excellence and leadership in innovative healthcare initiative

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زايد بن سلطان آل نهيان

تغمده الله بواسع رحمته

His Highness

Sheikh Zayed bin Sultan Al Nahyan

May Allah Be Merciful To Him

UAE Genetic Diseases Association was founded in 2004 as a dedication to the memory of His Highness Sheikh Zayed bin Sultan Al Nahyan, founding father of the U.A.E.

His Highness

Sheikh Mohammed Bin Zayed AlNahyan

President United Arab Emirates

His Highness
Sheikh Mohammed Bin Rashid Al Maktoum.
Vice President of the Federal Supreme Council, Vice President of the State, Prime Minister and Ruler of Dubai.

His Highness
Sheikh Saud Bin Rashid Al Mualla.
Member of the Supreme Council of the Union, Ruler of Umm Al Quwain.

His Highness
Sheikh Dr. Sultan Bin Muhammad Al Qasimi.
Member of the Federal Supreme Council, Ruler of Sharjah.

His Highness
Sheikh Saud Bin Saqr Al Qasimi.
Member of the Supreme Council of the Federation, Ruler of Ras Al Khaimah.

His Highness
Sheikh Humaid Bin Rashid Al Nuaimi.
Member of the Supreme Council of the Federation, Ruler of Ajman.

His Highness
Sheikh Hamad Bin Mohammed Al Sharqi.
Member of the Supreme Council of the Federation, Ruler of Fujairah.

About UAEGDA

Core Themes for 2024:

- Genomic Medicine
- Microbiome Discoveries
- Genomics of Mental Health
- Global Health AI
- Longevity & Regenerative Medicine

معالي الشيخ

نهيان بن مبارك آل نهيان

عضو مجلس الوزراء وزير التسامح والتعايش

الرئيس الأعلى لجمعية الإمارات للأمراض الجينية

H.E. Sheikh Nahayan Mabarak Al Nahyan

UAE Cabinet Member and Minister of Tolerance and Coexistence
President of UAE Genetic Diseases Association

It gives me immense pleasure to state that UAE Genetic Diseases Association, under the leadership of Dr.Maryam Matar has taken a major initiative in recognizing and addressing genetic disorders in our population.

د. مريم محمد مطر

المؤسس ورئيس مجلس الإدارة

Dr Maryam Mohd Matar

Founder and Chairperson

Dear Esteemed Attendees, Colleagues, and Friends,

Welcome to Dubai, UAE, for the first International Federation of Clinical Chemistry (IFCC) WorldLab conference in the Middle East. We are honored to co-host this event with the Saudi Society for Clinical Chemistry (SSCC), in partnership with the IFCC and the Arab Federation of Clinical Biochemistry (AFCB). The conference offers a dynamic program with insights from both academia and industry.

We are excited to present renowned speakers from various disciplines, with a special focus on talent from the UAE in our UAEGDA sessions. This event also marks the 20th Anniversary of the UAEGDA, celebrating our ongoing commitment to innovation and education to address genetic disorders in the UAE and the region.

As the medical field evolves rapidly, it is crucial to focus on the future of Medicine and share new technological breakthroughs for the benefit of humanity. We look forward to sharing knowledge and experiencing the vibrant city of Dubai with you on this journey of learning and growth.

Our vibrant city of Dubai awaits you!

Dr. Maryam bin Matar, M.D, PhD
Founder and Chairperson
UAE Genetic Diseases Association

UAEGDA Board Members

Dr. Maryam Matar

Saeed Al Suwaidi

Dr. Tariq Al Gurg

Shaikha Al Mutawa

Jassem Al Blooshi

Faheema Mohammad Ali

Dr. Shaikha Al Mazrouei

Mona Hammad

Zainab Rashid Al Kaabi

Our Vision

رؤيتنا

- الريادة في البرامج الوقائية في مجال الاضطرابات الصحية في دولة الامارات والمنطقة.
- Pioneering preventive and screening programs for health related disorders in UAE and the region.

Our Mission

رسالتنا

- فهم الأساس البيوكيميائي والجزيئي للاضطرابات الشائعة من خلال تنفيذ برنامج وقائي وفحصي وتوعية عامة.
- To understand the Biochemical and molecular basis of common disorders through implementation of preventive, screening and public awareness program.
- تعزيز وبدء الأبحاث المتطورة وتبادل المعرفة باستخدام التقنيات الأكثر ابتكارًا والفعالية من حيث التكلفة.
- To promote and initiate cutting-edge research and knowledge exchange by using most innovative and cost-effective technologies.
- المبادرة والدعوة لبرامج بناء القدرات.
- To initiate and advocate for capacity building programs.

UAEGDA Objectives

Community Empowerment in Genomics & Future Medicine

- Education & Training.
- Quality of Life Improving.
- Initiating Patient Support Group& Societies.

Youth & Women Empowerment in STEM & Leadership

- Fostering Diversity & Leadership.
- Creating Opportunities for Gender Equality
- Innovation
- Professional Growth Opportunities

Support Public Policy Advocacy & Legislation

- Establishing Comprehensive Protocols.
- Strategic recommendations for legislation implementation.
- Data Driven Advocacy.

Clinical Application and Applied Research Innovation

- Facilitating Research & Clinical Trials.
- Support Advancement in Innovation.
- Prevalence Analysis.
- Enhancing strategy for advance healthcare knowledge.

Local Scientific Committee

Dr.Abdullah Al Ali
Consultant, Zayed Military Hospital, UAE
Chairman - Scientifc Committee, Abu Dhabi Geriatric Conference

Dr.Aysha Ali Ahmed Al Mehri
Group Chief Nursing Officer at Burjeel Holdings

Dr.Erol Baysal
Head of Molecular Genetics, Department of Pathology and Genetics, Dubai Health Authority,

Dr.Fahem Al Nuaimi
CEO, Ankabut UAE

Dr.Fatme Al Anouti
Associate Professor, College of Natural and Health Sciences, Zayed University, UAE

Dr.Gowri Ramanathan
Consultant Obstetrician & Gynaecologist, King's College Hospital London ,UAE

Dr.Wail Al Samawi
General Manager Neuberg Diagnostics

Dr.Saba Habibollah
Genomic and Longevity Medicine Specialist, UAE Genetic Diseases Association.

Dr.Sara Sorrell
Physician, Medical Subspecialties Institute, Cleveland Clinic Abu Dhabi

Dr. Andrew Jeremijenko
Head of Occupational Health, M42, UAE

Dr.Ibrahim Hachim
Member of the Teaching and Examination Committee, RAK Medical University, UAE

Dr.Ibtihal Fadhli
Chair at Eastern Mediterranean NCD Alliance,

Dr.Kamal Khazanehdari
Director of Molecular Biology and Genetics, Central Veterinary Research Laboratory

Dr.M. Azzam Kayasseh
CEO Dr. Kayasseh Medical Clinic, Dubai, UAE

Dr.Mahmoud Marashi
Consultant Haematologist, Mediclinic City Hospital, Dubai, UAE

Dr.Majd Dameh
Assistant Professor, Institute of Applied Technology, Abu Dhabi, UAE

Dr.Karam Adnan Fadhli
Integrative Consultant Psychiatrist

Dr.Youssef Idaghour
Assistant Professor of Biology, New York University Abu Dhabi (NYUAD), UAE

Dr.Yousef Nazzal
Professor & Chair at Zayed University

Dr.Sana Farid
" General Surgeon, Co Chair Healthcare Committee ,VR AR Association"

Dr.Mohadditha Al Hashimi
Chairwoman at Sharjah Private Education Authority, UAE

Dr.Ibtihal Fadhli
Chair at Eastern Mediterranean NCD Alliance, Former Regional Adviser NCDs , WHO/EMRO

Dr.Mohamed Al– Sayegh
Assistant Professor, New York University Abu Dhabi (NYUAD), UAE

Dr.Rawad Abou Assaleh
Community Relations - Corporate Communications - Patient Advocacy

Dr.Rifat Hamoudi
Associate Professor in Cellular and Computational Medicine, University of Sharjah

Dr.Taif Sabah Nafa Al Sarraj
Chief of Clinical Support Services, Tawam Hospital, Al Ain, UAE

Dr.Hafez Ahmed
Professor of Biochemistry at Dubai Medical College, Dubai, UAE

Dr.Shefa Mostafa Gawish
Professor of Anatomy, Dubai Medical College, Dubai, UAE

Dr.Amir Khan
Assistant Professor, University of Sharjah

Dr.Sheikha Al Mazrouie
Head of Stem Cells Group

Dr.Abdulla Al Nuaimi
Board Member, Emirates Insurance Association

Dr.Khaled Mussallam
Group Chief Research Officer, VPS Healthcare Global Medical Lead AMICULUM

Dr.Fatma Al Hashimi
"Director Hortman Stem Cell Laboratory"

Dr.Awni Hawamdeh
Managing Director of Pulse International FZ-LLC

Dr.Manjula Anagani
Clinical Director and HOD, Women and Child Centre, Care Hospitals. Maxcure Suyosha Hospital, India

Dr.Nishi Singh
Consultant Medical Microbiologist-Virologist. Conceive Gynecology & Fertility Hospital. UAE

Dr.Kanakkande Aabideen
Consultants, Pediatric Hematology Oncolgy @ Tawam Hospital

Dr.Yahia Kiwan
Consultant Cardiologist

Dr.Wafaa Ayesh
Clinical Nutritionist

Mr.Patrick Moloney
CEO and Founder of P4ML

Dr.Sreepoorna Pramodh
Assistant Professor, Department of Biomedical Sciences, University of Birmingham

Dr. Aaron Han
Vice President / Deputy Commissioner Emirates Pathology Society / College of American Pathologists, UAE

Regional Scientific Committee

Dr.Abdulrahman A Alrajhi
Professor & Executive Director, Department of Medicine, Alfaisal University, KSA

Dr.Ghazi Omar Tadmouri
Dean of the Faculty of Public Health, Jinan University of Lebanon

Dr.Hani Choudhry
Professor King AbdulAziz University Senior Advisor at the Research, Development and Innovation Authority (RDIA)

Dr.Khaldoun Al–Romaih
Scientist, King Faisal Specialist Hospital and Research Center, KSA

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Executive Director,International Life Sciences Institute - Middle East (ILSI), Jordan

Dr.Mariam Mohammed Ali AlEissa
Head of Genetic and Heredity Department in Saudi Public Health and Artificial Intelligenc

Dr.Mariam Mohammed Ali AlEissa
Head of Genetic and Heredity Department in Saudi Public Health and Artificial Intelligenc

Dr.Moiz Bakhiet
CEO, Princess Al-Jawhara Center for Molecular Medicine, Genetics and Inherited Disorders, Bahrain

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Dr.Rami Mahfouz
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Prof.Sami Al Garawi
Professor, King Abdulla University of Science & Technology, KSA

Dr.Safouq Al Shammary

Dr.Maha Almozaini
Infectious Disease Researcher and Educator Expert in Research and Development

Dr. Souhaila Al Khodor
Director of Reproductive and Perinatal Health Division, Sidra Medicine, Qatar

Dr.Tarek Mostafa Kamal
Professor, Faculty of Medicine, Ain Shams University, Egypt

Dr.Hamad M. Ali Yaseen Ali
Associate Professor Kuwait University

Dr.Maryam Al Shehi
Vice President and Co-Founder of the Oman Genetic Medicine Association

Dr.Burhan Fakhurji
Founder and CEO of @iGene.

Dr.Essam Abdelalim
Senior Scientist at Qatar Biomedical Research Institute QBRI

Dr.Sultan Al Sedairy
Saudi Arabian Genome Project and Executive Director, King Faisal Specialist Hospital and Research Center, KSA Board Member King Salman Center for Disability Research

Dr. Fahad Mahmood Al Zadjali
Dean, Oman College of Health Sciences, Oman

Dr.Hani Abdullah Alhadrami
Head of Nanobiotechnology for Medical Applications Research Group, King Fahad Medical Research Center

Dr.Asim Abdulaziz Khogeer
Board member of IRB committee (IRB-Makkah, UQU, and SEC)

Dr.Rami Obaid
PhD. Assistant Professor Molecular Medical Genetic Medical Center of Umm Al Qura University

Dr.Mohammed Mezaal
Molecular Genetics Representative of Iraq in the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) ,Geneva-Switzerland

Dr.Rami Obaid
PhD. Assistant Professor Molecular Medical Genetic Medical Center of Umm Al Qura University

International Scientific Committee

Prof.Ahmed Ahmed
Professor of Gynaecological Oncology, MRC, Weatherall Institute of Molecular Medicine (WIMM), University of Oxford

Dr.Alireza Haghighi
Founding Director of International Center for Genetic Disease, BWH, Harvard Medical School | President, Advancement Initiative for Medicine and Science

Prof. Yoshiki Sawa
Professor of Health Sciences Osaka University japan

Prof.Firouz Darroudi
Senior Research Consultant, IAEA (Vienna), WHO (Geneva) UNESCO (Paris)

Dr.Marshall L. Summar
Chief Executive Officer Children's National Hospital Rare Disease Institute Laboratory Director

Prof.Atta–ur–Rahman
Professor Emeritus at the International Center

Dr. Vincenzo Di Donna
Specialist Vascular Surgeon / Founder, MHARE, Italy

Dr.Peter R. Brindsen
Medical Director, Bourn Hall Clinic, Cambridge, UK

Prof. Evelyne Bischof
Professor of Medicine, Shanghai University of Medicine and Health Sciences

Dr.Philippe Macaire
Director of Anesthesiology and Pain Management VinMec INternational Hospitals Hanoi Vietnam

Dr.Hossam Zowawi
Advisory Group Member WHO Associate Professor, University of Queensland, Australia

Dr.Majlinda Lako
Prof. of Stem Cell Sciences Biosciences Institute, Newcastle University

Prof. Ahmed Ashour Ahmed
Professor of Gynaecological Oncology, University of Oxford, UK

Milestones

2001
- Community Outreach Program Blood Screening for common genetic disorders 1114 students at Dubai Women's College.

2003-2012
- UAE Free of Thalassemia Campaign.

2005
- Legislation of Premarital Screening.

2006
- Founding UAE down syndrome society.

2007
- H.H Sheikh Mohammed Bin Rashed Al Maktoum inaugurating of Sheikh Zayed Research Centre.

2008
- Introduced screening program for Hemoglobinopathies in HCT (High College Technology).

2009
- UAE International Genetic disorder award.

2010
- International scientific committee.

2011
- Folic Acid Deficiency Campaign.

2012
- Nobel laureates visit UAE GDA.
- Ebtisam Society and Cancer patients support group.

2015
- Founding GCC genomics Society.

2016
- Founding UAE Rare Diseases Support Groups.

2017
- Familial hypercholesterolemia Research.
- One of the founder of NCDA.

2018
- Effective Member of Global Commission of Rare Diseases.

2019
- Founding UAE Stem Cells Society.
- Founding longevity and reprogram your genes services.

2020
- UAE Society of Researchers.
- UAE Public Health Society.

2021
- 1st edition Future Medicine and Science Gernal.

2022
- Member in Middle East NNEdPro Network events.
- Co-organize of Precision Med exhibition and summit.

2023
- Co-organize of Rare Diseases conference with MENA.

2024
- Hosting the World Summit for Clinical, Chemistry and Laboratory Medicine in collaboration with the Saudi Society for Clinical, Chemistry, and the Arab Federation for Clinical Biology.

The Five Forces of Genomic Medicine

1. Technology Advancements in Sequencing Are Making Genomic Medicine a Reality

2. The Declining Cost of Sequencing is Opening the Door for Genomics in Medicine

3. Advancing Storage Capacity and Computing Power Will Drive the Value of Genomic Medicine

4. Population-scale Sequencing Will Increase the Implementation of Genomics in Medicine

5. Government Initiatives for Implementation Framework and Reimbursement

Diagnosis

for example, rare diseases that only present as a set of symptoms that cannot be pinpointed by any other means

genomic information can highlight susceptibility to suffer certain illnesses, like heart disease, stroke, and cancer

Disease Risk

GENOMIC MEDICINE

Prevention

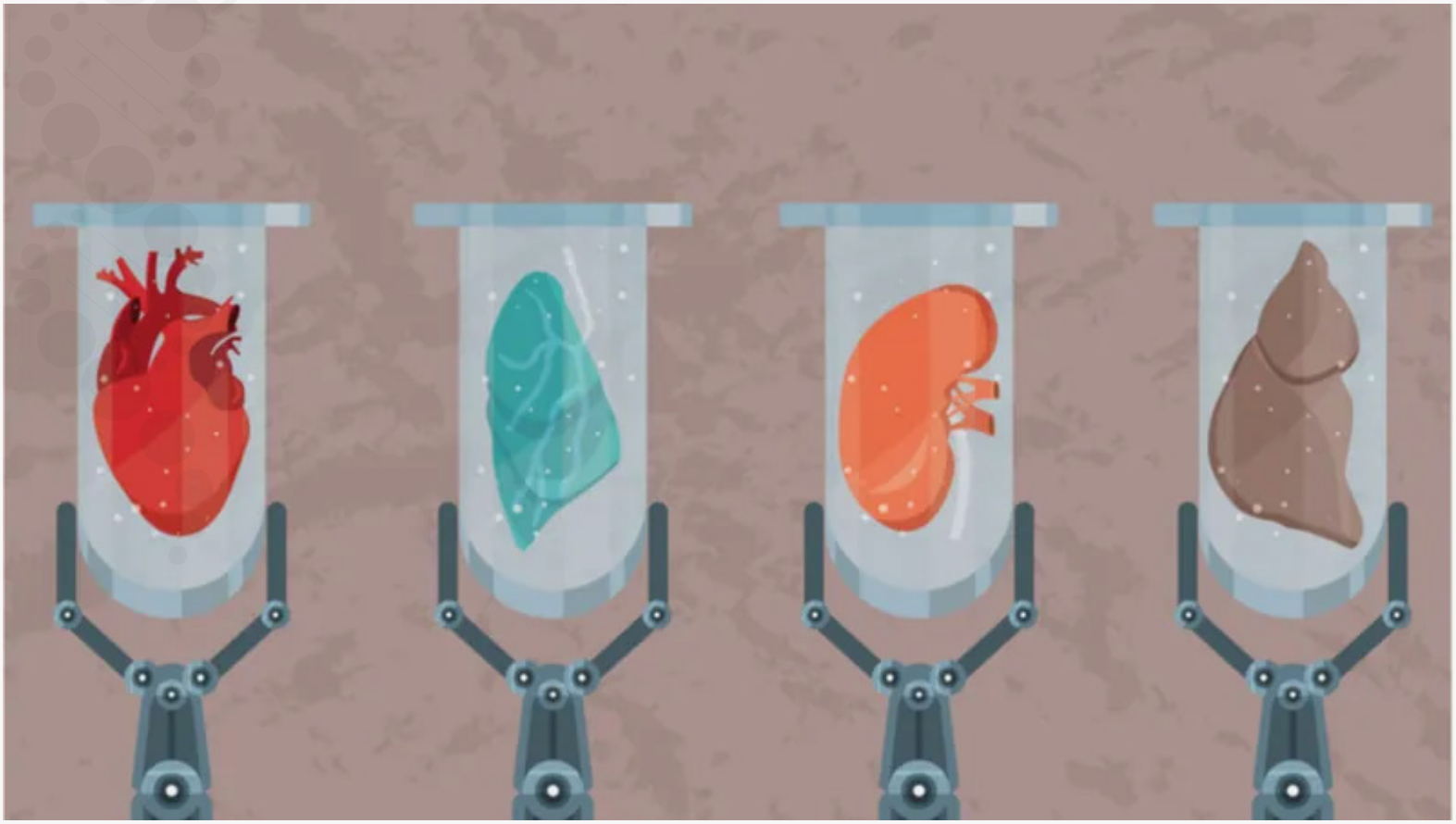
analyzing differences in genome helps take a preventive rather than reactive approach to healthcare and medicine

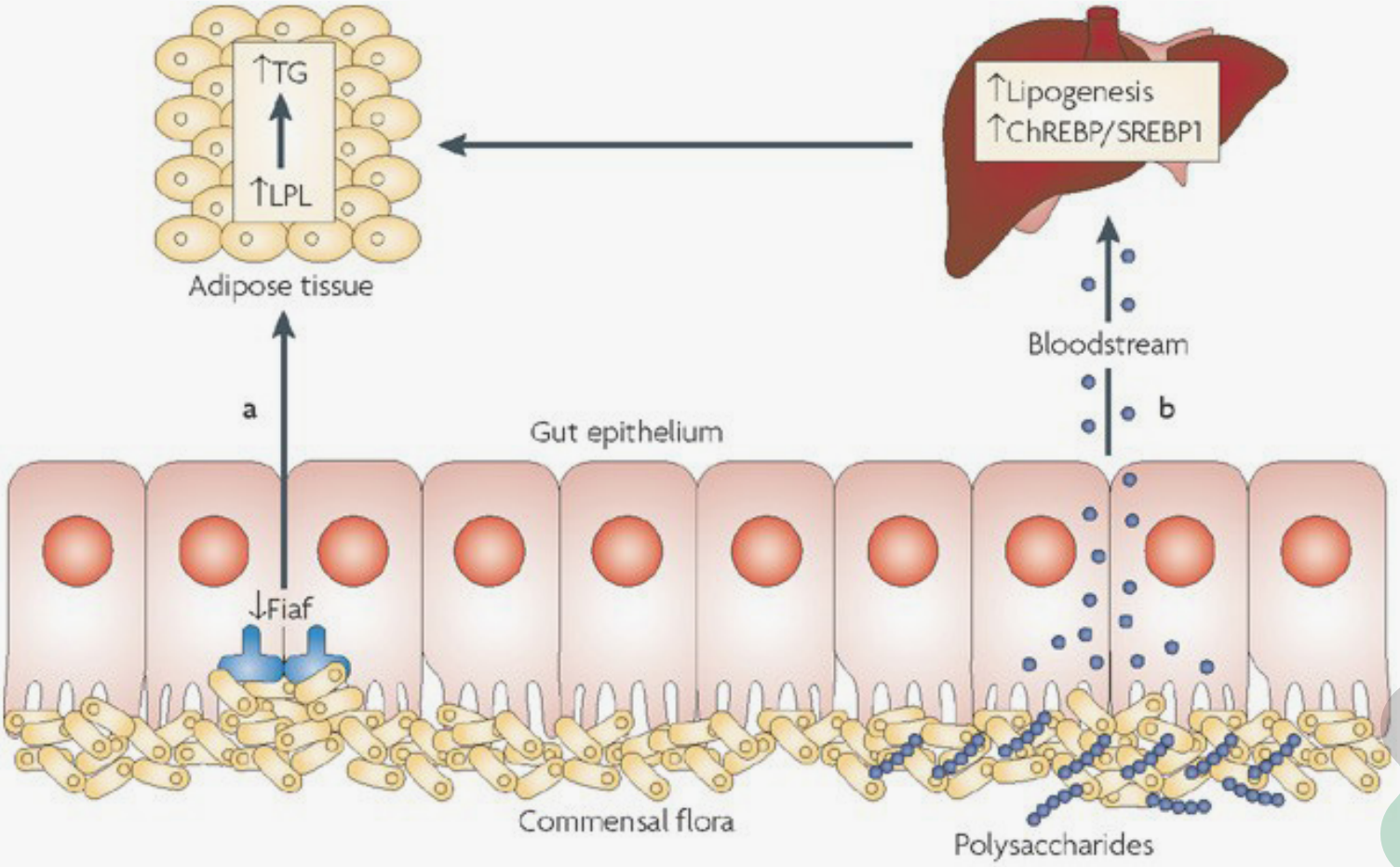
Personalized treatment

can reduce risk of adverse side reactions and enable the selection of optimal therapy

Reduce healthcare costs

improved drug targeting, reduced trial and error in treatments, and early deduction can lower healthcare costs




↑TG
↑LPL
Adipose tissue
↑Lipogenesis
↑ChREBP/SREBP1
Bloodstream
a
b
Gut epithelium
↓Fiaf
Commensal flora
Polysaccharides

SPONSORS & PARTNERS

Core Themes for 2024:

- Genomic Medicine
- Microbiome Discoveries
- Genomics of Mental Health
- Global Health AI
- Longevity & Regenerative Medicine

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هيئة تنمية المجتمع Community Development Authority

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IFCC International Federation of Clinical Chemistry and Laboratory Medicine

GLOBAL COMMISSION

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Asia Pacific Society of Human Genetics

الإتحاد الإقليمي للأمراض غير السارية REGIONAL NCD ALLIANCE

منظمة المرأة العربية ARAB WOMEN ORGANIZATION

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Conference Accreditation

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Saudi Commission for Health Specialties

About the Conference

Core Themes for 2024:

- Genomic Medicine
- Microbiome Discoveries
- Genomics of Mental Health
- Global Health AI
- Longevity & Regenerative Medicine

Introduction

The 8th International Genetic Disorders Conference

Welcome to The 8th International Genetic Disorders Conference, where we gather to explore the forefront of medical science and its profound impact on our world. This year, we are excited to delve into five core themes that represent the cutting edge of research and innovation in healthcare: Genomic Medicine, Microbiome Discoveries, Genomics of Mental Health, Global Health AI, and Longevity & Regenerative Medicine.

As we convene in this dynamic forum, we are privileged to host a distinguished lineup of speakers and experts who will share their groundbreaking research and insights. Together, we will navigate the latest advancements in genomic medicine, uncover the intricate relationships within the human microbiome, explore the genetic foundations of mental health, harness the power of artificial intelligence in global health, and envision the future of longevity and regenerative therapies.

This conference is not just an opportunity to learn and exchange knowledge but also a celebration of our collective commitment to advancing healthcare for the benefit of all. We look forward to engaging discussions, inspiring presentations, and the collaborative spirit that defines our community.

Welcome to this exciting journey of discovery and innovation at the The 8th International Genetic Disorders Conference.

Core Themes For The Conference:

- **Genomic Medicine**
- **Microbiome Discoveries**
- **Genomics of Mental Health**
- **Global Health Al**
- **Longevity & Regenerative Medicine**

Highlights Of The Past Seven International Genetic Disorders Conferences

⇒ Over 150 leading scientists, experts and researchers have offered keynote and expert sessions in last six editions.

⇒ Globally acclaimed speakers from international universities and research centers were

invited to present their cutting edge research, and case studies and present keynote and sessions.

⇒ Over 5,000 researchers, scientists, doctors and nursing staff from GCC countries had attended our conferences.

in last five years and received updated and credible information about latest research.

⇒ Consistently growing numbers of delegates and participating countries.

Conference Growth In The Past 6 Editions

2018	1115
2016	1520
2014	1472
2013	726
2012	480
2010	417
2009	200

2018	42
2016	33
2014	26
2013	16
2012	13
2010	07
2009	12

2018	55
2016	37
2014	55
2013	21
2012	13
2010	02
2009	01


المؤتمر الدولي السادس للاضطرابات الجينية
وجائزة الإمارات للحد من الاضطرابات الجينية | ٢٠١٦
The 6th International Genetic Disorders Conference
& UAE International Genetic Disorders Prevention Award | 2016


المؤتمر الدولي السابع للاضطرابات الجينية
وجائزة الإمارات للحد من الاضطرابات الجينية | ٢٠١٨
The 7th International Genetic Disorders Conference
& UAE International Genetic Disorders Prevention Award | 2018


السابع للاضطرابات الجينية
الحد من الاضطرابات الجينية | ٢٠١٨
The 7th International Genetic Diso
& UAE International Genetic Disorders Preve


المؤتمر الدولي
وجائزة الإمارات ل
ders Conference
ention Award | 2018
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جائزة الإمارات للحد من الاضطرابات الجينية

The 8th International Genetic Disorders Conference 2024
UAE International Genomics Awards

Core Theme for 2024:

- Genomic Medicine
- Global Health AI
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- Microbiome Discoveries
- Genomics of Mental Health

26-30 MAY 2024
United Arab Emirates
www.uaegda.ae
www.dubai2024.org

Message From Founder and Chairperson:

With great pleasure, we welcome the World lab IFCC conference to Dubai in 2024! Dubai's rich heritage and hospitality will set the stage for this prestigious gathering of professionals from around the globe. Renowned speakers will share insights shaping the future of clinical chemistry and molecular biology.

Join us for an innovative event filled with cutting-edge research and engaging discussions. Dubai offers a blend of old-world charm and modern innovation, with iconic landmarks and vibrant culture to explore. Indulge in cuisine, shopping, and desert safaris – Dubai has something for everyone. We hope you'll join us for the 26th International Congress of Clinical Chemistry, contributing to its success and advancing our fields. Thank you for your commitment. See you in 2024!

Dr. Maryam Matar
Founder and Chairperson
UAE Genetic Diseases Association

ACCREDITATION

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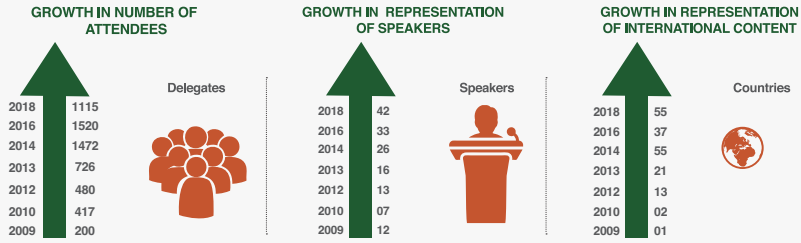
WHO SHOULD ATTEND:

- Researchers in the field of Life Sciences and Biotechnology
- Policy Makers and Advisers in Hospitals and Clinics
- Decision Makers in Healthcare
- Physicians and Clinicians
- Nurses, Pharmacists & Health Alliances
- Medical Experts who encounter patients with genetic disorders
- Students of Life Science, Biotechnology
- Genetic Counsellors and Researchers and Genetics.
- Patients with genetic disorders and their families, Support Groups and NGOs

CONFERENCE GROWTH IN THE PAST 7 EDITIONS



CONFERENCE OBJECTIVES

The main objective of the conference is to encourage researchers and professionals involved in genetic disorders to gather & share latest information, ideas, and scientific data and to share their experiences.

*Empower UAE Community and the High Risk Groups with relevant evidence-based knowledge.

Building UAE as a Hub of Scientific Learning Opportunities in Genetics, showcase UAE on forefront of Genetic and Scientific Innovation.

Creating an Action-led and interactive platform for the global genetics research community to interact.

Knowledge exchange opportunities with scientists and researchers, experts and students, and the medical community.

REGISTER NOW!

For more details,Please visit: **www.dubai2024.org/registration**

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20th ANNIVERSARY

برعاية وحضور

معالي الشيخ

نهيان بن مبارك آل نهيان

وزير التسامح و التعايش ورئيس جمعية الإمارات للأمراض الجينية

المؤتمر الدولي الثامن للإضطرابات الجينية ٢٠٢٤

جائزة الإمارات للحد من الاضطرابات الجينية

The 8th International Genetic Disorders Conference 2024

UAE International Genomics Awards

الأعمال الأساسية لمؤتمر ٢٠٢٤

- Genomic Medicine
- Global Health AI
- Longevity & Regenerative Medicine
- Microbiome Discoveries
- Genomics of Mental Health

٢٦-٣٠ مايو ٢٠٢٤
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كلمة المؤسس ورئيس مجلس الإدارة

بالنيابة عن الفريق المسؤول عن تنظيم فعاليات المؤتمر الدولي السابع للاضطرابات الجينية ومراسم جائزة الإمارات الدولية للحد من الاضطرابات الجينية ٢٠٢٤ ، يُسعدنا أن نرحب بكم في دبي بالإمارات العربية المتحدة.

في ظل التغيرات المتلاحقة لآفاق الابتكار مثل الذكاء الاصطناعي، فإن تقنيات تحليل الجينات بما في ذلك الجيل القادم من ترتيب الحمض النووي وفي مجال المعلوماتية الخاصة بالبيانات الضخمة علم التخلق، التعديل الجيني بما في ذلك تسلسلات الجينوم والمعلومات الطبية توفر في الوقت الراهن فرصاً غير مسبوقة لعلم الجينات، وتمهد الطريق لتقديم وسائل إدارية وعلاجية أكثر فعالية، فضلاً عن توفير ادوات جديدة وجودة جينية افضل للجيل القادم.

ونحن نتطلع إلى الترحيب بكم في فعاليات مؤتمرنا.

د. مريم مطر
المؤسس ورئيس مجلس الإدارة
جمعية الإمارات للأمراض الجينية

تطور المؤتمر على مدار النسخ السبع السابقة

الإعتمادات

هيئة الصحة بدبي
DUBAI HEALTH AUTHORITY

وزارة الصحة و وقاية المجتمع
MINISTRY OF HEALTH & PREVENTION

CPECS®
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الهيئة السعودية للتخصصات الصحية
Saudi Commission for Health Specialties

السادة الحضور في المؤتمر

- الباحثون في مجال علوم الحياة والتكنولوجيا الحيوية
- صناع السياسات والسادة المستشارين في المستشفيات والمراكز والعيادات الطبية
- صناع القرار في مجال الرعاية الصحية
- الأطباء والاختصاصيين الممارسين
- الممرضات والصيادلة ومقدمي الرعاية
- خبراء الطب ممن يقابلون المرض ذوي الاضطرابات الجينية
- طلاب علوم الحياة والتكنولوجيا الحيوية والوراثة
- الإستشاريون والباحثون في مجال الجينات الوراثية
- مرضى الذين يعانون من اضطرابات الوراثة وعائلاتهم، ومجموعات الدعم والمنظمات غير الربحية

أهداف المؤتمر

يتمثل الغرض الرئيسي للمؤتمر في تشجيع الباحثين والخبراء في مجال الاضطرابات الجينية لجمع وتبادل أحدث المعلومات والأفكار والبيانات العلمية وتبادل الأفكار فيما بينهم.

* تمكين مجتمع دولة الإمارات والمجموعات ذات المخاطر عالية من خلال اعطاء ادلة ناتجة عن البحث

تدشين دولة الإمارات العربية المتحدة بصفتها مركزاً لفرص اكتساب علوم الجينات الوراثية وإبراز مكانة الإمارات بصفتها الدولة الرائدة في مجال علوم الجينات والابتكار العلمي.

إنشاء منصة عملية وتفاعلية للجهات الدولية البحثية العاملة في مجال الجينات الوراثية لكي يُتاح لها التفاعل فيما بينها من خلال هذه المنصة.

إيجاد فرص للتبادل المعرفي مع العلماء والباحثين والخبراء والطلاب والدوائر الطبية الدولية بوجه عام.

سجل الآن

سجل الآن من خلال الموقع الإلكتروني www.dubai2024.org/registration

٢٠ عاماً من العطاء و الريادة في المبادرات النوعية للارتقاء بجودة الحياة الصحية
20 years of excellence and leadership in innovative healthcare initiative

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CONFERENCE KEY FEATURES

⇒ State of the Art Keynote from leading Genetics Researchers, Innovators and Scientists from over 116 countries.

⇒ Case Studies and presentations from Globally Acclaimed Speakers in Genetics, Epigenetics, and Smart Ageing.

⇒ Public Education and Community Segment.

⇒ Knowledge Exchange Platform to connect international Scientific Community to the Arab World.

⇒ Young Talent Showcase – competitions and exhibitions of projects on the themes of Science and Genetics.

⇒ Exhibition and Special Project Display.

CONFERENCE OBJECTIVES

1. Building UAE as a Hub of Scientific Learning Opportunities in Genetics, showcase UAE on forefront of Genetic and Scientific Innovation.

2. Creating an Action-led and interactive platform for the global genetics research community to interact.

3. Knowledge exchange opportunities with scientists and researchers, experts and students, and the medical community.

OPPORTUNITIES FOR THE DELEGATES

⇒ Learn about the latest advances, challenges, facts, figures and trends in the field of genetics, epigenetic and rare diseases with international expert speakers.

⇒ Innovation – Great focus on scientific and technological innovation, with seminars on next generation therapies as well talks throughout the agenda on health, gene editing & gene therapies, genetic testing & genomics sequencing, data analytics, bioinformatics.

⇒ High-level partnerships with the presence of key genetics and rare disease and research organizations and institutions such as NORD.

⇒ Engage in formal and informal networking and idea generation with globally acclaimed experts, innovators and influencers in the genetics, rare diseases and epigenetics

⇒ Largest platforms to explore research collaborations.

⇒ Meet key leaders in genetics and rare diseases research.

DELEGATE PROFILE

⇒ Medical experts / physicians and clinicians looking for better diagnosis for their patients via genetics.

⇒ Allied health care support providers, nurses, nurse practitioners, physician assistants, certified nurse midwives, and others who may encounter patients with genetic disorders.

⇒ Genetic counselors.

⇒ Public policy decision makers and advisors responsible for planning and building healthcare servicesinfrastructure,facilities.

⇒ Researchers in the field of biotechnology, biomedical and science.

⇒ Students pursuing their degree in medicine, such as general and family practice, pediatrics, obstetrics and gynecology, and genetics.

⇒ Interested to learn about the potential of emerging sciences in genetics such as epigenetics and smart ageing

Conference Local Scentific committee

- Dr. Rachel Stratton*(Chair Person)*
- Dr. Farida Alshamali
- Dr. Shaikha Al Mazrouei
- Dr. Fatma aljamili
- Dr. B. R. Lakshmi
- Noura Al Matroushiseba
- Dr. Mohammed Mezaal

Conference Scientific Program

Core Themes for 2024:

- **Genomic Medicine**
- **Microbiome Discoveries**
- **Genomics of Mental Health**
- **Global Health AI**
- **Longevity & Regenerative Medicine**

Day 2: Monday, 27 May 2024

Longevity: Diet & Smart Aging

Chair Moderator : Dr. Mishkat Shehata
Co-Chairs Moderator : Dr. Jaffer Khan
UAEGDA Moderators : Dr. Maryam Matar

09:00-09:15	*Opening Message*	*Dr. Asma Al Mannaei* *Hamid Muhammad Al Qatami*
09:15-09:30	Mediterranean Diet & the Prevention of Cardiovascular Disease	Prof. Samia Mora
09:30-09:45	Glycans are Modifiable Biomarkers and Functional Effectors of Age-related Diseases	Prof. Gordon Lauc
09:45-10:00	Healthy Longevity Medicine: Restoring and Maintaining Biological Age of Optimal Performance	Prof. Evelyne Bischof
10:00-10:15	The Role of Membrane Lipidome in Lifespan: Why Dietary Lipids can Impact Longevity	Dr. Vincenzo Di Donna
10:15-10:30	Novel Strategies to Delay Brain Aging and Cognitive Decline	Dr. David Vauzour
10:30-10:45	Fasting: The Fountain of Youth?	Dr. Mussaad Al-Razouki
10:45-11:00	Why Longevity Fails – Invisible toxic Exposures	Dr. Andrew Jeremijenko
11:00-13:00	IFCC Plenary Lecture - Hall 7	

Genetics for Non-Genetists

WORKSHOP+LUNCH

13:00-14:00	History & Basic of Genetics	Dr. Lova Matsa
	DNA Methylation Markers and Cervical Cancer	Dr. Mohammed Mezaal

Day 2: Monday, 27 May 2024

Genomics & Microbiome Discoveries

Chair Moderator : Dr. Luis Saravia
Co-Chairs Moderator : Dr. Ahmed AlHammadi

14:00-14:30	Precision Microbiome Medicine in Healthcare	Prof. M. Azzam Kayasseh
14:30-15:00	Enhancing Longevity: Unveiling the Impact of the Gut Microbiome	Dr. Alla Zaentc
15:00-15:30	Understanding the Microbiome in Rare Genetic Disorders: Lessons from Very Early Onset Inflammatory Bowel Disease	Dr. Souhaila Al Khodor
15:30-16:00	Investigating Microbiome Dysbiosis and Species Interactions within Colonies under Diseased Conditions Employing Systems Biology Approaches	Dr. Mohammad Tauqeer Alam

PANEL Longevity & Smart Aging

Chair Moderator : Prof. Evelyne Bishof
Co-Chairs Moderator : Dr. Mussaad Al-Razouki
UAEGDA Moderators : Dr. Saba Habibollah

16:15-17:00	Smart Aging & Longevity	Dr. David Vauzour Dr. Jaffer Khan Dr. Andrew Jeremijenko Dr. Andrew McCombe Dr. Mishkat Shehata

END OF DAY 2

Day 3: Tuesday, 28 May 2024

Stem Cells & Regenerative Medicine

Chair Moderator : Dr. Sfoug AlShammary
Co-Chairs Moderator : Dr. Yahya Kiwan
UAEGDA Moderators : Dr. Fatima Jamali

09:00-09:15	*Opening Message*	*Prof. Tomris Ozben*
09:15-09:30	Development of Myocardial Regenerative Medicine for Severe Heart Failure	Prof. Yoshiki Sawa
09:30-09:45	Corneal Stem Cell Therapies: From Lab to Clinic	Dr. Sujjad Ahmad
09:45-10:00	Towards a better Understanding of Diabetes-Associated Gene Function through iPSC-Derived Islet Organoids	Dr. Essam Abdelalim
10:00-10:15	Apolipoproteins Have a Major Role in Cellular Tumor Dormancy in Triple Negative Breast Cancer: In-silico Study	Dr. Shimaa Elshenawy

Advancing Cancer Care

Chair Moderator : Prof. Thomas Adrian
Co-Chairs Moderator : Dr. Mahmood Al Mashhadani
UAEGDA Moderators : Dr. Burhan Fakhurji

10:20-10:35	Towards Eliminating Minimal Residual Disease in Ovarian Cancer to Prevent Recurrence	Prof. Ahmed Ashour Ahmed
10:35-10:50	AI in Cancer: Pathology Applications	Dr. Aaron Han
10:50-11:05	Epigenetics and Cancer	Dr. Ali Hamiche
11:05-11:20	Plasminogen Activator Inhibitor 1: Bridging Bench and Clinic in Cancer Research	Dr. Khalid Bajou
11:20-13:00	IFCC Plenary Lecture - Hall 7	

Day 3: Tuesday, 28 May 2024

Genetics for Non-Genetists
WORKSHOP+LUNCH

13:00-14:00	Pharmacogenomics	Dr. Saba Habibollah
	Molecular Genetic Tools & Technology	Dr. Burhan Fakhurji

Leading Precision Therapies

Chair Moderator : Prof. Tomris Ozben
Co-Chairs Moderator : Dr. Aaron Han
UAEGDA Moderators : Dr. Rachel Stratton

14:00-14:30	Breaking the $100 Genome Barrier: Our Journey from Bp to Pb	Dr. Toby Huang
14:30-15:00	Unlocking the Potential of «Body on a Chip» to recapitulate Living Systems in vitro	Dr. Ken-ichiro Kamei
15:00-15:30	Exploring Pharmacogenomics in the Middle East: Opportunities and Challenges	Prof. Mohammed Alsbou
15:30-16:00	Tackling Disease Heterogeneity Through Innovative Personalized Preclinical Models	Prof. Geppino Falco

PANEL Stem Cells & Regenerative Medicine

Chair Moderator : Dr. Emmanouil Nikolousis
Co-Chairs Moderator : Dr. Fatima Jamali
UAEGDA Moderators : Dr. Shaikha Almazrouei

16:15-17:00	Stem Cells & Regenerative Medicine	Dr. Sujjad Ahmad Prof. Falco Geppino Dr. Rifat Hamoudi Dr. Essam Abdelalim

END OF DAy 3

Day 4: Wednesday, 29 May

Genomics of Rare Disease I

Chair Moderator : Prof. Bassam Ali
Co-Chairs Moderator : Dr. Maryam AlShehhi
UAEGDA Moderators : Dr. Shaikha Almazrouei

09:00-09:15	*Opening Message : Future Medicine Highlight*	*Dr. Maryam Matar*
09:15-09:40	Unraveling Common Dyslipidemia in a Population Through Genetic Screening	Dr. Fahad Mahmood Al Zadjali
09:40-10:00	Genetics of Pediatric Cardiomyopathy: New Findings and Challenges	Prof. Alireza Haghighi
10:00-10:15	Deciphering the Genetic Landscape of ADPKD: Paving the Way for Novel Therapeutic Targets	Dr. Hamad Ali Yaseen
10:15-10:30	Newly identified Syndromes with novel phenotypes in Omani patients	Dr. Musallam Al Araimi
10:30-10:45	Promoting Rare Diseases Research in China: Challenges and Solutions	Mr. Boya Yu
10:45-11:00	Deconstructing Rare Diseases with Functional Genomics - a Middle Eastern Adventure	Dr. Luis Saraiva
11:00-13:00	IFCC Plenary Lecture - Hall 7	

Genetics for Non-Genetists
WORKSHOP+LUNCH

13:00-14:00	Emerging Applications of Next-Generation Sequencing in Disease Biology	Dr. Mariam AlEissa
	Global Scenario of GC education and training and the possible strategic plans for the MENA region	Dr. B. R. Lakshmi Dr. Qurratulain Hasan

Day 4: Wednesday, 29 May

Genomics of Rare Disease II

Chair Moderator : Hibat Omer
Co-Chairs Moderator : Dr. Mariam AlEissa
UAEGDA Moderators : Dr. Noura Almatrooshi

14:00-14:30	Global and Regional burden of Congenital Disorders Compared with the UAE National Burden	Dr. Wael Osman
14:30-15:00	Testing and Counselling for Genetic Disorders in the Genomic Era	Dr. Qurratulain Hasan
15:00-15:20	Unveiling the Genetic Landscape of the Arab Population	Dr. Zeina Almahayri
15:20-15:40	Rare Diseases(RD): The Importance of Early Detection and Treatment in Ramathibodi Hospital Thailand	Prof. Thanyachai Sura
15:40-16:00	Rare Diseases and Gene Editing: Applications in the Neuromuscular Field	Dr. Jon Andoni Urtizberea
16:15-16:35	A Holistic Model Addressing the Needs of Rare Disorders- Case of Duchenne Muscular Dystrophy (DMD)	Dr. B. R. Lakshmi
16:35-17:00	The Progress of Gene Therapy in Hemoglobinopathy - Insights from First-Hand Clinical Data	Dr. Chao Liu

END OF DAY 4

Day 5: Thursday, 30 May 2024

Global Health AI: Uniting Nations for Genomic Insights and Data Governance

Chair Moderator : Dr. Mazin Gadir
Co-Chairs Moderator : Dr. Fady Hannah-Shmouni
UAEGDA Moderators : Philippe Gerwill

09:00-09:15	*Opening Message*	*Ministry of Artificial Intelligence*
09:15-09:30	From Data to Action: AI-powered Personalized Medicine and Global Health Equity	Dr. Noor AlSaadoun
09:30-09:45	Will Artificial Intelligence deliver Genomic Medicine? Review of applications of artificial intelligence in genomic medicine	Mark Bartlett
09:45-10:00	The Automation of Clinical Genetic Data through Implementation of ACMG guidelines	Dr. Mariam Eldesouky
10:00-10:15	Beyond Borders, Beyond Bias: Can XR Revolutionize Healthcare Equity?	Dr. Sana Farid
10:15-10:30	PreciousGPT: Multimodal Multiomics Multi-species, Multi-tissue Multitasking Transformers for Aging Research and Drug Discovery	Dr. Alex Zhavoronkov

PANEL Genomics in the Metaverse

Chair Moderator : Philippe Gerwill
Co-Chairs Moderator : Dr. Noor AlSaadoun

10:45-11:30	Genomics in the Metaverse	Muhammed Fafis Dr. Khulood AlSayeah Sonal Ahuja Dr. Sana Farid
11:30-13:00	IFCC Plenary Lecture - Hall 7	

END OF DAYY 5

Conference Local Scentific committee

- Dr. Rachel Stratton*(Chair Person)*
- Dr. Farida Alshamali
- Dr. Shaikha Al Mazrouei
- Dr. Fatma aljamili
- Dr. B. R. Lakshmi
- Noura Al Matroushiseba
- Dr. Mohammed Mezaal

برنامج المؤتمر العلمي

Core Themes for 2024:

- **Genomic Medicine**
- **Microbiome Discoveries**
- **Genomics of Mental Health**
- **Global Health AI**
- **Longevity & Regenerative Medicine**

Day 2: Monday, 27 May 2024

Longevity: Diet & Smart Aging

Chair Moderator : Dr. Mishkat Shehata
Co-Chairs Moderator : Dr. Jaffer Khan
UAEGDA Moderators : Dr. Maryam Matar

09:00-09:15	*Opening Message*	*Dr. Asma Al Mannaei* *Hamid Muhammad Al Qatami*
09:15-09:30	النظام الغذائي للبحر المتوسط والوقاية من أمراض القلب والأوعية الدموية.	Prof. Samia Mora
09:30-09:45	الغليكونات هي علامات حيوية قابلة للتعديل وتؤثر وظيفيا على الأمراض المرتبطة بالتقدم بالعمر.	Prof. Gordon Lauc
09:45-10:00	طب العمر الصحي: استعادة وصيانة العمر البيولوجي لضمان الأداء الأمثل.	Prof. Evelyne Bischof
10:00-10:15	تأثير الغشاء الدهني في دورة الحياة للإنسان ولماذا يمكن أن تؤثر الدهون الغذائية على إطالة العمر الصحي للإنسان.	Dr. Vincenzo Di Donna
10:15-10:30	استراتيجيات حديثة لتأخير شيخوخة العقل وتراجع الإدراك المعرفي	Dr. David Vauzour
10:30-10:45	الصوم: ينبوع الشباب	Dr. Mussaad Al-Razouki
10:45-11:00	لماذا قد تفشل محاولات إطالة العمر الصحي للإنسان: التعرض غير المرئي للسموم	Dr. Andrew Jeremijenko
11:00-13:00	IFCC Plenary Lecture - Hall 7	

علم الوراثة لغير المختصين
ورشة عمل وغذاء

13:00-14:00	تاريخ وأساسيات علم الوراثة	Dr. Lova Matsa
	العلامات الجينية وسرطان عنق الرحم	Dr. Mohammed Mezaal

Day 2: Monday, 27 May 2024

الجينوم واكتشافات المايكروبيوم

Chair Moderator : Dr. Luis Saravia
Co-Chairs Moderator : Dr. Ahmed AlHammadi

14:00-14:30	الطب الدقيق للميكروبيوم في نظام الرعاية الصحية	Prof. M. Azzam Kayasseh
14:30-15:00	تعزيز إطالة العمر الصحي: كشف تأثير البكتيريا المعوية	Dr. Alla Zaentc
15:00-15:30	فهم بيئة البكتيريا المعوية في حالات الاضطرابات الجينية النادرة: دروس من الإصابة الالتهابية للأمعاء في مراحلها المبكرة	Dr. Souhaila Al Khodor
15:30-16:00	التحقيق في اضطراب التوازن في الميكرو بيوم وتفاعلات الأنواع داخل المستعمرات البكتيرية تحت الظروف المرضية من خلال اتباع النهج البيولوجي للأنظمة.	Dr. Mohammad Tauqeer Alam

حلقة نقاشية: طول العمر الصحي والتقدم بالعمر بذكاء

Chair Moderator : Prof. Evelyne Bishof
Co-Chairs Moderator : Dr. Mussaad Al-Razouki
UAEGDA Moderators : Dr. Saba Habibollah

16:15-17:00	حلقة نقاشية حول التقدم بالعمر بذكاء وإطالة العمر الصحي	Dr. David Vauzour Dr. Jaffer Khan Dr. Andrew Jeremijenko Dr. Andrew McCombe Dr. Mishkat Shehata

END OF DAY 2

Day 3: Tuesday, 28 May 2024

الخلايا الجذعية والطب التجديدي

Chair Moderator : Dr. Sfoug AlShammary
Co-Chairs Moderator : Dr. Yahya Kiwan
UAEGDA Moderators : Dr. Fatima Jamali

09:00-09:15	**الكلمة الافتتاحية**	*Prof. Tomris Ozben*
09:15-09:30	تطوير الطب التجديدي للعضلة القلبية لعلاج الفشل القلبي الحاد	Prof. Yoshiki Sawa
09:30-09:45	علاج القرنية بالخلايا الجذعية: من المختبر إلى العيادة	Dr. Sujjad Ahmad
09:45-10:00	نحو فهم أفضل لوظيفة الجينات المرتبطة بمرض السكري من خلايا الأنسجة العضوية المستمدة من خلايا جذعية متعددة.	Dr. Essam Abdelalim

تطوير العناية بمرضى السرطان

Chair Moderator : Prof. Thomas Adrian
Co-Chairs Moderator : Dr. Mahmood Al Mashhadani
UAEGDA Moderators : Dr. Burhan Fakhurji

10:20-10:35	نحو القضاء على المتبقي من سرطان المبيض لمنع العودة للظهور ثانية	Prof. Ahmed Ashour Ahmed
10:35-10:50	تطبيق الذكاء الاصطناعي في حالات السرطانات	Dr. Aaron Han
10:50-11:05	ما فوق الجينات والسرطانات	Dr. Ali Hamiche
11:05-11:20	مثبط منشط البلاسمينوجين 1: ربط الأبحاث بين المختبر والعيادة	Dr. Khalid Bajou

Day 3: Tuesday, 28 May 2024

علم الوراثة لغير المختصين
ورشة عمل وغذاء

	الصيدلة الجينية	Dr. Saba Habibollah
13:00-14:00		
	أدوات وتقنيات الوراثة الجزيئية	Dr. Burhan Fakhurji

قيادة العلاجات الدقيقة

Chair Moderator : Prof. Tomris Ozben
Co-Chairs Moderator : Dr. Aaron Han
UAEGDA Moderators : Dr. Rachel Stratton

14:00-14:30	تجاوز حاجز الجينوم بقيمة 100دولار: رحلتنا من قاعدة واحدة إلى بترابيت	Dr. Toby Huang
14:30-15:00	إطلاق العنان لإمكانية "الجسم على رقاقة" لإعادة تمثيل الأنظمة الحية خارج الجسم	Dr. Ken-ichiro Kamei
15:00-15:30	استكشاف الصيدلة الجينية في الشرق الأوسط: الفرص والتحديات	Prof. Mohammed Alsbou
15:30-16:00	امواجهة تنوع الأمراض من خلال النماذج السريرية التخصيصية المبتكرة	Prof. Geppino Falco

حلقة نقاشية: الخلايا الجذعية والطب التجديدي

Chair Moderator : Dr. Emmanouil Nikolousis
Co-Chairs Moderator : Dr. Fatima Jamali
UAEGDA Moderators : Dr. Shaikha Almazrouei

		Dr. Sujjad Ahmad
		Prof. Falco Geppino
16:15-17:00	الخلايا الجذعية +الطب التجديدي	Dr. Rifat Hamoudi
		Dr. Essam Abdelalim

END OF DAy 3

Day 4: Wednesday, 29 May

جينوم الأمراض النادة ١

Chair Moderator : Prof. Bassam Ali
Co-Chairs Moderator : Dr. Maryam AlShehhi
UAEGDA Moderators : Dr. Shaikha Almazrouei

09:00-09:15	الكلمة الافتتاحية اضاءات على طب المستقبل	*Dr. Maryam Matar*
09:15-09:40	فك لغز ارتفاع الدهون الثلاثية المشتركة بين شعوب معينة من خلال المسح الجيني	Dr. Fahad Mahmood Al Zadjali
09:40-10:00	علم وراثة أمراض القلب عند الأطفال: اكتشافات حديثة وتحديات	Prof. Alireza Haghighi
10:00-10:15	فك شفرة الخارطة الوراثية للأكياس الوراثية المتنقلة السائدة تفتح الطريق أمام أهداف علاجية جديدة.	Dr. Hamad Ali Yaseen
10:15-10:30	المتلازمات الحديثة: مظاهر جديدة عند المرضى العمانيين	Dr. Musallam Al Araimi
10:30-10:45	تشجيع بحوث الأمراض النادرة في الصين: التحديات والحلول	Mr. Boya Yu
10:45-11:00	تحليل الأمراض النادرة باستخدام علم الجينوم الوظيفي-مغامرة من الشرق الأوسط	Dr. Luis Saraiva
11:00-13:00	IFCC Plenary Lecture - Hall 7	

علم الوراثة لغير المختصين
ورشة عمل وغذاء

13:00-14:00	التطبيقات الناشئة لتقنية Next Generation Sequencing	Dr. Mariam AlEissa
	السيناريو العالمي للتعليم والتدريب في دول الخليج والخطط الاستراتيجية لمنطقة الشرق الأوسط	Dr. B. R. Lakshmi Dr. Qurratulain Hasan

Day 4: Wednesday, 29 May

جينوم الأمراض النادة

Chair Moderator : Hibat Omer
Co-Chairs Moderator : Dr. Mariam AlEissa
UAEGDA Moderators : Dr. Noura Almatrooshi

14:00-14:30	العبء العالمي والإقليمي للاضطرابات الخلقية: مقارنة بالعبء الوطني في دولة الإمارات	Dr. Wael Osman
14:30-15:00	فحص وتقديم الإرشاد عن الأمراض الوراثية في عصر (حقبة الجينوم)	Dr. Qurratulain Hasan
15:00-15:20	كشف الخارطة الجينية للشعوب العربية	Dr. Zeina Almahayri
15:20-15:40	الأمراض النادرة: أهمية الكشف المبكر والعلاج في مستشفى Ramathibodi hospital Thailand	Prof. Thanyachai Sura
15:40-16:00	الأمراض النادرة وتحرير الجينات في مجال العضلات العصبية	Dr. Jon Andoni Urtizberea
16:15-16:35	نموذج متكامل لاحتياجات الاضطرابات النادرة وعرض حالة ضمور العضلات	Dr. B. R. Lakshmi
16:35-17:00	تقدم العلاج بالجينات في حالات اضطرابات الهيموجلوبين-رؤى من مصادر مباشرة من البيانات السريرية.	Dr. Chao Liu

END OF DAY 4

Day 5: Thursday, 30 May 2024

الذكاء الاصطناعي للصحة العالمية: توحيد من أصل رؤعا في منظور الجينوم وحوكمة البيانات

Chair Moderator : Dr. Mazin Gadir
Co-Chairs Moderator : Dr. Fady Hannah-Shmouni
UAEGDA Moderators : Philippe Gerwill

09:00-09:15	الكلمة الافتتاحية لوزارة الذكاء الاصطناعي	Ministry of Artificial Intelligence
09:15-09:30	من البيانات إلى الأفعال: الطب الشخصي المدعوم بالذكاء الاصطناعي والمساواة بالصحة العالمية	Dr. Noor AlSaadoun
09:30-09:45	هل سيقدم الذكاء الاصطناعي طب جيني؟ مراجعة لتطبيقات الذكاء الاصطناعي في الطب الجيني	Mark Bartlett
09:45-10:00	أتمتة بيانات الجينات من خلال تطبيق إرشادات ACMG	Dr. Mariam Eldesouky
10:00-10:15	ما وراء الحدود و ما وراء الانحياز: هل يمكن للواقع المعزز أن يحدث ثورة في المساوة في الرعاية الصحية	Dr. Sana Farid
10:15-10:30	الثمينة: النماذج متعددة الوسائط ، متعددة الأوميكس، متعددة الأنواع ، متعددة الأنسجة متعددة المهام محولات لأبحاث الشيخوخة واكتشاف الأدوية ChatGPT	Dr. Alex Zhavoronkov

علم الجينوم في عالم الواقع الإفتراضي

Chair Moderator : Philippe Gerwill
Co-Chairs Moderator : Dr. Noor AlSaadoun

10:45-11:30	الجينوم في عالم الميتافيرس	Muhammed Fafis Dr. Khulood AlSayeah Sonal Ahuja Dr. Sana Farid
11:30-13:00	IFCC Plenary Lecture - Hall 7	

END OF DAYY 5

Conference KeyNote Speakers

Core Themes for 2024:

- Genomic Medicine
- Microbiome Discoveries
-Genomics of Mental Health
- Global Health AI
- Longevity & Regenerative Medicine

Prof. Samia Mora
Prof. of Medicine, Harvard Medical School, USA

Biography

Prof. Samia Mora is a cardiologist and molecular epidemiologist conducting translational research in the prevention of cardiometabolic disease, with a focus on lipid and inflammatory mechanisms of cardiovascular disease. She is the Director of the Center for Lipid Metabolomics and Director of the Biorepository, Divisions of Preventive and Cardiovascular Medicine at the Brigham and Womens Hospital, and Professor of Medicine at Harvard Medical School. She is an Elected Member of the American Society for Clinical Investigation and the Association of University Cardiologists.

Abstract

The Mediterranean diet has been associated with lower risk of future cardiovascular disease (CVD), diabetes, cognitive decline, and other chronic diseases of ageing including all-cause mortality. Yet the precise mechanisms through which greater Mediterranean diet intake may reduce the long-term risk of CVD and chronic diseases are not well understood. This talk will discuss the epidemiological evidence supporting the Mediterranean diet for CVD prevention and the biological mechanisms that underlie this benefit. We will discuss the extent to which known CVD risk factors (both traditionally measured or the novel ones) mediate the cardioprotective effects of Mediterranean diet including lipids, lipoproteins, apolipoproteins, inflammation, glucose metabolism/insulin resistance, branched-chain amino acids, small molecule metabolites, and clinical factors. The public health message is that modest changes in known CVD risk factors, particularly those relating to inflammation and insulin resistance, account for a substantial portion of the benefit of Mediterranean diet on CVD risk and thus may have important downstream consequences for the prevention of CVD and other chronic diseases of ageing.

Prof. Gordon Lauc
CEO, Genos, EU

Biography

Prof. Gordan Lauc is the Prof. of Biochemistry and Molecular Biology at the University of Zagreb, Director of the National Centre of Scientific Excellence in Personalised Healthcare, honorary Prof. at the University of Edinburgh and the Kings College London and member of the Johns Hopkins Society of Scholars. In 2017 he initiated the launch of the Human Glycome project and is one of its two co-directors. His research team is pioneering high throughput glycomic analysis and the application of glycan biomarkers in the field of precision medicine. By combining glycomic data with extensive genetic, epigenetic, biochemical and physiological data in a systems biology approach they are trying to understand the role of glycans in normal physiology and disease. Prof. Lauc co-authored over 200 research articles that are cited over 10,000 times. In 2007 he founded Genos, a biotech company that is currently the global leader in high-throughput glycomics. Research in Genos led to the development of the GlycanAge test of biological age.

Abstract

Glycans are the ultimate layer of molecular complexity generated by modifying proteins with chemical structures that integrate genetic, epigenetic, and environmental information. Hundreds of genes are involved in the complex pathway of glycan biosynthesis and glycome composition is significantly heritable as a complex trait. Alternative glycosylation (attaching different glycans to the same glycosylation site on a protein) modulates protein function and in this way actively participates in the transition from health to disease. By analysing over 200,000 individuals, we demonstrated that glycans have significant biomarker potential in predicting different age-related diseases, but also in monitoring pharmacological and lifestyle interventions aimed at decreasing the disease risk.

Prof. Evelyne Bischof

Professor of Medicine, Shanghai University of Medicine and Health Sciences, Switzerland

Biography

Professor Evelyne Bischof is a Clinician and full Professor at the Shanghai University of Medicine and Health Sciences. Full time chief associate clinician at Shanghai Renji University Hospital of Jiaotong. Training at Harvard Medical School affiliated hospitals(Mass General. Beth Israel, Brighams and Dana Farber), Columbia University Presbyterian Hospital and Basel University Hospital. Specialist in Internal Medicine and Medical Oncology. Research focus on healthy longevity medicine, Artificial Intelligence (AI) and digital health with a research focus on oncology, preventative and precision medicine, biogerontology and geroncology. Prof. Bischof spent a decade practicing medicine, lecturing at medical schools and performing clinic and translational research in New York, Shanghai and Basel, Switzerland. She has extensive experience in scientific research and clinical practice at the following well known and highly reputable institutions:Fudan Cancer Institute and Hospital,Shanghai; Zhongshan Hospital(Fudan University).Renji Hospital (Jiaotong University) and Shanghai East Hospital (Tongji University). Dr. Bischof has published over 180peer-reviewed papers and is a frequent speaker at scientific and medical conferences. Known for an interest in preserving longevity, Dr. Bischof is well known for her excellent work in the field of medicine on an international and cross-cultural level. e.g. as a board member of the European Federation of Internal medicine. Swiss Society of Internal Medicine,Royal Society of Medicine and more.

Abstract

This presentation explores the evolving landscape of Healthy Longevity Medicine, focusing on interventions aimed at extending healthspan—the period of life spent in good health and free from age-related diseases. As populations age globally, the challenge shifts from merely increasing lifespan to enhancing healthspan, ensuring years added are marked by vitality and functional independence.

The speech will cover the latest research and methodologies in slowing the biological aging process, emphasizing the restoration and maintenance of an individual's biological age to reflect their period of optimal performance.

Dr. Vincenzo Di Donna

Specialist Vascular Surgeon / Founder, MHARE, UAE

Biography

Dr. Vincenzo Di Donna is a specialist in vascular surgery and regenerative medicine who graduated in medicine and surgery at the University of Naples, Italy. Dr. Vincenzo always looks for innovative and non-invasive treatments for his patients and can integrate traditional medical therapies with new diagnostic and curative technologies. He has co-authored numerous publications on Vascular Surgery in national and international scientific journals. He is a member of SICVE (Italian Society of Vascular and Endovascular Surgery). He is a founding partner of SIMCRI (Italian Society of Regenerative Medicine and Surgery) and is a member of AIUC (Italian Association of Skin Ulcers). He is also the Innovation & Technology Medical Manager of The Longevity Suite in Milan, Italy, and the Medical Director for Epigenetic Molecular Cell Membrane Profile at CNR National Research Center in Bologna, Italy. In Dubai, UAE, Dr Vincenzo has his own clinic (The Cornerstone Clinic) where he practices vascular surgery and regenerative medicine.

Abstract

The aging process is fundamentally regulated by the balance between the oxidative degradation processes and the protective antioxidant system. To evaluate the efficiency of the enzymatic and molecular protections against degradation and the ability of the body to activate regenerative processes, one of the most interesting tools in molecular diagnostics is the evaluation of membrane lipidome, using mature red blood cells as efficient reporters of dietary and metabolic contributions]. The membrane lipidome profile can give information on the exposure of the body to oxidative damage and on its ability of reconstituting the membrane homeostasis, as physiological mechanism connected not only to the lifespan but also to the life quality, especially considering the presence of adequate quantities of polyunsaturated fatty acids (PUFA) and monounsaturated fatty acids (MUFA). In particular, based on studies of centenarians and their offspring, the fatty acid profile of erythrocyte can be considered a biomarker of longevity, able to indicate favorable membrane assets to the life extension, as well as personalized interventions using "membrane lipid therapy" to repristinate the optimal structural and functional balance, as molecular basis to live longer and healthier.

Dr. David Vauzour
Associate Professor of Medicine
University of East Anglia, UK

Biography

Dr. David Vauzour is an Associate Professor in Molecular Nutrition at the Norwich Medical School, University of East Anglia, UK. Dr Vauzour has longstanding interest on the impact of food bioactives on (neuro)degenerative disorders and to develop novel strategies to delay brain ageing and cognitive decline. His recent interests concern how food bioactives modulate the gut microbiome-brain axis in ageing and neurodegenerative disorders and their underlying molecular mechanisms. To date Dr Vauzour has published over 100 peer reviewed articles, serves as the Associate Editor for many journals and currently sits on the ILSI Europe Scientific Advisory Committee.

Abstract

Research focused on characterising the structure and function of microbial communities in the human body has increased in recent years due to the development of metagenome analyses techniques. This has led to a recent explosion of research interest in the complex, bi-directional relationships between the gut microbiota and brain functions. This concept of a microbiome–gut–brain axis suggests that modulation of the gut microbiota is a tractable approach for developing novel strategies for the regulation of overall brain function (2). This is particularly relevant for an ageing population for which cognitive decline is a common symptom and can be a harbinger of the development of neurodegenerative conditions, such as dementia.

The wide variation in the gut microbiota between individuals is a result of modulations of many genetic, environmental and physiological factors though changes in dietary composition and diversity are considered the main drivers of the shifts in microbiome structure and activity.

Dr. Mussaad Al-Razouki
Operating Partner / Founder,
Deerfield Management, Kuwait

Biography

Dr. Mussaad M. Al-Razouki has 20 years of experience in venture capital and private equity investment with a focus on healthcare and technology, shifting from an excellence in clinical practice and research to the management and financing of healthcare and education systems. A graduate of Columbia Business School, Dr. Razouki is the first-ever Arab national to receive an MBA with a focus on Healthcare Management and Finance. Dr. Razouki is a member of the Hermes Honors Society of Columbia Business School, an honor bestowed on the top 1,000 global alumni of the university. An Oral and Maxillofacial surgeon by training, Dr. Razouki has completed clinical rotations at New York-Presbyterian Hospital of Columbia University Medical Center, Harlem Hospital, Cleveland University Hospital of Case Western Reserve University, and Mass General Hospital of Harvard University. Dr. Razouki graduated with Cum Laude Honors from Creighton University with a Bachelor›s in Biology (Ethology) and TPP (Theology, Philosophy and Political Science).

As an anatomist, Dr. Razouki has dissected over 37 cadavers and has worked as an Assistant Prosector at Columbia University under the late Professor Ernest Wilfred April. He is a published author on anatomical anomalies and has named four new anatomical features including the eponymous, Razouki's Dorsal Callus and the Prophet Mohammad's (PBUH) Protuberance.

Dr. Razouki is the current Chief Business Development Officer of Kuwait Life Sciences Company (KLSC) where he is part of a team that manages local, regional, and international investments on behalf of the Kuwait Investment Authority (KIA), the sovereign wealth fund of the State of Kuwait. Dr. Razouki represents the State of Kuwait on the Board of Directors of the Arab Company for Drug Industries and Medical Appliances (Amman, Jordan), Tassili Arab Pharmaceutical Company (Algiers, Algeria) and the Arab Pharmaceutical Company (Khartoum, Sudan).

Dr. Razouki has authored three books, "An Arab Science Spring," "Dashing in the Desert," and "Hybrid Healthcare."

Dr. Andrew Jeremijenko
Head of Occupational Health, M42, UAE

Biography

Dr. Andrew Jeremijenko is an Occupational and Environmental Medicine specialist with over 100 publications in scientific journals. He currently serves as the Head of Occupational Health M43 and Medical Director at Capital Health Screening Centre. He was the Group Medical Director at AspenMedical, and a senior consultant at Hamad Medical Corporation in Qatar.

He worked at the Mater Private Hospital in Brisbane where he specialized in work-related injuries and illnesses for over a decade. He served as a World Bank Consultant, focusing on Bird Flu, and as a Medical Advisor for BP in Indonesia.

Dr. Jeremijenko has provided medical care to victims of natural disasters, including the Boxing Day tsunami, Nias and Jogjakarta earthquakes. He has also assisted individuals affected by industrial accidents and terrorism-related bombings.

Dr. Andrew Jeremijenko is committed to advancing the field of occupational and environmental medicine and improving the lives of workers around the world. His clinical experience treating workers with heavy metal exposures, pesticides and occupational groups such as firefighters and oil and gas workers gives him a unique insight into how environmental exposures create illness and affect longevity.

Abstract

Environmental factors contribute to the acceleration of aging processes, increase biological age, and facilitate the development and progression of a wide range of age-associated diseases. Their pathogenesis involves cellular and molecular mechanisms of aging such as increased oxidative stress, impaired mitochondrial function, DNA damage, and inflammation and is influenced by environmental factors. Environmental toxicants, including ambient particulate matter, pesticides, heavy metals, and organic solvents, have been identified as significant contributors to cardiovascular and brain aging disorders. These toxicants can inflict both macro- and microvascular damage and many of them can also cross the blood–brain barrier, inducing neurotoxic effects, neuroinflammation, and neuronal dysfunction. In conclusion, environmental factors play a critical role in modulating cardiovascular and brain aging. A deeper understanding of how environmental toxicants exacerbate aging processes and contribute to the pathogenesis of neurodegenerative diseases, VCI, and dementia is crucial for the development of preventive strategies and interventions to promote cardiovascular, cerebrovascular, and brain health. By mitigating exposure to harmful environmental factors and increasing exposure to helpful environmental factors, we can strive to reduce the burden of age-related cardiovascular and brain pathologies in the aging population.

Dr. Lova Matsa
Global Diagnostics Director, Igenomix
UAE

Biography

Dr. Lova Matsa is the Scientific Director & Global Diagnostic Director at Igenomix, responsible for Implementation and Supervising clinical genetic diagnostic services. He has previously worked in Medgenome Labs, India (2015 to 2020) as Associate Scientist and as the Head of Genome analysis and clinical reporting and the Manager for Scientific Affairs. Dr. Lova Matsa has spent over 9 years within industry in the field of genomics and molecular biology and holds 16+ publications in peer reviewed national and international journals.

Dr. Lova Matsa specialises in the analysis and interpretation of molecular genetic test results (Genome, Exome, Targeted panels, Mitochondrial Genome; Microarray and NIPT tests) using various genomic tools . He is an expert on ACMG/AMP guidelines - NGS data analysis and interpretation. He frequently Consults and supports clients in the Genetic test product portfolio.

Further to these roles, Dr. Love Matsa provides support to clinicians regarding identification and management of high-risk patients and aiding in genetic counselling.

Abstract

Genetics is the study of heredity, and of genes in particular. Gene, in informal use, is a unit of heredity which is transferred from a parent to offspring. The scientific history of genetics began with the works of Gregor Mendel in the mid-19th century. The word genetics was introduced in 1905 by English biologist William Bateson. Genetics and genetic technologies were more developed during 20th century.

Genome is a fancy word for all your DNA. All living organisms have their own genome. Understanding the molecular background of genetics is the key to current technology developments in the field of genetic diagnosis. Rapid technological advancements, followed by the completion of Human Genome Project, have contributed a great deal to the knowledge of genetic factors and their impact on human life and diseases. Molecular biology laboratory tools identify changes in the structure and/or sequence of human genes which can cause changes in protein function, and ultimately to health and disease.

Dr. Mohammed Mezaal
President / Scientific Committee
Iraqi Society for Molecular Biology and Genetics (ISMBG) / UAEGDA

Biography

Dr. Mohammad I. Mezaal Atheab is a distinguished scientist and researcher in the fields of molecular genetics and cancer genetics. As the President of the Iraqi Society for Molecular Biology and Genetics (ISMBG), he has made significant contributions to advancing scientific knowledge and promoting research in his areas of expertise.

With a Ph.D. in Molecular Genetics and Cancer Genetics, Dr. Atheab serves as a clinical scientist licensed by the Dubai Health Authority (DHA). He holds the pivotal role of General Manager for the Genome Group for Clinical and Research Services, overseeing cutting-edge research and clinical applications in the field of genomics.

Dr. Atheabs international reputation is further solidified by his roles as the Representative of Iraq in the International Federation of Clinical Chemistry and Medicine Laboratory (IFCC) and the International Union for Biochemistry and Molecular Biology (IUBMB). He is also an esteemed member of the Scientific Council of the UAE Genetic Diseases Association (UAEGDA) and the Sheikh Zayed Genetic Research Center.

Through his extensive research, publications, and leadership roles, he has made significant contributions to the advancement of molecular biology, genetics, and cancer research, positioning myself as a prominent figure in the scientific community.

Abstract

Human papillomavirus (HPV) is the most common viral infection of the reproductive tract. Cervical cancer is by far the most common HPV-related disease. Virtually all cases of cervical cancer are caused by HPV, and just two HPV types 16 and 18 are responsible for about 70 percent of all cases. This study was designed to detection of PAX1 gene methylation (promoter region) which is responsible for silencing of tumor suppressor genes as hallmarks and potential diagnostic value for cervical cancer screening. The study comprised 90 abnormal Pap smear samples belonging to women suffering from unhealthy cervix and 10 Pap smears from healthy women as a control group. The specimens were collected from the Outpatient Gynecology Department of Baghdad Teaching Hospital / Medical City Campus, Oncology Teaching Hospital and Al- Amal Hospital (in Baghdad) during the period from April, 2015 to April, 2016. The age of the examined women ranged from 16 to 60 years.

Prof. M Azzam Kayasseh
Visting Professor and Advisory Council Member / Committee Member, College of Health Sciences Jumeirah University / CCP, UAE

Biography

Dr. Kayasseh has been serving his patients in the United Arab Emirates since 1979 In Fujairah and Dubai, UAE. He started his dream of the Liver Transplantation Care Program by applying Pre and Post Liver Transplantation Care in Dubai since 2010 and now he is the Medical Director of this program which is affiliated with the International Liver Centers. He has been succeeded in a couple of cases that achieved a new happy, healthy and wealthy life.Dr. Kayasseh's mission is to provide a unique medical service that offers superior care to a human being while achieving a standard of accurate diagnosis, maintenance of care, and follow-up of treatment to retain the highest quality of life as his Patients are his Life and his Truth. With his wealth of experience, Dr. Kayasseh delivers a quality practice for his patients in diagnostic therapeutic digestive endoscopy.Dr. Kayasseh is actively involved in WEO education and training activities locally, regionally, and internationally. He is presently working on education awareness and clinical research in Microbiome medicine.

Abstract

In medicine, there has been a huge shift from a one-size-fits-all approach to more personalized treatments. We must learn to understand the Microbiome›s role in Precision Medicine, explore how variations in the microbiome can affect individual health outcomes and conduct research to show correlations between microbiome composition and various diseases.

In this talk, I will discuss cutting-edge technologies such as metagenomics, metabolomics, and microbiome sequencing that allow for detailed analysis of the microbiome. These developing technologies enable precision medicine approaches by providing insights into individual microbiome compositions.

Precision medicine is already widely applied to treat specific diseases, for example inflammatory bowel disease, obesity, and diabetes, with further present and future application within prevention. There is substantial high potential for microbiome-based interventions, such as probiotics, prebiotics, and fecal microbiota transplantation (FMT). However, we must overcome the current challenges in precision microbiome medicine, for example the variability in microbiome composition, lack of standardization, and ethical considerations.

Dr. Alla Zaentc
Functional & Regenerative Medicine Physician
The AEON Clinic, UAE

Biography

Dr. Alla Zaentc is a Functional and Regenerative Medicine Doctor holding a Dubai Health Authority (DHA) license with over 8 years of experience specializing in anti-aging medicine and treatment of chronic diseases. Within my practice, I offer a range of cutting-edge therapies including Stem cells and exosomes treatment, peptide therapy, Hormone Replacement Therapy (HRT), IV nutritional therapy, ozone therapy, laser therapy, and diet and lifestyle modification, sleep and stress management. I take pride in employing a holistic and integrative approach tailored to each patient›s unique needs, aiming to optimize their overall well-being.

Abstract

As we strive to extend human lifespan and improve quality of life, a burgeoning field of research focuses on the gut microbiomes profound influence on longevity. This abstract explores the intricate relationship between gut microbiota composition, host health, and longevity, presenting compelling evidence from recent studies.

The human gut harbors a diverse community of microorganisms, collectively known as the gut microbiome, which play pivotal roles in various physiological processes, including metabolism, immune function, and neurobehavioral modulation. Emerging evidence suggests that alterations in the composition and function of the gut microbiome can significantly impact aging trajectories and lifespan.

Studies have revealed that a balanced gut microbiome, characterized by microbial diversity and stability, is associated with healthy aging and longevity. Conversely, dysbiosis, an imbalance in gut microbial composition, has been implicated in age-related diseases such as cardiovascular disorders, metabolic syndrome, and neurodegenerative conditions.

Furthermore, the gut microbiome communicates bidirectionally with the host through a complex network of signaling pathways, influencing immune responses, inflammation levels, and nutrient metabolism. This interplay between gut microbes and host physiology underscores the importance of microbiome-targeted interventions in promoting longevity and mitigating age-related ailments.

Dr. Souhaila Al Khodor
Director of Reproductive and Perinatal Health Division
Sidra Medicine, Qatar

Biography

Dr. Al Khodor is the Director of Reproductive and Perinatal Health Division in the Research Branch at Sidra Medicine, Qatar.Dr. Al Khodor received her Bachelor's degree in Medical Lab technology from the Faculty of Public Health at the Lebanese University in 2001. Soon after, she started her master's degree in microbiology and Immunology at the American University of Beirut (2004-2002). Dr. Al Khodor received her second master's degree and PhD in Microbiology and Immunology from the University of Louisville, Louisville, KY, USA (2008-2005). Before joining Sidra, Dr. Al Khodor worked as a postdoctoral fellow in the Signaling systems Unit, laboratory of Systems Biology, at the National Institute of Allergy and infectious Diseases (NIAID), National Institutes of Health (NIH) in Maryland, USA. Dr. Al Khodor's laboratory at Sidra Medicine focuses on using multi-omics (metagenomics, transcriptomics, proteomics) and computational biology aiming to understand the molecular mechanisms underlying various diseases. Her primary goal is to identify early biomarkers for disease prediction and to validate those biomarkers using various functional assays. With a special focus on pregnancy complications (mainly preterm birth "PTB" and Gestational Diabetes Mellitus "GDM") and complex pediatric disorders such as Inflammatory Bowel Disease, herresearch at Sidra Medicine has attracted around 2.5 million USD in external funds.Dr. Al Khodor is an adjunct Faculty at the College of Health & Life Science in Hamad Bin Khalifa University.

She has over 70 peer-reviewed publications. Shecurrently serves as an Assistant Specialty Chief Editor for Frontiers in Cellular and Infection Microbiology and is the Section Editor for Metagenomics in the Journal of Translational Medicine.

Abstract

Very Early-Onset Inflammatory Bowel Disease (VEO-IBD) is a chronic and recurrent inflammation of the gastrointestinal tract diagnosed in children under the age of 6. VEO-IBD is a rare disease with an estimated worldwide prevalence of 000 100/14 and incidence of 4.3 per 100,000 children. Due to the rarity and diversity of the disease VEO-IBD patients have not been well studied so far.

Dr. Mohammad Tauqeer Alam
Assistant Professor of Biology
UAE University, UAE

Biography

Dr. Mohammad Tauqeer Alam serves as an Assistant Professor of Systems Biology & Omics at The United Arab Emirates University, located in Al Ain, Abu Dhabi. His research focuses on deciphering the intricate metabolic interactions within and between organisms using systems biology approaches. Specifically, his laboratory aims to unravel the dynamics of microbial colonies, investigating how microbial interactions shape community structure and growth.

Before joining UAEU, Dr. Alam held the position of Bioinformatics group leader at the University of Warwick, UK. He completed two postdoctoral research positions, one at Radboud University in Nijmegen, The Netherlands, and the other at the University of Cambridge, UK. Dr. Alam obtained his PhD from the University of Groningen, The Netherlands, where he conducted research on the metabolism of actinomycetes species. Prior to his doctoral studies, he pursued an advanced PG diploma in Bioinformatics from Jawaharlal Nehru University, India, and an MSc in Bioinformatics from Jamia Millia Islamia University, Delhi, India, where he secured a top rank and received a gold medal from the University

Dr. Alam›s research has garnered recognition, leading to the acquisition of three new research grants at UAEU aimed at deepening our understanding of microbial interactions within human microbiomes associated with complex diseases. His contributions have been published in prestigious academic journals, including Nature Microbiology, Cell, Nature, and Nature Communications. Additionally, two of his articles were recognized as «must-read» papers by Faculty Opinions, and one paper was designated as Prime Recommended.

Abstract

Complex diseases like diabetes, obesity, cancer, and inflammatory bowel diseases stand as significant contributors to mortality rates both in the United Arab Emirates and globally. These conditions often lead to substantial alterations in the structure of the human gut microbiota, making the study of gut microbiota dynamics in disease crucial. Despite numerous studies linking microbial interactions with microbiome structure, the developmental mechanisms of gut microbiota in various health and disease states remain elusive.

Prof. Yoshiki Sawa
Professor of Health Sciences. Osaka University
Japan

Biography

Prof. Yoshiki Sawa is the Professor at Department of Cardiovascular Surgery, Osaka University Graduate School of Medicine. Research activities include heart transplantation, artificial organs, gene and regenerative therapies. Dedication to the research led to receive numerous awards and honors, such as Japan Biomaterial Association Award, Scientific Technology Award sponsored by Minister of Education, Culture, Sports, Science and Technology, Minister of Health, Labor and Welfare award. He is also the President of Japanese Society of Regenerative Medicine and the President of Japanese Association for Thoracic Surgery.

Earned a medical degree from Osaka University Medical School in 1980 and joined the First Department of Surgery, Osaka University School of Medicine. In 1989, earned Humboldt scholarship to pursue further education in both the departments of cardiovascular physiology and cardiac surgery at the Max-Planck Institute in Germany. After returning to Japan, became Chief surgeon at the Department of Cardiovascular Surgery in 2004, Professor and Chief at the Department of Cardiovascular Surgery in 2006 till now. Appointed to the Dean at Osaka University Graduate School of Medicine from 2015 – March 2017.

Abstract

In the world, an aging society, overcoming incurable diseases is an essential issue in order to extend healthy life expectancy. For this reason, challenges have begun to develop new treatments based on new scientific discoveries, such as regenerative medicine using iPS cells, and we are entering an era of medical innovation where previously uncurable people can be cured. In Osaka, we have established an international base for future medical care that combines clinical care and research under one roof, which is rare in the world, on Nakanoshima in the center of Osaka. Establish a future medical bridging base and a startup development acceleration base. Furthermore, since there is a hospital in the same building, these improvements can be directly linked to clinical applications. It is expected to develop future medical care, establish a medical industry ecosystem from Osaka "Nakanoshima Qross", establish a cutting-edge medical industry in Osaka, and contribute to the revitalization of the Japanese economy.

Dr. Sujjad Ahmad
Consultant Opthalmologist, University College London
UK

Biography

Consultant Ophthalmic Surgeon, Moorfields Eye Hospital and Associate Professor, UCL Institute of Ophthalmology, London, UK

Dr. Ahmad is a consultant ophthalmic surgeon with over 20 years' experience. He has special expertise in corneal, eye surface diseases and cataract surgery.

He was awarded a PhD in stem cell biology from Newcastle University in 2007 for his work on developing a novel stem cell therapy for corneal burns, which he is now successfully applying on patients who have lost their vision due to chemical burns.

His mix of research and clinical experience has been vital to translate some of his laboratory research findings into the treatment of debilitating eye diseases of the cornea and the ocular surface. He is known as an expert in inflammatory eye diseases of the cornea and conjunctiva.

Abstract

The cornea is the clear front of the eye, and it is renewed by stem cells located at its periphery, in a region known as the limbus. These so-called limbal stem cells can be lost or become dysfunctional, resulting in the blinding condition of limbal stem cell deficiency. (LSCD) There are several causes, including genetic disease such as aniridia and ectodermal dysplasia, as well as acquired causes such as chemical burns. Dr Ahmad has developed a stem cell therapy for LSCD. In this presentation, he will discuss the journey this therapy has taken from laboratory, through regulation and clinical application in trials. He will discuss this in the context of real-world case histories.

Dr. Essam Abdelalim
Principal Investigator - Associate Level ,Sidra Medicine
Qatar

Biography

Dr. Abdelalim currently holds the position of Principal Investigator at Sidra Medicine and is also a joint Associate Professor at HBKU. He obtained his PhD in Medical Science from Shiga University of Medical Science (Japan) and subsequently completed a postdoctoral fellowship. Later, he was appointed as an Assistant Professor at the same university. Before joining Sidra, he held Senior Scientist at QBRI, HBKU until Feb 2024. He had the privilege to set up the first pluripotent stem cell program focusing on diabetes research in Qatar at QBRI (March 2014-February 2024). His team has established several iPSC lines from a wide range of patients with monogenic and polygenic forms of diabetes and established novel protocols for enhancing the differentiation of stem cells into insulin-secreting cells and insulin-target cells. Dr. Abdelalim also assumed the role of Chair for the HSCI-QBRI Steering Committee Agreement from January 2022 to December 2023, overseeing the diabetes/stem cell program collaboration between HSCI and QBRI.

Furthermore, Dr. Abdelalim is actively involved in the scientific community, serving on the editorial boards of prestigious journals such as «Stem Cells and Development» and «Stem Cells Translational Medicine.» He has authored over 70 articles in reputable scientific journals and has been the recipient of numerous research grants and awards throughout his career. As an educator, he imparts knowledge by teaching the «Stem Cell Biology» course at HBKU and has mentored more than 15 graduate students, significantly contributing to their international recognition for outstanding work.

Abstract

Different paths, triggered by several genetic and environmental factors, lead to the loss of pancreatic β-cells and/or function. Understanding these paths to β-cell damage or dysfunction could help in identifying therapeutic approaches specific for each path. Most of our knowledge about diabetes pathophysiology has been obtained from studies on animal models, which do not fully reflect human diabetes phenotypes. Human pluripotent stem cell (hPSC) technology is a powerful tool for generating in vitro human models that could provide key information about the disease pathogenesis and provide cells for personalized therapies. The recent strides in producing functional stem cell-derived β-cells, coupled with the rapid evolution of genomic and gene-editing technologies, present numerous avenues for unraveling the cellular and molecular mechanisms driving the onset of various diabetes types. In this talk, I will elucidate the findings obtained from our established iPSC-based models aimed at investigating the role of genes associated with diabetes.

Dr. Shimaa Elshenawy
Senior Biotechnologist & Molecular Biologist
Egypt Center for Research & Regenerative Medicine, Egypt

Biography

Dr. Shimaa is an experienced Senior Biotechnologist and Molecular Biologist with a proven track record in medical and pharmaceutical research, quality assurance/ control, and project management. As an ISO/IEC ,9001 -45001 ,14001 Internationally certified Lead Auditor, I have demonstrated expertise in ensuring adherence to rigorous quality standards and accreditation processes within research laboratories. With 6 years of experience working in research laboratories, I have honed advanced managerial, senior, and training skills in the medical sector. Demonstrated expertise in ensuring adherence to rigorous quality standards and accreditation processes within research laboratories. Extensive research experience in Stem Cells and Regenerative Medicine, including the successful establishment of a research and therapeutic center with all research, equipment selection, quality and accreditation process to Manage research projects and driving experimental design processes, delivering comprehensive outcomes for various projects. Additionally, one of my notable contributions was to the Egypt Rare Disease Project and Egypt Sport Genome Project a subsidiary of the Egypt Genome Project, showcasing my commitment to addressing critical healthcare challenges. Holding a Bachelor›s degree in Biotechnology with honors, as well as a Premaster›s degree in Biotechnology. Alongside my technical skills, I possess exceptional leadership abilities and am adept at providing line management to scientists, including laboratory technicians and scientific officers. By effectively managing teams, I ensure the delivery of agreed quality performance and achievement of turnaround times. My strategic planning skills and effective communication enable me to consistently enhance efficiency and optimize research outcomes.

Abstract

Breast cancer is the world's most prevalent cancer globally. Triple-negative breast cancer (TNBC) represents %20-10 of BC cases and lacks estrogen, progesterone, and human epidermal growth receptors. TNBC has a poorer prognosis and treatment options. Oocyte extract (OE) protiens induces reversion of of cancer cells from the aggressive to a dormant state.

Prof. Ahmed Ashour Ahmed

Professor of Gynaecological Oncology, University of Oxford
UK

Biography

Professor Ahmed is the Professor of Gynaecological Oncology at the University of Oxford. Graduated from Ain Shams University in Cairo, Egypt and completed his PhD and Gynaecological Oncology Surgical training at the University of Cambridge. Prof. Ahmed received his postdoctoral research training at the University of Cambridge and at the University of Texas, M.D. Anderson Cancer Centre in the USA. He was appointed a Professor of Gynaecological Oncology in 2012. His research aim is to improve clinical outcomes for ovarian cancer patients through understanding the biology of ovarian cancer initiation, progression and resistance to treatment.

Abstract

Over the last decade, our research provides strong evidence that the drivers of minimal residual disease (MRD) survival are different from those that drive bulk ovarian cancer. Therefore, eliminating minimal residual disease at the end of traditional treatment requires rationalised therapeutics that specifically target MRD drivers. In this talk I will discuss our recent work in characterising MRD in ovarian cancer and our ongoing work to develop therapeutics to eliminate it.

Dr. Aaron Han

Vice President / Deputy Commissioner
Emirates Pathology Society / College of American Pathologists, UAE

Biography

Prof. Aaron Han is a Consultant Pathologist with a special interest in haematology and coagulation disorders. An MD and PhD graduate from Baylor College of Medicine, USA. Dr. Han is American board-certified in Anatomic and Clinical Pathology, holding a special qualification in Hematology. With a rich professional background, he has served as the Head of Hematopathology at Tower Health, USA, and held leadership positions at other hospitals as the Head of Lab. Dr. Han has also contributed significantly to various administrative roles, demonstrating expertise in clinical informatics, quality management, education, and infection control. Additionally, he maintains a joint faculty appointment at Mohammed Bin Rashid University School of Medicine and University of Louisville, KY

Abstract

The transformation of healthcare continues from a mass market one size fit all treatment approach to individualized care. We discuss the impact of individualized medicine using the example of brain tumors. The impact of NGS data on our ability to accurately subclassify tumors and design specific targeted treatments appropriate for each patient. Examples of algorithms that can accurately predict treatment response for patients will be discussed. The impact of AI and digitization in pathology will be examined. The roadmap to AI adoption depends on the use of standard platforms that have been optimized for workflow. All of these improve patient experience and the physician's ability to get the diagnosis to the patient in a timely manner. AI predicting genetic genotype from traditional histopathology morphology is discussed and its implications. Future direction with cancer theragnostics will be examined.

Dr. Ali Hamiche
Director of Research,Institute of Genetics and of Molecular and Cellular Biology (IGBMC), France

Biography

Ali Hamiche holds the position of First-Class Director of Research at the National Center for ScientificResearch (CNRS) and serves as the Chief of the «Chromatin and Epigenetics» laboratory at the Instituteof Genetics and Molecular and Cellular Biology (IGBMC) in Illkirch, France.Ali Hamiche has pioneered the development of tools in chromatin biochemistry, epigenomics,structural biology, and bioinformatics. These tools have enabled the analysis of interactions betweenepigenetically modified DNA sequences within the genome and the molecular complexes that controlgene expression in various biological processes, including proliferation and differentiation, and celldeath, particularly in the context of cancer and neurological diseases. Among the numerouscontributions originating from Hamiche›s laboratory in the field of chromatin biology, notableachievements include the identification and characterization of several histone variant chaperones.Additionally, recent groundbreaking work from the laboratory has unveiled a novel role for the methylCpG-binding protein MeCP2.This newfound role involves safeguarding CA repeats within the genomefrom nucleosome invasion and implies a potential link between MeCP2 dysfunction and Rett›ssyndrome. Dr. Hamiche›s notable research portfolio includes co-authorship of several impactfulpublications. His research team has received multiple acknowledgments of excellence from theesteemed French evaluation institution HCERES.

Abstract

Cancer has been viewed as a set of diseases that are driven by accumulation of genetic abnormalities over time, including mutations in oncogenes and tumor-suppressor genes. However, it is becoming increasingly clear that cancer is also driven by 'epigenetic changes', i.e. alterations of gene expression that are mediated by mechanisms that do not affect the primary DNA sequence such as histone variants. Histone H3.3 variant mutations have emerged as significant contributors to cancer development, impacting chromatin structure and gene regulation. During this presentation, I will explore the intricate connection between H3.3 mutations and the dysregulation of repetitive elements in cancer cells. The aberrant activity of repetitive elements, such as transposons, has been implicated in genomic instability and oncogenesis.

Dr. Khalid Bajou
Associate Professor of Applied Biology, University of Sharjah, UAE

Biography

Dr. Khalid Bajou currently holds the position of Associate Professor in the Department of Applied Biology at the College of Sciences, University of Sharjah. He completed his Ph.D. at the University of Liege, Belgium, in the year 2001. Following his doctoral studies, he performed 5 years of postdoctoral research at the University of Southern California, Los Angeles. Prior to his appointment at the University of Sharjah in 2015, Dr. Khalid Bajou served as an assistant professor at the University of Liege, Belgium.

Dr. Khalid Bajous primary research focus centers on Cancer Biology and the tumor microenvironment. He is particularly interested in elucidating the pathological function of the fibrinolytic system in the processes of angiogenesis and metastasis.

Abstract

The 14-kilodalton human growth hormone (14 kDa hGH) N-terminal fragment derived from the proteolytic cleavage of its full-length counterpart has been shown to sustain antiangiogenic potentials. This study investigated the antitumoral and antimetastatic effects of 14 kDa hGH on B16-F10 murine melanoma cells. B16-F10 murine melanoma cells transfected with 14 kDa hGH expression vectors showed a significant reduction in cellular proliferation and migration associated with an increase in cell apoptosis in vitro. In vivo, 14 kDa hGH mitigated tumor growth and metastasis of B16-F10 cells and was associated with a significant reduction in tumor angiogenesis. Similarly, 14 kDa hGH expression reduced human brain microvascular endothelial (HBME) cell proliferation, migration, and tube formation abilities and triggered apoptosis in vitro. The antiangiogenic effects of 14 kDa hGH on HBME cells were abolished when we stably downregulated plasminogen activator inhibitor-1 (PAI-1) expression in vitro. In this study, we showed the potential anticancer role of 14 kDa hGH, its ability to inhibit primary tumor growth and metastasis establishment, and the possible involvement of PAI-1 in promoting its antiangiogenic effects. Therefore, these results suggest that the 14 kDa hGH fragment can be used as a therapeutic molecule to inhibit angiogenesis and cancer progression.

Dr. Saba Habibollah

Genomic and Longevity Medicine Specialist / Scientific Committee, UAEGDA

Biography

Physician-Clinical Scientist Genetics, Stem Cell Science Expertise, Lead Genetic Counselor, Advocate for Predictive Preventive, Personalized and Longevity Medicine, Healthcare Leadership, Accreditation, Enterprise Quality and Safety Consultant

Longevity Medicine and Omic Sciences: Dr. Habibollah is a dedicated and accomplished professional in the fields of medicine, genomics, and stem cell science, with a strong commitment to advancing longevity medicine and personalized healthcare. Their background in these areas has led to significant contributions in the pursuit of extended healthspan and enhanced well-being. Academic Journey: Dr. Habibollah embarked on their academic journey with medical school, followed by specialized training in Medical Genetics and PhD in Regenerative Medicine and Stem Cell Engineering. Driven by her passion she sought Postdoctoral Research positions enabling her to work with a diverse range of stem cells, focusing on translation clinical research. Their medical expertise and diagnostic skills have positively impacted patient care.

Genomics Specialist: With a passion for genomics, Dr. Saba has conducted valuable research to understand the genetic basis of various diseases. Their work has helped bridge the gap between genetics and clinical practice, contributing to predictive and personalized medicine.

Stem Cell Science Expertise: Dr. Habibollah has extensive experience in the field of stem cell science, particularly focusing on umbilical cord blood stem cells, Mesenchymal Stem cells and induced pluripotent stem cells (iPSCs). Their research has opened new possibilities for regenerative medicine and potential treatments for disorders. Advocate for Personalized Medicine: A strong proponent of personalized medicine, Dr. Saba promotes the idea of tailoring medical care to individuals› genetic profiles, thereby enhancing the effectiveness of treatments for improved longevity and well-being. Omic Sciences for Health and Longevity Medicine: Dr. Habibollah is at the forefront of longevity medicine, seeking to extend healthspan and quality of life. Their work in integrating omic sciences, including genomics, epigenomics, metabolomics and more, contributes to a comprehensive approach to health and longevity.

Abstract

Pharmacogenomics, the study of how an individual›s genetic makeup influences their response to drugs, is poised to revolutionize the field of medicine. This talk will delve into the intricate interplay between genetics and drug metabolism, elucidating the principles, applications, and implications of pharmacogenomics in clinical practice.

Dr. Burhan Fakhurji

Founder, iGene Medical Research and Training Center
KSA

Biography

Founder of well-established 2 biotech companies iGene (diagnostic for Oncology and genetic disorders) and Xgenome (Molecular Biology and Genetics innovation industry). More than 18 years of experience in Molecular Biology with a demonstrated history of working in the medical diagnostic lab at the Ministry of Health. Skilled in outbreak project planning, strong interpersonal skills with certification in employee mediation, team building and innovative problem solver. Dr. Fakhurji graduated from medical School in 1999, he holds MSc in Molecular and cancer cell, MSc in anatomy and histology, Dip in Epidemiology in action, Dip in leadership and management and PhD in liver fibrosis. He works as an independent consultant in many medical colleges and health care projects.

Abstract

The workshop is designed to provide a solid foundation in modern molecular genetics. It is intended to help the non-genetic audience understand molecular biology concepts. It will also work as preparation for further students in a graduate programme in molecular biology or related topics. The focus will be on understanding central principles and fundamental mechanisms for the organization, replication, and expression of the genetic material as well as methods for molecular genetic analyses and gene technology as well as the role of genetic lab innovation for health wellbeing. One of the main goals of the course is for non-genetic and students to understand molecular genetics as an experimental field and to understand how knowledge in the field is based on experimental evidence, which helps to build molecular biology knowledge.

Dr. Toby Huang

Regional Director, MGI Technology
UAE

Biography

As Regional Director, Toby leads MGI's operations in the Middle East. With a Bachelors in Biological Science from Cornell University and Masters in Molecular Biology from National Taiwan University, Toby has worked globally within the field of genomics for over a decade.

Abstract

A highlight of our 20+ years in the field of genomics, in terms of our contributions to the evolution of massively parallel sequencing technology, and how we are able finally break the $100 genome barrier.

Dr. Ken-ichiro Kamei

Associate Professor of Biology & Bio-Engineering
NYUAD , UAE

Biography

Dr. Ken-ichiro Kamei is a stem cell engineer and an associate professor with a joint appointment in Biology and Bioengineering programs in Divisions of Science and Engineering at New York University Abu Dhabi, and an affiliated associate professor at Tandon School of Engineering, New York University. He is also a visiting associate professor of Institute of Integrated Cell-Material Sciences (iCeMS), Kyoto University Institute of Advanced Study. He earned his BA (1998) and MS (2000) before obtaining his PhD from Tokyo Institute of Technology in 2003. His research objective revolves around the creation of a miniature, all-inclusive device called «Body on a Chip.» This innovative concept aims to recapitulate the physiological and pathological conditions of living systems in vitro. To realize this vision, he employs an interdisciplinary approach, seamlessly integrating stem cell biology, chemical biology, physics, micro/nanotechnology, and materials science. His research efforts are currently focused on advancing regenerative medicine and drug discovery for both humans and endangered animals, with the ultimate goal of promoting global healthcare.

His career includes a postdoctoral fellowship at the Molecular Biology Institute at the University of California, Los Angeles (UCLA), a staff research associate position at the California NanoSystems Institute at UCLA, and roles as an assistant professor and later an associate professor at iCeMS, Kyoto University.

Abstract

he «Body on a Chip» (BoC) paradigm represents a seminal advancement in the intersection of biotechnology and biomedicine, allowing for the in vitro emulation of complex living systems. Leveraging the pluripotent capabilities of stem cells (PSCs) within engineered micro/nano-scale environments, this field seeks to replicate the developmental and functional aspects of tissue and organ systems.

PSCs serve as a robust platform for delineating the nuances of organismal development. Yet, the maturation of PSCs into functional organ systems remains a formidable challenge, primarily due to the limitations of traditional culture systems that fail to replicate the essential microenvironmental cues necessary for tissue development.

Prof. Mohammed Alsbou

Professor of Clinical Pharmacology, Pharmacogenomics and Precision Medicine, Ajman University, UAE

Biography

Dr. Mohammed Al-Sbou is currently working as a professor in Clinical Pharmacology, Pharmacogenomics and Precision Medicine at the College of Medicine/ Ajman University. He has more than 16 years of progressive experience in teaching and conducting research in the field of clinical pharmacology. Prof. Al-Sbou was the Director of the Pharmacovigilance Center for South Jordan and the vice chairman of Health and Hazzard Evaluation Committee at the Jordan Food and Drug Administration (JFDA). His research work focuses on two areas: the first concerns with pharmacogenomics, precision Medicine, and pharmacovigilance. The second focuses on rare genetic disorders. He is the medical director, co-founder and chairman of the alkaptonuria (AKU) society in Jordan and a member in the International Alkaptonuria clinical trial research team (DevelopAKUre Project). Prof Al-Sbou is a member of the AKU Society Scientific Advisory Board in the UK to help guide the research into AKU, and foster international collaboration, and to review current research initiatives, propose new directions, and provide feedback on potential clinical trials and drug development programs.

Abstract

Pharmacogenomics, is the study of how genes affect a persons response to drugs, is becoming worldwide as a promising approach to personalized medicine. In the Middle East, where genetic diversity is rich and healthcare systems are rapidly evolving, pharmacogenomics presents unique opportunities and challenges. This presentation aims to explore the current landscape of pharmacogenomics in the Middle East, highlighting its potential benefits, existing initiatives, and the obstacles that must be overcome for its successful integration into clinical practice.

Prof. Geppino Falco

Professor of Applied Biology, Federico II University of Naples , Italy

Biography

Professor Geppino Falco is a full Professor of Applied Biology at the University of Naples Federico II and an Associate Researcher at the Institute of Experimental Endocrinology and Oncology (IEOS) of the National Research Council (CNR) of Naples.

During his PhD in Applied Biology, he carried out his research at the International Institute of Genetics and Biophysics (CNR) in the group of Dr. Michele D›Urso. He subsequently continued his studies as a Visiting Fellow at the National Institute of Aging (NIA at National Institute of Health (NIH), USA) as directed by Dr. Minoru Ko (Baltimore, USA). Recent research studies have led to the identification of genes related to the aging of germ cells and the chromosomal stability of murine embryonic stem cells. Currently, research activity aims to understand the molecular mechanisms underlying the differentiation and dedifferentiation of endodermal stem cells; In particular, for pathophysiological conditions such as cellular degeneration and transformation.

Prof. Geppino Falco currently coordinates a Research Team between two laboratories, one for in vitro experimental studies (Department of Biology of the University of Naples Federico II), and a second for the in vivo and ex vivo study of mouse models (Institute of Biogem Research, Italy). Furthermore, he works as a tutor for a team of researchers engaged in experimental oncology clinical studies (CROB Institute, Italy).

Abstract

The intrinsic heterogeneity (molecular, histological, and clinical) is a major determinant of disease-limiting treatment efficiencies and subsequent loss of benefit in treated patients. Currently, predictive biomarkers to guide treatment drug selection are still hardly applicable to clinical practice in a generalized way. In our studies, we consider molecular signatures, pathways, and key molecular master regulators very relevant for therapy efficiency. We employ multi-omics molecular profiling of patient samples and highlight the signaling pathways associated with therapy efficiency. Our research focuses on the generation of a platform for in vitro screening, and pharmacodynamic dissection of both traditional and innovative drugs. The objective is to generate high-quality data in a precise and timely manner, allowing researchers to identify the best compound(s) for further pharmaceutical development. According to the idea of precision medicine, it is fundamental to set a treatment tailored to the patient.

Dr. Fahad Mahmood Al Zadjali

Dean, Oman College of Health Sciences,
Oman

Biography

Dr. Fahad AL Zadjali has obtained PhD degree in Medical Science in 2011 from Karolinska Institutet, Sweden. Currently Dr. Al-Zadjali is the dean of Oman college of health sciences. Dr. Al zadjali has previously served as director of research and studies at Ministry of health and a faculty at Department of clinical Biochemistry ,College of Medicine & Health Science, at the Sultan Qaboos University and also the vice dean of research the University. Also affiliated faculty at department of pediatrics at University of Tennessee Health Science Center ,USA.

Dr. Al-Zadjali research focus is understanding human disease pathogenesis with focus on hormonal dysregulation and alteration in JAK-TSC-STAT pathway. Specific investigation is conducted on non-alcoholic steatohepatitis and inflammatory bowel disease, thymic rejuvenation, renal cysts development in tuberous sclerosis.

Dr. Al Zadjali has expertise in complex heritability studies on metabolic syndrome and study lipid and blood glucose variability in extended families using measured genotype analysis. At the department, Dr. AL Zadjali is responsible for analysis monogenic disorders using next generation sequencing with focus on familial hypercholesterolemia and hypertriglyceridemia.

Abstract

Hypercholesterolemia is a common disorder in the Middle East. In Oman nearly 35% of adult population is affected by hypercholesterolemia, and 25% affected by hypertriglyceremia and 50% affected have low HDL. Family pedigree analysis using measured genotype analysis showed that variation in 56% of blood LDL cholesterol levels, 63% of HDL and 38% of TG are controlled by genetic factors. Hypercholesterolemia may present either as monogenic or polygenic disease and use of clinical screening tools are commonly used to identify these patients. Our genetic screening analysis has identified multiple polygenic form of the disease. However, the current available polygenic scores do not apply to local Arab population. The polygenic score does not show difference between affected patients and healthy control and no difference between patients with familial and non-familial hypercholesterolemia. Clinical guidelines recommend initiation of lipid lowering agent as early as possible to prevent adverse cardiac outcomes in patients with familial hypercholesterolemia. We applied cascade screening in a hospital setting to identify undiagnosed cases within families in a population with high consanguinity. With genetic screening rare form of dyslipidemia were identified and increased detection of patients.

Prof. Alireza Haghighi

Professor of Medicine,Harvard
USA

Biography

Prof. Alireza Haghighi, MD, DPhil, a clinician-scientist in the Department of Medicine at Brighamand Women›s Hospital and at Harvard Medical School, is recognized globally for leadinginternational projects aimed at advancing medical science worldwide. He regularly consultswith governments as well as academic and industrial organizations and institutes. Dr. Haghighi is the founding director of the International Center for Genetic Diseases(iCGD), which aims to advance genomic medicine globally through partnerships withgovernments, academia and industry. In addition, he is the PI and Director of the NationalGenome Project of Bahrain (Phase I: ~$10M) at Harvard. He is an American board-certified geneticist. He completed his graduate and clinical trainingat University of Oxford, and Harvard Medical School. Dr. Haghighi is the Founding Director ofBWH International Center for Genetic Disease (iCGD), and the PI and Director of the NationalGenome Project of Bahrain (Phase I: ~$10M) at Harvard.In his research, he investigates the genetic basis of human disease and health, focusing oncardiovascular diseases and translating research discoveries into improved diagnostics andbetter patient care. His research is funded by the National Institutes for Health and theAmerican Heart Association. Additionally, Dr. Haghighi leads international genomicsprograms aiming to enhance genomic medicine on a global scale.He is also the Director of GEnetics NEtwork in the Middle East and Africa (GENE-ME), a largeclinical research network for genetic studies in those regions that aims to: (1) identify noveldisease-causing mutations and genotype-phenotype correlations, and (2) advance genomicmedicine in the Middle East and Africa through capacity building.

Abstract

In the lecture «Genetics of Pediatric Cardiomyopathy: New Findings and Challenges,» I will present a comprehensive overview of primary pediatric cardiomyopathies, including dilated (DCM), hypertrophic (HCM), restrictive cardiomyopathy (RCM), left ventricular non-compaction (LVNC), and arrhythmogeniccardiomyopathy (ACM), with a particular focus on patients of Middle Eastern descent.

Pediatric cardiomyopathies are progressive heart muscle diseases often caused by genetic mutations leading to myocyte structural abnormalities. DCM and HCM are the most prevalent forms, accounting for 50-60% and 40% of cases, respectively. Despite treatment advances for heart failure and arrhythmias, the risk of sudden death remains, highlighting the critical need for ongoing research and tailored therapeutic strategies. This presentation will discuss the genetic underpinnings, clinical characteristics, updated outcomes, and the unique challenges faced in managing these conditions in pediatric patients, especially those of Middle Eastern descent.

Dr. Hamad Ali Yaseen
Associate Professor of Genomic Medicine. Kuwait University, Kwait

Biography

Dr. Hamad Ali is an Associate Professor of Human Genetics at Kuwait University›s Health Science Center and a Research Associate at Dasman Diabetes Institute. Dr. Ali earned his Bachelor›s degree in Molecular Genetics from Ohio State University in the US and continued his academic journey at Institute of Genomic Medicine at Newcastle University in the UK, where he obtained his Master›s and Ph.D. in Human Genetics. His research primarily focuses on Autosomal Dominant Polycystic Kidney Disease (ADPKD), where he strives to improve molecular diagnosis methods and enhance the understanding of genotype-to-phenotype relationships. Dr. Ali›s research endeavors are primarily supported by funding from the Kuwait Foundation for the Advancement of Sciences (KFAS) and the National Institutes of Health (NIH) in the US through his active collaboration with Mayo Clinic in Rochester, Minnesota. Dr. Ali was part of an international consortium that identified the third most common gene associated with Autosomal Dominant Polycystic Kidney Disease (ADPKD) last year. In addition to his academic pursuits, Dr. Ali plays a vital role in healthcare administration. He serves as the Secretary General of the Kuwait Society of Organ Transplant and heads the genetic arm at the ADPKD polyclinic in Great Mubarak Hospital, one of the main Ministry of Health hospitals in Kuwait.

Abstract

Autosomal dominant polycystic kidney disease (ADPKD) is the most prevalent monogenic renal disease that is characterized by the presence of fluid-filled cysts that develop bilaterally in the kidneys leading progressively to end stage renal disease. Currently there is a need for ADPKD early biomarkers and therapeutic approaches. Here, we profiled human urinary extracellular vesicles small RNAs by small RNA sequencing in patients with ADPKD and compared their differential expression considering healthy control individuals. Analysis to identify differentially expressed microRNAs (DE-miRNAs) and PIWI-interacting RNAs (pi-RNA) revealed that significantly dysregulated small RNAs in ADPKD patient urine extracellular vesicles. Using miRNet, we predicted 695 target genes for upregulated miRNAs and 254 target genes for downregulated miRNAs. We constructed the DE-miRNA-target gene regulatory network and analyzed its topological properties for high degree and bottleneck to pick up five 'driver' target genes (namely MCL1, EDC3, FMNL3, NACC1 and KCTD15) and five 'key' DE-miRNAs (namely miR-320c, miR-146a-5p, miR-199b-3p, miR-671-5p and miR-29c-3p).

Dr. Musallam Al Araimi
Consultant Clinical Geneticist, Ministry of Health Oman

Biography

Dr. Musallam Al-Araimi (MD, DCH, MSc, PhD) from Oman. Dr. Musallam is a clinical & molecular geneticist and the Head of Genetic counseling & Genetic Educational department in the national genetic center. He is an establishing member of the Omani society of inherited blood disorders.Dr. Al-Arami is a champion of genetics counselling; he instigated programs at the National Genetic Centre, a first of its kind in the region, to support the education of students, nurses, and doctorsfrom GCC countries. The idea of the program is to establish a genetic counselling unit in every governorate of the Sultanate, which aims to specialise in genetic counselling as a treatment and preventative measure when dealing with genetic disorders. Secondly, it is used to raise public awareness, by informing the public about genetic disorders and premarital testing.

Abstract

In the last decade when the advanced genetic diagnostic technologies implemented to promote the genetic health services in Oman at the National Genetic Centre (NGC), mysteries were explored in terms of identifying the etiology of many undiagnosed complicated cases with multiple congenital anomalies in Oman. Many syndromic phenotypes among which some were novel were allocated in certain patients and families and with the help of molecular-cytogenetic advanced technologies the pathogenic mutation was identified. This was revolution advancement in genetic health and genetic counseling services in Oman as it helped efficiently in promoting early rehabilitation interventions and future family planning. The presentation will elaborate more on this and the family genetic counseling and planning.

Mr. Boya Yu

Project Manager, Hope4Rare
China

Biography

Boya has been engaged in popular science writing and translation of popular science books since 2007. He published dozens of articles in Chinese newspapers and magazines, and hundreds of articles on his blog and self-media. Translated several books by Eric Kandel, the Nobel Prize winner in physiology or medicine, including his autobiography In Search of Memory.

He has been volunteering in the rare disease community for a long time. In 2022, he joined the Hope for Rare Foundation, the first non-profit foundation in China to focus on rare diseases research and translational medicine. He is responsible for the assessment and management of the rare diseases research grants.

Currently, as a core member of the organizing committee, Boya is fully engaged in the preparation of the 2024 Global Rare Diseases Research Symposium, which will be the largest rare diseases research conference ever held in China, with more than 1,000 rare disease researchers and stakeholders from all over the world attending.

Abstract

In China, rare diseases have become a growing concern in recent years, with the number of patients increasing each year. As a result, rare diseases research has gradually gained attention and become an important area of research in China. This talk will provide an overview of the challenges and solutions in promoting rare diseases research in China, with a special focus on the important role played by the Hope for Rare Foundation, the first non-profit foundation in China to focus on rare diseases research. Firstly, one of the challenges in promoting rare diseases research is the lack of professional research teams and research funding. Although China has made some progress in the field of rare diseases, most of the research is still carried out by individual researchers or small research teams and is poorly funded. Therefore, it is necessary to establish a professional and stable research team to promote research cooperation and resource sharing among universities and hospitals. In addition, the government and enterprises should also increase investment in this field to provide more funds for research. Secondly, another challenge is the lack of public awareness and support for rare diseases. Although the number of rare disease patients in China is increasing, most people still do not know much about these diseases, nor do they know how to support and help these patients. Therefore, the media and society should strengthen publicity and education on rare diseases, so that more people can understand these diseases and provide support and help for patients.

Dr. Luis Saraiva

Associate Director, Sidra Medicine
Qatar

Biography

In 2004, he completed a "Licenciatura" (B.Sc.+M.Sc.) in Biology at the University of Evora and Gulbenkian Institute of Science (Portugal). He then became a Fellow of the International Graduate School in Genetics and Functional Genomics of the University of Cologne (Germany), where he received his Ph.D. in Genetics (summa cum laude) in 2008. After spending a brief period as a visiting scientist at Harvard Medical School (USA), funded by the Boehringer Ingelheim Fonds, he became a post-doctoral scholar at the Fred Hutchinson Cancer Research Center (USA). In 2013, he was awarded the EBI–Sanger Postdoctoral (ESPOD) Fellowship and continued his postdoctoral training at the EMBL-European Bioinformatics Institute and the Wellcome Sanger Institute in Cambridge (UK). In 2014 he won a Sanger Early Career Innovation Award.

In 2015, he moved to Sidra Medicine (Qatar), where he is a Principal Investigator and leads the Disease Modeling and Therapeutics Lab at Sidra Medicine (Qatar). He also holds a Joint Faculty position at Hamad bin Khalifa University (Qatar). In recognition of his scientific achievements, his continued efforts to inspire younger generations to pursue science, and to promote science among the general public, he was awarded the Silver Medal of Merit by the Mayor of Manteigas (his hometown in Portugal) in 2020.

Abstract

Sidra Medicine is a leading academic hospital in Qatar, offering top-tier tertiary healthcare services and personalized medical care for women and children. Dr. Saraiva established and leads the Laboratory of Disease Modelling and Therapeutics at Sidra›s Research Branch. His lab develops and employs biological assays to uncover the molecular mechanisms involved in specific neural and metabolic processes. By doing so, they hope to advance fundamental science and translate their findings into innovative diagnostic and personalized treatment options for patients affected by conditions affecting the senses, brain, kidney, and heart. In his presentation, Dr. Saraiva will provide an overview of Sidra Medicine and discuss the strategies they use to diagnose and investigate the causes of rare diseases in patients.

Dr. B. R. Lakshmi
Founder & Managing Director, MDCRC
India

Biography

Dr. Lakshmi is the Director & Managing Trustee at MDCRC India. MDCRC (Molecular Diagnostics, Counseling, Care & Research Centre) located in Coimbatore, Tamil Nadu, is a not for profit charitable organisation lead by Dr.B.R.Lakshmi, working in the area of Public health towards the identification and prevention of a rare genetic lethal disorder namely Duchenne Muscular Dystrophy affecting only the male children. We have been playing a crucial role in identifying, preventing and setting the base for future therapeutic strategies of this disorder.

Abstract

A holistic model addressing the needs of individuals and families with Duchenne Muscular dystrophy (DMD) was found essential and this holistic model providing education, awareness, care and support evolved at MDCRC with its sensitive and committed approach. This initiative has also contributed and served as a base and replicative model for the policy makers.

Training and educating the grass root level health workers on the disorder, conducting camps, sample collection and molecular diagnosis followed by genetic counselling provides families with information about the disorder, inheritance patterns and empowering them to make informed decisions about family planning and understanding the risk of the disorder in future generations. This is followed by rehabilitation that plays a significant role in managing the symptoms and improving the quality of life for individuals with DMD. Regular clinical assessments, monitor disease progression and identify potential complications, allowing for prompt intervention.

A multidisciplinary clinical care team consisting of specialists mainly pediatricians, neurologists, cardiologists, pulmonologists and physical therapists collaborate to provide comprehensive care tailored to the specific needs of each patient family. The holistic approach also prioritizes providing psychological and social support services to individuals with DMD and their families, addressing emotional well-being, coping strategies, and social integration. The complete molecular work up also prepares the families for understanding the possibility to participate in future therapeutic strategies this comprehensive model created by MDCRC, apart from ensuring the best for the patient and their families, contributes to the nation by ensuring a working model that can be fine-tuned for each rare disorder, which will be a critical contribution for any policy decision.

Dr. Qurratulain Hasan

Founder & Managing Director, MDCRC
India

Biography

Dr. Qurratulain Hasan, PhD. FNASc is a Researcher, Counselor and Teacher/Trainer ofGenetics/Genomics. She is a senior consultant & HOD, Department of Genetics & Molecular Medicine, Principal Post Graduate Medical Education, Kamineni Hospitals and Research director of Kamineni Group, India. She has guided 21 PhD students as guide and 10 as Co-guide. She has more than 140 publications and 3 book chapters. A founder Coordinator of the first full time Post graduate Certificate Course in Medical and Genetic Counseling in India (2007-). Dr. Hasan is founder member and President of Board of Genetic Counseling, India (2014 - to date).

Abstract

Genetic counseling (GC) is a communication process which assists people to comprehend and adjust to the medical, psychological, familial, and reproductive ramifications of the hereditary contribution to health issues. One of the many facets of GC includes selecting the most appropriate test, facilitating the testing process, interpreting results, providing pre and post test counseling. Various disorders can be prevented or appropriately managed by providing information coupled with supportive counseling to patients/families/clinicians in the present Genomic Era.

Until a couple of decades back, GC was largely provided in low resource countries by general medical professionals or specialists of other fields like Gynecologists, Pediatricians, Oncologists, etc, who were not trained in Genetics, as the medical curriculum does not focus on Genomics. The Royal College of Physicians UK then recommended a workforce target of 6–12 genetic counselors per million population to support the World Health Organization›s (WHO), guideline of equitible healthcare for all using the advancements in Genomics.

The escalating demand for genetic counseling is propelled by the surge in individuals seeking genetic testing and the expanding implementation of genomic technologies in diagnosis, prognosis, management and prevention of both rare Mendelian disorders and common diseases with a genetic basis.

Dr. Mariam AlEissa

Genetic Innovation Consultant , Al Faisal University
KSA

Biography

Awarded Princess Nourah Bint Abdulrahman Prize For "Women's Excellence" Presented by Princess Fahadah Bin Falah AlHethlen in the field of health sciences. Assistant Professor, College of Medicine, Alfaisal University, KSA. Associate and principal investigator at the Artificial Intelligence Center at Alfaisal University, KSA. Worked at the Stanley Psychiatric Research Center, Broad Institute of MIT and Harvard, Cambridge, Massachusetts, USA. Worked for three years as a teaching assistant at University College London, UK. Visiting Researcher at the Analytical and Translational Genetics Unit, Massachusetts General Hospital, Boston, Massachusetts, USA. Founder and CEO of GENEration Health Company.

Abstract

Advancements in molecular genetics have accelerated research and progress in various fields of biology. This requires both a fundamental understanding of molecular genetics tools and hands-on experience in research. Scholars and healthcare providers from various backgrounds will be nourished with basic knowledge of molecular genetics. The workshop aims to provide the target group with an Overview of the genetics techniques applications for disease diagnosis or prediction. The training will combine scientific lectures to provide a thorough understanding of molecular tools and techniques. Participants are encouraged to discuss their ongoing practice or research, which will benefit them.

Dr. Wael Osman

Assistant Professor of Biological Sciences,Khalifa University
UAE

Biography

Dr. Wael Mohammed Osman is an Assistant Professor at Khalifa University College of Medicine and Health Sciences in Abu Dhabi, United Arab Emirates. He holds a medical degree from the University of Khartoum, Sudan, and a PhD in Molecular Genetics from the Graduate School of Medicine, University of Tokyo, Japan; the home of the Biobank Japan Project, and a major collaborator on the Human Genome Project. Additionally, he holds an MSc degree in International Public Health from Liverpool John Moores University, UK, and a Postgraduate Certificate in Clinical Research from Harvard Medical School, USA. Using association analyses and genome sequencing, he examines the genetics of metabolic traits (type 2 diabetes, gestational diabetes, obesity, and cardiovascular disease). Furthermore, he studies the genetic and metabolic factors involved in the development of diabetic kidney disease (DKD) and its complications. The goal of his research is to develop better prevention and treatment strategies for DKD. Additionally, he is exploring methods for combining traditional clinical data and medical diagnostics with modern big data analysis in order to improve the accuracy of his strategies. His current research involves the identification of genetic and metabolomic markers that can be used to detect 1) gestational diabetes mellitus and predict pregnancy outcomes, and 2) obesity, particularly among adolescents. In addition to genetic epidemiology, Dr. Osman also studies clinical epidemiology with a particular interest in the epidemiology of disease burden.

Abstract

A congenital anomaly refers to an abnormality of the bodys structure or function present at birth. In addition to ‹birth defects, ‹congenital abnormalities›, and ‹congenital malformations›, the latter is a more specific term. Depending on the location of the anomaly, it may be either major or minor, external, such as cleft lip, or internal, such as congenital heart defects.

Despite varying prevalence rates across regions, these conditions contribute significantly to childhood morbidity and mortality. Affected individuals may experience significant social, medical, and cosmetic consequences as a result of these complex conditions, and they are often in need of medical treatment.

Globally, it is estimated that 3 to 6% of newborns suffer from congenital disorders. According to a report by the World Health Organization, there were 270,000 deaths due to congenital anomalies in 2010.

Dr. Qurratulain Hasan

President . Board of Genetic Counselling India
India

Biography

Dr. Qurratulain Hasan, PhD. FNASc is a Researcher, Counselor and Teacher/Trainer of Genetics/Genomics. She is a senior consultant & HOD, Department of Genetics & Molecular Medicine, Principal Post Graduate Medical Education, Kamineni Hospitals and Research director of Kamineni Group, India. She has guided 21 PhD students as guide and 10 as Co-guide. She has more than 140 publications and 3 book chapters.

A founder Coordinator of the first full time Post graduate Certificate Course in Medical and Genetic Counseling in India (2007-).

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Abstract

Genetic counsellors (GC), are a cohort of adept healthcare professionals with specialized training in genomic medicine and counselling techniques. They play an integral role in current day medical practice by helping clinicians, individuals, families and communities to navigate the intricate implications of genetic contributions to diseases. The Royal College of Physicians UK has recommended a workforce target of -6 12 genetic counsellors per million population, highlighting the importance of an adequately sized genetic counselling workforce.

Currently, the global (GC) community consists of approximately 7000 practitioners, of these maximum are in the USA (~5000), this indicates the requirement in other parts of the world where their demand is escalating propelled by the surge in individuals seeking genetic/ genomic testing. Realising this importance of qualified GCs in current day healthcare over 28 countries have genetic counselling programs now. However, the lacuna in the MENA region has to be established prior to planning a sustainable training and certification program to meet the growing demand for these professionals.

The WHO and HUGO both are supporting the introduction of Genetic/Genomic medicine in routine healthcare to benefit everyone globally. This will not become a reality unless well trained GCs help liaise with the clinical fraternity, patients, family and policy makers.

Dr. Zeina Almahayri

Pharmacogenomic Education Coordinator UAEU / The Golden Helix Foundation UK, UAE

Biography

Dr. Zeina is a distinguished pharmacogenomics scientist and a passionate advocate for precision medicine. Holding a Ph.D. in Pharmacogenomics from the United Arab Emirates University (UAEU), she further honed her expertise as a postdoctoral fellow at the same institution, dedicating three years to advanced research. Her contributions are notably pioneering in the field of pharmacogenomics within the region, having authored over twenty publications in esteemed international journals. Her work is particularly recognized for uncovering rare and novel genetic variants among Arab.

An engaged member of the scientific community, Dr. Zeina actively participates in international consortia and holds positions on editorial boards of various scientific journals. Her commitment to education, fortified by her completion of the «Teaching in Medicine» program at Harvard Medical School, drives her to disseminate knowledge on pharmacogenomics with a focus on Middle Eastern populations. Utilizing the latest teaching methodologies, she aims to enhance understanding and application of this critical field.

Currently serving as an Educational Specialist with the UK-based Golden Helix Foundation, Dr. Zeina is deeply involved in various educational initiatives. Through her role, she is dedicated to advancing the integration of pharmacogenomics into clinical practice, thereby contributing to the global movement towards more personalized and effective healthcare solutions.

Abstract

ackground: In the era of personalized medicine, governing the human genome necessitates integrating advanced computational tools to manage and interpret the burgeoning volume of genetic data. Moreover, the interplay between genetics and drug response, central to pharmacogenomics, is pivotal in advancing personalized medicine. However, the representation of diverse populations in pharmacogenetic data remains uneven, with limited data on Arab populations.

Aim: This study exemplifies the synergy of artificial intelligence (AI) and big data analytics in pharmacogenomics, explicitly targeting the underrepresented Arab population.

Methods: We conducted an extensive systematic review of 616 studies, employing AI algorithms to filter and analyze data efficiently.

Results: Our final collection included 424 studies. We identified variants in 20 pharmacogenes and mapped prevalent pharmacogenetic variants among Arabs.

Prof. Thanyachai Sura

Professor of Medicine, Mahidol University, Nakhon Pathom (MU) , Thailand

Biography

Dr.Thanyachai Sura, Professor of Medicine in the Medical Genetics and Genomics unit Department of Medicine at Ramathibodi Hospital Mahidol University Bangkok Thailand. Dr.Sura finished his training in Internal Medicine at Faculty of Medicine Ramathibodi Hospital Mahidol University then he had his further training in Molecular Genetics England.He joined the Medical Genetics unit at Department of Medicine, Ramathibodi Hospital in 1995.Dr.Sura's research interest is in molecular diagnosis of genetic diseases and undiagnosed diseases. Hepublished more than 90 articles in national and international peerreviewed medical journals. He is a cofounders of the Medical Genetics training program in Thailand in 2019 and Genetic Counselling training program for healthcare personnel in 2020.Dr.Sura is currently the President of Medical Genetics and Genomics Association of Thailand (MGGG) and the Immediate Past President of Asia Pacific Society of Human Genetics (APSHG)

Abstract

The global average prevalence of rare disease (RD) is 1 in 2,500 people (Richer et al., 2015). More than 80% of RD are inherited and can manifest in adults, some are nonspecific leading to a major reason why rare diseases go undetected. RD can affect any organ system and clinical manifestations could vary from those of acute life-threatening situation to subacute and chronically ill.

Disease progression causes wide range of effects, with rapid life-threatening deteriorate on over hours, episodic with intermittent decompensations and asymptomatic intervals, or insidious with slow degeneration over decades. Late-onset forms of RD tend to display attenuated phenotypes, which in some instances are associated with one or more clinical manifestations that differ from the classic clinical picture described in children. One of the positive keys for diagnostic approach in adult RD is facilitated by the fact that the human body systems are already mature, therefore clinical presentations are more homogeneous than in children, in whom clinical signs usually differ depending on their stage of maturation.

Dr. Jon Andoni Urtizberea

Head of Institute of Myology. Salpetriere University Hospital France

Biography

J. Andoni URTIZBEREA, (MD, MSc), aged 64, is a French physician trained in Paris University, France (1983-1987) and certified both in paediatrics and PMR (physical medicine and rehabilitation). After additionally graduating from the Institut d'Etudes Politiques de Paris in 1987, he served many years as Medical Director of the AFM-Telethon and then as General Delegate of the Institut de Myologie of Paris (1993-2000). As Scientific Director of the European Neuromuscular Center in the Netherlands (ENMC, 1999-2005), and with the AFM-Téléthon's support, he contributed to the establishment of many global networks in myology. He served till December 2019 as part-time clinical myologist in Hendaye Hospital, France (APHP trust) and as deputy coordinator of the French Neuromuscular Network (FILNEMUS) in Marseilles. Over the past twenty years, he headed various worldwide educational events dedicated to myology (in Europe, Russia, Latin America and, more recently in the Middle-East). He is currently a faculty at the Institut de Myologie of Paris, France, running the Summer School of Myology of Paris. He is a regular visiting professor in various countries and a consultant for several pharma. Ideally located at the intersection of academia, patient advocacy groups and industry, his main objective is to raise more awareness about these rare conditions notably in emerging countries. He is currently the founder and chairman of "Myologie Sans Frontières" a humanitarian NGO dedicated to education and relief for neuromuscular patients.

Abstract

Gene editing (GE) is nowadays part of the therapeutic arsenal to tackle hereditary diseases. Among the constellation of approaches meant to fix a genetic defect, GE seems to be a more efficient and more targeted technique.

There are four main families of nucleases, or molecular scissors to achieve successful gene editing. Today the best known are the CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats)-Cas9 scissors. Three other families of molecular scissors are also used: meganucleases, zinc-finger nucleases (or ZFNs) and transcription activator-like effector nucleases (or TALEN).

The CRISPR/Cas9 system enables to cutting of a DNA sequence at a precise point of the genome, in any cell. A "guide RNA" is created, which targets a particular DNA sequence, associated with the Cas9 enzyme, which cuts the DNA. Once the DNA sequence has been cut, the cell repair systems will re-bind the ends of the two DNA pieces created by cutting. Then, depending on the protocol, the targeted gene can then be corrected, repaired or deactivated.

More recently, "BASE editing", an adaptation of the CRISPR system, has been developed. This precise editing method involves changing single nucleotides. It has the advantage of not requiring DNA strands to be broken, which avoids the insertions and deletions associated with breakage of DNA strands.

Dr. B. R. Lakshmi

Founder & Managing Director. Molecular Diagnostics Counselling Care and Research Centre India (MDCRC). India

Biography

Dr. Lakshmi is the Director & Managing Trustee at MDCRC India. MDCRC (Molecular Diagnostics, Counseling, Care & Research Centre) located in Coimbatore, Tamil Nadu, is a not for profit charitable organisation lead by Dr.B.R.Lakshmi, working in the area of Public health towards the identification and prevention of a rare genetic lethal disorder namely Duchenne Muscular Dystrophy affecting only the male children. We have been playing a crucial role in identifying, preventing and setting the base for future therapeutic strategies of this disorder.

Abstract

A holistic model addressing the needs of individuals and families with Duchenne Muscular dystrophy (DMD) was found essential and this holistic model providing education, awareness, care and support evolved at MDCRC with its sensitive and committed approach. This initiative has also contributed and served as a base and replicative model for the policy makers.

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Dr. Chao Liu
CEO
Hemogen, China

Biography

CEO of Hemogen Therapeutic Co., Ltd, an Overseas High-Talents of Shenzhen, got his postdoctoral training in the University of California, San Diego, and hold a Ph.D. degree from the Institute of Genetics and Developmental Biology at the Chinese Academy of Sciences, recipient of the Chinese Academy of Sciences President›s Scholarship and the American Heart Association Postdoctoral Fellowship. In February 2018, he joined the BGI-Research, where he was responsible for preclinical research and clinical translation of the thalassemia gene therapy project, as well as serving as head of the Cell Engineering Center. In July 2021, he founded Hemogen Therapeutic (HGI, a subsidiary of BGI group) as CEO, and lead the team to successfully conduct clinical trial and help multiple thalassemia patients free from transfusion-dependence. He has published 15+ SCI articles, applied for 6 patents and has 4 software copyrights. He has participated in several provincial, municipal, and national projects and has led one General Program of National Natural Science Foundation of China. He is currently a principal investigator in genomics since 2020.

Abstract

Hemoglobinopathy, one of the most common genetic disease around the world, is particularly prevalent in Gulf Cooperation Council (GCC) region. The advent of gene therapy, an emerging cutting-edge technology and innovative approach, has demonstrated promising results for hemoglobinopathy treatment. Here in this talk, I will share the lastest progress of our gene therapy product, HGI-001 injection, developed to address transfusion dependent beta-thalassemia (TDT) and also sickle cell disases (SCD).

In our clinical trial, five TDT patients who received the HGI-001 injection treatment have successfully stopped blood transfusions, with the longest duration exceeding 36 months and an average duration of 24.2 months, ranging from 14 months to 36 months. HGI-001 injection operate through a lentiviral vector to express therapeutic gene under the regulation of specific promoter, ensuring the safety and efficacy of this product, and suggesting this platform is adpatable for other genetic diseases. Additionally, the fully enclosed and automated manufacturing process, significantly enhance the product stability and cost-effectiveness. Currently, we has established cooperation with regions in Southeast Asia and the Middle East, advancing the globalization of the product to benifit local communities.

Dr. Noor AlSaadoun
Director of Health Innovation Biotechnology Incubator & Health Tech Unit, Al Faisal University, KSA

Biography

Noor Asaad Al-Saadoun, a notable figure at Alfaisal University, holds a Master of Science in Medical Sciences, with a concentration in Cancer Biology from the University of Calgary. Her professional training includes stints at Tokyo›s National Cancer Center and Calgary›s Tom Baker Cancer Center, enhancing her expertise. Noor›s international stature is evidenced by her array of awards and her active involvement in key global conferences and training programs, including notable recognitions like the 2017 IASLC Researchers Award and the 2021 Aramco Innovative Solutions Award.In her roles at Alfaisal University, Noor directs the Alfaisal Health Innovation Biotechnology Incubator and the Health Tech Unit, and she also leads the innovative Metaverse for Health Academy, designed for young participants in the university›s Enrichment Programs. As a Stanford University-certified Women in Data Science (WiDS) Ambassador, Noor fosters global partnerships to drive forward health innovations, making her a key visionary and leader within the Saudi community at Alfaisal, especially in the intersection of AI, health policy, and digital health technologies. Adding to her portfolio, Noor is a board member of the GCC Taskforce on Workforce Development in Digital Healthcare (ZIMAM), an NGO established in Dubai committed to creating a sustainable digital health ecosystem in the GCC region. This role highlights her dedication to advancing digital healthcare in the Gulf.Currently, Noor is pioneering the establishment of the first University SandBox at Alfaisal University. This initiative is set to be a groundbreaking platform for testing digital regulatory solutions, aiming to enhance the integration of AI into the healthcare ecosystem while upholding the highest standards of quality, privacy, and integrity. This project further demonstrates Noor›s commitment to driving innovation and excellence in the healthcare.

Abstract

As nations globally navigate the complexities of healthcare advancement, the emergence of AI-powered personalized medicine offers a promising horizon. This paradigm, particularly resonant in regions with a high focus on technological healthcare innovations and a notable prevalence of genetic disorders, stands as a beacon of modern medical potential.

This presentation will delve into the transformative journey from data to action, highlighting how artificial intelligence is being harnessed to decode the vastness of genomic information into tailored, individualized medical interventions. It will underscore the significance of this shift not only in enhancing treatment efficacy and patient outcomes but also in bridging the chasms of global health inequities.

Mark Bartlett
CEO
Storegene, UK

Biography

Mark has an MSc in Pharmacogenetics and Stratified medicine from UCL, and has published research on clinician barriers to genetics. Having over 10 years experience working in Digital Health startups. In 2012 he founded the award winning pharmacogenetics company Geneix, which promoted a digital approach to whole genome interpretation for guiding safer prescription. During his time there, he led a team of 6 individuals, secured over 150,000£ in funding and represented the company at international events and political forums. From 2020-2016 Mark used his experience to support the growth of scale-up digital Health company DrDoctor and was responsible for account management, implementation and customer success, retaining and supporting clients with a %100 success rate. He co-founded London Bioinformatics and has hosted conferences with the Royal Society of Medicine's Medical Genetics section. As a trained ski instructor he is happy in the mountains equally excited about joining a wadi-bashing tour.The discussion around implementation of genomics into mainstream clinical research could not be more relevant than ever. If you are a forward-looking clinician or policy maker who would like to discuss progress in the field do reach out.

Abstract

Genome data provides benefits over comparative diagnostics in healthcare. Diagnostic yield improved by up to 24% in monogenic assessments compared to targeted panels1; risk assessment enhanced accuracy by 12% through polygenic risk scores integrated with conventional scoring methods2; and adverse drug reactions were found to reduce by up to 30% through precision medicine in pharmacogenomics3.

Over the last decade AI has further improved the integration of genomics into routine clinical care:

- Monogenic - deep learning models (e.g. Deepmind's AlphaFold2 extension Alpha Missense) has classified >1.28 million variants as pathogenic.
- Polygenic - Risk scores developed using random forest models have significantly improved accuracy of risk stratification4.
- Pharmacogenomic – discovery of pharmacogenes has ensured early identification.

Dr. Mariam Eldesouky
Research Assistant
MBRU, UAE

Biography

Dr. Mariam Eldesouky's research is focused on the automation of large-scale clinical genomic data and its integration with Artificial Intelligence (AI), patient phenotypic observations and other healthcare components. She is a critical part of a large-scale genomic project spearheaded by the Center for Applied and Translational Genomics (CATG), led by Dr. Mohammed Uddin, director of CATG She is also part of a biotech in Canada, GenomeArc Inc. that specializes in clinical genome interpretation and integration.

Abstract

Whole genome and Whole Exome Sequencing have shown great impact in the diagnosis, treatment, and prevention of diseases. Additionally, the advances in long-read and short-read sequencing methods have enabled the detection of a large amount of single nucleotide variants (SNVs)and structural variants (SVs). Despite these developments, the interpretation of genetic variants remains a huge bottleneck in genomics. Although there are standard guidelines established by the American College of Medical Genetics (ACMG), the manual process of filtering variants moves at a much slower pace than the data generated. To streamline the functional classification process, we have developed an interpretation tool, Horizon, for automating the implementation of ACMG guidelines for clinical genetic diagnosis support. Through the integration of Artificial Intelligence (AI), Horizon integrated a clinical language model to construct a gene panel based on the patient phenotypes. Variant annotations results are in 99% concordance with ANNOVAR annotations. To assess the sensitivity and specificity of detecting diagnosable (damaging) variants, Receiver Operating Characteristic (ROC) curve analysis has shown 96% accuracy in the detection of clinically diagnosed SVs. Data used in the platform and in validation are from genetically diverse populations showing a balanced representation of the model's accuracy. The automation of clinical genetic data interpretation has shown significant reduction in time and costs of genetic diagnosis. Our study shows promise in deciphering genomics at a large-scale with high accuracy providing better outcomes in research and healthcare.

Dr. Sana Farid
Director of the Extended Reality Lab, Prince Sultan University, KSA

Biography

Dr. Sana Farid is a Medical Practitioner, Entrepreneur, and Futurist, she is a pioneer in using Virtual and Augmented Reality to improve lives. Recognized as a top 100 XR voice globally, Dr. Sana designs industry standards for using XR technologies, crafting best practices and implementation strategies that pave the way for a brighter future.

Abstract

Imagine a world where healthcare knows no borders, no limitations, and no bias. A world where cutting-edge technology transcends physical barriers and socio-economic divides to bring healthcare directly to you. «Beyond Borders, Beyond Bias: Can Extended Reality Revolutionize Healthcare Equity?» dives into this exciting possibility.

This discussion is more than just a conversation; it›s a call to action. We›ll explore how Extended Reality (XR) has the potential to revolutionize healthcare access, ensuring everyone, regardless of background or location, receives the care they deserve. Join us as we delve into the power of XR to dismantle barriers and forge a future where empathy and expertise are delivered virtually, erasing inequalities, and building a healthier nation, together. This is your chance to be a part of the revolution. Let›s explore the potential of XR to heal not just bodies, but the very fabric of our society, creating a future where healthcare is a right, not a privilege.

Dr. Khadija Alawi
Senior Analyst, Insilico
UAE

Biography

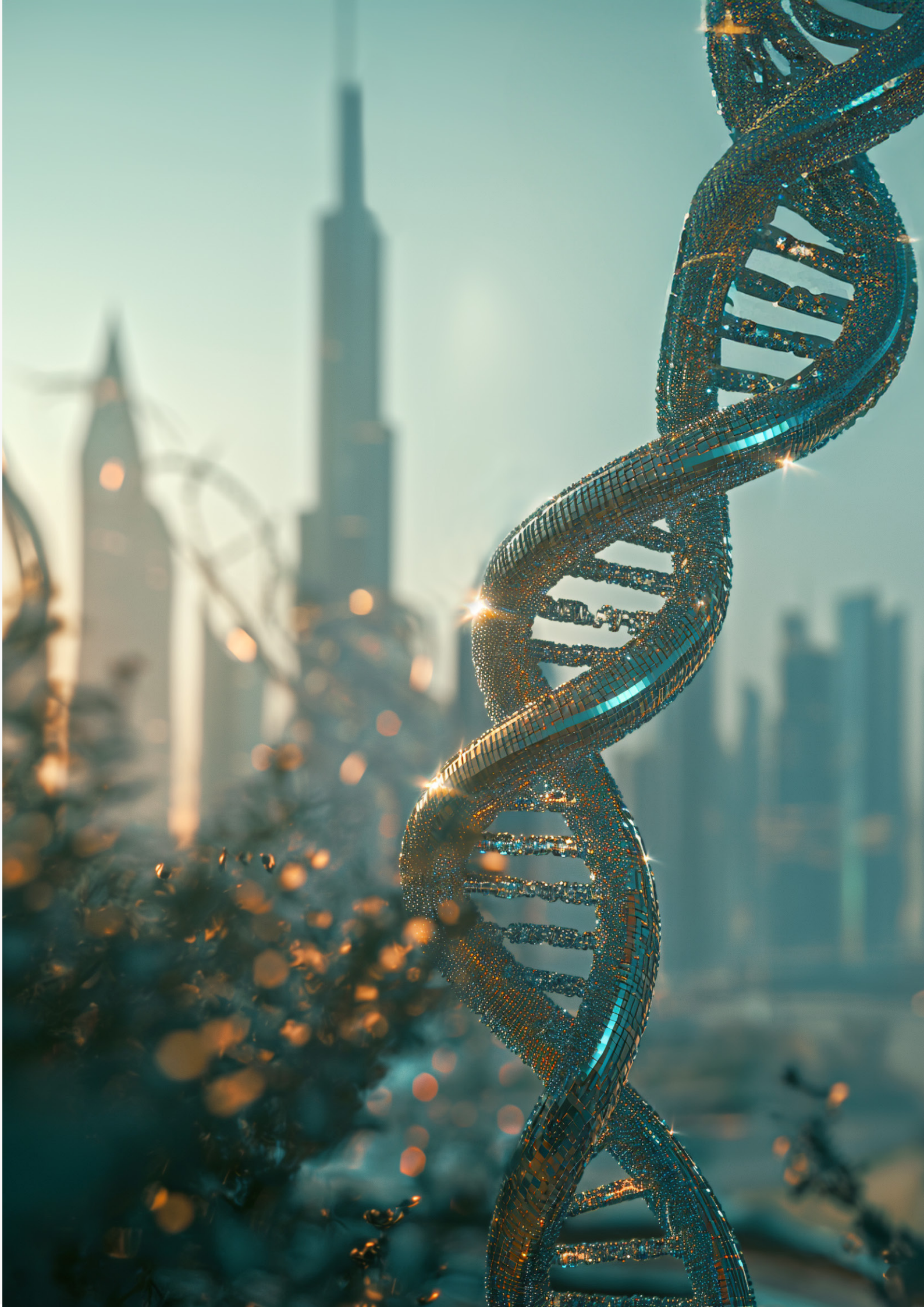
Khadija Alawi is an experienced preclinical biologist in drug discovery, with a background spanning diverse therapeutic areas. Her journey began during her doctoral training at King's College London, where her passion for understanding biology in health and disease was ignited. This scientific interest has since driven her from academia and into the biotech industry, where she has made significant contributions to the field. Khadija›s career in drug discovery has been marked by pioneering work such as research in gene therapy highlighted by progressing candidates from proof-of-concept to human trials, to novel approaches in small molecule drug discovery programs.

At Insilico Medicine AI, Khadija leverages her expertise to interpret complex omics data, collaborating closely with multidisciplinary experts utilizing Insilico's cutting-edge cloud-based software platform, PandaOmics driven by artificial intelligence (AI) to solve complex biomedical problems including, but not limited to, discovering therapeutic targets and biomarkers. Her contributions to several publications in prestigious scientific journals with over 900 citations, several featured articles, attest to her expertise and dedication to advancing scientific knowledge.

Khadija›s passion for delivering impactful therapies extends beyond her research, as she actively engages in science communication at international conferences. With a deep commitment to improving patient outcomes and addressing unmet medical needs, Khadija›s overarching goal is to drive advancements in drug discovery, bridging the gap between cutting-edge research and clinical application, ultimately making a meaningful difference in patients lives.

Abstract

We present a highly capable generative AI multimodal model series capable of age prediction, generation of synthetic biological data, target discovery, disease modelling, and many other tasks. We will also show the evolution of AI aging clocks and the aging biomarkers developed in the MENA region.



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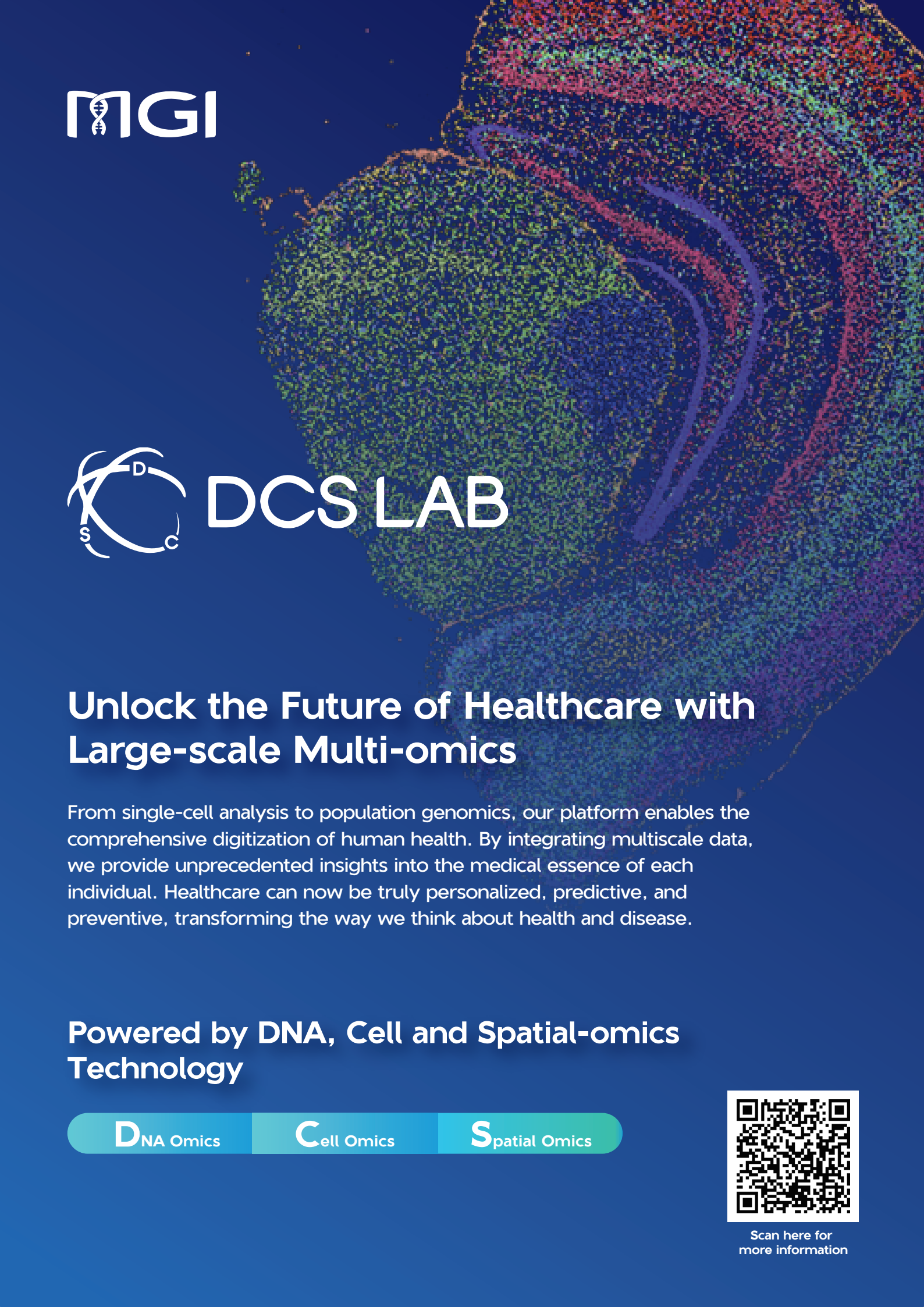

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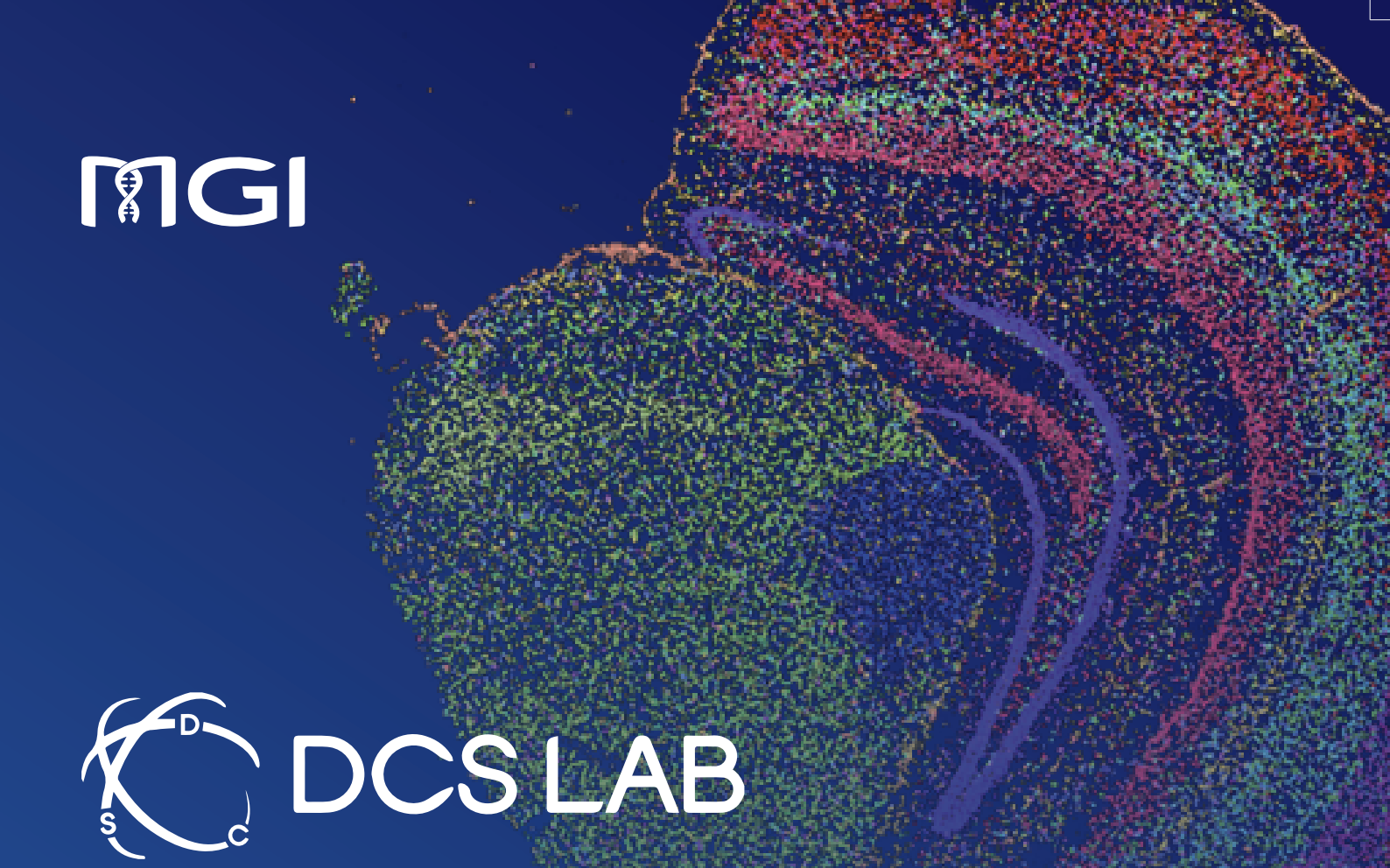

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