



إكسبو 2020
دبي الإمارات العربية المتحدة
DUBAI UNITED ARAB EMIRATES



المجلس العالمي
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SPACE WEEK

17-23 October 2021



HOPE AND PERSEVERANCE

Lessons from the Red Planet for Life on Earth

in collaboration with the USA

DATE Thursday, 21st October 2021

TIME 4.00 to 6.00 PM UAE

VENUE Terra - The Sustainability Pavilion



THE CONVERSATION TOPIC

HOPE AND PERSEVERANCE

Lessons from the Red Planet for Life on Earth

Mars missions are gaining momentum and generating a new flow of scientific information and discovery that may well contribute to our understanding our own planet's trajectory.

On the 9th of February 2021, the UAE made history when its "Hope" spacecraft, the Arab world's first mission to another planet, successfully entered Mars' orbit to begin a two-year data-collecting operation. Nine days later NASA's "Perseverance" rover gently touched down in the Jezero Crater of Mars, the ninth spacecraft to successfully land on the Red Planet.

In a year of great global challenges here on Earth, Hope and Perseverance are not just major achievements in our quest to explore space. Like their evocative names, they are symbols of the importance of a spirit of international collaboration, and a perspective that goes beyond national boundaries and interests.

For centuries, Mars has been a source of inspiration for explorers, scientists and authors. Recent missions have deepened our knowledge of the planet significantly and shown that it has characteristics and a history similar to Earth's. The exciting possibility of finding life elsewhere in the universe and new answers to our questions is prompting more

countries and other players to participate in efforts to put humans on Mars.

Why is exploring Mars so important?

What should we prioritise in our efforts to explore Mars?

Are we still racing to space or have we entered a new era of collaboration?

Will we see humans on Mars in our lifetimes?


MODERATOR

SAEED AL GERGAWI
Director, Dubai Future Academy, UAE

Saeed Al Gergawi is the Director of the Dubai Future Academy, the capacity-building arm of the Dubai Future Foundation, which works in building and developing capacity in future foresight by empowering leaders with the skills necessary to adapt to the future. Prior to joining the Dubai Future Foundation, Saeed worked as the Program Manager for the "Mars 2117" initiative at the Mohammed bin Rashid Space Centre, the UAE's 100-year space exploration strategy. In addition, Saeed was a member of the strategic planning team for the Emirates Mars Exploration Project "Probe of Hope".


PARTICIPANTS

DR DIMITRA ATRI
**Mars Research Group, Center for Space Science,
New York University Abu Dhabi, UAE**

Dr. Dimitra Atri leads the Mars Research Group at the NYU Abu Dhabi Center for Space Science along with Prof. K.R. Sreenivasan. Using data from various space missions, his group is investigating how Mars lost most of its atmosphere and the possibility of finding extinct or extant life on the planet. He is using NASA's MAVEN mission and plans to use UAE's Hope mission data to answer the former, and NASA's Curiosity and Perseverance rover data to answer the latter. He is also interested in human space exploration and is investigating how radiation in outer space impacts astronauts in long-term space missions, especially for future crewed missions to Mars (Mars 2117). He is also developing strategies on how to sustainably explore moon and Mars in the coming decades. Before working at NYU Abu Dhabi, he was a Research Scientist at the Blue Marble Space Institute in Seattle (USA) and a Visiting Scientist at the Tata Institute of Fundamental Research in Mumbai (India). He earned his PhD in Physics from the University of Kansas (USA). He is a lead author of numerous publications in international peer-reviewed scientific journals. He regularly serves on committees of NASA and NSF, and referees for major astrophysics, planetary science, and astrobiology journals.

DR JOSÉ A RODRÍGUEZ-MANFREDI
Scientist, Department of Advanced Instrumentation at INTA - Centro de Astrobiología, Spain


José A Rodríguez-Manfredi is a scientist in the Department of Advanced Instrumentation at INTA - Centro de Astrobiología (CAB) in Madrid, Spain, of which he was head of department from 2010 to 2015. Since 2012 he has been the Principal Investigator of the Space Instrumentation Research Group at CAB.

Dr. Rodríguez Manfredi is the Principal Investigator of the TWINS (Temperature and Winds for InSight) space instruments on NASA's InSight mission (on Mars since November 2018), and MEDA (Mars Environmental Dynamics Analyzer) on NASA's Mars 2020 mission (on Mars since February 2018). He is also co-investigator and mission manager of the REMS (Rover Environmental Monitoring Station) instrument that has been exploring Mars aboard Curiosity since 2012.

Dr. Rodríguez Manfredi has led as Principal Investigator, or contributed as researcher, to numerous Research and Development projects funded by the European Commission, the State Research Agency (and previous equivalent agencies), as well as autonomic and local agencies, and other institutions.

His interest is focused on the science and development of instrumentation for the characterisation of environmental and geobiological conditions of the subsurface of other planets, especially Mars. Dr. Rodríguez-Manfredi is also very involved in science outreach, participating actively in outreach programs, and talks in schools, universities, etc.



DR MICHAEL A. MEYER

**Lead Scientist for the Mars Exploration Program,
NASA Headquarters, USA**

Michael Meyer is a Senior Scientist at NASA Headquarters in the Science Mission Directorate. He is the Lead Scientist for NASA's Mars Exploration and for Mars Sample Return Programs, responsible for the science content of current and future Mars missions.

Dr. Meyer was the Senior Scientist for Astrobiology from 2001 to 2006. The Program, which is dedicated to the study of the life in the universe, started in 1997 with Dr. Meyer as the Discipline Scientist. Since 1993, Dr. Meyer managed NASA's Exobiology Program and from 1994 to 1997, was also the Planetary Protection Officer for NASA. Dr. Meyer was the Program Scientist for the 2001 Mars Odyssey mission, the Mars Microprobe mission (DS-2), and for two Phase I Shuttle/Mir experiments.

Dr. Meyer's primary research interest is in microorganisms living in extreme environments. He has conducted field research in the Gobi Desert, Negev Desert, Siberia, and the Canadian Arctic. He is also a veteran of six research expeditions to Antarctica and two summers working as a treasure salvager.

Dr. Meyer earned his Ph.D. and M.S. in oceanography from Texas A&M University (1985 and 1981) and his B.S. in biology from Rensselaer Polytechnic Institute (1974).

OMRAN SHARAF

**Project Director, Emirates Mars Mission (Hope Probe),
Mohammed Bin Rashid Space Centre, UAE**

Omran leads the Emirates Mars Mission. He and his team are responsible for directing, managing, and supporting the different ongoing activities within the mission and identifying new science-led strategic opportunities through the mission for the United Arab Emirates.

An experienced engineer who trained in the US and Korea, Omran was responsible for developing and implementing the Command & Data Handling Subsystem (C&DH) for the DubaiSat-1 high resolution LEO imaging satellite. He was responsible for both the system engineering and C&DH for the DubaiSat-2 project, which added complementary high resolution panchromatic and multispectral imaging capabilities. From 2011 to 2014, Omran was Director of Space Image processing and Analysis Department, developing solutions for satellite image utilisation in various applications.

He is a member of the UAE's delegation to and former chair of the International Committee on Global Navigation Satellite Systems (ICG). He has also formed part of the UAE's delegation to the United Nations Committee on Peaceful Uses of Outer Space (UNCOPOUS) since 2010.

Omran holds a bachelor's degree in Electrical Engineering from the University of Virginia and a master's degree in Science and Technology Policy from the Korea Advanced Institute of Science and Technology (KAIST).





RANDY LYCANS

Vice President and General Manager, Nasa Enterprise Solutions (Jacobs), USA

Randy Lycans is Jacobs Vice President and General Manager of the NASA Enterprise Solutions organization. Randy oversees Jacobs support to NASA at Johnson Space Center, Kennedy Space Center, Marshall Space Flight Center, Langley Research Center, and the White Sands Test Facility. Prior to this role, Randy served as the Program Manager for the MSFC engineering and science support for 14 years. As the MSFC PM, he was responsible for providing scientific, engineering, and technical support to MSFC’s Engineering Directorate, Science and Technology Office, Flight Programs and Partnerships Office, as well as future programs and projects.

Prior to serving as the PM, Randy was the Deputy General Manager and Director of the ESTS Group’s Engineering Directorate where he supported programs such as the Space Shuttle Return-to-Flight, the International Space Station, and the development of microgravity materials science experiments. Randy has more than 41 years of experience, the bulk of which has been spent supporting the human space flight program at NASA MSFC in various management and technical roles. He is experienced in thermal analysis and design, wind tunnel test support, and launch vehicle design and development.

Randy was selected as a NASA Space Flight Launch Honoree in 2003 and has authored a number of technical papers and journal articles. He was elected as an American Institute of Aeronautics and Astronautics (AIAA) Associate Fellow in 2016 and serves on the AIAA Management Technical Committee. In 2013 he received the AIAA Holger Toftoy Award for significant leadership of the MSFC engineering support contracts, providing outstanding engineering, technical and science support to major NASA MSFC programs, including Space Shuttle, International Space Station and Space Launch System. He is a member of the University of Huntsville (UAHuntsville) President’s Council and previously served as chair for the National Space Club – Huntsville and chair of the SciQuest Hands on Science Center.

MAZLAN OTHMAN

Director of the International Science Council (ISC) Regional Office for Asia and the Pacific (ROAP), Malaysia

Mazlan obtained a Ph.D. in Astrophysics from the University of Otago, New Zealand, and became a lecturer at the Universiti Kebangsaan Malaysia (UKM) in 1981. Seconded to the Prime Minister’s Department in 1990 to set up and head the Planetarium Division, which subsequently became the Space Science Studies Division in 1993. Appointed by Universiti Kebangsaan Malaysia as Professor of Astrophysics in 1994, she was appointed Director of the United Nations Office for Outer Space Affairs (UNOOSA) in Vienna, Austria in 1999, and returned to Malaysia to become the founding Director General of the National Space Agency (ANGKASA) beginning of July 2002. In this capacity she established the National Observatory in Langkawi and National Space Centre in Selangor. She headed the National Angkasawan (Astronaut) Programme, which saw the launch of the first Malaysian to the International Space Station in 2007. She was responsible for the launch of Malaysia Remote Sensing Satellites : TiungSAT and RazakSAT and she attended the Advanced Management Programme (AMP169) at Harvard Business School in 2005.

She resumed her post as Director of UNOOSA in December 2007 upon retirement from the Malaysian Civil Service and was appointed Deputy Director-General of the United Nations Office at Vienna (UNOV) in June 2009. She retired from the United Nations in December 2013 and was appointed Project Director of Mega Science 3.0 at the Academy of Sciences Malaysia (ASM) 2014-2016.

She became Professor Emeritas at UKM in 2015 and was a Fulbright Scholar at the Space Policy Institute of George Washington University, 2015-2016, and elected Senior Fellow of ASM in 2016.

She co-chaired the ASM Malaysia Foresight 2050 initiative, and is currently the Director of the International Science Council (ISC) Regional Office for Asia and the Pacific (ROAP) since 2017.

