

27 - 29

APRIL

2022



INCREASING STUDENT INTEREST AND ENGAGEMENT IN SPACE EXPLORATION CONFERENCE

BRINGING SPACE INTO THE
CLASSROOM AS A GATEWAY TO STEM



FASESA
FUTURE AFRICAN SPACE EXPLORER'S STEM ACADEMY



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INTRODUCTION

Space exploration is an emerging global megatrend and recent developments in space travel may be setting the stage for a striking new era of Space Exploration. As evidenced by the recent leaps and strides in space exploration by the likes of Sir. Richard Branson, Elon Musk, and Jeff Bezos, space exploration is an expanding vocation that will provide vast socio-economic benefits to a nation.

FASESA understands that cultivating an interest in space exploration begins at a young age. Through introducing the vocation to children, then guiding and equipping them with the resources and skills to explore the subject further, will greatly increase a nation's ability to produce thought leaders in the field, who will form the basis of future space programs

ABOUT THE CONFERENCE

The Conference offers a great opportunity to the African teachers, administrators, education officials, and students to get acquainted with the Space exploration in the curriculum, and each other. Space education experts sharing new teaching methodologies with African institutions will make a long-lasting connection. This unique event will serve as a model, transferable to other K-12 institutions and lead to deep space contributions and societal engagement from future space leaders.

This event will bring together teachers, administrators, managers, students, and our space education experts to discuss current challenges and innovative solutions for Increasing Student Interest and Engagement in Space Exploration.

This event will offer teachers a first-hand opportunity to learn about how space exploration in the curriculum is important in early childhood education and beyond

CONFERENCE

- Participants will gain an understanding of the skills that can be taught to students that translate to future real-world career success in space. These include space engineering concepts, and teamwork capabilities, as well as interpersonal skills like service, communication, leadership, and civic engagement.
- Teachers will understand how to introduce new space-based lessons directly in classroom settings to impact an even greater number of students.
- Administrators and education officials will learn how to introduce career planning to parents and students that will impact the space pipeline when students choose space as a major.
- Participants will gain skills that translate to future real-world career success in space. These include space preparedness and teamwork capabilities as well as interpersonal skills like service, communication, leadership, and civic engagement.

CONFERENCE AIM

The teachers and students need to know and understand what the Space Science Sector is and the career opportunities it offers. "Space" does not mean they have to be an Astronaut. The impressive development of Space Applications gives immense opportunities to those who study IT, Agronomy, Biology, Chemistry, Nutrition, Geography, Medicine, Law, Management, Communications, Electronics, Physics, and so on



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DAY 1

Who should attend? -Teachers, Principals, Ministry of Education, Ministry of science and technology officials' and Space Agency representatives

TOPICS:

09:00 introducing space exploration in the classroom

- How children learn about space, & what their conceptions of space exploration are?
- Data at Your Fingertips: The Use of Citizen Science in a Variety of Classroom Contexts
- Use of model satellite-CanSat in applied teaching of satellite technology.
- Teaching coding and Cybersecurity using robotics

13:00 Lunch

- Robotics use in Middle grades
- "Build Your Own" hands-on STEM projects

16:00 End of Conference



DAY 2

Who should attend? -Teachers, Principals, Ministry of Education, Ministry of science and technology officials' and Space Agency representatives

TOPICS:

09:00 Entrepreneurship and Aerospace

- How to organize a space career day at your school?
- How to integrate space projects into your classroom
- Why is space so important?
- Space Scholarships, internships, and more

13:00 Lunch

- Improvement of girls' auto confidence in STEM areas since early childhood

15:00 Policies and strategies

- National policies and strategies
- Regional cooperation
- Multi-stakeholder initiatives
- International collaboration and cooperation

16:00 End of Conference

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DAY 3

Who should attend? Students, Teachers & career guidance counselors

TOPICS:

09:00 HUMAN SPACE FLIGHT

SPACE CAREERS

Introduction to the immense career opportunities the space sector offers

ROCKET SCIENCE

Intro to Rocket Science and Technology

How does a Rocket Fly?

How do I become a Rocket Scientist?

SATELLITE SCIENCE

Introduction to Satellite Technology

How do we Launch a Satellite?

How do I become a satellite engineer?

ASTRONOMY

What is Astronomy?

The Universe and its Formation

Galaxies and Stars

How do I become an Astronomer?

13:00 LUNCH

ASTROBIOLOGY

What is Astrobiology?

Life and Its Origin & Distant Worlds!

How do I become an Astrobiologist?

SPACE ROBOTICS

Intro to Space Robotics

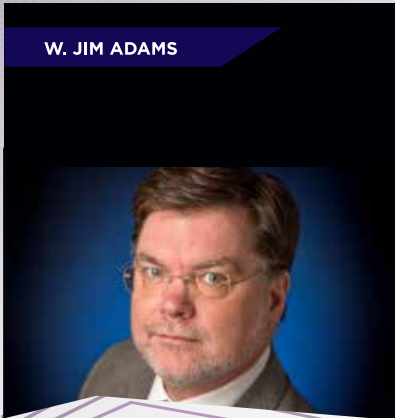
Key technologies in Robotics and AI for space

Current and future space missions and opportunities

16:00 End of Conference

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SPEAKERS



W. JIM ADAMS

CEO, Jim Adams World SA (Pty) Ltd.
NASA Deputy Chief Technologist, Retired
Keynote Speaker



PROF. ELIZABETH HENNING

Professor of Educational Linguistics
Department of Childhood Education
University of Johannesburg



RUVIMBO SAMANG

CNN Women Shaping African Space
Space Law & Policy Analyst
Top 10 Under 30 African Space Industry
CEO-Founder
AgriSpace



PROF. MOLLY SIMON

Assistant Professor
School of Earth and Space Exploration
Arizona State University



PROF. DR. ALIM RUSTEM ASLAM

Professor of Aerospace Engineering
Manager, Space Systems Design and Test Lab
Dept. of Astronautical Engineering
Faculty of Aeronautics and Astronautics
Istanbul Technical University



PROF. PAULINE MOSELY

Associate Chair & Full Professor
Department of Information Technology
Pace University



PROF. CHRISTINE ANNE ROYCE

Past President (18-19), National Science
Teaching Association
Professor of Teacher Education and
Co-Director of MAT in STEM Education
Shippensburg University



DR. MNCEDISI TRINITY DEWA

Senior Lecturer - Industrial Engineering
School of Mechanical, Industrial and
Aeronautical Engineering
University of the Witwatersrand



HIROKO TSUZUKI

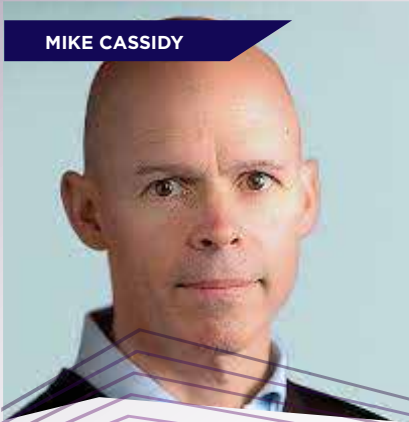
Administrator for the Space Education Center
Japan Aerospace Exploration Agency



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SPEAKERS

MIKE CASSIDY



VP of Product Development
Project Leader on Project Loon
Astra

PROF. ILEANA MARIA GRECA



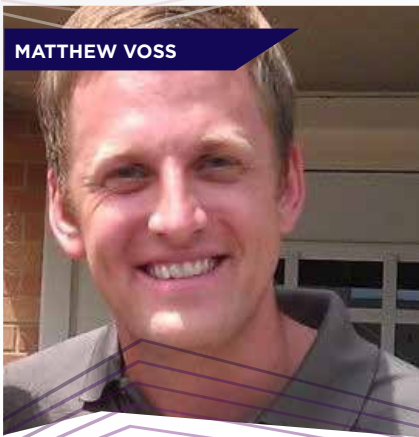
Director of a Consolidated Research
Unit in the area of Education
University of Burgos

DR. GORDON FARQUHARSON



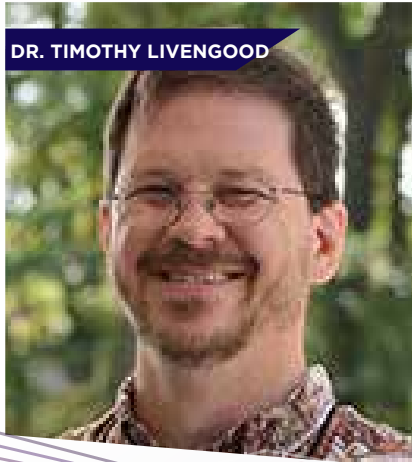
Director of Radar Systems
Capella Space

MATTHEW VOSS



Chief Operation Officer
NearSpace Launch, INC

DR. TIMOTHY LIVENGOD



Research Scientist
Center for Research in Earth and Space
Science and Technology
NASA Goddard Space Flight Center

ZIED TAYEB



Founder
Neurorobotics Researcher
NASA iTech Innovator
NeuroTech & Space Robotics
Myelins

PROF. DANTE LAURETTA



Regents Professor, Lunar and Planetary
Laboratory
Principal Investigator, OSIRIS-REx Asteroid
Sample Return Mission
University of Arizona

DR. CHRISTINA CARMEN



Founder and CEO
The Talon Company

PROF. YANG GAO

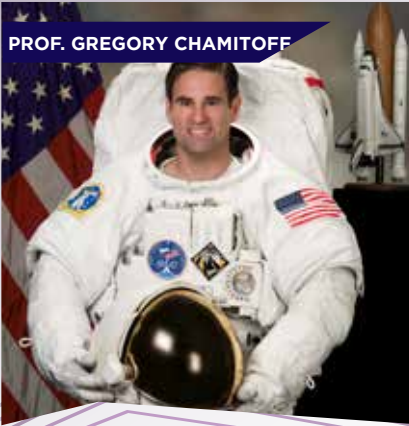


Professor of Space Autonomous Systems;
Wiley JFR Editor-in-Chief; United Nations
Space4Women Mentor
Surrey Space Centre,
University of Surrey

SPEAKERS

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PROF. GREGORY CHAMITOFF



Former NASA Astronaut
Space Station Flight Controller
Aerospace Engineer
Professor of Engineering Practice, Aerospace Engineering
Director, AeroSpace Technology, Research & Operations (ASTRO)

PROF. OLGA KOSHELEVA



Co-Chair Department of Teacher Education,
Director STEM Education Division –
The University of Texas at El Paso

PILAR GONZALEZ



Doctoral student in the STEM strand of the Teaching,
Learning, and Culture
University of Texas at El Paso (UTEP)

ZUKISA MAJOLA



Deputy Director: Space Science and Tech
Department of Science and Technology South Africa

DR. PETER MARTINEZ



Executive Director,
The Secure World Foundation

MARCELLO BARTOLINI



Head of Engineering,
Dragonfly Aerospace

MARUSKA STRAH



Executive Director
World Space Week Association

ABDUL SATTAR



Project Director
National Curriculum Development on Space Science
Project

