

Program

8:30 ~9:00	Reception(opening the ZOOM room) & Announcement
9:00~9:05	Opening remarks
9:05 ~10:05	Space Education in Victoria, Australia “Scenario Based Learning, CanSAT project, Radio Astronomy Project” Michael Pakakis (Director of the Victorian Space Science Education Centre) Mark Gleeson (Curriculum Manager and STEM Learning Specialist) “Pathways to Agriculture, Food and Space industries” Dr. Kim Johnson (Senior Lecturer in Plant Biology at La Trobe University) Dr. Brian Abbey (Joint Deputy Director of the La Trobe Institute of Molecular Science) “Swinburne Youth Space Innovation Challenge” Dr. Rebecca Allen (Acting Co-Director, Swinburne Space Technology and Industry Institute)
10:05~ 10:10	Break
10:10~ 11:10	Introduction to JAXA’s Latest Research “Asteroid Explorer Hayabusa2” ~Everything important was taught in middle and high school science~
11:10~11:15	Break & Announcement
11:15~11:55	Online Meet-Up JAXA Space Education Centre staff will answer questions and queries about space education from those who are practising, want to practise or are interested in space education. The aim is also for participants to interact with each other, to obtain new information on space education and to stimulate each other which will hopefully lead to the development of future activities, the expansion and penetration of space education.
11:55~12:00	Closing Remarks Dr. Kate Kitagawa (Director of the JAXA Space Education Centre)
12:00~12:10	Questionnaire

Biography



Michael Pakakis

Assistant Principal, Strathmore Secondary College
Director, Victorian Space Science Education Centre

Michael has been the Director of the Victorian Space Science Education Centre (VSSEC) since its official opening in 2005 and Assistant Principal of Strathmore Secondary College since 2016. He was instrumental in conceiving and developing the idea of establishing a centre where students could engage in hands-on immersive scenario-based science learning.

VSSEC was established in 2001 to promote innovative science, technology, engineering and mathematics (STEM) education programs for Victorian students in years five to 12. VSSEC uses the context of space to engage teachers and their students in the teaching and learning of STEM.

As Director, Michael oversees implementation of the latest educational research to develop effective programs for both students and teachers. To maintain the highest level of excellence in both pedagogy and science content, VSSEC's programs support dedicated subject and cross-curricula domains. These programs are delivered in context and highlight career and study pathways. Programs support both primary and secondary school learning. VSSEC also offers a range of outreach programs for students, both in person and online. A range of events to engage the general public in STEM are also held.

A teacher of science and mathematics for more than 35 years, Michael brings a passion for both innovation and excellence in the teaching of science and mathematics to his current role. He has been a member of a number of advisory boards involved in the development of senior science curriculum and the inclusion of integrated communication technologies to the Australian National Science Curriculum.

As a result, he has established collaborative working relationships with many of Australia's Universities. Internationally he is recognised as a leader in STEM education, working with the Chief Scientist's Office at NASA (Ames Research Centre), The European Space Agency (ESA) and the Japan Aerospace Exploration Agency (JAXA). He collaborates closely with the Education Heads of these agencies to develop STEM teaching resources used in Australia. This has resulted in the development of the first curriculum in Quantum Computing and the development of a CubeSat program for secondary students.

In 2019, Michael successfully collaborated with the district board of Wallingford schools in Connecticut, USA to establish a space education centre in the district, and assist in the implementation of VSSEC's educational programs at that centre.

Since 2010 Michael has been actively engaged in facilitating VSSEC's membership of the International Space Science Education Board. This group includes all the Heads of Education of the major global space agencies and is dedicated to the global promotion of STEM Education. This experience has given him an understanding of the Department of Education's future Teaching and Learning Strategy and has influenced policy and implementation of programs for students across the State.

Michael earned his Bachelor of Science in Microbiology and Biochemistry at Latrobe University in Melbourne, and went on to complete a Diploma of Education at Monash University. Michael is a recipient of the 2007 Latrobe University Dean's Medal for outstanding service to science and engineering. He has also been recognised for his work in STEM education by receiving the BHP/Billiton Science Teachers Award (certificate of achievement), a Hellenic Distinction Award (Education), and in 2011 a NASA appreciation certificate for outstanding service and significant contributions to space education. In 2021 he was awarded the Marion Heale Professional Learning Award by the Victorian Association of State Secondary Principals and was also awarded the Member of the Order of Australia for his contributions to STEM Education in Victoria in the Australia Day Honours.



Mark Gleeson

Curriculum Manager and STEM Learning Specialist
Master of Teaching, Bachelor of Science

Mark Gleeson is a Primary and Secondary School Leader and Teacher in Victoria, Australia. His primary responsibility is the Head of Curriculum at the Victorian Space Science Education Centre located on the grounds of Strathmore Secondary College. In this role, he is tasked with leading the research, implementation, and evaluation of new and existing national and international student and teacher educational programs. Mark is a STEM Learning Specialist and Instructional Coach at Strathmore Secondary College. This positions Mark as a change-maker, empowering teachers to personalise and grow their practice to support the changing focus of Industry, Government, and evolving expectations of students in classrooms.

Mark is active in Pre-Service and In-Service Teacher Professional Development, supporting new and experienced teachers to refocus existing, or implement new, teaching strategies. His work is grounded in evidence-based pedagogy which forms the basis for professional development. He has held leading positions at universities in the Information Technology and Engineering Faculties, lecturing to undergraduate and supporting post-graduate students in the fields of Information Technology, Engineering, and Education. He continues his work at university, supporting Pre-Service Teaching students studying to become teachers in Victoria. Before Mark studied teaching, he was an Electronics and Software Engineer in the automotive industry. Mark holds a Bachelor of Science, Majoring in Computer Science and Mathematics, and Minor in Astrophysics; he holds a Master of Teaching (Upper Primary + Secondary).



Dr. Brian Abbey

Deputy Director of the La Trobe Institute for Molecular Science

Prof Brian Abbey is a Physics researcher at La Trobe University and joint Deputy Director of the La Trobe Institute for Molecular Science. Over the past 15 years Brian has been leading the development of new optical technologies for biological imaging employing techniques in coherent optics and nanotechnology. Prof Brian Abbey received a PhD in chemistry from Cambridge University in 2007, after graduation Brian worked as a research fellow within the Centre of Excellence for Coherent X-ray Science at the University of Melbourne prior to taking up a permanent faculty position at La Trobe University.

In 2012 he was given the deans award for excellence in research and from 2014-2018 was an ARC Future Fellow. In 2015 he won a prestigious international visiting scholarship to the JILA research institute in Boulder, Colorado and in 2016 he received the AIPS Young Tall Poppy award. In 2019 Brian led a multidisciplinary team of researchers to win the national Medtech's Got Talent award for his invention of a novel diagnostic test for early-stage breast cancer. Brian most recently led this same team to win the 2022 Eureka prize for the innovative use of technology.

He is co-founder of Freely Accessible Remote Laboratories (FarLABs) virtual education platform. FARLabs (www.FARLabs.edu.au) provides high school teachers and students with online access to scientific equipment for use in pre-prepared, curriculum-relevant, practical experiments. The platform consists of three main components: 1) the equipment, 2) the website portal and 3) the teaching materials. Teachers and students access the equipment via the website portal. Instruction and background knowledge are provided by the teaching materials.

Do you know JAXA Academy ?

The Space Education Center organizes a lecture series on STEAM subjects. Selecting topics which carry crucial roles in resolving global issues, the JAXA Academy offers exciting opportunities for all of those who are keen to Learn about aerospace. One of the goals of SDGs (Sustainable Development Goals) is to provide educational opportunities for all (Goal 4). It is a very difficult task, but JAXA's Space Education Center gives opportunities to connect people with diverse background through teaching and learning. It will continue to extend its reach in the coming years to all who share the desire to solve urgent global issues such as climate change. Come along and join us!

Find more about us here : <https://edu.jaxa.jp/contents/english/academy/>



Dr. Kim Johnson

Senior lecturer in Plant Biology at
La Trobe University

Dr Johnson is a senior lecturer in Plant Biology at La Trobe University and a program lead in the La Trobe Institute for Sustainable Agriculture and Food. Dr Johnson's research looks at how plants change their growth in response to stress. Dr Johnson received a PhD in biology from the University of Melbourne in 2005. She worked in leading plant science institutes at the University of Edinburgh and John Innes Centre, UK and was awarded a prestigious Marie Curie Fellowship. Since returning to Australia she led the cell wall sensing program in the Australian Research Council funded Centre of Excellence in Plant Cell Walls (2012-2017) before taking up a position at La Trobe University in 2018.

In 2021 Dr Johnson was awarded the Australian Society of Plant Scientists Jan Anderson (female plant scientist of the year) and Education and Outreach awards. She is passionate about communicating the importance of STEM in agriculture to make the way we eat more sustainable and enjoyable. Dr Johnson coordinates several STEM outreach programs (Ambassadors for Agriculture, STEM in Agriculture, *Taste tomorrow*) and will lead the Plants for Space education, training and outreach program. Her programs include the design, organisation, and teaching of professional development courses for primary and secondary teachers; researcher-teacher partnerships in science electives where students co-design experiments, interpret data and present in scientific formats. Implementation of these resources in participating schools reaches thousands of students. Public-facing events aim to raise awareness of future food security and the importance of research in achieving this goal.



Dr. Rebecca Allen

Acting Co-Director, Swinburne Space
Technology and Industry Institute

Dr Rebecca Allen completed her PhD in astrophysics at Swinburne University of Technology where her research focused on understanding the evolution and growth of galaxies over time, going all the way back to when the Universe was barely a billion years old. Now, the project lead for microgravity experimentation at Swinburne's Space Technology and Industry Institute, she applies her scientific expertise to help support Australia's growing space industry. To this end, she is working with the SmartSat CRC as the capability demonstrator lead for I-in-the-Sky, a program designed to explore how space can be used to build climate change resilient communities. When she's not studying space or sending things there, she's sharing her enthusiasm for space by communicating the wonders of the Universe to others and creating inspiring learning experiences.