

Impact, Expectations and Challenges of AI: A review from Mexican and Australian Researchers' contributions and their Bilateral collaborations

Programme

- 12:00 – 12:02 pm Welcome to Country

Dr. Alejandro Rivera Becerra, Head of Economic Affairs & International Cooperation

- 12:02 – 12:05 pm Welcome Remarks

H.E. Mr Ernesto Céspedes Oropeza, Ambassador of Mexico

- 12:05 – 12:08 pm

Remarks

Mr Emmanuel Rodríguez, President, Australian Chapter of the Global Network of Mexicans Abroad (RGMX)

PANEL:

- 12:08 – 12:15 pm

Dr Jorge Gálvez Vallejo, Senior HPC Specialist, National Computational Infrastructure (NCI),
Australian National University

Prof Robert Heinsohn,

Fenner School of Environment and Society
Australian National University



Professor Rob Heinsohn, from the ANU Fenner School of Environment and Society, is a conservation biologist with a special focus on birds. For the last 35 years his Difficult Bird Research Group has focused on practical research aimed at saving endangered bird species from extinction. He has conducted projects world-wide including in Africa, North and South America, South-east Asia, Australia and the Pacific. He has a special fondness for parrots, the bird order with the highest proportion of endangered species.

Dr. George Olah,

Fenner School of Environment and Society
Australian National University



Dr. George Olah holds a Discovery Early Career Researcher Award Fellowship at the ANU and has recently become Doctor of the Hungarian Academy of Sciences. His research career has focused on tropical ecology and conservation genetics, and he has greatly advanced knowledge about the interactions between environmental and human-caused threats to wildlife. George is also a very passionate science communicator and wildlife documentary filmmaker including with the BBC Natural History Unit.

Dr Eduardo Benitez Sandoval,
Deputy Director, Creative Robotics Lab
University of New South Wales



Dr Sandoval is a Senior Lecturer at the University of New South Wales (UNSW). He is the Deputy Director of the Creative Robotics Lab in the School of Art and Design and a member of the UNSW Scientia Program for two consecutive periods (2018-22, 2022-26). This program supports the top 10% most productive researchers at UNSW. Dr Sandoval has been a pioneer exploring Social Robotics and Human-Robot Interaction in Latin America since 2008. His field of research focuses on robots supporting co-creative tasks with humans, children-robot interaction, and senior-robot interaction in domestic environments. He has produced around 70 peer-reviewed publications since 2014 and several non-traditional research outcomes. Dr Sandoval has 10 years of academic experience after PhD graduation, 5 years of industry experience and entrepreneurship, and 20 years of experience as an educator.



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Q3 Diplomats of the Science Club Meeting

2 October 2026



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Dr Jorge Gálvez Vallejo,
Senior HPC Specialist,
National Computational Infrastructure (NCI),
Australian National University



Jorge Luis Gálvez Vallejo holds a B.Sc. in Chemistry from the Universidad de las Américas Puebla (UDLAP, 2017), where he graduated magna cum laude with honors, and a Ph.D. in Physical Chemistry from Iowa State University (2022), completed under the supervision of Prof. Mark S. Gordon.

He is currently a Senior High Performance Computing Specialist at the National Computational Infrastructure (NCI) in Canberra, Australia. From 2022 to 2025 he was a Research Fellow at the Australian National University (ANU) in the group of Dr. Giuseppe Barca, where he was a core developer of the EXESS (Extreme-scale Electronic Structure System) code and advised on its industrialization.

His research focuses on high-performance computing applied to computational science. This includes GPU-accelerated algorithms for quantum chemistry, molecular fragmentation methods, ab initio molecular dynamics, and the modernization of legacy Fortran and C scientific codes for current and exascale architectures, including Alps, Frontier and Aurora. At his present role, he aids developers and researchers in the areas of climate, weather, and geophysics. His current work involves accelerating the ANUGA flooding simulator software and the Modular Ocean Model (MOM) for large ocean simulations.

He has co-authored 20 scientific publications in journals such as the Journal of Chemical Theory and Computation, The Journal of Chemical Physics and Physical Chemistry Chemical Physics, and in the proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis (SC). He is a co-developer of the GAMESS quantum chemistry package.

He is a co-recipient of the 2024 ACM Gordon Bell Prize, the highest honor in high-performance computing, for bio-scale ab initio molecular dynamics with MP2 potentials at more than one million electrons. Other distinctions include the Alpha Chi Sigma Research Award (2022), the Klaus Ruedenberg Theoretical Chemistry Award (2021), Fellowship of the American Association of Hispanics in Higher Education (2021), the Preparing Future Faculty Fellowship (2021) and selection for the Argonne Training Program on Extreme-Scale Computing (2020).

He has supervised PhD students and project students at ANU, as well as summer research interns at the Pawsey Supercomputing Centre. His service includes co-chairing the Workshop on Accelerator Programming and Directives (WACCPD) at SC25, organizing Molecular Modelling 2025, and serving as event organizer and webmaster for the Association of Molecular Modellers of Australasia. He has given invited talks at Pacifichem 2025 and to the Embassy of Mexico in Australia on behalf of the RedGlobalMX.

Dr Gustavo Fimbres,
Affiliate Researcher, School of Chemical
and Biomolecular Engineering
The University of Sydney



Dr Gustavo Fimbres Weihs trained as a chemical engineer at Tec de Monterrey in Mexico and obtained his PhD at UNSW. He is Lead Process Engineer with Shoalhaven Water, and Affiliate Researcher at the University of Sydney. His career spans research and teaching as a CONACYT Fellow in Mexico and as a Lead Research Fellow in Australia, with expertise in water treatment, process modelling, circular economy and sustainable technologies. He now works at the interface between research and critical infrastructure, exploring how data analytics, machine learning and generative AI can support safer, more efficient and sustainable water operations towards a more circular economy.

Dr Ana Casas Ramos,
Postdoctoral Researcher,
Department of Materials Physics
Australian National University



The scientific career of Dr Casas Ramos began with a Bachelor's degree in Chemical Engineering Technological Institute of Tuxtla Gutierrez (ITTG), in her native state, Chiapas, south of Mexico. She then moved to Mexico City in 2013 to pursue a Masters degree in Volcanology at the Geophysics Institute at the National Autonomous University of Mexico (UNAM) to study Mexico's deadliest volcano, El Chichón. Her passion for volcanology was a natural succession rather than a random pursuit; she was deeply inspired by her mother, Dr Silvia Ramos Hernández, who pioneered the monitoring of Mexico's El Chichón volcano in the late 1980s.

Dr Casas Ramos' research improved the geochemical monitoring at El Chichón, particularly the detection of periods of unrest that could result in eruptive activity. In 2015 she moved to Germany, to undertake doctoral studies in Volcanology at the Ludwig Maximilians University (LMU) in Munich. Her work focused on simulating volcanic eruptions, to understand solid-gas reactions occurring between volcanic ash and SO₂ gas, as well as the climate implications of large volcanic eruptions. She then accepted a position as a research fellow at the LMU to continue her experimental volcanology research until 2022, when she came to Australia to work at the Research School of Earth Sciences at the Australian National University (ANU). Her project aimed to experimentally study metal transport within the Earth's mantle to the crust.

In 2024 she joined the OreAI project as a geologist, at the Department of Materials Physics, the Research School of Physics, at the ANU. The project focuses on improving mining processes, workflow development and overall understanding of ore deposits with state-of-the-art X-ray computer tomography techniques, machine learning and AI.

- 12:15 – 12:22 pm
Dr Gustavo Fimbres, Affiliate Researcher, School of
Chemical and Biomolecular Engineering
The University of Sydney

- 12:22 – 12:29 pm
Dr Ana Casas Ramos,
Postdoctoral Researcher, Department of Materials Physics
Australian National University

- 12:29 – 12:36 pm
Prof Robert Heinsohn, Fenner School of Environment and
Society
Australian National University

- 12:36 – 12:43 pm
Dr Eduardo Benitez Sandoval, Deputy Director, Creative
Robotics Lab
University of New South Wales

- 12:45 – 1:00 pm Q&A

- 1:00 – 2:00 pm Lunch and Networking