

Members of the

International Space Surgery Research Consortium

Undergraduate Fellows



Bridging Earth and Space — Taking Surgery to
the Final Frontier

Anay Ashwin



Anay Ashwin is a high school student who is also undertaking a foundational unit in the Bachelor of Space Science. He has a keen interest in bioastronautics and aspires to become a flight surgeon, focusing on astronaut health and performance in space. Anay's research began with studying the psychological impacts of isolation on sleep during COVID lockdowns, later expanding to the

effects of isolation on sleep in long-duration space missions. He is now eager to broaden his knowledge and gain a comprehensive understanding of the challenges humans face in space, with a particular focus on space surgery. He is passionate about student outreach, interns with space organisations, and hosts a podcast exploring diverse space careers, championing the idea that "space is for all." Outside of space, he juggles Latin and French studies. He plays classical and jazz guitar, enjoys the piano and choral singing, and never misses a chance to hit the cricket nets. An avid traveller, Petra, Jordan, tops his list.

Arthur Carvalho

AS



Arthur Alves de Carvalho e Silva is a Brazilian medical professional and researcher operating at the intersection of trauma surgery, emergency medicine, and aerospace medicine. His work centers on a single operational question: how clinicians make high-stakes decisions when specialist support, advanced resources, or timely evacuation are not available.

Drawing on hands-on exposure to military and tactical medicine, prehospital trauma care, and clinical rotations in austere settings, his clinical foundation spans trauma resuscitation, surgical autonomy, and communication-delayed decision-making. His active research portfolio includes high-impact collaborations with the NASA Open Science Data Repository (OSDR) and the Harvard MGH Emergency Medicine Network (EMNet).

As a Project Coordinator and Research Fellow at the International Space Surgery Research Consortium (ISSRC), Arthur leads systematic research mapping surgical competencies for future Mars missions. His broader collaborations extend across institutions working on space biomedicine, resuscitation science, and extreme environment medicine. This multidisciplinary approach reflects his core philosophy: the same principles governing trauma care in isolated or resource-limited terrestrial settings are the ones that will secure medical autonomy beyond Earth.

Imane Ennaji



Imane Ennaji is a Montreal-based student in her final year of CEGEP in the Health Science program, preparing to enter university next year with the goal of studying medicine. Interested in the field of surgery, she is committed to building a career at the intersection of clinical practice, research, and technological innovation. Imane currently serves as co-president of MedVenture, a student organization dedicated to exploring the many fields of healthcare through workshops, events, and community-oriented projects. She is also conducting a research project at McGill University, where she is studying neural sensitivity in cockroaches by analyzing how their legs respond to controlled electrical flux. This project allows her to explore neurophysiology and early principles of neurosurgical innovation, while gaining experience in research design and experimental methodology.

Imane is a student member of both the Aerospace Medical Association (AsMA) and CStaRS, reflecting her growing commitment to the field of space medicine. She hopes to bridge surgical sciences with the challenges of space exploration, and to contribute to the development of surgical innovation for extraterrestrial environments. Her long-term aspiration is to become a surgeon, drawn especially to the precision, complexity, and human impact of surgical practice. She aims to blend her clinical ambitions with scientific curiosity to advance surgery and healthcare, on Earth and beyond.

Anushka Gupta

MPH, MBS



Anushka Gupta is a medical student in the University of Queensland–Ochsner MD Program, with a background in public health and biomedical sciences. She holds a Master of Public Health from George Washington University and has research experience spanning neurocritical care, neuroinflammation, population health, and aerospace medicine. Her work has included clinical and translational research, evidence synthesis, and conference presentations focused on human performance and health in extreme environments.

Her interest in space surgery and space medicine lies in understanding how physiological stressors, isolation, and resource constraints shape medical risk and decision-making during long-duration missions. Through her involvement with the International Space Surgery Research Consortium, Anushka is interested in contributing to interdisciplinary research that bridges spaceflight medicine, surgical preparedness, and Earth-based healthcare systems.

Dana Oh (Daeun)

MD Candidate



Dana Oh is a fifth-year undergraduate medical student at Monash University, Australia.

Her passion for space and space surgery began in high school, where she won second place in the 2020 NSS Space Settlement Contest for designing a permanent spacecraft for human habitation. She has a strong interest in biotechnology and artificial intelligence, having completed an AI course at Monash University in 2024. Currently, she serves as a medical officer at the startup company Chyral. She is dedicated to advancing the field of space surgery and medical technology, believing that these innovations will push the boundaries of modern medicine.

Paloma Quinn

BSc (Human Physiology)



Paloma is a Doctor of Medicine (MD) student at the University of Tasmania, Australia, with a background in human physiology and a strong interest in emergency medicine, general surgery, aerospace medicine, and human health in extreme environments. She was awarded the Associate Dean Research Prize at Deakin University in recognition of academic excellence and research potential during her Bachelor of Science (Human Physiology), where she contributed to laboratory-based research investigating heat stress-induced changes in gene expression. Her experience includes molecular techniques such as RNA extraction, cDNA synthesis, and quantitative PCR, as well as data analysis within structured, protocol-driven research environments.

Paloma has since expanded her research involvement into applied health settings, contributing to health literacy and behavioural research focused on health service evaluation and equity-informed care. Alongside her academic work, she serves in the Australian Army Reserve in Preventive Medicine, where she has developed experience in communicable disease control, environmental health, and operational healthcare delivery in resource-constrained environments. Her current interests lie at the intersection of space medicine, human physiology, general surgery, and clinical care in extreme environments, with a focus on translational research bridging laboratory findings with real-world medical applications. Through her involvement with the International Space Surgery Research Consortium, she aims to contribute to research exploring how surgical care, medical systems, and human performance must adapt to support long-duration space missions, while advancing healthcare practice on Earth.

Shivani Tripurani

BA

Shivani Tripurani is a second-year undergraduate at Northeastern University, studying Behavioral Neuroscience and Data Science. She researches brain stimulation in the Movement Neuroscience Lab and co-founded Serapy, a mental health NGO dedicated to integrating holistic well-being into school curricula. Passionate about the intersection of life sciences, technology, and human experience, she also enjoys writing poetry and exploring creative expression beyond academia.

