

Members of the

International Space Surgery Research Consortium

Post-Graduate Fellows



Bridging Earth and Space — Taking Surgery to
the Final Frontier

Asllan Abili

BBiomedSc, BParamed

Asllan is a registered paramedic and aspiring medical student with a deep passion for healthcare, particularly in extreme environments. Holding a Bachelor of Biomedical Science (2020) and a Bachelor of Paramedicine (2023) from Monash University, he has hands-on experience in emergency pre-hospital care. Currently a Research Assistant at the Turner Institute for Brain and Mental Health, he contributes to research examining the effects of shift work and challenging environments on work performance and physiology in frontline workers. Coupled with his certification as an advanced diver, his clinical experience and passion for healthcare in extreme settings drives his commitment to improving care for individuals in high-stress environments, ensuring virtually everyone has access to optimal care.



Omar Alshrouf

MB, BCh, BAO



Omar Alshrouf is a third-year medical student at the Royal College of Surgeons in Ireland (RCSI) – Medical University of Bahrain. He has a strong interest in cardiothoracic and vascular surgery, with research experience in systematic and scoping reviews across a range of clinically relevant topics. His academic interests include surgical outcomes research, evidence-based medicine, and the application of emerging technologies in healthcare. Through his involvement with the International Space Surgery Research Consortium, he hopes to contribute to research exploring surgical care and healthcare delivery in extreme environments.

Manvir Bamrah

BS



Manvir Bamrah is a recent graduate of Michigan State University (MSU) dual majoring in Human Biology and Psychology with a minor in Bioethics. Throughout his undergraduate career Manvir was involved in research in Sleep Psychology, investigating the effects of Blue Light on cognition, as well as the role of polarized macrophages in the pathogenesis of Type 1 Diabetes. Following graduation, Manvir has been a Master's candidate in MSU's Department of Global Health. He is currently researching the burden of pediatric Cerebral Palsy on caregivers in rural Malawi communities--as part of this research he will be working on the ground in Malawi, directly with local communities.

Manvir's interest in space research lies at the intersection of his passion with space exploration and his commitment to medicine, shaped by his goal of pursuing a career in surgery. He is drawn to studying how physiological adaptation and medical care in extreme environments can advance both spaceflight medicine and terrestrial clinical practice.

Stavroula Chaloulakou

MSc



Stavroula Chaloulakou is a Greek nutritionist - dietitian, holding an MSc in Food, Nutrition and Health, and she's currently pursuing a second master's degree in physiology and medicine of humans in space and extreme environments. She serves as a member of the Aerospace Medical Association's (AsMa) Commercial Spaceflight Committee, focusing on gastrointestinal and nutritional considerations for commercial spaceflight travellers. Finally, she was involved in the recently conducted European Space Agency (ESA) Bed Rest with Artificial Gravity and Vibration resistance Exercise (BRAVE) study and served as Nutrition Officer in two Asclepios Analog missions between 2022 and 2024.

Dr Ian Dox

MD



Ian Dox is a former military medical officer with a decade of experience in the Mexican Army, where he performed emergency care and medical logistics during tactical operations. He holds a Bachelor's degree as a Military Medical Surgeon from Military Medical School and further expanded his expertise with a Master's in Direction and Management of Health Institutions, as well as a specialization in Corporate Health and Well-being from Anahuac University in Mexico City. Currently, Ian is pursuing a Master of Space Studies at the International Space University in Strasbourg, France. Passionate about space medicine and exploration, he is committed to advancing research on human health in extreme and microgravity environments, aiming to contribute to the future of medicine beyond Earth.

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.

Divy Kumar

BSc, Msc



Divy is currently a second-year medical student at Northwestern University Feinberg School of Medicine. He earned his Bachelor of Science in Neuroscience and Integrated Sciences and a Master of Science in Computer Science from Northwestern University. As an undergraduate, he was part of the highly rigorous and selective Integrated Science Program, where he studied astrophysics, quantum mechanics, biology, and advanced mathematics—an experience that deepened his appreciation for interdisciplinary problem-solving and scientific exploration.

His research interests lie at the intersection of neurosurgery, aerospace medicine, and artificial intelligence. He is particularly focused on neurological and spinal complications in spaceflight, as well as AI-driven solutions such as autonomous robotic surgery for space missions. His work aims to address the challenges of delivering high-level surgical and neurological care in austere environments, ensuring astronauts remain safe during prolonged missions beyond Earth. Divy's fascination with space began during a trip to the Nevada desert, where he saw the Milky Way for the first time. Looking up at the vast expanse of stars, he was struck by how small we are in the universe. But rather than making life feel insignificant, it reinforced just how important medicine and human connection are—especially as we venture further into the unknown. As we travel through the emptiness of space together on our small blue rock, ensuring the health and well-being of one another becomes even more essential. This perspective continues to shape his passion for advancing medical care in extreme environments, both on Earth and beyond.

Cooper Lytle

BA



Cooper is a second-year medical student at Chicago Medical School at Rosalind Franklin University. He is an aspiring bread maker and maple syrup connoisseur, who enjoys seeing his house plants grow and spending long days at art museums with his wife.

Lauren Puig

BSc



A licensed pilot with a passion for medicine, Lauren Puig brings a unique blend of sky-high ambition and medical expertise to the ad astra vita team. Currently pursuing her MD at Texas Tech Health Sciences Center, Lauren channels her enthusiasm for aerospace medicine as president of TTUHSC's Aerospace Medicine Interest Group, where she plans events to bring aviation and aerospace to her peers. When not immersed in her medical studies or research projects, you'll find Lauren sharing her love of flight by taking fellow med students up in the air, volunteering weekends at the Texas Air Museum, or shadowing all sorts of specialties. Her background in biophysics from Duke University, combined with hands-on clinical experience and genuine excitement for the future of aerospace medicine, makes Lauren a natural fit for the International Space Surgery Research Consortium.

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.

Dr Mauricio Rubio

MD



Mauricio was born in Colima, a small Mexican city where the night sky was never blocked by city lights. Growing up able to see the stars clearly shaped his career path. Formed early by writers like Asimov and Sagan, he began his studies in physics, but left the program and chose to pursue medicine instead, at Universidad Anáhuac. The pull toward space, however, never left him. At his university, he founded GIMAT, an aerospace medicine group created to show people that space and medicine aren't always separate fields. He is currently completing his mandatory social service as a physician at the Mexican Red Cross, while preparing to apply for a Master's in Neuroscience before returning to physics.

His research interests center on the technologies needed to sustain long-duration human spaceflight: hibernation systems for extended missions and their physiological and psychological effects, the challenges of human reproduction beyond Earth, and how drugs behave differently under microgravity and affect surgical outcomes. This draws him to the question of what conditions would need to exist for surgery to be performed in space, and whether space itself could offer surgical advantages that Earth cannot. He hopes to help build toward that capability with the ISSRC.

Outside of his research, Mauricio is a football fan and enjoys playing FIFA (very badly), is currently developing a health tech app, and has a longtime love for science fiction and retro-futurist storytelling.

Aman Sandhu

BA



Aman is a third-year medical student at Drexel University College of Medicine. He completed his undergraduate degree in Biological Sciences at Rutgers University – New Brunswick. His interest in astronomy began in high school, where he used to organize stargazing nights at his school parking lot. He founded Drexel's Astronomy and Space Medicine Club, which is now recognized as an official chapter of the Aerospace Medicine Student and Resident Organization. He has a strong interest in the dermatological effects of spaceflight and aims to raise awareness of these unique challenges within the broader medical community.

Simran R. Sarin

BA



Simran Sarin is a fourth-year medical student at the University of Iowa. She is interested in ophthalmology and has presented cornea research at regional, national, and international conferences.

She is interested in how the body performs at extremes and how to optimize care in resource-limited environments. This starts with being involved with her local wilderness medicine organization, free eye clinics, and several global health experiences; it extends to exploring ophthalmologic challenges in space, such as deepening our understanding of SANS and dissecting the nuances of performing microsurgery under microgravity.

Outside of medical school and research, she loves hiking and running, and her favorite backpacking trip was the Kalalau Trail (Kauai, HI).

Natassha Naomi Shanmugam

BBiomedSc



Hello! My name is Natassha Naomi. I'm currently pursuing my Master's in Space Studies at the International Space University in Strasbourg, France, where I'm blending my background in biomedical sciences with the wonders of outer space.

With a Bachelor's degree from the University of Western Australia, I majored in Pathology, Immunology, and Microbiology - and it was during that time I stumbled upon the concept of Panspermia. That single spark launched me on a trajectory into the world of Astrobiology, where I became fascinated by how tiny microbes could hold answers to some of space's biggest questions.

What truly captivated me was realizing that space wasn't just about rockets and satellites — it's also about humans, health, and life itself. From space medicine to bioregenerative closed-loop systems, I discovered that my knowledge in pathology and immunology could actually help pave the way for sustaining life beyond Earth. Now, through my Master's, I'm diving deeper into the physiological challenges of human spaceflight and how we can develop innovative solutions to support human performance in extreme environments. I'm thrilled to be part of the International Space Surgery Research Collaborative (ISSRC) as I work towards turning these ideas into reality.



Jonathan Szeto

BA



Jonathan is a medical student at the University of Pennsylvania, where he also attended as an undergraduate and earned degrees in Earth science and political science. He has a strong interest in the effects of space travel on cardiovascular health. His other research interests include environmental health and minimally invasive surgery. In his free time he trains for marathons and watches Star Wars.

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.



Nicolas Vassiliev

BS



Nick is a third-year medical student at Rush Medical College in Chicago. Born and raised in Southern California, Nick sought to combine his love for the outdoors with his passion for medicine. In his journey to learn more about providing medical care in austere environments, he discovered the field of space medicine. Nick's medical interests lie in critical care and emergency medicine beyond the hospital, but in his free time you can find him rock climbing, playing water polo, golfing, fencing, playing guitar, and reading.

Dr Milton Viza Rivera

MD, BSc Nursing



Milton V-Rivera is a Peruvian Medical Doctor and holds his BSc Nurse. He is currently pursuing a Master of Science in Medicine. His scientific work focuses on the strategic convergence of clinical practice, biomedical engineering, and human survival in extraterrestrial environments. Having worked as a Medical Doctor in several healthcare institutions in his country, he has extensive clinical experience in the high-altitude Andes. This experience provides him with a unique perspective on the physiology of hypoxia, knowledge he directly applies to the study of human performance for future Lunar and Martian colonies. He has been a research associate at the Center for Emerging Space Technologies (C-SET) and led the Space Human Medicine Division in the Bioastronautics and Space Mechatronics Research Group. He co-authored the T-EVA project, a cutting-edge thermal telemetry system selected by The Mars Society for technical validation at the Mars Desert Research Station (MDRS) in Utah. He was a member of the Sociedad Científica de Astrobiología del Perú (SCAP). Currently, he is the driving force behind the «VESALIUS-G Project», focused on the design of autonomous mechatronic surgical units for long-duration space missions. Since 2018, he has co-directed the institutional structuring of the Sociedad Peruana de Medicina Aeroespacial (SOPEMA) as a founding member. His operational experience includes serving as a crew member on the Olympus Mission's Analog Habitat for Simulated Space Exploration (HAdEES-C) in Colombia. He is an author and reviewer of articles for national and international journals. Passionate about nature and physics. Deeply influenced by the legacy of Galileo Galilei, his vision of the cosmos transforms stellar observation into a constant source of scientific inspiration.

Dr Hyun Yi (Jacqueline) Woo

MD, MPH(c)



Dr. Jacqueline Woo is a South Korean physician with a highly international background. Trained in Hungary, she has gained diverse clinical experience in the U.S., Italy, and South Korea. Currently, she is expanding her expertise by pursuing a Master of Public Health at the Johns Hopkins Bloomberg School of Public Health, concentrating in Epidemiology and Biostatistics, while earning certificates in Clinical Trials and Public Health Informatics.

Fascinated by space and medicine from an early age, Jacqueline is passionate about exploring the intersection of surgery, technology, and extreme environments. She actively seeks opportunities that push her beyond traditional medical practice, engaging in research, clinical work, public health informatics—leveraging her Python skills—health tech industry experiences, case competitions, and international collaborations. With a versatile skill set and a global perspective, she aims to bridge medicine, technology, and public health to drive meaningful impact.