Members of the

International Space Surgery Research Consortium

Professional Fellows

Bridging Earth and Space — Taking Surgery to the Final Frontier

Nabiha Asghar

BSc

Nabiha Asghar holds her BSc degree in Biotechnology and Sociology from Forman Christian College University, where she specialized in microbiology research. During her studies, she conducted her undergraduate thesis on biopriming sub-optimal cotton and rice seeds under the supervision of Dr. Kauser Abdullah Malik, investigating how microbial interactions can enhance germination and resilience. Her interdisciplinary engagements strengthened her interest in applying microbiology across new frontiers. In particular, her independent exploration of the emerging field of space surgery sparked her fascination with the role of microbiology in sustaining human health in space, including infection control, immune stability, and wound healing in microgravity. Her research interests now focus on how microbiology can support medical innovation and contribute to human survival beyond Earth.

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Dr Deepasree Bangaru-Raju

BMBS, MRCP (London), PgDip (Medical Toxicology)

Dr. Deepasree Bangaru-Raju is a Visiting Research Fellow at the University of California, San Diego (UCSD), where she leads and collaborates on clinical and translational research in cardiovascular disease, heart transplantation, and advanced heart failure. She serves as principal investigator and co-investigator on multiple studies, including projects on left ventricular assist device (LVAD) outcomes, immunosuppressive risk, and arrhythmia management, with presentations at leading global conferences. As part of a multidisciplinary team, she also explores the use of artificial intelligence (AI) and machine learning to improve diagnostics, risk prediction, and clinical decision-making in heart failure. With over 15 years of experience as a physician in acute and internal medicine in the UK, she brings a strong background in frontline care, diagnostic medicine, and simulation-based education. She is an active contributor to the field of space medicine, serving as the medical lead for analog missions, including the AMADEE-20 Mars mission and the World's Biggest Analog mission. She has completed multiple missions as an analogue astronaut herself and serves as an editor of the Analog Astronaut Foundation Journal. She holds active roles with the Biomedical Engineering Group at the Austrian Space Forum (OeWF), Aerospace Medical Association (AsMA), and UK Space LABS, focusing on the integration of earth- and space-based healthcare. Dr. Bangaru-Raju's research interests span toxicology, cardiovascular health, patient safety, human factors, and the use of simulation, telemedicine, and digital health tools in austere and resource-limited environments. Her future goals include advancing intelligent, self-sufficient healthcare systems for space exploration, expanding AI-powered diagnostics for isolated environments, and fostering international collaboration in space health research. She is also passionate about mentoring the next generation of clinicians and scientists, actively promoting STEM education through outreach and advocacy, with a strong emphasis on diversity and inclusion in space and science.

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Dr Dhivyashree Bangaru-Raju

BMBS, MRCP (London), PgDip (Medical Toxicology)

Dr. Dhivyashree Bangaru Raju is a British physician, researcher, and analog astronaut with a passion for bringing space and medicine closer together. Currently based at the University of California San Diego (UCSD) as a Visiting Research Scholar, she works on cutting-edge studies in advanced heart failure, transplant medicine, and patient-centred outcomes. With more than a decade of clinical experience in the UK, including as an Attending Physician and Educational Lead at Queen Alexandra Hospital, Portsmouth, her background blends frontline care with academic leadership. Her work spans a wide clinical spectrum, including geriatrics, cardiology, intensive care, respiratory medicine, and stroke medicine. As an educational lead for junior doctors, she is recognised for her leadership in clinical training, service improvement, and patient safety. At UCSD, Dr. Bangaru-Raju serves as Principal Investigator on multiple research initiatives focused on advanced heart failure and transplant medicine. Her current projects include evaluating psychosocial predictors of LVAD outcomes, analysing immunologic risks in transplant recipients, and genetic testing in cardiomyopathies. She is also part of a collaborative team applying machine learning and AI tools to improve diagnostic precision, clinical forecasting, and risk modelling in heart failure populations. In the domain of space medicine, Dr. Bangaru-Raju holds multiple leadership roles. She served as Medical Officer during a LunAres analog space mission in Poland, part of an all-female, multidisciplinary crew focused on space health, robotics, and EVA protocols. She currently serves as Medical Lead for a large-scale international analog mission, the World's Biggest Analog, developing safety strategies and operational medical protocols across more than a dozen analog habitats worldwide. Her responsibilities span medical operations, crew safety, and simulation-based training in planetary analog environments. She is also an active contributor to space medicine through roles with the Aerospace Medical Association, particularly in cardiovascular adaptation and crew health during spaceflight. She is also editor of the Analog Astronaut Foundation Journal, promoting cross-sectoral research in space health sciences. Her broader research portfolio includes cardiovascular science, transplant outcomes, and medical toxicology. She has presented at leading international conferences, including the International Society for Heart and Lung Transplantation (ISHLT), American College of Cardiology (ACC), Aerospace Medical Association (AsMA), and the International Astronautical Congress. Through her work in education, research, and global analog missions, Dr. Bangaru Raju is committed to supporting a safe, equitable, and sustainable future for human exploration beyond Earth—working toward a future where medical systems in space not only help astronauts but also strengthen healthcare on Earth—while fostering international collaboration, advancing diversity in space health research, and promoting science outreach and mentorship through STEM education, advocacy, and leadership development. Outside of her professional work, she is an avid mountaineer, surfer, tennis player, and outdoor enthusiast, with a deep appreciation for exploration, physical endurance, and the parallels between human performance in natural environments and in extreme settings.

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Dr Brett Berezowski

MD, MSc, BSc(Hons)

Dr. Brett Berezowski is a University of Queensland medical graduate who is beginning a Family Medicine residency at the University of Saskatchewan in June 2026. He holds a Bachelor of Science Honours degree in Physiology and Pharmacology and a Master of Science degree in Biochemistry, Microbiology, and Immunology from the University of Saskatchewan. Following the completion of his medical degree in 2025, Brett gained clinical experience as an Intern Medical Doctor in the Emergency Department at Cairns Base Hospital. His long-term professional goal is to serve the Canadian community as a family physician with a broad clinical scope encompassing emergency medicine, pediatrics, and obstetrics. Additionally, he remains committed to advancing the field of aerospace medicine through research into the physiological aspects of perioperative care during spaceflight and intends to explore a future support role as a Medical Officer in the Canadian Armed Forces Reserves. Outside of medicine, Brett is a competitive distance runner and an ice hockey official with experience at both the local and national levels in Canada and Australia.

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Dr Mourad Berrim

MD

Dr. Mourad Berrim is an Algerian medical doctor and researcher with a background in physical medicine and rehabilitation, specializing in aerospace medicine. He has a strong interest in the physiological effects of microgravity and in developing rehabilitation strategies to support astronaut health during long-duration missions.

Passionate about human adaptation in extreme environments, Dr. Berrim is dedicated to exploring the intersection of clinical rehabilitation, space health, and innovation. He actively participates in international training programs and collaborative initiatives aimed at advancing medical preparedness for space exploration. His enthusiasm for innovation, cross-disciplinary collaboration, and progress reflects a vision to help shape the future of human health beyond Earth.

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Dr Jessica D'Urbano

MD, Sgt Maj

Jessica D'Urbano is an Italian Medical Doctor, Occupational Medicine Resident at the University of Trieste, and a Space Medicine Research Fellow of ASRI (Advanced Space Life Research Institute). She was recently appointed Sergeant Major of the Italian Red Cross Military Corps.
Jessica is always looking for international collaborations to learn and exchange knowledge and backgrounds coming from different cultures. She's the Co-Lead of NASA Multi-Omics Analysis Working Group, where researchers can explore GeneLab datasets in the data repository and create collaborative projects. Last year Jessica was selected as one of the members of NASA Space App Collective 2024-2025 Cohort. Together they're learning how to use NASA data to advance its mission priorities and to make a difference both locally and globally. She is also an advisor of UNOOSA and WHO Space and Global Health Curriculum Taskforce.
Jessica has recently been nominated a member of the International Astronautical Federation – Space Education and Outreach Committee.

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Dr Francesc March de Ribot

MD, PhD

Dr Francesc March is an eye surgeon with a strong clinical and academic focus on ophthalmology innovation and aerospace. He is an Associate Professor and works as a consultant specialist in the surgery of the retina, glaucoma, complex cataracts and ocular trauma. His ophthalmology practice is driven by a commitment to delivering high-quality and patient-centered care.

Dr March leads research focused on improving the delivery of eye care while addressing the growing burden of vision loss in ageing populations and across healthcare systems with varying resources. His work integrates clinical data analysis, health services research, and translational innovation to deliver practical, scalable solutions. By bridging clinical medicine and engineering, he aims to improve precision, efficiency, and surgical outcomes. In parallel, Dr March is involved in aerospace research, including participation in parabolic flight campaigns investigating the effects of microgravity on the eye.

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Dr Roya Ghafoury

MD, MPH

Education: Iran University of Medical Sciences, Tehran: MD, 2023, MPH, 2021.

Member, International Space Surgery Research Consortium and the Society for Space Radiology.

Experience:
Researcher, Endocrine Research Center, Institute of Endocrinology and Metabolism, Iran and the University of Medical Sciences, Tehran, Iran.

Contributed to screening, data extraction, and writing for several space research projects, including “Neuro-Ophthalmology In Commercial Spaceflight: A Comprehensive Scoping Review”, “Musculoskeletal Health in Commercial Spaceflight: A Comprehensive Scoping Review”, “Pioneering Space Surgeons: Matching Skills to Mission Needs and Determining the Essential Surgical Expertise for Mars Missions” and “Pioneering Space Surgeons: Surgical Disciplines in Human Deep-Space Exploration”.

Google Scholar:
https://scholar.google.com/citations?user=GUv0GzIAAAAJ&hl=en

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Dr Luis Guilarte

MD

Luis is a dedicated and passionate Venezuelan medical doctor who graduated in 2019 with a goal to complete his residency in Cardiac Surgery. With a profound interest in neuroanatomy and neurophysiology, he initiated a tutoring course for medical students between 2014 and 2016, demonstrating his commitment to education of medical sciences early on. After graduation in 2019, Luis began his medical career as an emergency room doctor in Barcelona, Venezuela. His journey took a significant turn when he joined the University of Texas Cardiothoracic and Vascular Surgery Department as a Research Coordinator. In this role, he has been instrumental in advancing clinical trials related to aortic implantable devices, heart valve replacements, and follow-up studies on morbidity and mortality. Luis's dedication to integrating AI into medicine is evident through his active involvement with the Lumen Foundation since 2021. He collaborates with the Forum of Artificial Intelligence in Medicine, contributing to their newsletter with insights on some of the most advanced AI-driven medical procedures. Beyond his professional endeavors, Luis is a Goethe-certified German language speaker since 2021 and a football fan, balancing his professional life with personal interests and hobbies. Luis's story is one of relentless pursuit of knowledge, innovation, and a deep-seated commitment to improving medical outcomes through both traditional and cutting-edge methods..

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Dr Pablo Luis Paglialunga

MD, MSc, PhD

Pablo Luis Paglialunga is a Specialist in Thoracic Surgery since 2015. He holds a Master's degree in Advanced Medical Competencies and a PhD in Medicine and Translational Research, awarded Excellent Cum Laude, both from the University of Barcelona, with a focus on the implementation of robotic surgical systems.

In addition to his surgical practice, he has a strong academic profile, contributing to education and training in thoracic surgery. Dr. Paglialunga is dedicated to advancing surgical innovation and translational research, with particular interest in integrating robotic systems and novel techniques into thoracic surgery practice.

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Adrian Ramirez

BS

Adrian is a dedicated research assistant in the Department of Cardiothoracic and Vascular Surgery at UTHealth Houston McGovern Medical School. He is also passionate about education, serving as a math instructor at the Mathnasium of Fulshear, where he teaches junior high and high school students.

Adrian earned his Bachelor of Science in Biomedical Sciences from Texas A&M University, where he cultivated his interests in human medicine, research, and education. With a commitment to academic excellence and innovation, he aspires to pursue a career in academic medicine, integrating clinical practice, scientific research, and teaching to make a meaningful impact in the field.

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Seline Ryan

BN, RN

Seline Ryan is an Australian emergency Registered Nurse based in Sydney with a clinical background in high-acuity emergency department care. Over the past decade she has worked across a range of healthcare environments including emergency medicine, defence-adjacent civilian nursing supporting the Australian Defence Force (Army), veteran telehealth, correctional and forensic health, aged care, neurology, and frontline roles during the COVID-19 response. These roles have shaped her clinical practice in environments characterised by uncertainty, constrained resources, delayed escalation, and high-consequence decision-making.

She is currently completing a Postgraduate Certificate in Critical Care at the University of Technology Sydney and is developing a research interest in human health and performance in spaceflight contexts. Seline is the founder of The Bioastronautical Nursing Initiative, a professional platform established to explore and articulate the role of nursing within the emerging field of space health. Her work explores how regulated nursing practice contributes to space health, particularly in areas such as human performance, operational healthcare delivery, ethics, and governance in remote and resource-limited spaceflight environments. Through her involvement with the International Space Surgery Research Consortium, she is interested in contributing to interdisciplinary research examining how healthcare systems must adapt to support human health during long-duration space missions, while also strengthening healthcare practice on Earth.

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George Salazar

BS, MS

Mr. Salazar recently retired from NASA after more than 40 years of service in human spaceflight exploration. He has expertise in telemetry, communications, speech control, command and data handling, audio, displays and controls, intelligent lighting, project management, and systems engineering. He has contributed to the design of advanced telemetry, speech recognition, and intelligent computer systems, for which he holds several patents. Additionally, he led multiple advanced avionics technology concept investigations for the next-generation space program. Mr. Salazar has received numerous awards, including the NASA Silver Achievement Medal, the John F. Kennedy Astronautics Award, and the NASA Johnson Space Center Engineering Directorate Legacy Award for his contributions to human spaceflight. He has also co-authored several technical papers on spacecraft design, systems engineering, and Human Systems Integration (HSI). He was assigned to the Human Interface Branch in the Avionics Systems Division, serving as the Human-Computer Interface Technical Discipline Lead to develop advanced human interfaces. He also served as the Displays and Controls Subsystem Manager for the Commercial Crew Program, overseeing the astronaut crew interfaces for the SpaceX Dragon crew vehicle, and as the Artemis Human Lander System Computer Human Interface System Manager. Mr. Salazar co-founded the successful NASA/JSC Human Systems Integration (HSI) Employee Resource Group, with the main goal of integrating HSI into NASA's development processes. He earned his Associate of Applied Science in Electronics Technology from the now Lone Star College. He later obtained his Bachelor of Science in Electrical Engineering from the University of Houston and his Master of Science in Systems Engineering from Southern Methodist University. Mr. Salazar is a member of Eta Kappa Nu (HKN), the international honor society of the Institute of Electrical and Electronics Engineers (IEEE). He is a licensed professional engineer in Texas and holds an Expert Systems Engineer Professional certification through the International Council on Systems Engineering. Additionally, he is a lifetime senior member of the IEEE.

Dr Preeti Sawant

MBBS, DNB General Surgery

Dr. Preeti Sawant is a curiosity-driven science enthusiast, visionary leader, and futurist with a deep commitment to advancing the frontiers of surgical care beyond gravity. Currently a General Surgery trainee under the National Board of Examinations in Medical Sciences, New Delhi, India, she combines her clinical expertise with a passion for space health and innovation.

Dr. Sawant has held leadership positions within the International Association of Student Surgical Societies and the World Medical Association's Junior Doctors Network, reflecting her dedication to global medical collaboration. She serves on the Space and Global Health Taskforce under the United Nations Office for Outer Space Affairs (UNOOSA), where she leads key initiatives on telesurgery and remote sensing.

Beyond her professional pursuits, She is an avid reader, a dedicated runner, and an amateur skater. She lives by the statement "Think beyond gravity", capturing both her mission and the spirit she hopes to inspire in others.

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Kimia Seyedmadani

PhD

Kimia Seyedmadani is currently serving as the Research Operations and Integration (ROI) Project Engineer (PE) and Technical Lead (TL) for medkit development for Artemis missions to the moon under the guidance of the Human Research Program of the National Aeronautics and Space Administration Johnson Space Center United State Government. Her duties include biomedical and countermeasure hardware and software development flight certification and sustaining of such systems in orbit throughout the space mission. In addition, she is a hardware liaison of NASA to the Food and Drug Administration to ensure the safety and efficacy of biomedical space hardware and open dialog for the future advance of human health on earth. Kimia has expertise in engineering innovation and design with a twist in space exploration application. During her career in medical devices and diagnostics she developed more than 50 biomedical instrumentations, mainly class I and II. She explores space application with hope of unlocking novel approaches to design and reverse engineering human resilience for global healthcare. Her trans disciplinary approach between aerospace engineering and bioengineering had resulted in multiple design and patent awards. Kimia was a recipient of NASA silver achievement medal for her effort in the field of bioastronautics 2023. In addition to her capabilities in engineering Kimia has conducted research across the domain of human physiology and performance, from neuro ocular to musculoskeletal. She is also very passionate about passing on the information to the next generation and educating and mentoring students.

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Suhail Shameem

MSc Anaesthesia

Suhail Shameem is an MSc anaesthesia professional with experience in clinical research and perioperative physiology. Working on cardiovascular physiology under acute stress from the theatre floor to spaceflight. His Master's research was a prospective clinical study of sixty women, comparing phenylephrine and ephedrine to manage hypotension after spinal anaesthesia for caesarean section. He is trained in systematic review methodology, including PRISMA and structured evidence synthesis, and is currently preparing a review manuscript on anaesthesia in microgravity. Separately, his work on aerospace anaesthesia protocols was presented as a poster at the International Conference of Biomedical Sciences.
As a research consortium member with the International Space Surgery Research Consortium, Suhail contributes to a systematic review of space surgery competencies for deep-space missions and is building toward a PhD examining cardiovascular and autonomic responses to rapid gravitational transitions. He is also a member of NASA's Open Science Data Repository Analysis Working Group, contributing to a causal model of early physiological adaptation to spaceflight. Outside the theatre, he was a delegate at the Best Diplomats Model UN Conference in Kuala Lumpur.

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Mónika Szűcs

MSc

Mónika Szűcs holds her MSc degree in Applied Mathematics from the University of Szeged, where she developed a strong interest in medical applications during her studies. Currently, she is working as an assistant lecturer at the Department of Medical Physics and Informatics at the University of Szeged.

Besides teaching informatics and statistics to medical and PhD students, as a biostatistician she collaborates with several medical research groups, mainly in the fields of clinical and physiological research. Her research interests also include medical applications of artificial intelligence, with a particular focus on the potential of data-based decision support in the field of space medicine.

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Harini Thevarajah

BSc(Hons)

Harini is a Clinical Research Analyst at Princess Margaret Cancer Centre, supporting radiology and oncology trials, particularly MRI-guided therapies for prostate cancer. With over a decade of experience across pediatrics, surgical oncology, and medical imaging, her work bridges patient care with data-driven insights. She holds an Honours Bachelor of Science in Neuroscience and Human Biology from the University of Toronto. Harini's curiosity about how the human body responds to extreme environments led her to space medicine, with a focus on neurophysiology and rehabilitation. Outside of research, she's involved in podcast production and space health communication. She will be joining the International Space University's Space Studies Program in France in 2026 and is excited to contribute to ISSRC and the future of surgical care beyond Earth.

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Dr Zachary (Zack) Zajac

DO, MSc

Zack is a family medicine resident physician at Corewell Wayne hospital in Wayne, Michigan whose main academic passions include medicine, physics, and space. He obtained his undergraduate and Master's degrees from University of Toronto in Biophysics and Medical Biophysics, where he spent time researching using ultrasound contrast agents to measure flow. Zack has always had a passion for space, completing a research project in planetary science which investigated whether the carbonate-silicate cycle is able to stabilize atmospheric conditions of an exoplanet which is heated by tidal forces.

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