MESSAGE FROM THE CHAIR

On January 8, 2024, I was honored to become Chair of the Department of at University of Arizona College of Medicine – Tucson and Physician Executive for Functional Neurosurgery at Banner Health. A long line of esteemed colleagues have served at the helm, starting with Philip Gildenberg MD, PhD in 1982 and including Robert Spetzler MD in 1986, Allan Hamilton MD from 1993-2004, G. Michael LeMole MD from 2009-2020, and Justin Cetas MD, PhD most recently. I want to draw special attention to Dr. Marty Weinand who has served as Chief of the Division, Program Director of the residency and Interim Chair of the Department. Marty has been integral in the development of academic neurosurgery in Tucson and instrumental in training over 50 fellows and developing our neurosurgical residency which began in 2004.

I am fortunate to enter this role during a time of growth. Banner University Medical Center Tucson has turned the corner financially and the value of the academic mission realized. To that end, we have garnered local support for submitting our RRC application for a residency complement increase and are eager to explore new fellowship opportunities. We have recruited PhD scientists/engineers to the department to aid with our research mission and look forward to growing our clinical footprint with new neurosurgeon recruits over the next few years. Further, we have been identified as the Functional Neurosurgery Destination Center for the Banner Health 32 hospital system. Finally, we continue to promote our people as our greatest resources. We are so appreciative of all the work our staff, residents, fellows and faculty do on a daily basis supporting the academic mission. Our patients no doubt reap these benefits. Onward and upward! Thank you for being part of our Wildcat Family!

Julie G. Pilitsis, MD, PhD, MBA
Department of Neurosurgery chair and physician executive for functional neurosciences for Banner Health
I was born and raised in Mexico. I wanted to be a doctor because I wanted to follow my dad’s footsteps, who is a surgeon. He inspired me to be diligent in work and compassionate with patients. I graduated from the University of Guanajuato, where I met my beautiful wife. Shortly after, I sought opportunities in research at the National Institute of Health “Salvador Zubirán” in Mexico City where I found the passion and joy to contribute to the medical literature. I have found research as a tool to help people and to contribute to society.

Given that I have always been passionate about the nervous system, I wanted to combine a career in which I could do surgery and research, so I decided to pursue my dream of becoming a neurosurgeon. Once I moved to the US, I started doing research in Florida where I found genuine and truly empathetic mentors, Drs. Hanel, Aldana, and Sauvageau. The focus of my work since then has been on neurovascular disease. I started my residency in 2018 and I have had the opportunity to work with great mentors, students, and researchers. My career goals have been fully supported by my mentors, students, and researchers.

Outside of surgery, I enjoy reading, traveling, and spending time with my wife Karen and our son Matias, watching him grow amazes us every day.

ALUMNI UPDATE
Robert W. Bina, MD, MS

Born in Oceanside, California, to parents Gayle and Dr. William Bina, Bob (throughout his formative years) along with siblings Betsy, Bill, and Jonathan, circled the globe with their parents as Dr. William Bina provided and advanced medical care practices to impoverished patient populations. This exposed a young Bob to many cultures as he worked alongside his father during his missionary tours, visiting such places as Nigeria, Vietnam, Cambodia, and Italy, instilling in him a desire to elevate medical availability for the underserved, and a life-long passion for travel, along with a proclivity for learning new languages, such as French, Spanish, and even American Sign Language.

Bob had a unique educational trajectory, spending two years at the Valley Forge Military College, which prepared him well for a disciplined career as a surgeon, as he earned an A.S. in Science. From there, Bob obtained a B.A. in Philosophy at the University of Pennsylvania, and then participated in post-baccalaureate studies at Mercer University, where his studies were focused on molecular biology, molecular genetics, and biochemistry. Bob went on to earn an M.S. in Biology, from Northern Arizona University, graduating Cum Laude in Neuroscience.

Bob obtained his M.D. from the University of Arizona College of Medicine in Phoenix in 2013 and subsequently matched in the General Surgery Residency Program at Banner Good Samaritan Medical Center in Phoenix, however during his intern year, already knew his career intentions lay in the neurosciences, with a strong desire to enter the field of neurosurgery. Dr. Bob Bina reached out to Dr. Martin Weinand to arrange a month-long elective with the University of Arizona Neurological Surgery Residency Program, which led to him transferring to the Tucson residency program that subsequent January of his intern year.

Dr. Bina completed an enfolded six-month Epilepsy and Functional Restoration Fellowship at Swedish Medical Center, Seattle, Washington, under Local Training Director, Ryder Gwinn, MD, in his seventh year of residency training and from there, completed a post-residency one-year fellowship in Functional Neurosurgery at the University of Louisville, Kentucky, under the mentorship of Joseph Niemat, MD, MS.

Dr. Bina entered his first post-training position in July 2021, as Clinical Assistant Professor of Neurosurgery with appointments as Director, Epilepsy and Functional Restoration, Clinical Co-Director of the NeuroScience II Block. Dr. Bina was recently appointed Assistant Professor of Translational Neuroscience at Banner University Medical Center, Phoenix Campus, in June 2023 and he became an ABNS Board Certified Diplomate in January 2024.

Since joining Banner University Medical Center Phoenix, Dr. Bina became a co-investigator on an NIH grant, to study “Direct Dopamine Recording from Humans Engaging Working Memory,” and has another pending NIH grant proposal to study “Circuit and Systems Mechanisms Underlying Catecholamine Control of Arousal and Valence Projects.”

Dr. Bina has been honored for his excellence in Medical Student Mentoring (2023), Resident Educator of the Year (2019), he was the resident recipient of the Robert V. Ansay Humanism in Medicine in 2015 and 2017, and during his medical school years received the Pillar Award for Leadership (University of Arizona, Phoenix), 2013, the Service Learning Distinction Award (University of Arizona, Phoenix), 2013 and has been a member of the Gold Humanism Honor Society from 2012 to present.

In his non-working hours, Dr. Bina enjoys running, art, history, art history, classical music, opera, philosophy, literature, poetry, and traveling with his spouse, Kevin Zalizniak.
RESEARCH ON THE CUTTING EDGE

Over the last year, research within the Department of Neurosurgery has greatly expanded. We currently have 20 investigator-initiated studies in which undergraduate/medical students and residents are actively involved in. Further we have a robust portfolio of clinical trials in NIH and funded clinical studies. Most recently, the ASPEN trial focused on cell transplantation to help treat Parkinson’s Disease has begun enrollment and our site has performed three procedures to date.

The team has also developed new collaborative efforts with industry partners and Banner and expanded regulatory communications. Through the addition of new faculty members, the department has begun basic science research with funding from the NIH and the Focused Ultrasound Foundation. Currently, the basic science research is focused on advancing technology from bench to bedside including using Focused Ultrasound and Trans Spinal Magnetic Stimulation to help treat chronic pain, an MRI compatible robot for tumor ablation and machine learning to help predict longitudinal outcomes in patients. Due to this expansion, the research team has also grown and now includes research laboratory manager Debbie Morris, PhD, clinical research manager Marisa Valletta, PhD and clinical research coordinator, Iliana Perez, MPH, MBA. As research within the department continues to grow, we are excited to offer our patients the opportunities to receive novel treatments and provide them with the best care available.

DEBBIE MORRIS, PhD

Debbie earned her BA in Biology in 2009 from Florida Atlantic University and PhD in Biomedical Sciences in 2015 from Florida State University College of Medicine. Debbie worked as a lab/quality control manager for a public water utility and research lab manager at Florida Atlantic University prior to joining UArizona.

ILIANA PEREZ, MPH, MBA

Iliana earned her BS in Speech and Hearing Science and BA in Spanish in 2017 from The University of Arizona. She completed her Masters in Public Health and Masters in Business Administration in 2022 at the University of Arizona. Prior to joining the Department of Neurosurgery, she worked as the lead clinical research coordinator for the Infectious Diseases Department at UArizona and lead CRC for the RECOVER Long-COVID program for the Aegis Consortium.

MARISA VALLETTA, PhD

Marisa earned her BS in Animal Science with a minor in Molecular and Cellular Biology in 2015 from the University of Connecticut. She completed her PhD in Neuroscience in 2019 at Albany Medical College. Prior to joining the team at UArizona, Marisa worked as a Project Manager at the Neurological Clinical Research Institute at Massachusetts General Hospital and as a Director of Clinical Research at Florida Atlantic University.

VISIT OUR WEBSITE
neurosurgery.arizona.edu
EDUCATIONAL ENDEAVORS

The Department of Neurosurgery at Banner University of Arizona Medical Center, Tucson Campus, received ACGME accreditation to train neurological surgery residents in 2003, with the first resident trainees entering the program in 2004. Since that time, the residency has graduated thirteen neurosurgeons, who have entered academic and private practices. The program is in the process of submitting a request to the ACGME to elevate the complement from seven to fourteen.

With the presence of internationally-renowned neurosurgery faculty member, Dr. R. John Hurltbert, MD, PhD, Professor and Co-Director of the Spine Program, the academic mission and educational opportunities within the department were further expanded after approval in 2018 of a twelve-month fellowship training program, with the first participant graduating in 2019. Since that time, Dr. Hurltbert, and the Complex Spine Fellowship Program teaching faculty, have successfully graduated five trainees. The Complex Spine Fellowship again expanded in 2023 to train two fellows per year, when the program received CAST Accreditation for the training of LCME-accredited Neurosurgery residency graduates (or for those in their seventh year of neurosurgery residency in an enfolded fellowship), in addition to the Non-Standard Post-graduate training of international surgeons who have completed either an orthopaedic or neurological surgery residency in their respective institutions. We look forward to the partnering with orthopedics surgery to ensure a multi-disciplinary approach.

At this time, the Department is well-poised for additional growth in neurological surgery post-graduate educational opportunities, with the recent CAST approval of a Stereotactic, Functional, and Movement Disorders twelve-month fellowship program, under the Directorship of Professor and Department Chair, Dr. Julie G. Pilitsis, MD, PhD, MBA.

For further information regarding educational opportunities within the Department of Neurosurgery, please feel free to contact Residency Program Administrator, Julie Schippers, juliess@arizona.edu, or Fellowship Program Manager, Giselle De La Rosa, giselledlr@arizona.edu.

TOWARDS A CURE: PARKINSON’S

The idea of stem cell therapy for Parkinson’s disease began in the 1990s with attempts to replace the lost brain cells by harvesting stem cells and transplanting them into the putamen. While the preliminary results were encouraging, two subsequent blinded clinical trials showed no benefit. Likely this result was due to the failure of transplanted cells to survive and the types of cells implanted.

After two decades, the field of cell transplantation is moving forward again. Aspen Neuroscience, a biotechnology company in San Diego, CA, has developed a unique approach to cell transplantation that uses the patient’s own skin as the source of cells. This so-called “autologous” approach has been done before in individual patients, but Aspen is sponsoring the first multicenter, multisite clinical trial (designated ANPD001-02). In this trial, Parkinson’s patients undergo a 3mm skin biopsy to obtain fibroblasts which can be turned into dopamine-producing brain cells that can then be transplanted back into the patient’s putamen. Using a patient’s own cells overcomes many of the issues of trials in the 1990s, ethical concerns, and any need for immunosuppression.

The Aspen Neuroscience ANPD001-02 clinical trial is underway, with patients being enrolled at Banner UMC-Tucson/University of Arizona as well as Scripps Clinic in San Diego, University of California Irvine, University of California San Francisco and Emory University. This initial clinical trial is a phase 1 study, which is unblinded. For the phase 1 trial, all of the patients will be traveling to Banner UMC-Tucson to have their transplants performed by Dr. Paul Larson. If the phase 1 study shows positive results, a larger phase 2 blinded study with more hospitals and surgical sites will be planned as part of the process to gain FDA approval.

FIRST FETAL SURGERY IN SOUTHWESTERN U.S.

In February 2024, the Department of Neurosurgery (Dr. Anthony Avellino) and the Division of Pediatric Surgery (Dr. Ken Liechty) together performed the first fetal surgery in not only the state of Arizona but also in the Southwest region. The in utero surgery was a fetal myelomeningocele. The complicated procedure involves opening the uterus and closing the opening in the unborn baby’s spine while they are still in the womb. The delicate surgery is done to improve outcomes for infants with spina bifida, improving their ability to walk and prevent further damage to the spinal cord and reducing their need for ventriculo-peritoneal shunts. Priscila Carranza Olea and her husband, Ramon Alberto Contreras Armenta, were 22 weeks pregnant when they learned of the spina bifida diagnosis. Priscila had not noticed anything different about this pregnancy compared to her other two pregnancies until the time of diagnosis. She was referred to the Banner – University Medicine Fetal Care Center by Dr. Christopher Sullivan, a high-risk pregnancy obstetrician-gynecologist in the community, who sees one to two patients a month who previously had to be referred out of state to seek care. The fetal surgery multidisciplinary team included a pediatric surgeon, maternal-fetal medicine specialist, neonatologist, fetal nurse practitioner, geneticist, social worker, and specific pediatric/fetal subspecialists in neurosurgery, neurology, nephrology, cardiology, radiology, anesthesiology, and more. “Banner’s fetal care center provides our patients access to an array of fetal medicine expertise found at Banner – University Medicine. With the establishment of the program in Tucson, our community and state now have access to the best of fetal surgery care,” said Anthony M. Avellino, MD, MBA, co-surgeon of the fetal spina bifida repair surgery with Dr. Liechty, and director of pediatric neurosurgery at Banner - University Medicine Tucson.