2018 Year In Review
UC Davis Department of Neurological Surgery welcomes Dr. Griff Harsh as Professor and the Julian R. Youmans Endowed Chair. Dr. Harsh joined the department July 1, 2018. Previously at Stanford University, Dr. Harsh served as vice chair of the Department of Neurosurgery, chief of neurosurgical oncology, director of the Brain Tumor Center, co-director of the Pituitary Center, and neurosurgery residency director. He is excited to join and lead a team that is home to internationally recognized experts, a full range of neurosurgical technologies, and robust clinical and basic-science research. Our goal is to provide patients with the most current and effective treatments for the entire spectrum of neurological disease.

"UC Davis’ neurological surgery faculty has an outstanding track record of treating the full breadth of challenging brain and spine conditions," Harsh said, "and the department collaborates closely with the university’s NCI-designated Comprehensive Cancer Center, Level I Trauma Center, Center for Neuroscience and Stroke Program to ensure patients have access to advanced, multidisciplinary, patient-focused care. I look forward to leading this remarkable, resourceful and dedicated team."
Dr. Jared Ament graduated from the Department of Neurological Surgery Residency Program in June. Dr. Ament earned his M.D. from the Medical School for International Health, a combined program between Ben-Gurion University, Israel and Columbia University, NY. He completed a surgical internship at University of Massachusetts, a post-doctoral fellowship in surgical outcomes at Harvard University and an enfolded fellowship in complex and minimally invasive spine procedures at Cedars Sinai Medical Center under Dr. J. Patrick Johnson. Dr. Ament has joined the Sierra Neuroscience Institute in Los Angeles as the Director of Spine Neurosurgery and is President and Founder of Neuronomics.
The School of Medicine Turns 50!

We celebrated 50 years of the School of Medicine by hosting the inaugural Franklin Wagner Endowed Lectureship and Symposium: Innovations in Spine Surgery on September 15, 2018. Bringing neurological surgeons, alumni, fellows and other healthcare providers together, this event highlighted recent technological advances in all neurosurgical subspecialties, with particular emphasis on the results of clinical trials of innovative robotic surgery, instrumentation and biologics in NeuroSpine disorders. The evening culminated in a Gala reception and dinner in the Capitol Ballroom at the Hyatt Regency Hotel in Sacramento.

HONORING

Franklin Wagner, Jr, M.D., earned his Medical Degree from Bowman Gray School of Medicine, Wake Forest University in 1966. He completed his neurological surgery residency at Northwestern University in 1972. From 1972 to 1982, Dr. Wagner served as a member of the neurosurgical faculty of Yale University. He was appointed as the Chair of Neurological Surgery at UC Davis from 1982 to 1999. Dr. Wagner specialized in the treatment and research of spinal cord injuries and had a substantial impact in resident education. We honor his many contributions to the department and specialty.
In addition to Dr. Harsh we welcomed one new faculty this year and successfully recruited two others.

**Ignacio Saez, Ph.D.,** joined the Department in September.

The Saez Lab focuses on the combination of computational models of decision making. He was awarded a K01 grant from the NIH to study the electrocorticography of human prefrontal cortex during value-based decision making and is a Co-Investigator on an NIH R21 grant examining cortical oscillatory dynamics and human decision-making.

**Dr. Orin Bloch** joined the department in March 2019. A highly respected surgical neuro-oncologist, he specializes in the treatment of patients brain and spinal cord tumors. Supported by an NIH R01 grant, Orin’s laboratory develops novel immunotherapy approaches for brain tumor patients. In collaboration with medical neuro-oncologists, he will expand current and initiate new clinical trials at UC Davis.

**Dr. Michael Edwards** joined the department in April 2019.

He specializes in the treatment of pediatric neurosurgical disorders. Widely recognized as the leading academic pediatric neurosurgeon in Northern California for the last three decades, Mike will bring renowned surgical skill, unparalleled commitment to patient care, superb teaching, and regional outreach to the department.
Challenging Glioblastoma

Drs. Kia Shahlaie, Gene Gurkoff, and Amir Goodarzi are developing novel treatments for glioblastoma. Their work was featured in the Fall 2018 issue of Synthesis. Read more about their strategies by following the link.


Baby Gets Life Saving Help From Neurosurgery

Dr. Marike Zwienenberg was recently featured on the UC Davis Patient Stories blog for her treatment of intraventricular hemorrhage of a pediatric patient, Tikhon. Read about his amazing journey following the link provided below. Kudos to Dr. Zwienenberg and the entire care team.

Associate Professor Dr. Marike Zwienenberg is the lead neurosurgeon on the fetal surgery team performing closure of spina bifida defects in utero to improve the chance that these babies will lead a normal life. UC Davis established the first comprehensive multidisciplinary fetal diagnosis and therapy center in inland Northern California, led by Dr. Shin Hirose.

Over the past year the program has grown significantly. The fetal team has successfully treated a number of babies and both mothers and babies have thrived following treatment. The clinical expertise at UC Davis is supported by a robust research program led by one of the pioneers in fetal surgery. This places UC Davis in a unique position to research and optimize future treatment strategies for improving the long term outcome of babies with spina bifida.
Severe traumatic brain injuries are devastating. Early interventions and a collaborative multidisciplinary approach is key to improving patient outcomes.

Faculty members and Co-directors of the Neurocritical Care Service, Drs., Lara Zimmermann and Ryan Martin were recently featured for their efforts in treating a patient who suffered a two story fall from the roof of his home onto concrete. Their efforts to stop seizures, control brain swelling and prevent further injury made a substantial impact on the patient’s recovery. You can read more about their work at [https://health.ucdavis.edu/welcome/features/2017-2018/05/20180518_tbi_story.html](https://health.ucdavis.edu/welcome/features/2017-2018/05/20180518_tbi_story.html)
Dr. Kee Kim, Professor and Co-director of the UC Davis Spine Center, is the primary investigator for a multicenter double blind randomized clinical trial to evaluate a nonsurgical treatment for lumbar herniated disc. Currently, UC Davis Health is one of only three sites in California where this novel treatment is available. For more info: https://health.ucdavis.edu/publish/news/newsroom/13212

Associate Professor Dr. Ben Waldau, specializes in cerebrovascular and endovascular neurosurgery. In April 2018 he was awarded an NIH K08 award to study the "Mechanism of memory decline after intraventricular hemorrhage." In July he was awarded a MAS Cellular Therapy Grant "Generation of a human cerebral organoid blood brain barrier." We are proud of his exciting accomplishments.

Congratulations to Assistant Professor Gene Gurkoff, Ph.D. on being awarded the 2018 Outstanding Graduate Mentor in Neuroscience and the Outstanding Service Award by the UC Davis Neuroscience Graduate Group.
Chief Resident, Tamar Binyamin, M.D., will graduate in June of 2019. Dr. Binyamin obtained her M.D. degree from Virginia Commonwealth University School of Medicine in 2012. She has been a superb Chief Resident, adroitly managing a very busy inpatient service of as many as 50 patients while leading a resident corps of 10. Tamar has accepted a prestigious fellowship in cerebrovascular neurosurgery at the University of Texas, Southwestern, in Dallas beginning in July 2019.

Congratulations to Bart Thaci, M.D., PGY-4 for his selection as resident representative to the Council of State Neurological Societies Socioeconomic panel. Bart will work on the panel to improve educational resources for residents such as the CNS Nexus project and the CNS Case of the Month publications. Bart will also begin the first year of a CNS resident cerebrovascular enfolded fellowship, at the University of Alabama, Birmingham, in July of 2019.
Wellness

Each quarter, our residents participate in a wellness event. This fall, they participated in the 1st Annual West Coast Neurosurgery Games hosted by UCLA. This event brought together eight west coast neurosurgery programs for friendly beach game competition and networking with colleagues.
Patient Referrals, Transfers and Phone Consults:

Thank you for choosing UC Davis Health and for referring your patient to us. We appreciate the opportunity to partner with you in your patient's care.

To see one of our specialists call our Physician Referral Center at 800-4-UCDAVIS (800-482-3284), option #3.

You may also go to: https://health.ucdavis.edu/referrals/

Additional contacts: 916-734-6513, Kally Turner, Chair's Analyst
916-731-1987, Floreece Murphy, R.N., Clinic Manager
Patient Support

The Brain Tumor Support Group was formed in 1990 to provide emotional support and educational programs to tumor patients and their families and friends. The group is open to all patients with benign or malignant brain tumor disease at any stage. Patients’ family members are encouraged to participate. Membership is free. The group meets the first Wednesday of every month from 6:30 to 8:00 p.m. Suite 3015B, Ellison Ambulatory Care Center.

The Brain Aneurysm Support Group provides hospital visitation, telephone support and monthly meetings to help you connect with other people who are facing treatment, recovering, or supporting someone who has experienced aneurysm. The support group meets monthly and covers a variety of important topics for aneurysm patients and their families. Meetings are the fourth Saturday of every month, 3-5 p.m., at the UC Davis ACC. 4860 Y Street RM 3015, 3rd Floor, Sacramento, CA 95817 For more information about the aneurysm or tumor support groups, contact Breana Sanchez at bnsanchez@ucdavis.edu.

The Deep Brain Stimulator Support and Education Group is open to patients, caregivers, and family who have or are considering a deep brain stimulator for a movement disorder such as Parkinson's disease, tremor or dystonia. Monthly topics and guest speakers will help you learn more about living with a stimulator and Parkinson’s. Meeting days and locations for the Deep Brain Stimulator Support Group alternate between the three clinic sites. For more information, contact Karla Lindstrom at 916-734-6282 or klindstrom@ucdavis.edu.


2018 Publications


Zwienenberg M, Marcin JP.
Getting a head start: expediting neurosurgical intervention in children transported with intracranial hemorrhage with telemedicine.

Book Chapters

Madden LK, Ruiz MA, Shahaie K.

Cerebral metabolism and blood flow following traumatic brain Injury.

Severe traumatic brain injury.

Traumatic spinal cord injury.

Nayak JV, Harsh GR, Hwang PH.
Endoscopic management of clival chordomas and chondrosarcomas.

Ostergard T, Girgis F, Miller JP.
Multiple subpial transections and multiple hippocampal transections for epilepsy in eloquent Brain Areas.
The behavioral, neuroanatomic, cellular, and molecular impact of maternal autoantibodies in a rat model of autism spectrum disorder
Van de Water J, Berman RF
Robert Landrith Family Fund
July 2018 to June 2019

Representation of spatiotemporal information in human episodic memory and navigation
Ekstrom A, Gurkoff G, Shahlaie K
National Institutes of Neurological Disorders and Stroke
NIH R01 NS 076856
July 2018 to June 2022

Restoring functional connectivity following TBI
Gurkoff G, Ekstrom A, Lyeth B, Shahlaie K, Berman R
NIH 5 R01 NS 084026-05
February 2018 to January 2019

A concurrently controlled study of the LimiFlex Paraspinous Tension Band in the treatment of lumbar degenerative spondylolisthesis with spinal stenosis
Kim K
Empirical Spine, Inc.
January 2018 to June 2027

A multicenter, randomized, double-blind, sham-controlled, comparative study of SI-6603 in subjects with lumbar disc herniation (Phase 3)
Kim K, Copenhaver D
Seikagaku Corporation
July 2018 to May 2021

A confirmatory clinical study to support the effectiveness and safety of Oxiplex® for the reduction of pain and symptoms following lumbar surgery
Kim K, Ebinu J
Fziomed, Inc.,
September 2018 to September 2021

Acute SCI study
Kim K
Mitsubishi Tanabe Pharma Corp.
July 2018 to July 2019

Neuro-spinal scaffold
Kim, K
Invivo Therapeutics Corporation
XYA35490 August 2018 to August 2020

Traumatic injury clinical trial evaluating tranexamic acid in children
National Heart, Lung Blood Institute
NIH 5 R34 HL135214-02
January 2018 - December 2018

The role of Src family kinases in traumatic brain injury
Liu D, Lyeth B
National Institute of Neurological Disorders and Stroke
NIH R01 NS 089901-04

Tools and services for designing methodologically rigorous animal studies
Lyeth B
Stochastech Corporation
October 2018 to April 2019

The UCD-DGMC TBI precision medicine network for complex trauma
Palmiere T, Meyers F, Martin R, Zimmermann LL
Department of Defense
2018

Deep brain stimulation of the medial septal nucleus in epilepsy
Shahlaie K
UC Davis School of Medicine Dean's Grant 2018 to 2020

Intracranial electrode implantation to deliver spherical tumor treatment fields therapy for management of glioblastoma multiforme
Shahlaie K
UC Davis Comprehensive Cancer Center
July 2018 to June of 2019

Development of a lateral flow assay (LFA) for the rapid and cost-effective diagnosis of cerebrospinal fluid (CSF) fistulae
Steel T, Strong B, Shahlaie K
February 2018 to January 2019

Pilot funding for investigators in oncology Shahlaie K
CCSG Institutional Research Grant
UC Davis Comprehensive Cancer Center January 2018 to December 2019

Interferometric near-infrared spectroscopy for tissue flowmetry and oximetry
Sriniivasan V, Lyeth B
National Institute of Neurological Disorders and Stroke
NIH 5 R21 NS105043-02
September 2018 to August 2019

Functional vascularization of human brain organoids
Waldau B
Cellular Therapy Training Program, CIRM
Alpha Stem Cell Clinics
October 2018 to June 2020

Mechanism of memory decline after intraventricular hemorrhage
Waldau B
K08, National Institutes of Health
April 2018 to March 2022

Brain tissue oxygen optimization in severe traumatic brain injury (BOOST-III)
Zimmermann LL, Martin R
National Institutes of Health
2018

Epilepsy Bioinformatic Study for Post-Traumatic Epilepsy (EpiBioS4-PTE)
Zimmermann LL, Martin R
DOD (CDMRP)
2018
Honoring James E. Boggan, M.D.
Professor Emeritus
Chair 2014-2018

We recognize the extraordinary contributions of Dr. James E. Boggan to the UC Davis Department of Neurological Surgery. Dr. Boggan joined the department in 1985 as an Assistant Professor. He was promoted to Associate Professor in 1987 and full Professor in 1993. Dr. Boggan served as the Associate Director, Center for Skull Base Surgery from 1990 to 2017 and was an Acting Chair of the department from 1994 to 1996. He was a Co-Director for the UCDavis Gamma Knife Radiosurgery Program from 2003 to 2017.

Dr. Boggan was appointed as the department chair in 2014. We deeply value the leadership, commitment and tireless dedication to patient care, research and resident education that Dr. Boggan has manifest over the many years of service to UC. We appreciate the wealth of guidance, mentorship and support he has provided to students, residents, fellows, researchers, junior faculty and staff and we wish him the very best as he moves into the next phase of his career.
With Gratitude:

The UC Davis Department of Neurological Surgery expresses our deep appreciation and gratitude to those of you who so generously donated to our program in 2018, especially those who supported our inaugural Julian R. Youmans and Franklin C. Wagner Jr., Neurological Surgery Fund. We are committed to providing the very best in neurological patient care and resident training in Northern California and your philanthropic support helps us achieve that vision.

Honoring our Donors

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Thank you for inspiring us to accomplish more!

UC Davis Health

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