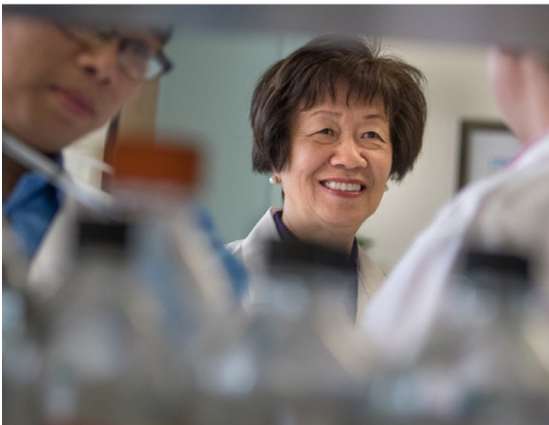


# COMMUNITY

*for a* **CURE**



## *Faculty Spotlight: Celebrating the Career of Dr. Amy S. Lee*



After 45 years of dedication and excellence to the University of Southern California (USC), we celebrate the remarkable career and well-earned retirement of Dr. Amy Lee, a professor of Biochemistry & Molecular Medicine and internationally recognized expert in molecular biology, stem cells, and gene expression. She is known for her pioneering work on endoplasmic reticulum (ER) stress, particularly the ER chaperone proteins GRP78 and GRP94.

**“I’ve always loved biology, so during my graduate and postdoctoral training, I became extremely interested in gene regulation, which remains a fundamental mystery in cell biology,”** said Dr. Lee.

She joined USC in 1979 as a faculty member in the department of Biochemistry and moved her lab to the USC Norris Comprehensive Cancer Center (USC Norris) in 1993. During her time at USC Norris, Dr. Lee served as the Associate Director of Basic Science from 1996 to 2019 and also served as the Associate Director for Shared Resources from 2020 to 2021. Dr. Lee holds the Judy and Larry Freeman Cosmetics Chair in Basic Science in Cancer Research.

Her lab was the first to clone and study the regulation and function of the 78 kilodalton glucose regulated protein GRP78/BiP, a master molecular chaperone in the ER and a key regulator of ER homeostasis. She has made numerous discoveries regarding how these genes are regulated and their role in development and human diseases. Dr. Lee’s laboratory established that GRP78 is a major contributor for tumorigenesis, metastatic growth, and drug resistance. By creating conditional mouse models of GRP78, her laboratory provided direct proof that partially reducing GRP78—while having no effect on normal organ function—is sufficient to halt cancer progression in vivo.

GRP78 is now recognized as a novel cancer therapeutic target with dual function in tumor progression and tumor angiogenesis, as well as a novel prognostic marker for tumor virulence and disease recurrence. With her discovery that GRP78 is preferentially expressed on the cell surface of tumor cells, controlling signaling and proliferation, her laboratory investigated the mechanisms of GRP translocation to the cell surface and developed therapeutics targeting GRPs for clinical applications. Recently, her lab further discovered that in cancer cells, GRP78 can enter the nucleus and regulate gene activities, leading to cell migration and invasion.

**continued on page 2...**

Dr. Lee obtained her B.A. from the University of California, Berkeley, and her Ph.D. from the California Institute of Technology, with a major emphasis on fundamental knowledge of DNA, protein, and cell biology. In recognition of her research achievements, Dr. Lee received the MERIT Award from the National Cancer Institute. She was also elected as a Fellow of the American Association for the Advancement of Science (AAAS) for her pioneering work on ER stress and its impact on cell and cancer biology.



Photo Credit: Steven Lam

**“If you say GRP78, your next word is Amy Lee,”** said Dr. Peter Jones, former director of USC Norris. **“And if you say Amy Lee, your next word is GRP78. That is the mark of a successful career.”**

## Honors and Recognitions



**Congratulations to Joi Torrence-Hill, chief of operations at USC Norris Cancer Hospital, who has been recognized as an outstanding hospital and health system chief operating officer for 2024 by Becker’s Hospital Review.** Joi has overseen exponential growth in programs such as bone marrow transplants, ambulatory care, and infusion services, all while launching innovative initiatives like a multidisciplinary oncology care model and a breast cancer survivorship program. She also spearheaded efforts to enhance patient transitions between inpatient and outpatient care, improve operational efficiency, support

clinical trial integration and precision therapies, and foster collaboration through advanced technology platforms and steering committees.



**Congratulations to Dr. Monish Aron, member of the USC Norris Translational and Clinicals Sciences Program, Dr. Gabriel Zada, member of the USC Norris Epigenetic Regulation in Cancer Program and Surgical Director of the USC Brain Tumor Center, and Anthony El-Khoueiry, Associate Director for Clinical Research at USC Norris, who have been named as 2025 “Leaders of Influence: Top LA Doctors” by the Los Angeles Business Journal.**

Dr. Aron has dedicated his career to advancing the field of robotic surgery for urological diseases, including prostate, bladder, and kidney cancers.

Dr. Zada has dedicated his career to advancing patient care through minimally invasive survival techniques, innovative technologies, and education.

Dr. El-Khoueiry is a recognized international expert in the treatment of hepatobiliary cancers and leads the phase I section of developmental therapeutics at USC Norris.

Learn more here: <https://hscnews.usc.edu/keck-medicine-of-usc-physicians-named-among-top-los-angeles-doctors>.



Congratulations to all of our USC Norris Members who have been selected as Top Doctors for 2025 by Castle Connolly. Castle Connolly Top Doctors represent the top 7% of all U.S. practicing physicians. These doctors are best-in-class healthcare providers, embodying excellence in clinical care as well as interpersonal skills.

**Top Gynecologist Oncologists:**

Lynda Roman, MD

**Top Radiation Oncologist:**

Eric Chang, MD

**Top Medical Oncologists:**

Anthony El-Khoueiry, MD

Jorge Nieva, MD

Syma Iqbal, MD

Jacek Pinski, MD, PhD

Jacob Thomas, MD

Gino K. In, MD

Sandra Algaze, MD

**Top Hematologists:**

Casey O’Connell, MD

Ann Mohrbacher, MD

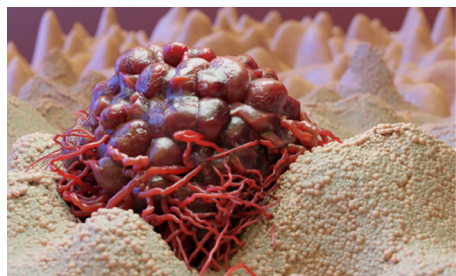
Howard Liebman, MD

**Top Diagnostic Radiologists:**

Peter S. Conti, MD, PhD

Edward Grant, MD

*Scientific Advances and Discoveries*



**Rare type of melanoma shows reduced response to two-drug combination in new study**

Melanoma is a deadly form of skin cancer that affects more than 325,000 people worldwide each year. A study published in the **British Journal of Dermatology** by USC Norris members Drs. Gino In and Fumito Ito, along with Katherine Butcher, a nurse practitioner at USC Norris Cancer Hospital, examined acral lentiginous melanoma (ALM)—a rare type of melanoma that appears on the palms, soles, or nailbeds and is more common in individuals with darker skin tones.

They found that ALM is less responsive to a specific two-drug combination compared to other types of melanomas. In the study, only about 2 in 10 patients with ALM experienced tumor shrinkage. Additionally, the combination immunotherapy provided limited survival benefits. Most cancers returned after approximately four months, and patients had a median survival of about 17 months.

**“This study emphasizes the poor outcomes for patients with advanced acral melanoma treated with the combination of nivolumab and ipilimumab,” said Dr. In. “Even with some of the best cancer immunotherapy treatments available, patients with this melanoma subtype fare worse and need new treatment options beyond existing checkpoint inhibitors.”**



## Targetable mutations found in tumors: DH1 & KRAS identified

Uterine leiomyosarcoma is a rare and aggressive gynecological cancer with survival rates as low as 15%. Only 1,000 cases are diagnosed annually in the U.S., accounting for approximately 2% of all uterine cancers. Unfortunately, only a few studies have explored targeted treatments to improve personalized care for these patients. Published in [Science Direct](#), Dr. Tirzah Petta, member of the USC Norris Epigenetic Regulation in Cancer Program, and her team conducted an in-depth analysis of tumor DNA and proteins using advanced

multi-omics techniques. They discovered that some tumors had specific genetic mutations, such as IDH1 and KRAS, that could be targeted with existing treatments.

A major finding was that most tumors showed ‘homologous recombination deficiency’—a genomic signature that serves as a biomarker for target therapy. Fast-growing tumors with high Ki67 levels were linked to worse survival rates. However, the study also identified another tumor subtype driven by changes in the extracellular matrix, marked by high CTHRC1 levels.

**“This means uterine leiomyosarcoma isn’t just one disease—it has at least two distinct biological profiles, which could change how we treat it! This research opens the door for precision medicine—matching the right treatment to the right patient for better outcomes,” said Dr. Petta. “Every patient is a story, and every rare tumor is a chapter worth studying.”**



## Study links PFAS contamination of drinking water to a range of rare cancers

Communities exposed to drinking water contaminated with manufactured chemicals known as per- and polyfluoroalkyl substances (PFAS) experience up to a 33% higher incidence of certain cancers. Published in [the Journal of Exposure Science and Environmental Epidemiology](#), USC Norris members Drs. Max Aung, Lida Chatzi, David Conti, Robert McConnell, and Jesse Goodrich, along with Dr. Shiwen (Sherlock) Li, a postdoctoral researcher and first author on the study, conducted an ecological study that analyzed large

population-level datasets to identify patterns of exposure and associated cancer risk. They found that between 2016 and 2021, counties across the U.S. with PFAS-contaminated drinking water had higher incidences of certain cancers, which varied by sex. Overall, PFAS in drinking water are estimated to contribute to more than 6,800 cancer cases annually, based on the most recent data from the U.S. Environmental Protection Agency (EPA).

**“These findings allow us to draw an initial conclusion about the link between certain rare cancers and PFAS exposure,” said Dr. Li. “This suggests that it’s worth researching each of these links in a more individualized and precise manner.”**



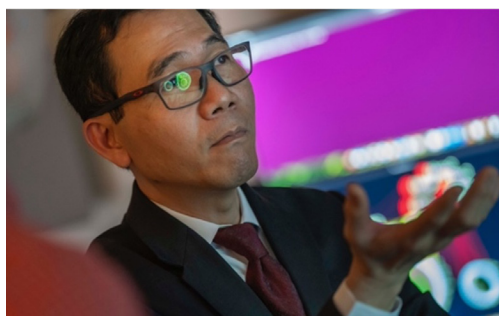
## Blocking STAT6-Bestrophin1-GABA axis starves brain metastasis

Leptomeningeal dissemination (LMD) occurs when tumor cells interact with choroid plexus epithelium (CPE) to gain access to cerebrospinal fluid (CSF) in the brain's meninges and ventricular system. Cancer cells send signals to the choroid plexus—specialized cells in the nervous system that support and protect neurons—tricking them into producing more of a brain chemical called GABA, a key energy source for cancer cells.

Published in the [Journal of Neuro-Oncology](#), USC Norris members Drs. Josh Neman and Frances Chow found that by using primary choroid plexus cells, breast cancer cells, and patient-derived metastatic cells from breast and lung cancer, they could block a specific pathway called the STAT6-Bestrophin1-GABA axis. By inhibiting this axis, Dr. Neman and his team prevented the choroid plexus from fueling tumor cells. Additionally, they found that using a STAT6 inhibitor extended survival in preclinical models.

**“This disease is particularly devastating for patients due to our limited understanding and few therapeutic options,” said Dr. Neman. “This breakthrough opens doors to new treatments for leptomeningeal disease, bringing hope to patients facing this tough battle.”**

## New Grants



Glioblastoma (GBM) is the most lethal brain cancer in adults with a median survival of less than 15 months and a five-year survival rate of only 5%. **Thanks to a major grant awarded by the California Institute for Regenerative Medicine (CIRM), USC Norris member Dr. David Tran and his team will pioneer a first-of-its-kind, heterogeneity-agnostic gene therapy that targets glioblastoma.** This novel strategy, designed to target common glioblastoma molecular features, promises a broadly effective gene therapy, offering renewed hope to GBM patients in California and beyond.

The grant team, which includes USC neuropathologists, computational biologists, and neurosurgeons, will collaborate with the USC/CHLA cGMP facility. This facility, designed to manufacture cell and gene therapies under the Food and Drug Administration's current Good Manufacturing Practice (cGMP) standards, will ensure that all treatment products and protocols meet human safety and efficacy requirements.



Rhabdomyosarcoma is the most common type of muscle cancer in children. When this cancer spreads to other parts of the body (metastasis), it becomes significantly harder to treat, with survival rates dropping as low as 20%. **Thanks to an award from the Alex's Lemonade Stand Foundation, Dr. Jinseok Park, a member of the USC Norris Tumor Immunology and Microenvironment Program, will investigate the role of the PAX3-FOXO1 fusion gene in defining each cell's function in collective cell invasion and its contribution to increased metastatic potential.** This study could provide critical insights into the mechanisms

underlying FPRMS metastasis and aid in the development of therapeutic strategies to suppress metastasis, ultimately improving clinical outcomes for children affected by this devastating cancer.

## *Community Outreach and Engagement*



During the LA 2025 wildfires, the Office of Community Outreach and Engagement (COE) at USC Norris, in collaboration with Department of Population and Public Health Sciences and the Clinical Translation Institute (CTSI), played a vital role in supporting cancer patients, their families, and impacted communities. Efforts included social media outreach, resource distribution, referrals, donation management, volunteer mobilization, and tutoring services. Recognizing the immense hardships faced by cancer patients—many displaced or unable to return home—COE helped facilitate \$28,050 in financial aid from national non-profits.

Social media outreach provided critical wildfire safety updates and healthcare resources, while 19 promotores distributed educational materials across 45 volunteer locations.

Additionally, USC medical and public health students at the Joint Educational Project provided tutoring services for families in need. Through strategic planning and collaboration, COE delivered essential support to those most vulnerable during the crisis.

## *Valentine's Day Grams - Institute for Arts in Medicine Program*



The Institute for Arts in Medicine (I\_AM) program is committed to enhancing the role of healing arts and wellness throughout our healthcare system. One of its most heartfelt initiatives is the annual Valentine Grams Fundraiser. This year, custom portraits and handwritten cards were created to spread love and joy to our cancer patients, their loved ones, and our phenomenal faculty and staff.

This year's fundraiser featured the incredible talents of I\_AM Volunteers Savannah, Patrick, and Angela, who carefully sketched each portrait in pencil and marker and crafted heartfelt messages by hand. Every detail was thoughtfully designed to make each gram a cherished keepsake.

**With your help, we can make cancer a disease of the past.**

[GIVE NOW >>](#)

## FOLLOW US ON OUR SOCIAL MEDIA PLATFORMS!

To learn about the latest discoveries and news from USC Norris, please follow us on Facebook, Instagram, and Twitter. To connect with us, open your phone's camera app, face it towards the QR code, click on the link that appears, and click the "Follow" button located at the top.



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## Contact Us

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Have something to contribute to Community for a Cure? Send it to [Hinde.Kast@med.usc.edu](mailto:Hinde.Kast@med.usc.edu)

To learn more about giving to USC Norris, please contact Minhaal M. Nathani, Senior Executive Director of Development, at [Minhaal.Nathani@med.usc.edu](mailto:Minhaal.Nathani@med.usc.edu)

Learn more about the USC Norris Comprehensive Cancer Center on our website:  
<https://uscnorriscancer.usc.edu>