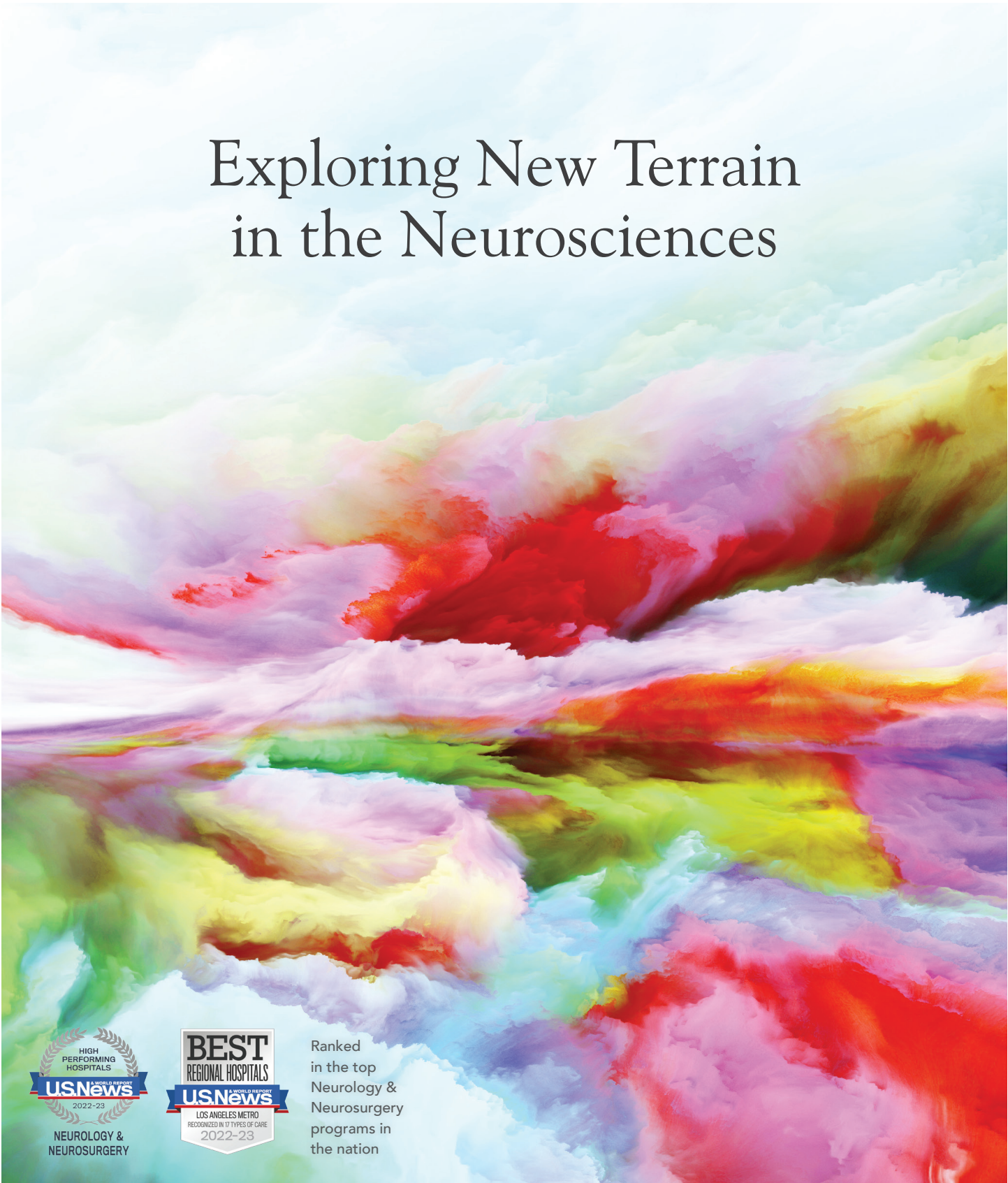


2022 IN REVIEW &
LOOKING FORWARD IN 2023



Exploring New Terrain in the Neurosciences



Ranked
in the top
Neurology &
Neurosurgery
programs in
the nation



PUTTING YOUR
BRAIN CARE
in the most capable hands

RANKED IN THE NATION'S TOP neurology and neurosurgery programs, **PACIFIC NEUROSCIENCE INSTITUTE** experts specialize in minimally invasive, maximally effective treatments focused on quality of life.

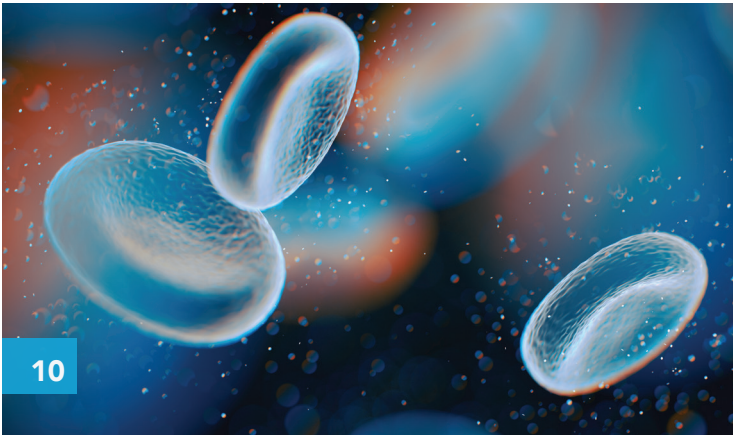
Throughout their treatment journey, patients experience compassionate, multispecialty care at Saint John's Health Center, Santa Monica, Little Company of Mary, Torrance, and Saint Joseph Medical Center, Burbank.

THINK NEURO. THINK PNI.

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Editorial Team

Director and Co-Founder, Pacific Neuroscience Institute
Daniel Kelly, MD

Vice President, PNI Foundation
Melissa Coleman, Esq

Director, Marketing & Communications
Zara Jethani, MS, MBA

Specialist, Marketing & Communications
Amelia Garrison, BA, MPhil



PACIFIC NEUROSCIENCE INSTITUTE

2022 BY THE NUMBERS

PNI	10 Centers of Excellence 36 PNI Medical Group Faculty	100 Providence Medical Group Staff 22 Advanced Practice Providers	21 Affiliate Staff 32 PNI Foundation	7 Hospital Affiliates 24 Locations
Neuroscience Clinical Care, Grants & Publications	65,549 Clinic Visits (In-person & virtual)	2,136 Medical Group Surgical Procedures 933 NIR/Neurovascular Procedures	46 Peer-Reviewed Publications	3 Funded Grants
Patient Support Groups & Webinars	16 Community Events	7 Community Partners	190 Support Groups	32 Webinar Sessions
Continuing Education & Training	53 Neuroanatomy Formal Dissections	69 CME Courses	16 Medical Assistants-In-Training	6 International; Neurosurgical Fellows 7 Neuroscience Interns
PNI Foundation Programs & Outreach	\$4 million Dollars Raised	210,162 Podcast All-Time Downloads	40,884 Social Media Followers	1.1 million Website Sessions



Pacific Neuroscience Institute Founders Chester F. Griffiths, MD, FACS; Daniel F. Kelly, MD; Howard R. Krauss, MD; Santosh Kesari, MD, PhD

MESSAGE FROM THE FOUNDERS

At Pacific Neuroscience Institute® (PNI) we achieved many milestones in 2022 and continue to make positive impacts in neuroscience clinical care, research, and education.

Our Santa Monica and Torrance locations thrive, serving patients with difficult neurological conditions. While PNI physicians have had a presence at Providence Saint Joseph Medical Center in recent years, we formally opened our neuroscience clinic in Burbank to provide a wide array of services including neurosurgery, neuro-oncology, and neurointerventional radiology. We welcomed PNI Medical Group’s new Chief Administrative Officer, Christopher Cosgrove.

The PNI Foundation successfully launched the exciting and innovative Lifestyle Program. Comprehensive educational courses are available in-person and virtually, addressing many memory and lifestyle-related brain health concerns. A broad range of participants can find classes relevant to issues such as memory, sleep, nutrition, and stress. The Lifestyle team, led by Karen Miller, PhD, includes memory experts, brain and lifestyle health coaches, and FitBrainSM specialists.

In addition to the publication of several key papers aimed at adding to the medical literature and improving standard of medical care, our research and clinical trials have been robust. The Treatment & Research In Psychedelics (TRIP) program, wrapped up two clinical trials for alcohol use disorder and major depressive disorder, and began a study for generalized anxiety disorder.

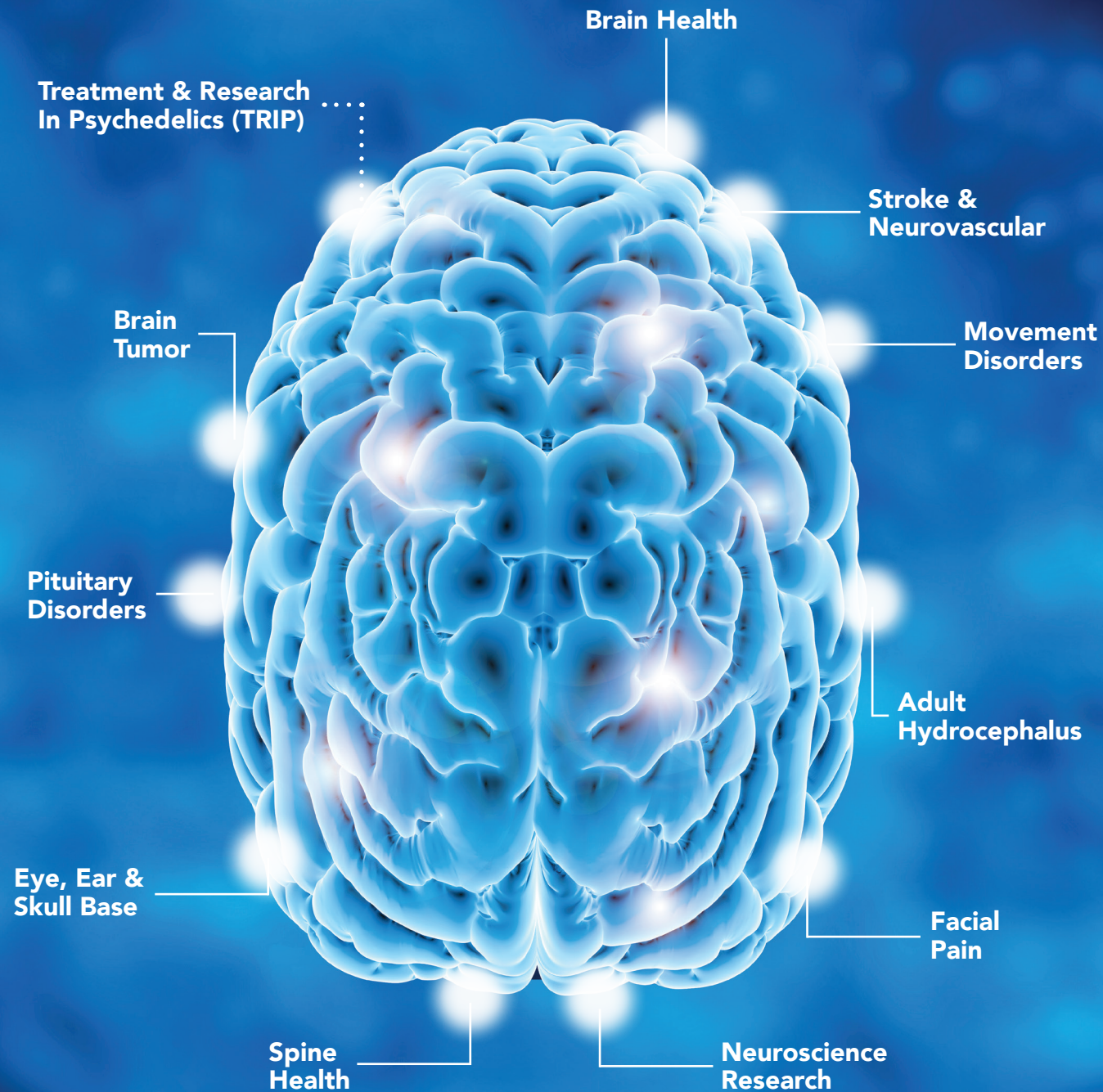
Our gratitude as always goes to all those who support us through their generosity. Your philanthropy makes our mission possible. We could not achieve much without the expertise and dedication of every single member of our medical, professional, and support teams. We thank you.

We are delighted to present PNI’s HIGHLIGHTS of accomplishments in 2022 and are ready to take on 2023. Come and join us!

Sincerely,

Daniel F. Kelly, MD, Chester F. Griffiths, MD, FACS, Santosh Kesari, MD, PhD, and Howard R. Krauss, MD

PNI'S CENTERS OF EXCELLENCE



In the Pursuit of Excellence NEUROSCIENCE CLINICAL CARE

► PNI receives national recognition for neurology & neurosurgery

Ranked in the top neurology and neurosurgery programs in the nation by US News and World Report, PNI specialists continued to provide comprehensive care this year for a wide spectrum of neurological disorders at Providence Saint John's Health Center (Santa Monica), Providence Little Company of Mary (Torrance), Providence Saint Joseph Medical Center (Burbank), and Providence Holy Cross Medical Center (Mission Hills). PNI specialists continue to serve at 17 clinic locations across Southern California. Our Providence affiliates received nearly 150 honors, including Southern California's prestigious High Performing Best Hospitals award for patient outcomes, nurse staffing, and services in neurology and neurosurgery at Saint John's Health Center.

► Brain Tumor & Pituitary Disorders programs expand, ranking for shortest hospital stays

At Providence Saint Joseph Medical Center (Burbank), we officially opened our neuroscience clinic, offering neurosurgery, neuro-oncology, neurointerventional radiology, and head and neck cancer care services to patients in the San Fernando Valley. Providence Saint John's Health Center (Santa Monica) and Providence Little Company of Mary (Torrance) ranked in the shortest length of hospital stay for brain and pituitary surgery in all of Providence, so that patients get home sooner and recover more quickly. Our neuro-oncology network is one of the largest in the nation.

DIRECTORS: Daniel F. Kelly, MD & Garni Barkhoudarian, MD, FAANS

► Stroke & Neurovascular program recognized for excellence in life-saving care

The expertise of PNI specialists resulted in affiliate hospitals Providence Saint John's Health Center (Santa Monica) and Providence Little Company of Mary (Torrance) receiving multiple national recognitions from the American Heart Association, including the Get With the Guidelines – Stroke *GoldPlus* award for proven dedication and ensuring all patients have access to best practices and life-saving

care. Both affiliate hospitals met specific rigorous guidelines as a Primary Stroke Center/Comprehensive Stroke Center, featuring a comprehensive system for rapid diagnosis and treatment of stroke patients admitted to the emergency department.

DIRECTORS: Jason Tarpley, MD, PhD & Samuel Hou, MD PhD

► Eye, ENT, and Head & Neck programs thrive, addressing patient needs

PNI opened Providence Southern California's first Cochlear Implant Program for Adults and Children, addressing untreated hearing loss in adults and pediatric populations. PNI launched the Head & Neck Program, providing complex care for patients with head and neck cancers. The Hearing Aid & Recycling Program funded by philanthropy began hearing testing outreach through the HearX platform. PNI's facial paralysis specialist made international news for high-profile work with Ramsay Hunt syndrome. Our ENT and head & neck colleagues continued to serve patients in South Bay, Playa Vista, Santa Monica, and Westside Los Angeles clinics, providing general ENT, head and neck oncology, facial reconstruction, facial plastic surgery, and neuro-otology.

DIRECTORS: Chester F. Griffiths, MD, FACS & Howard R. Krauss, MD

► Brain Health & Clinical Trials programs gain traction

The Brain Health Center continued to provide quality care and support services for patients with dementia, memory loss, mental health-related concerns, multiple sclerosis, and psycho-oncology (cancer psychiatry). The Brain Health team partnered with the NFL Hall of Fame Health providing neurological and mental health programs to retired football players and their families.

DIRECTOR: David A. Merrill, MD, PhD

► The Treatment & Research In Psychedelics (TRIP) program expands

The TRIP program expanded the ketamine-assisted therapy program as an effective treatment for patients with depression and addiction.

DIRECTOR: Keith Heinzerling, MD

► Movement Disorders program provides essential care and support

The Movement Disorders team continued to grow its practice, providing essential care, education, and support for patients and their loved ones in Santa Monica and Torrance. Patients received life-transforming deep brain stimulation (DBS) surgery with faster recovery, and patients gathered for support groups, webinars, and community partner events throughout the year.

DIRECTORS: Jean-Philippe Langevin, MD & Melita Petrossian, MD



Barbara Giesser, MD - Multiple Sclerosis Neurology, Pacific Brain Health Center
Melita Petrossian, MD - Director, Pacific Movement Disorders Center

2022 Faculty Highlights

PNI welcomed new members to the team:

Jesús O. Barreto Abrams, PhD – *Clinical Neuropsychology*

Chris Cosgrove, MBA – *PNI Chief Administration Officer*

Rebecca Lewis, AuD – *Audiology*

Somayeh Meysami, MD
– *Brain Health Clinical Research Scientist*

Karen Miller, PhD – *Clinical Neuropsychology*

Sandra Narayanan, MD
– *Vascular Neurosurgery; Neurointerventional Surgery*

Alexander Solomon, MD – *Neuro-ophthalmology*



3 in 4 of our faculty received the nation's most prestigious Super Doctor, Super Doctor Rising Star, Top Doctor, Best Doctor, and Patients' Choice Awards.

Barbara S. Giesser, MD, received the Ted Burns Humanism Award for exhibiting humanism through humble leadership, advocacy, innovation, and creativity.

Santosh Kesari, MD, PhD was named Researcher of the Month by the Medical Oncology Association of Southern California.

Mihae Kim, MSN, RN, AGNP-BC received the Providence 2022 Advanced Practice Practitioner of the Year award.

In 2023...

We will grow our clinical programs and expand new territories in brain health.

- We will expand the pediatric cochlear implant program at Providence Saint John's Health Center in Santa Monica.
- We will expand TRIP clinical trials with new psychedelic compounds for additional mental health indications.
- We will continue to expand the Lifestyle Program to provide memory training.

TRAINING & CONTINUING MEDICAL EDUCATION

- In 2022, PNI provided training and education opportunities for six international neurosurgical fellows from Argentina, Iran, Korea, Malaysia, and the Philippines (2); seven neuroscience interns; and sixteen Medical Assistants-In-Training.
- Our PNI experts hosted 53 formal dissections at the state-of-the-art Neuroanatomical Surgical Skills Laboratory located at Saint John's Cancer Institute in Santa Monica. This advanced training facility has 12 stations for minimally invasive surgery, neuroanatomical dissections, and technology and approach advancements in keyhole surgery.
- Our Pacific Head & Neck specialists hosted an in-person ear, nose, and throat Continuing Medical Education (CME) course for primary care physicians. International otolaryngologists received training in ear surgery at a 3-day GEO Outreach and PNI Temporal Bone Dissection Course.
- Other CME courses included a movement disorder program for social workers and a neuroscience nursing symposium in its 13th year.

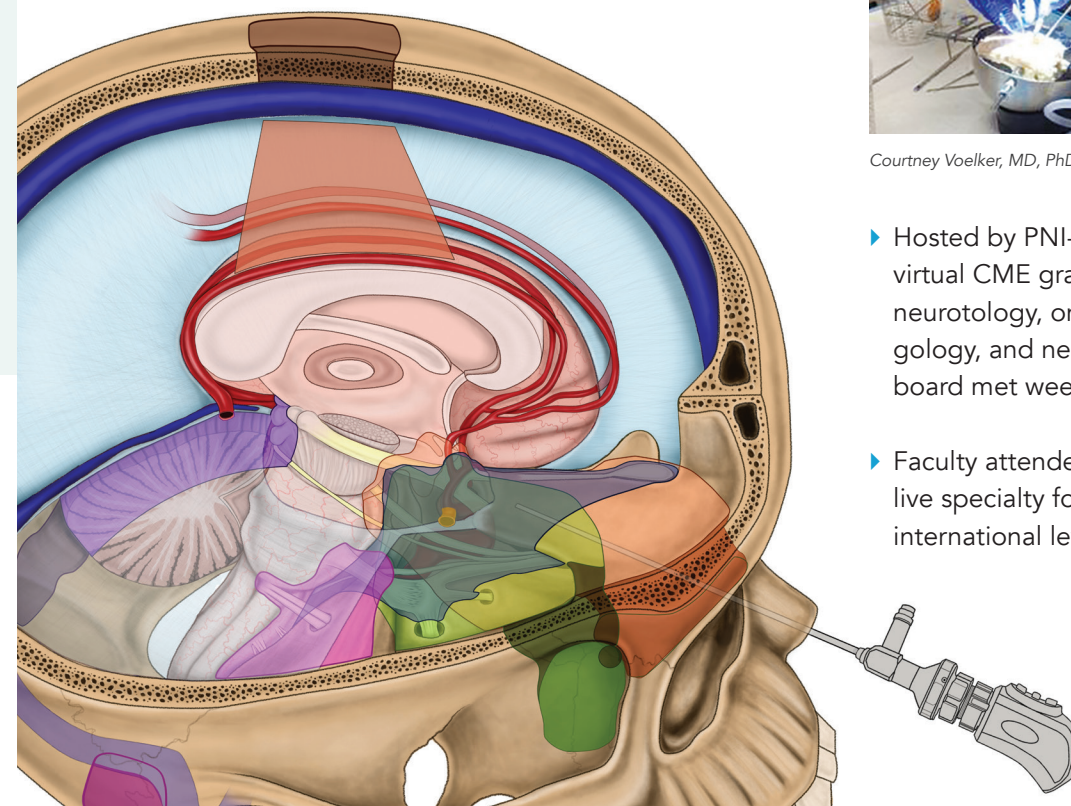


Amit Kochhar, MD, demonstrating a Botox injection



Courtney Voelker, MD, PhD, provides training at Temporal Bone Dissection Course

- Hosted by PNI-South Bay, faculty presented virtual CME grand round lectures in neurosurgery, neurotology, oncology, ophthalmology, otolaryngology, and neuropsychology. The brain tumor board met weekly.
- Faculty attended and presented at virtual and live specialty forums on local, national, and international levels.



CLINICAL TRIALS, RESEARCH & PUBLICATIONS



Clinical trials and research programs continue to grow in 2022 offering trial options to patients in several areas including brain tumors, pituitary disorders, movement disorders, stroke, head and neck cancer, Alzheimer's disease, multiple sclerosis, addiction, anxiety, and major depression.

► **Neuro-oncology program research & other studies**

PNI specialists became the first in the nation to treat recurrent glioblastoma using intra-operative radiation therapy (IORT). Clinical studies ran for neurological tumors, including mutant and/or high-grade gliomas and glioblastomas, chordomas, meningiomas, solid tumors, and brain metastases. Other trials included detecting recurrent brain metastases after radiation therapy and clinical assessment of common neurosurgical conditions.

► **Brain Health program research**

Brain health research experts focused on Alzheimer's disease and related conditions. Clinical trials using stem cells showed promising early results as cellular therapies in regenerative medicine, as well as in potential anti-cancer applications. The program launched a neuro-gaming trial for persons with mild cognitive impairment, and trials for depression and mobile technology-based aerobic exercise continued. Active trials: Stemedica, PREVENTION, mSIM, iPACES.

► **Movement Disorders program research**

Two clinical trials progressed: Synuclein One for neurodegenerative disorders; and Praxis, for essential tremor. A trial examining the current disease progression of Parkinson's disease psychosis ended.

► **Stroke & Neurovascular program research**

Stroke and neurovascular experts launched a trial for large vessel occlusion stroke. Trials at Little Company of Mary addressed neuroprotection and other methodologies for ischemic stroke, subdural hemorrhage, carotid artery stenosis, hematoma, and embolization: Active trials: ESCAPE NEXT, pRESET, TESLA, EMBOLISE, and CREST 2.



Naveed Wagle, MD, with a patient at the Brain Tumor Center
Brain Health Team - Verna R. Porter, MD; Scott A. Kaiser, MD; Stella Panos, PhD; David A. Merrill, MD, PhD; & William G. Buxton, MD
Jason Tarpley, MD, PhD, & Christopher Putman, MD, at the Stroke & Neurovascular Center

► **Psychedelic-assisted therapy program research**

The TRIP program explored new terrain in behavioral health with clinical trials addressing major depressive disorder (MDD) and generalized anxiety disorder (GAD). Using psilocybin for MDD and MM-120 for GAD, the team continues to study the short- and longterm benefits of these psychedelic medicines as potential therapies for millions of people suffering from mental health issues. Results from the alcohol use disorder study will be published in 2023. Active trial: MindMed MM-120 for GAD.

In 2023...

- We will add new clinical trials in hydrocephalus, brain tumor, and movement disorders. Patient recruitment for ongoing studies will continue.
- We will launch a pilot premium brain health multi-day assessment to evaluate neurocognitive function from head to toe, optimizing health in support of memory.



TRIP TEAM: Micah Linton, PsyD; Shanthi Gowrinathan, MD; Keith Heinzerling, MD, & Karina Sergei, MS, MFT

46 Peer-Reviewed Publications

- Neurosurgical and otolaryngology surgical teams set new standards of excellence in minimally invasive keyhole surgery, publishing the largest study of minimally invasive keyhole surgery for meningiomas to date.
- PNI and Providence Saint John's Health Center published clinical research linking muscular strength and mobility to brain health.
- PNI experts published the first-ever paper on psychedelics in neuro-surgery and neuro-oncology literature.



Scan QR code to view our publications from 2022

CHANGING LIVES WITH PSYCHEDELIC-ASSISTED THERAPY

VIKKI'S PATH TO SOBRIETY

For many, alcohol consumption is a regular part of life. Drinking at celebrations or toasting to the New Year, is deeply embedded in social culture and difficult to reject without raising eyebrows. However, drinking alcohol regularly use can pose serious health issues, including addiction. This was the case for Vikki, 60, living in Santa Monica.

Growing up with a family that entertained frequently, alcohol consumption was the focal point of social gatherings. Whenever Vikki gathered with friends or family, alcohol was the main event; oftentimes the reason to get together in the first place. 'Fun,' for Vikki, became associated with alcohol. She began drinking in her teens, and never stopped to question the long-term health implications of it until about eight years ago.

"I wasn't so much thinking about the health part of drinking, but rather the lifestyle of it. The first thing that popped into my head when getting together with friends was 'get your drink!' and I began to question why is it that alcohol takes precedence over connection and truly living in the moment," she said.



Vikki and her husband in Santa Monica, CA

Determined to make a lifestyle shift, Vikki enrolled in psychotherapy to little avail. She made progress, but not enough to seriously change her relationship with alcohol. When she heard a radio advertisement for an alcohol study with PNI's Treatment & Research In Psychedelics (TRIP) program, her life changed forever.

"I had been to regular psychology talk therapy for several years. It helped me a little bit, but it didn't make me better. When I heard the advertisement, I thought, 'That's for me. That's what's going to help me,' and that's what happened. It's so difficult to change your brain, and what I did in five and a half hours changed my brain."

Over the course of several sessions, Vikki met with Keith Heinzerling, MD, Director of the TRIP program, and Karina Sergei, MS, MFT, the TRIP Guide, for preparation and integration sessions supporting the two separate guided psychedelic therapy days. Now a year later, Vikki is sober and living each day more grateful and appreciative than the last.

"There are so many benefits I am experiencing. I don't crave alcohol, I'm smarter, and I have relentless curiosity," Vicky explained "I'm calmer and I appreciate nature even more than I did before. Life is brighter, and I am being kind to myself and listening to my brain."



Keith Heinzerling, MD, at the TRIP program in Santa Monica, CA (Genaro Molina / Los Angeles Times)



Brain Tumor Awareness Month Event (May 2022)

COMMUNITY OUTREACH & EVENTS

In 2022, PNI participated in multiple community events with sponsors and non-profit organizations, including the American Parkinson's Disease Association, Acoustic Neuroma Association, American Brain Tumor Association, Dystonia Medical Research Foundation, Hilarity for Charity, National Multiple Sclerosis Society, Parkinson's Foundation (English and Spanish), and Walk4Hearing.

Our physicians and care teams supported patients and care partners with nearly two-hundred support group sessions for brain health, brain tumor, multiple sclerosis, Parkinson's disease, pituitary disorders, and stroke/NIR.

The Movement Disorders Center kicked-off Dystonia Zoo Day at the Los Angeles Zoo, celebrating dystonia patients and their families.

PNI's multiple sclerosis specialist gave opening remarks at the annual Walk MS event with the National Multiple Sclerosis Society at the Pasadena Rose Bowl.

PNI hosted the third annual Brain Tumor Awareness Month "Go Gray in May" walk around Saint John's Health Center in Santa Monica with an opening address from TV weather anchor Maria Quiban. Throughout the month, PNI experts ran a series of virtual webinars and activities for brain tumor patients and their loved ones.

The PNI brain tumor team completed the Breakthrough for Brain Tumors 5K with the American Brain Tumor Association in La Cañada Flintridge, helping to raise critical research funds and awareness.



Natalie Diaz, MD & Robin Banuelos, Program Coordinator, at Dystonia Zoo Day (June 2022). Garni Barkhoudarian, MD, at the Breakthrough for Brain Tumors 5K (Nov 2022). Akanksha Sharma, MD (middle) & Maria Quiban (right), at the Brain Tumor Social Hour (May 2022). Barbara Giesser, MD, at the Walk MS booth (April 2022).

PNI FOUNDATION
THE VISION OF A NEW LIFESTYLE
PROGRAM BECOMES REALITY



Brain health research team



- ▶ Our commitment to care is achieved through philanthropy. This year, support from our outstanding donor community fueled vital research priorities, including innovations in PNI’s brain health, cochlear implant, neuro-oncology, TRIP, and Lifestyle programs.
- ▶ PNI Foundation (PNIF) welcomed neuropsychologist Karen Miller, PhD, as the Senior Director of the new Lifestyle Program. Launched in September 2022, the program provides virtual and in-person education for memory and lifestyle-related brain health concerns.
- ▶ In the three years since the \$40 million gift from Cary and Will Singleton, our brain health research team continues to transform clinical data into discovery, working towards novel approaches to prevent and slow progression of Alzheimer’s disease and other dementias.
- ▶ PNIF continued to work in partnership with Saint John’s Health Center Foundation, supporting the activities of clinical trials, research, patient education, and community outreach.
- ▶ In 2022, the PNIF Board of Directors and Advisory Committee worked together to promote the mission of PNI.

The PNIF Board of Directors includes Garni Barkhoudarian, MD, FAANS; Thomas Geiser; Chester F. Griffiths, MD, FACS; Mary Ellen Kanoff; Daniel F. Kelly, MD; Howard R. Krauss, MD; Neil A. Martin, MD; Lisa Nesbitt; Theodore H. Schneider; Donna F. Tuttle; and Roger Wacker. The PNIF Advisory Committee includes Mary Flaherty; Jae Goodman; Robert O. Klein; Blaine Lourd; Michael Ricks; Carole Schwartz; Louie Schwartzberg; Donna Schweers; Carla Mann Woods; and Santosh Kesari, MD, PhD.



A HEALTHY BRAIN FOR
Brighter Days
Memory classes at PNI’s Lifestyle Program

Visit PacificLifestyle.org or call 213-344-2037 to learn more.

**PACIFIC
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“In the past five years, PNI Foundation has grown to become an essential partner with the PNI Medical Group. Together, we have made advancements in innovative research and clinical trials, training future physician leaders, and educating the community on all aspects of the neurosciences to enhance the quality of life and advance the care of PNI patients.”



Melissa Coleman, Esq.
PNI Foundation Vice President

For more information about our our innovative programs at Pacific Neuroscience Institute, please visit PacificNeuro.org/Foundation or call PNI Foundation at 424-465-1551.



CLINIC LOCATIONS

2125 Arizona Ave, Santa Monica, CA 90404
 1301 20th St, #150, Santa Monica, CA 90404
 1301 20th St, #300, Santa Monica, CA 90404
 1301 20th St, #540, Santa Monica, CA 90404

4201 Torrance Blvd, #520, Torrance, CA 90503
 Torrance Blvd, #300, Torrance, CA 90503

181 Buena Vista St, Burbank, CA 91505
 501 S. Buena Vista Ave, Burbank, CA 90505

11550 Indian Hills Rd, #261, Mission Hills, CA 91345

11645 Wilshire Blvd, #600, Los Angeles, CA 90025
 12555 W. Jefferson Blvd, Los Angeles, CA 90066

PNI/PROVIDENCE STROKE CENTERS

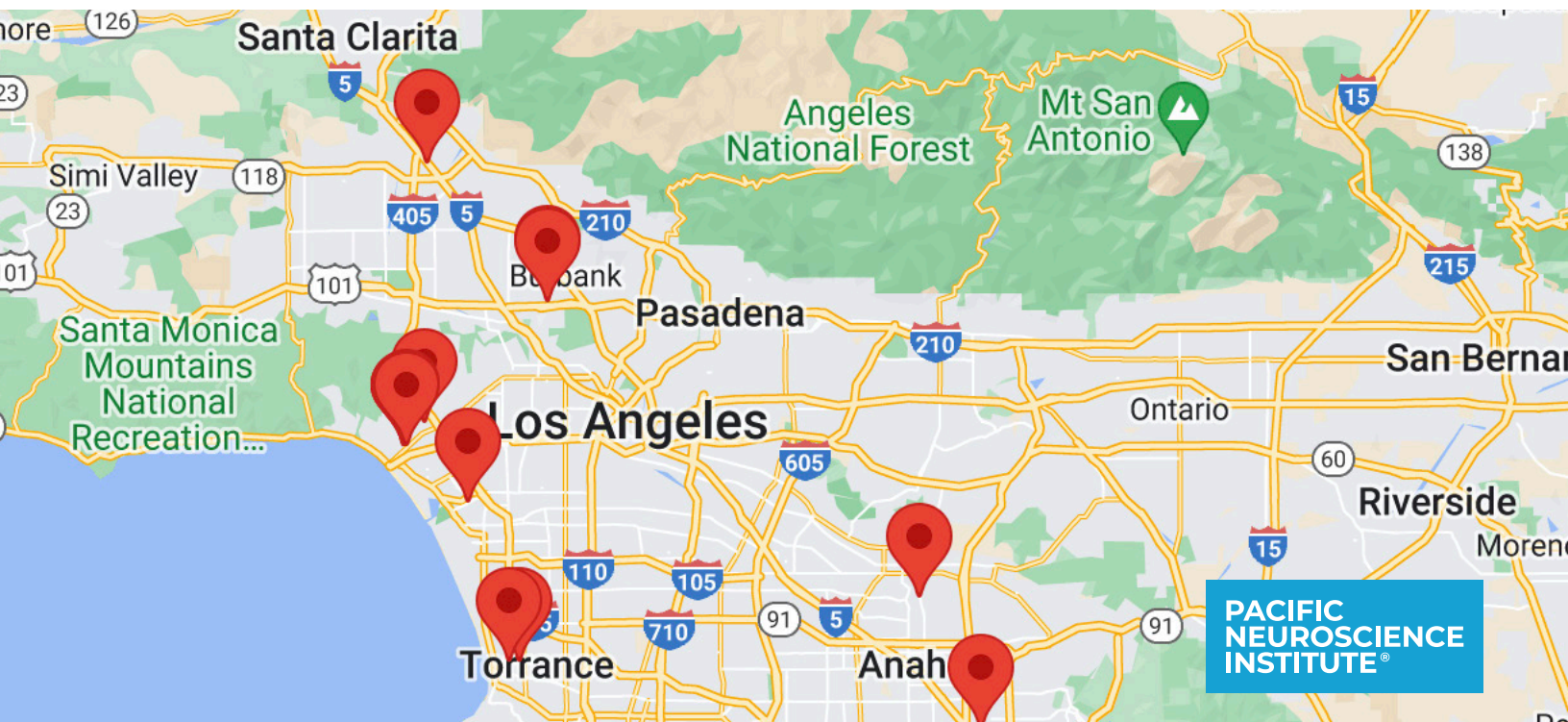
Saint John's Health Center, Santa Monica, CA 90404
 Little Company of Mary Medical Center, Torrance, CA 90503
 Saint Joseph Medical Center, Burbank, CA 90505
 Holy Cross Medical Center, Mission Hills, CA 91345

NEURO-ONCOLOGY CLINICS

2121 Santa Monica Blvd, Santa Monica, CA 90404
 5215 Torrance Blvd, #300, Torrance, CA 90503
 181 Buena Vista St, Burbank, CA 91505
 2151 N. Harbor Blvd, Fullerton, CA 92835
 27700 Medical Center Rd, Mission Viejo, CA 92691
 1000 W. La Veta Ave, Floor 1, Orange, CA 92868

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