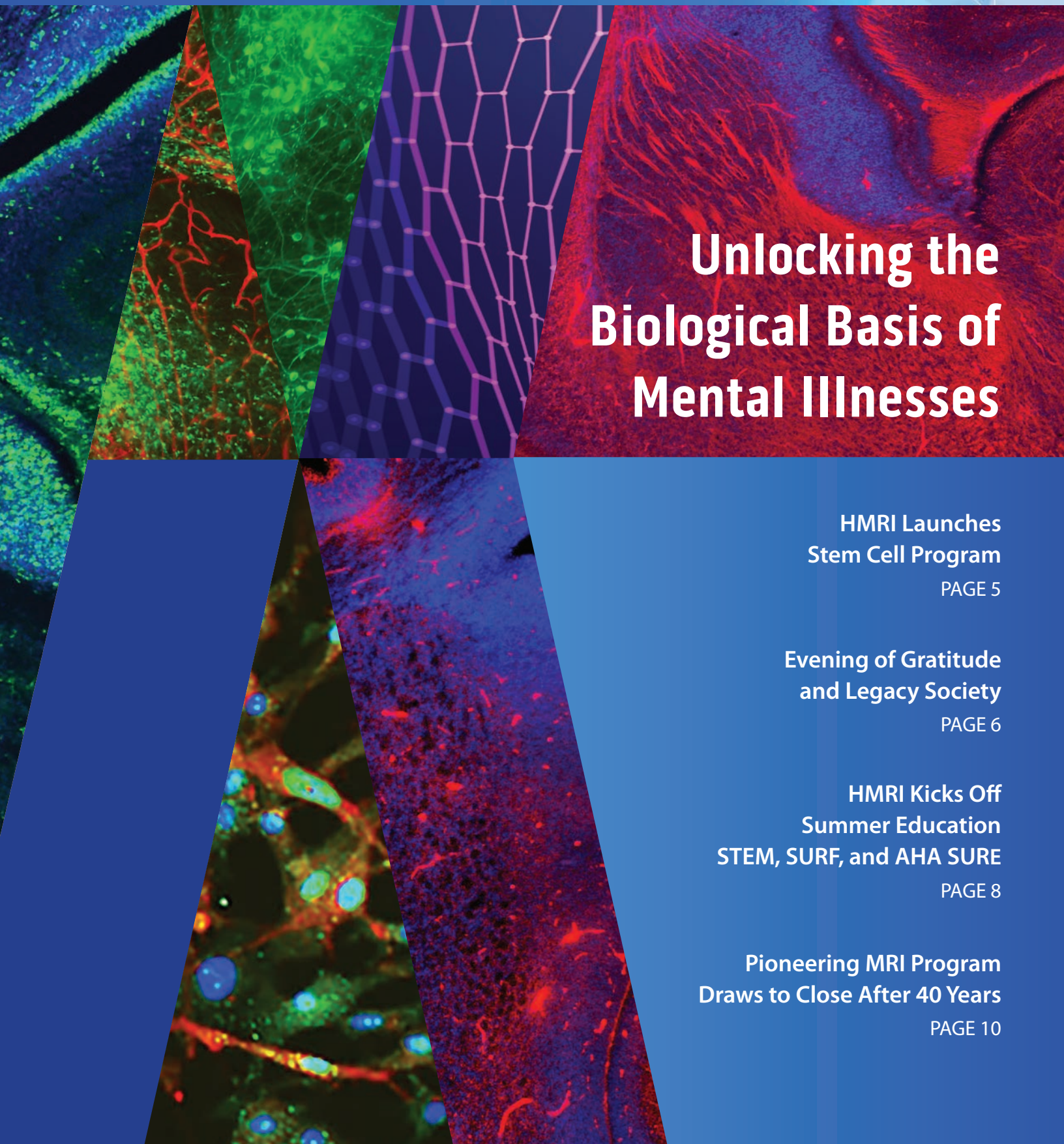
HMRI | Huntington Medical Research Institutes
SCIENTIFIC DISCOVERY, MADE IN PASADENA

Insights

SUMMER 2024



Unlocking the Biological Basis of Mental Illnesses

HMRI Huntington Medical Research Institutes
Insights
SUMMER 2024

A MESSAGE FROM OUR PRESIDENT & CEO

Over 70 years ago, passionate doctors and researchers sought to answer some of the era's most puzzling questions about science and human health. In the spirit of innovation, a cascade of scientific discoveries ignited, ultimately changing our world and leading to HMRI's formation. Two legacies evolved from their fearless pursuit of science to shape the foundation of HMRI's identity today.

First is the legacy of scientific discoveries that have improved human health on a global scale, such as HMRI's groundbreaking MRI Research Program. This left an indelible mark, transforming diagnostic imaging and modern medicine. An estimated 50,000 MRI systems are now installed globally, and over 95 million scans are performed worldwide every year.

In this newsletter, we are fortunate to have guest contributor and early MRI pioneer Dr. Brian Ross, who led HMRI's MRI program for many years. As MRI technology has become increasingly prevalent, we recognized in 2023 that we would be better stewards of the gifts that fund our research if we "outsource" this technology. Thus, we recently decommissioned the HMRI MRI machine and closed this chapter on HMRI's influential history.

To continue our legacy of scientific discovery, we look to future pioneering breakthroughs. I'm particularly excited about advancements from the Angiogenesis and Brain Development Laboratory in novel treatments for neuropsychiatric illnesses, shifting the way we think about and treat mental illnesses. The recent addition of the Translational Pluripotent Stem Cell Program will accelerate their quest to develop new avenues for diagnosis and treatment.

The second legacy is HMRI's commitment to educating and inspiring the next generation of scientists, which began in 1955. Last month, we welcomed a new cohort of students to embark on this important juncture of their science education.

As STEM educators, we are tasked with the great responsibility of creating equity among talented and diverse student populations. This creates a robust STEM workforce with equitable representation from various perspectives — crucial for developing innovations that advance technology and medicine to treat disparate patient populations around the world.

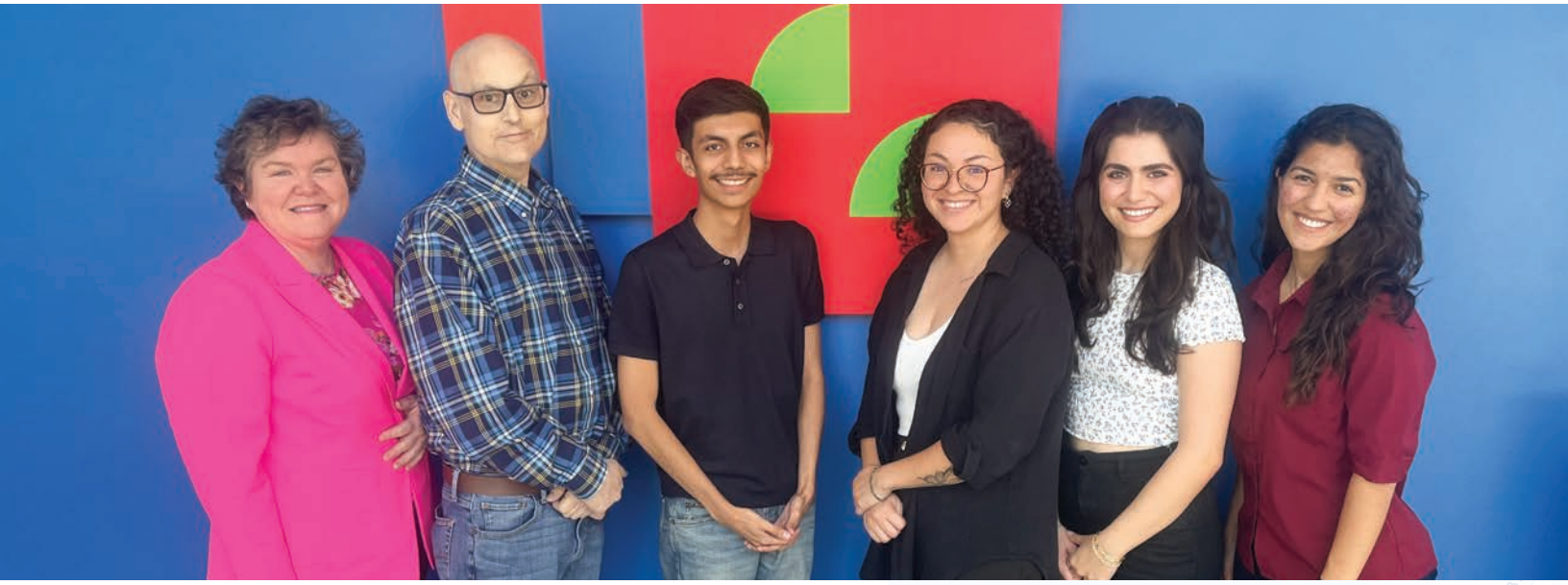
I invite you to join me at the next President's Event Series on July 24 from 12 pm to 1 pm. This event is part of our annual Science Day. I will moderate a panel of leading educators, scientists, and advocates for STEM education in Fearless: Critical Conversations on Equitable Pathways to STEM Education and Careers.

Thank you for your continued support of HMRI and its vital legacies.

Julia E. Bradsher, PhD, MBA
President and Chief Executive Officer

HMRI Welcomes New Team Members

Five new employees recently joined the HMRI team. President and CEO, Julia Bradsher (left) pictured with John Boyle, PhD, staff scientist, Translational Pluripotent Stem Cell Program; Richard Tirado, education programs assistant; Jacqueline Fonesca, high school summer STEM teacher; Emily Abad, summer STEM teaching assistant; and Reina Salman, summer STEM teaching assistant.



Innovating for the Greater Good

Regina Grice, Chief People Officer, joined HMRI in the fall of 2023. She is a strategic innovator who continuously seeks opportunities to make something better for the greater good, both personally and professionally. "Growth is a mindset," stated Grice. "HMRI advances innovation, empowers creativity, offers diverse collaboration, and operates with integrity. The culture aligns well with my values, and I enjoy pivoting and shifting priorities to support the organization's needs."

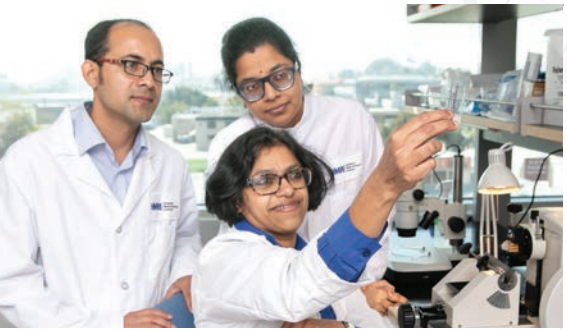
Grice's journey to HMRI began with the passing of her grandmother in June 2023. She battled dementia for many years and ultimately succumbed to Alzheimer's disease. Six months later, her grandfather passed away from a heart attack. Grice's ability to connect strongly with the mission and vision of an organization is paramount. HMRI's commitment to research on brain aging and cardiovascular disease deeply connects her two personal life experiences. "I couldn't ask for a better opportunity and team of colleagues," said Grice. "I am grateful to walk through the door each day because I am honoring my grandparents."

In addition to HMRI's mission, she appreciates the people most of all. "I get to work with the best of the best," expressed Grice. "The culture of collaboration is second to none. At HMRI, we have an exceptional culture of achieving our best together." With teams of incredibly talented people and a mission to improve human health through scientific discovery, her goal as Chief People Officer is to make HMRI an employer of choice.

Originally from Charleston, South Carolina, Grice moved to Pasadena a decade ago, where she met her husband, Zoro Rodriguez. They reside in Old Town with their two fur babies — Zoe, a 130-pound Newfoundland dog, and Fat Joe, a rescue cat from the Pasadena Humane Society. ❖

Regina and her grandmother, Mable Stephens, at Myrtle Beach, SC, 1978. Mable enjoyed spending time with her grandchildren, sharing her wisdom, singing Dolly Parton songs at the top of her lungs, and loving unconditionally.

Novel Discovery Links Defects in the Embryonic Forebrain to Mental Illnesses



Anju Vasudevan, PhD, Chair of Basic and Translational Neurosciences with postdoctoral fellows in the Angiogenesis Brain Development Laboratory (ABDL), Kazi Helal Hossain, PhD, and Divya Mishra, PhD.

As the unprecedented global mental health crisis continues to grow, some studies now suggest that one in four people will experience a mental health condition at some point in their lives. This creates an urgent need to understand the root cause of mental illnesses and discover new treatments.

Thanks to the leadership of Anju Vasudevan, PhD, Chair of Basic and Translational Neurosciences and founder of the Angiogenesis Brain Development Laboratory (ABDL), a new paradigm—shifting framework is advancing with novel approaches to the diagnosis and treatment of neuropsychiatric illnesses.

While on the faculty at Harvard University, Vasudevan began her pioneering work that led to the discovery of this new conceptual framework. Traditionally, research for neuropsychiatric conditions has been neurocentric, focused on treating the neurons and brain cells. Her research took a new approach by investigating blood vessel formation (angiogenesis) in the developing embryonic brain and its impact on adult behaviors.

Disruptions in prenatal or postnatal brain development can lead to neuropsychiatric diseases, including epilepsy, autism, schizophrenia, anxiety, and depression. "We investigate these key events of brain development and how those can go wrong; our long-term goal is to ensure that brain development remains on track," said Vasudevan. "We use a combination of developmental neuroscience, genetics, cell biology, biochemistry, stem cell biology, imaging, and behavioral techniques in our research."

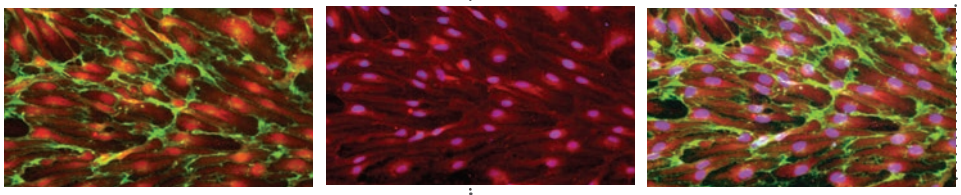
Earlier views of cerebral vascularization depicted blood vessel formation as a passive process driven primarily by oxygen demands to meet the metabolic needs of growing neuronal populations. ABDL research changed these notions to show that vascular networks of the embryonic forebrain have an organized structure. This serves as a blueprint to guide the key events of neocortical development and encode significant diversity in gene expression. It implicated a new cell type — embryonic forebrain endothelial cells. These contribute to many psychiatric disorders, with schizophrenia, bipolar, mood, and depressive disorders topping the list.

The novel discovery — that intrinsic defects within embryonic forebrain endothelial cells can directly contribute to mental illness produced a new way of thinking about the origin of neuropsychiatric illnesses. This is opening paths to crucial new treatment strategies.

In current basic research projects, funded by the National Institute of Mental Health (NIMH, PI: Vasudevan), ABDL neuroscientists study a novel GABA signaling pathway that is spatially and temporally active in forebrain endothelial cells and is distinct from neuronal GABA signaling. "GABA (Gamma-aminobutyric acid) is a deeply interesting and versatile molecule, playing multiple roles during brain development, based on brain region and cell type," said Vasudevan. "Indeed, brain development is like a gem that, when cut, has many facets that sparkle."

ABDL researchers show that this vascular GABA signaling pathway operates distinctly in the postnatal versus the prenatal phase, shaping brain development differently. This illustrates new concepts and insights into the diversity in behavioral symptoms observed in patients. Kazi Helal Hossain, PhD, an accomplished, hardworking postdoctoral fellow, leads this cutting-edge work and is assisted by Said Elbakri, a highly collaborative research assistant.

As ABDL neuroscientists continue to examine the biological basis of mental illnesses, they repeatedly observe both a reduction and increase in cerebral blood flow in patients with schizophrenia, autism, anxiety, and depression. The reason for this variability remains undefined. By connecting individual components of the lab's endothelial GABA-GABAA receptor pathway with altered blood flow and behavioral paradigms, researchers expect to break down the complexity seen in psychiatric disease conditions in a cell type—gene-time specific manner. This work is expected to be highly significant, bridging knowledge gaps and establishing basic research concepts in neuroscience. ❖



Successful generation of human periventricular endothelial cells in our laboratory expressing GABRB3 (red) and CD31 (green). Nuclei stained with DAPI.

The Angiogenesis and Brain Development Laboratory (ABDL) revolutionizes methods for diagnosing and treating psychiatric illnesses using stem cell technology. By replicating malfunctioning brain-like endothelial cells in the lab, researchers can evaluate what's happening and explore how to correct it, contributing to repair and regeneration.

HMRI Launches Translational Pluripotent Stem Cell Program

In translational research, ABDL scientists generate new and effective treatments by tapping into their fundamental understanding of neuropsychiatric disease origins. They used pro-angiogenic compounds to restore neurovascular interactions in the prenatal brain to successfully prevent the acquisition of postnatal behavioral symptoms.[1] They also generated human forebrain-like endothelial cells using pluripotent stem cell technology, extensively characterized their molecular, cellular, and functional properties, and demonstrated their effectiveness in brain repair.[2] Co-culture of human embryonic forebrain endothelial cells with human interneurons led to faster migration and wider distribution of grafted interneurons in vivo, compared to neuron-only transplants. Furthermore, their co-transplantation strategy was able to rescue abnormal behavioral symptoms in a pre-clinical psychiatric disease model, within one month after transplantation.

While the field of induced pluripotent stem cell (iPS)-based psychiatric research is still developing, it has the potential to shed light on the "black box" of human prenatal brain development. The ABDL team can apply knowledge from the control of human embryonic forebrain-like endothelial cells to study intrinsic defects in endothelial cells from patient-derived iPSs of any psychiatric disorder. "We expect to identify novel endothelial-associated cellular and molecular phenomena that underlie disease pathogenesis, opening new avenues for diagnosis and treatment," said Vasudevan. "Medications typically used for the treatment of psychiatric disorders may have little success. These endothelial cell phenotypes may explain why current treatments are only partially effective." This dish-based approach could revolutionize translational neuroscience and psychiatry and aid clinicians in diagnosing one specific psychiatric disorder versus another if the ABDL team succeeds in their venture.

John Boyle, PhD, staff scientist, Translational Pluripotent Stem Cell Program

Stem cell research is accelerating with the arrival of John Boyle, PhD, in May 2024. Boyle received his molecular and cell biology doctoral degree from the University of California, Berkeley. "Boyle is currently investigating the cellular and molecular mechanisms underlying schizophrenia pathogenesis using iPSs with the long-term goal of developing new treatments," said Vasudevan. "We are excited about the transformative contributions that will arise from this work." ❖

[1] *(Sciences Advances, 2020; and patent: US17/488,061)*

[2] *(Molecular Psychiatry, 2021 and patent: US17/769,647)*

WHAT ARE STEM CELLS AND WHY ARE THEY IMPORTANT?

Everything starts with stem cells – they are the body's master cells. They generate all the cells and structures of the human body and are the building blocks of all organs, tissues, blood, and the immune system. Stem cells serve as an internal repair system, regenerating to replace lost or damaged cells throughout a person's life.

Types of Stem Cells:

Adult Stem Cells
All living cells of the human body are stem cells. Many adult stem cell types are "multipotent," capable of developing into most cells and tissues in the body. Tissue-specific stem cells can replace only the tissue or organs they live in.

Embryonic Stem Cells
Embryonic stem cells are collected from a laboratory dish from in vitro fertilization clinics when donated to research with the donor(s) consent. They are often used in research to test or identify new drugs to treat disease.

Induced Pluripotent Stem Cells (iPS)
An iPS cell is an adult stem cell, often a skin cell, reprogrammed to revert to a pluripotent state. iPS cells are used for drug development and disease modeling. In widespread research and clinical trials, they induce the production of missing cells that will halt or reverse catastrophic or incurable degenerative diseases.

Source: National Stem Cell Foundation
HMRI supports only adult and iPS cell research.

HMRI Celebrates an Evening of Gratitude

John Babcock, John Siciliano, Wendy Siciliano

HMRI hosted its annual recognition event at the home of HMRI Board Chair John Babcock and his wife Laura Babcock. "Laura and I are pleased to welcome the HMRI researchers and their supporters to our garden to celebrate the remarkable science and scientists at HMRI," said Babcock. "This afternoon is not just about the collection of amazing scientists, researchers, and doctors here, but also our gratitude and pride that you're here, and the fact that you chose to join us in giving back and investing in Pasadena and HMRI."

HMRI President and CEO Julia E. Bradsher, PhD, MBA joined the hosts to provide a warm welcome for each of the arriving guests. Together they celebrated the impact HMRI donors have on scientific discovery, advances in heart and brain research, and student education. The garden party, filled with anticipation and excitement, began at 4 pm and featured a cocktail reception with hors d'ouevres.

Susan Kane, Kathleen Shannon, John Babcock

At the event, Bradsher announced the launch of the Legacy Society and extended an invitation for guests to become charter members by completing a bequest intention form before September 30. "We are extremely grateful to our generous hosts and donors who share our passion for propelling biomedical research forward," stated Bradsher. "Scientific research and progress are why HMRI exists. I'm excited to lead HMRI and continue our 70-year legacy of scientific curiosity, ensuring a brighter, healthier, more hopeful future."

Julia Bradsher

Mireya Jones, Lawrence Jones, Kristan Swan, Philip Swan

Astrid Suchy-Dicey, Hilary Fausett, Wendy Welch-Keller, Jessica West, Robert Kloner, Juan Sanchez

This celebration of science and philanthropy was made possible by the generosity of Hilary J. Fausett, MD and Bret Fausett; James J. Femino, MD and Sue Femino; Lawrence W. Jones, MD and Mireya Jones; Susan Kane, PhD and Jon Fuhrman; Ellen Lansden and Michael Farhang; Edward A. Mena, MD, MBA and Sophia Mena, MBA; Sandy Sharp, PhD and Steve Sharp, PhD; Prakash Shrivastava, PhD and Uma Shrivastava; and Sonia Singla, DO and Neil Singla, MD. ❖

Nicole Purcell, Uma Shrivastava, Jeannine Bogaard

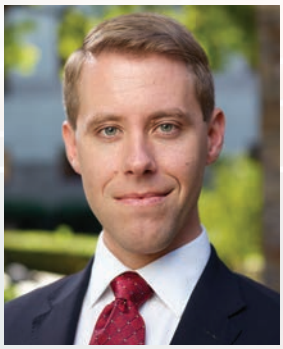
Become a Charter Member of HMRI's Legacy Society

Complete your bequest intention form before September 30

By including HMRI in your will or trust, you leave an enduring impact on biomedical research in Pasadena. Through their foresight and generosity, Legacy Society members play a pivotal role in ensuring groundbreaking research continues flourishing for generations to come.

When you make a legacy gift by September 30, you will become a member of the HMRI Legacy Society. This is one of the most popular ways our benefactors provide long-term support for HMRI. Gifts can be structured to achieve several goals, including life income and tax-efficient estate planning. Members are celebrated and recognized at HMRI events and programs throughout the year.

To explore how you can make a difference through the HMRI Legacy Society and to complete a bequest intention form, contact Paul Roach, Senior Director of Development. We are extremely thankful for your gifts, large and small. Your legacy gift to HMRI will propel biomedical research forward and ensure a brighter, healthier, and more hopeful future. ❖



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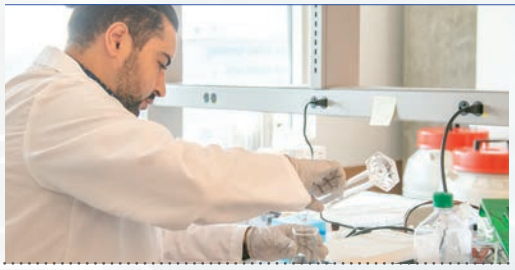
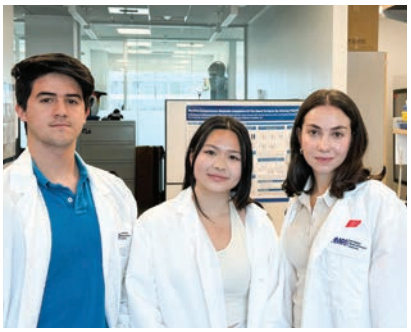


GIVING TO HMRI IS **YOUR** CHANCE TO
IMPROVE HUMAN HEALTH
AND INSPIRE THE NEXT GENERATION OF SCIENTISTS
Thank you for supporting our vital research!
hmri.org/donate | Development@hmri.org | 626-389-3408

GIVE TO HMRI TODAY!

HMRI Kicks Off 2024 Summer Education Programs

HMRI continues its 69-year legacy of educating and inspiring the next generation of scientists when students with the commencement of the 2024 summer education programs, led by Scientific Director of Education Programs Nicole Purcell, PhD. "All of us at HMRI are excited to mentor the students and watch them grow as aspiring scientists," said Purcell. "The greatest reward comes at the program's culmination when students are admitted to graduate and medical school programs."



Christopher Munoz, Lorraine Tam and Sona Ayvazyan join HMRI's first AHA SURE cohort.

Once again, HMRI welcomed exceptional students into its summer research programs —24 High School STEM students from Pasadena Unified School District, nine Summer Undergraduate Research Fellows, three undergraduate students to the newly added AHA SURE program, and two medical school interns from Western University of Health Sciences.

The American Heart Association (AHA) selected HMRI to partner in the AHA SURE (Summer Undergraduate Research Experience) Scholars program beginning in 2024. "The partnership with AHA will help HMRI create more equitable pathways into STEM careers," said Purcell. HMRI is the only independent research institute invited to join the program, typically offered through elite learning institutions. This program provides mentored, equitable experiences in cardiovascular research for groups historically underrepresented in Science, Technology, Engineering, Mathematics, and Medicine (STEMM).

High school students from PUSD arrive at HMRI to begin their six-week STEM program.

Members of the community are invited to join HMRI on July 24 from 10 am to 2 pm for Science Day, a celebration of science education. Meet this talented group of students and learn about their research and the impact of your gifts on science and education! ❖

Summer STEM Teacher Returns to HMRI for Fourth Consecutive year

Jackie Fonesca, HMRI Summer STEM teacher and LAUSD AP biology teacher.

Jackie Fonesca has been an integral part of the High School STEM program at HMRI since its inception in 2021. She teaches AP biology at the Los Angeles Unified School District during the school year. In the summer, she is enthusiastic about inspiring future scientists at HMRI.

"It is a privilege to facilitate STEM education for students at HMRI," said Fonesca. She emphasized the key benefits of learning at HMRI over a traditional high school science class. "Here, students have three hours of intensive daily instruction, more resources to encourage scientific discovery, hands-on laboratory experiences, access to scientific professionals, and mentorship." HMRI's STEM program gives students the foundation to succeed in future science classes and make informed decisions about their education and career paths.

She enjoys engaging students in vital conversations about higher education and pathways to various STEM careers. "When the students begin, they have preconceived notions and are afraid of making mistakes," explained Fonesca. "It's exciting to see their confidence and problem-solving abilities grow."

Valentina Huizar, a former student from the 2023 STEM cohort, found her passion in environmental science under Fonesca's instruction. She gained confidence and improved her study skills. After the STEM program, Huizar proudly said, "I'm smarter than I realized. Now, I have the confidence to be wrong, try new things anyway, and follow my dreams." ❖

Della Martin Foundation Fellow Advances Research to Unlock the Biological Basis of Mental Illnesses

HMRI is home to the Della Martin Foundation Fellow Divya Mishra, PhD. Through the fellowship, Mishra receives specialized training in Angiogenesis and Brain Development Laboratory in developmental neuroscience, cell biology, biochemistry, vascular biology, and behavioral techniques. Additionally, she receives one-on-one mentorship from the Chair of Basic and Translational Neurosciences, Anju Vasudevan, PhD, in experimental design, hands-on training, and guidance with data interpretation and analysis.

Divya Mishra, PhD, Della Martin Foundation Fellow, Angiogenesis and Brain Development Laboratory.

The Della Martin Foundation was established in 1973. Della Martin's family committed her to a San Gabriel Valley sanitarium in the early 1900s when she was 28 years old for hearing the voice of God. She remained there until her brother, aviation pioneer Glenn Martin, died. Following his death, efforts were made to secure her freedom, and at the age of 73, she was declared sane and freed from institutionalization. She received an inheritance from her brother's estate and lived in San Marino for the final 17 years of her life. Before she died in 1975 at 90, Della Martin dedicated her wealth to support mental health research.

Thanks to the support of the Della Martin Foundation, Mishra has the funding required to work diligently on the solution for an urgent and unmet need to identify novel substrates that lead to the development of psychiatric illnesses.

Neocortical endothelial cells that shape all stages of brain development need to be understood in depth. This will generate new, effective, and permanent solutions for treating psychiatric illnesses. Mishra's basic research in this vital area is expected to reverberate beyond the immediate boundaries of brain development and yield a body of insights into neocortical formation and malformation. She is preparing a high-impact paper on her results that will be published later in 2024. ❖

Join us in celebrating HMRI Education Programs!

HMRI's Annual Science Day

Wednesday, July 24 | 10 am – 2 pm

Event Highlights

10 AM - 2 PM | STUDENT POSTER PRESENTATIONS

Meet the students, learn about their research, and see the impact of your generous donations and support — inspiring the next generation of scientists!

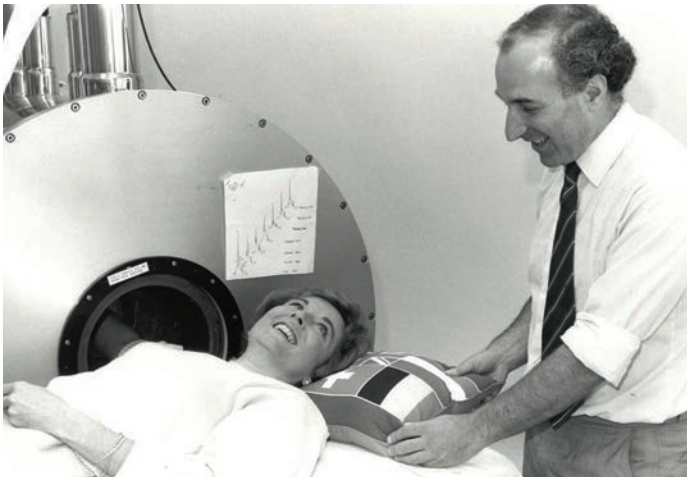
President's Event Series

12 PM - 1 PM | STEM EDUCATION PANEL DISCUSSION

Fearless: Critical Conversations on Equitable Pathways to STEM Education and Careers

Panel discussion with leading educators, scientists, and advocates for STEM education. Moderated by HMRI President and CEO Dr. Julia Bradsher.

Please Register In Advance: Scan the QR code | email development@hmri.org | call 626.389.3408



HMRI's 40 Years of Pioneering Work in Magnetic Resonance Imaging Draws to a Close

By: Dr. Brian Ross

In 1981, if you wanted to view a patient's brain, an X-ray, invented in 1897, would be next to useless, so you would have to call in your friendly neurosurgeon. At HMRI, where neurological research was a central theme, progress demanded a less-invasive approach, and the first MRI pictures of the human brain offered just that. MRI became HMRI's 'middle name' for the next 40 years.

HMRI acquired its first MRI machine and conducted the first whole-body human MRI in Southern California in 1983. The MRI program had two aims: A — The diagnosis of multiple sclerosis (MS); B — Proof that MRI was superior to 'cutting-edge' CT X-ray and, thereby, cost-effective. Almost incidental Aim C was to publish peer-reviewed journals used to convince the Federal government to cover the not-inconsiderable cost. Finally, Aim D was to train the next generation of specialist physicians.

Funding the endeavor was a huge challenge. Early financial support came from HMRI's loyal donors. In the early 1980s, the machine alone was nearly $1 million (equal to over $3 million in 2024), plus $100,000 per annum running costs. Hence, the third and fourth aims, C and D. The FDA approved MRI in 1984 and reimbursed medical brain scans in November 1985.

After Dr. William Bradley's award-winning MRI textbook was published (1988), the MRI revolution became clear. MRI would become the dominant imaging modality, with nearly 40 million yearly scans in the USA.

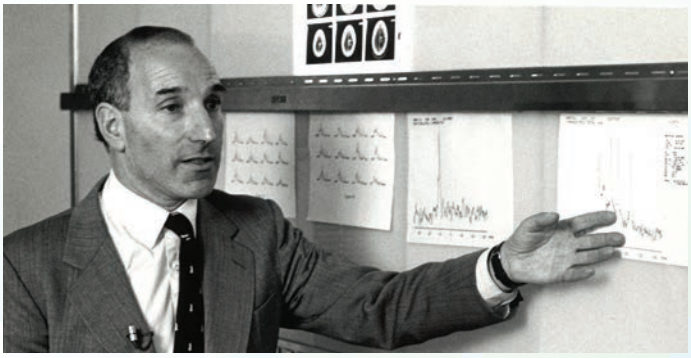
An important tool for further progress was an MRI machine with a higher magnetic field (measured in Tesla). HMRI purchased the General Electric 1.5 T, a ten-fold stronger scanner, which promised faster patient imaging.

However, HMRI was not satisfied with simply taking pictures. Early in 1981, a medical diagnosis was published that proved a biochemical use for MRI machines. Termed MRS ('neurospectroscopy'), this dovetailed nicely with efforts at Caltech, where Caltech professor and HMRI Board member Dr. J.D. Roberts pioneered chemical analysis in smaller laboratory magnets.

Dr. Roberts generously transferred his laboratory magnets to HMRI as they became obsolete. Here, they gained new life in exploring the biochemistry of single cells, tissue cultures, and intact organs in living animals, thereby integrating several previously distinct HMRI research programs, including cardiology, proteomics, organoids, and neurostimulation.

New dimensions of non-invasive diagnosis evolved under the direction of Dr. Brian Ross, a physician biochemist recruited from Oxford. Diagnostic procedures were established for Alzheimer's Disease (1992), traumatic brain injury (1993), and an array of pediatric brain disorders (1994), all formalized in national and international training programs for clinicians and scientists and in a textbook (Danielsen and Ross, 1999).

Research associates from the USA and abroad came to HMRI before returning 'home' to initiate neurospectroscopy programs, which blossomed worldwide. At HMRI, the first 1000 professional radiologists were trained in MRI, and the first 300 specialists were trained in MR spectroscopy.



I had never considered the monetary cost of joining HMRI's pioneering team; many scientific discoveries take a generation to become accepted. The journey has been amazing and could hardly have occurred anywhere else than HMRI, with its unique blend of intellectual curiosity, an enthusiastic hospital partner, world-class University, Caltech, enlightened leadership, and a hyper-generous donor pool that seemed never to run dry. ❖

Thank you.

Casey Meinster, LMFT; Anju Vasudevan, PhD; Julia Bradsher, PhD, MBA; Amy E. West, PhD; Cameo Stanick, PhD, LCP

Experts Highlight Adolescent Mental Health Challenges and the Future of Diagnostics and Treatment

HMRI hosted a panel discussion on April 25 at the President's Event Series, Fearless: Critical Conversations on Mental Health Challenges for Children and Adolescents, to kick off Mental Health Awareness Month in May. The discussion provided insights into current and future psychiatric treatments.

The growing mental health crisis among America's youth is accelerating at an alarming rate. According to a 2021 national survey of US high school students by the Center for Disease Control (CDC), more than 4 in 10 (42%) felt persistently sad or hopeless, up from 28% in 2011. Suicides are increasing among teens — more than 1 in 5 (22%) of students considered attempting suicide, and 1 in 10 (10%) attempted suicide. Additionally, children who identify as LGBTQ+, are in ethnic or religious minorities, experience poverty or homelessness, suffer from greater mental health challenges, and lack equitable access to therapeutic services.

President and CEO Julia Bradsher, PhD, MBA led the discussion on challenges for teens that contribute to poor mental health, including genetics, environmental causes, and social determinants. "At HMRI, our neuroscientists are at the forefront of discovering previously unknown abnormalities in the developing brain that lead to mental health disorders later in life," said Bradsher. "It is critical for HMRI to disseminate our knowledge to the community to support Pasadena youth and help improve their mental health outcomes."

The current state of mental health is undoubtedly disconcerting for youth, but hope is on the horizon. "There is groundbreaking research going on in my lab and labs around the world, including stem cell approaches to treat psychiatric diseases," said Chair and Scientific Director, Department of Basic and Translational Neurosciences Anju Vasudevan, PhD. **"Progress is a collective effort, and the 21st century will be the most transformative in psychiatry."** ❖

Join President and CEO Julia Bradsher

Fearless: Critical Conversations on Equitable Pathways to STEM Education and Careers

July 24 12 pm – 1 pm

This special panel discussion will be part of HMRI's Annual Science Day.

Scan the QR code to register

HMRI PRESIDENT'S EVENT SERIES
HMRI Huntington Medical Research Institutes
Julia Bradsher, PhD, MBA
President and CEO

HMRI | Huntington Medical Research Institutes

SCIENTIFIC DISCOVERY, MADE IN PASADENA

JOIN US FOR A SUMMER OF SCIENCE

JULY 17 – WELLNESS WALK | 8:30 AM

Get your steps in on a walk around the Rose Bowl with HMRI President and CEO Julia Bradsher and learn about her vision for 2025.

JULY 18 – WELLNESS WALK | 8:30 AM

Can't join us on 7/17? Here's another opportunity to stroll with the HMRI team around the Rose Bowl.

JULY 23 – HMRI TOUR | 4 PM – 5 PM

Ever wonder what it's like inside a biomedical research lab? Take a behind-the-scenes tour with Sr. Director of Development Paul Roach.

JULY 24 – SCIENCE DAY | 10 AM – 2 PM

Celebrate HMRI's education programs and attend the panel discussion on equity in STEM education.

REGISTER IN ADVANCE

Scan the corresponding QR code | email development@hmri.org | call 626.389.3408

HMRI Huntington Medical Research Institutes
Insights
SUMMER 2024

DIRECTOR OF MARKETING AND COMMUNICATIONS
Jessica West

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