



Grand Lodge of New York

CURRENTS

A publication of the Masonic Medical Research Institute

IN THIS EDITION

Revealing the Dangers of COVID-19 in the Heart

NIH Grants Encourage Creative Approaches

Postdoc Profile: Dr. Samantha Le Sommer

Science Publications

Rainbow Girls Raise Funds in New York and Virginia

Griffin Charitable Foundation Gives Big

Halfond-Weil Postdoctoral Fellowship

Connecticut Masons Support MMRI Research

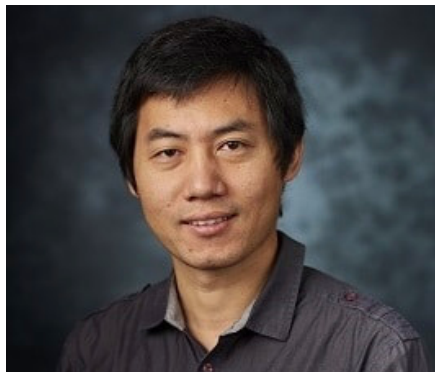
MMRI Poised to Tackle PTSD

Heidelberg Fundraiser Spurs Local Giving

Mohawk Valley EDGE

On the Calendar

REVEALING THE IMPOSING DANGERS OF COVID-19 IN THE HEART



Dr. Zhiqiang Lin

Zhiqiang Lin, Ph.D., Assistant Professor at MMRI, led a team of scientists in a multiyear study that revealed new information about how COVID impacts the heart. They discovered specific and direct evidence indicating that selective expression of the SARS-CoV-2 Spike protein alone in cardiomyocytes (the cells responsible for heart contraction) was sufficient to induce cardiac hypertrophy, a condition that causes the heart muscle to enlarge. The study reveals not only how COVID damages the heart but also the importance of being vaccinated.

As the world emerges from post-pandemic lockdowns and restrictions, the reality of living with this virus still poses threats and raises perplexing questions for medical doctors and scientists alike about post-Covid consequences. Science is tasked with helping to keep people healthy and safe today while also rebuffing future viruses before they progress tomorrow.

In this study, Dr. Lin and his research group, in collaboration with scientists

at the Harvard Stem Cell Institute and Boston Children's Hospital, found that the mechanism by which SARS-CoV-2 spike protein interacts in cardiomyocytes is through its binding with an inflammatory receptor called Toll-Like Receptor 4 (TLR4) in the heart, thereby initiating and activating a natural immune response. The spike protein is found on the surface of SARS-CoV-2 and is the mechanism by which the virus latches onto a receptor known as angiotensin-converting enzyme 2 (ACE2) on target cells. In this manner, the spike protein can facilitate virus entry into healthy cells, which is the first step in infection. These actions are specific to COVID-19 infection; previous coronavirus spike proteins have only led to flu-like symptoms, rarely, to heart injury.

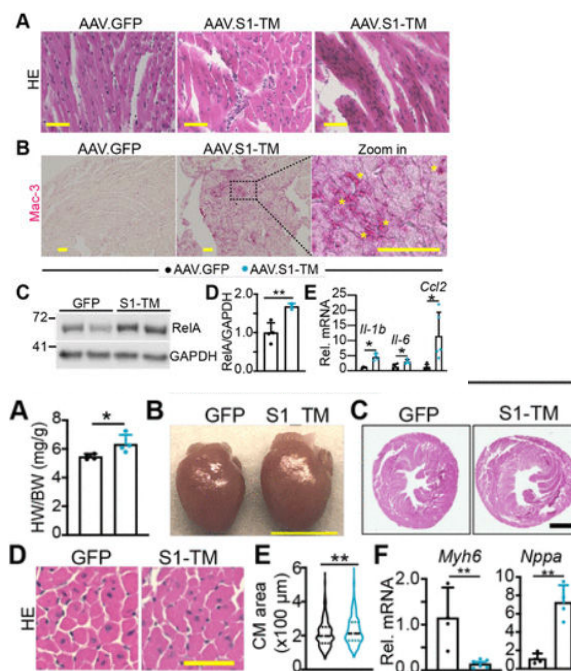
"It's known from the clinical side that COVID-19 can induce heart injury; however, what we don't understand is the mechanism for how this occurs. We believe that the spike protein has multiple pathological roles," said Dr. Lin, Principal Investigator, Assistant Professor, and the Gene Therapy Core Manager at MMRI. "Our data show for the first time that, even on its own, the spike protein from SARS-CoV-2 can cause heart muscle damage."

The study was presented at a conference of the American Heart Association in Chicago in the summer of 2022. Dr. Lin published an early preprint of the study on bioRxiv, which is an open-access site hosted by Cold Spring Harbor Laboratory. Dr. Lin's review article about spike protein

REVEALING THE IMPOSING DANGERS OF COVID-19 IN THE HEART (CONTINUED)

pathological roles is slated to be published in the journal *Sports Medicine and Health Science*. His work has already received notoriety and attention from the scientific community. On March 28, 2023, Dr. Lin was interviewed on Talk of The Town on WUTQ 100.7 FM. Hear his interview at the link here: <https://wutqfm.com/dr-zhiqiang-lin-explains-how-covid-19-spike-protein-damages-the-heart-based-on-his-studies-at-masonic-medical-research-institute-in-utica/>.

Dr. Lin's colleagues in the study include Chase Kessinger, Ph.D., Bing Xu, Ph.D., and Steven Negron—all from MMRI, and William T. Pu, M.D., of the Harvard Stem Cell Institute and Boston Children's Hospital. Read the study's preprint on the bioRxiv website, <https://www.biorxiv.org/content/10.1101/2021.06.20.448993v1>.



NIH GRANTS ENCOURAGE CREATIVITY, COLLABORATION, AND STIMULATE NOVEL APPROACHES TO UNMET MEDICAL NEEDS

The National Institutes of Health (NIH), the preeminent federal agency that funds medical research, stimulates scientific advancements via several mechanisms, including competitive grants. NIH funding is vital for research, with awards encouraging creativity, collaboration, and innovation in medicine.

One especially unique grant opportunity is called the NIH Exploratory/Developmental Research Grant Award (R21). This grant supports novel proposals that break new ground in what the NIH describes as “high-risk, high-reward studies.” The R21 is particularly useful in enabling scientists to think outside the box and pursue more paradigm-shifting approaches to questions in science and medicine. In fact, unlike other grants, scientists can apply for the R21 grant without preliminary data for their study, allowing funding at the early stage of an idea. The R21 is also highly competitive, with

as few as 12% of applicants securing funding.

That's why it's a particularly noteworthy accolade that one of our investigators, Dr. Jason McCarthy, Associate Professor and the Scientific Operations Director at MMRI, was awarded three R21 grants. Two of Dr. McCarthy's R21 grants will fund **experimental treatments for bone healing and grafting**. A third R21 grant, in collaboration with Dr. Maria Kontaridis, Executive Director of MMRI and Gordon K. Moe Professor and Chair of Biomedical Research and Translational Medicine, will explore a **proposed treatment for systemic lupus erythematosus (SLE)**.

The first R21 will focus on the development of polyphosphate-based materials to drive bone growth (osteinduction). Materials generated will be compared to determine which best possess optimal properties for therapeutics while also having minimal

unwanted side effects, such as clotting or inflammation. Importantly, these materials will be compared head-to-head with the “gold standard” to ultimately determine the highest efficacy. The second R21 takes this process a step further; Dr. McCarthy will develop implantable materials that will create a synthetic coat on the surface of a donor's bone to provide better integration with a recipient's bone. This award will explore whether these materials have the potential to increase the efficiency of these grafts at a cost significantly less than what is currently used in the clinic.



Dr. Jason McCarthy

The third R21 study will delve into lupus. Specifically, the research team will consider how the localization of therapeutics to the spleen, which regulates immune response and generates antibodies, might enable a systemic therapeutic effect for systemic lupus erythematosus (SLE).

The team will seek to modulate the splenic activity of SHP-2, which has been shown to play a major role in the disease. If successful, this may lead to novel therapeutic options for the treatment of SLE.

COMMUNICATING SCIENCE WITH A SMILE: A PROFILE OF DR. SAMANTHA LE SOMMER

Samantha Le Sommer, Ph.D., isn't afraid to share her passion for her work, where she grew up, and where she lives now. Indeed, Dr. Le Sommer prompted enthusiastic accolades for her eloquence and ease in explaining heady scientific topics. To make her presentations more accessible to non-science audiences, Dr. Le Sommer regularly weaves into them anecdotes drawn from her life in Scotland and some from her "home away from home" in Utica, NY. Dr. Le Sommer has been a team member at MMRI for two years and is a postdoctoral fellow in the Kontaridis Lab, where she researches mechanisms that cause lupus.

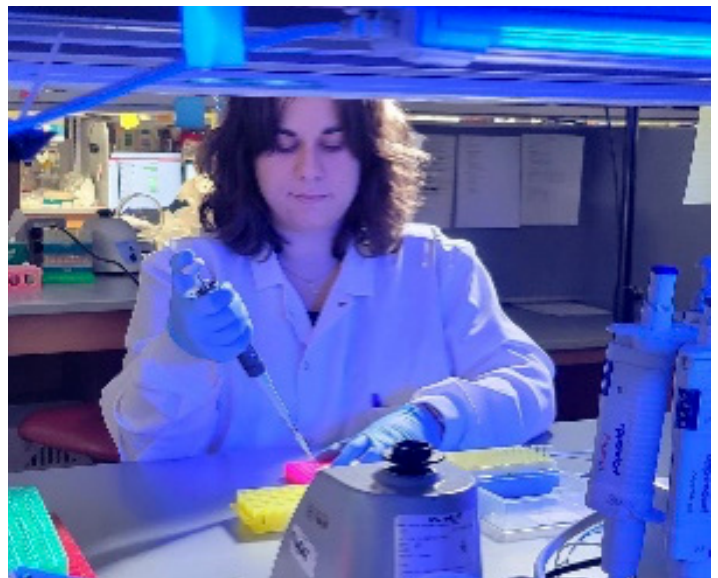
In January, Dr. Le Sommer was featured in "What's Upstate," a regional platform sponsored by community groups, including the Greater Utica Chamber of Commerce, where she discussed what drove her to move to MMRI and Utica, NY. She even shared her "insider tips" for those visiting or living in Utica, including where to go for the best Vietnamese cuisine.

"I feel very privileged to have been able to not just come to America but also to experience the hospitality and warmth of Americans," said Dr. Le Sommer. "I am constantly surprised by and in awe of the sense of community in the area."

In February and March, Dr. Le Sommer shared Lab news with audiences, including the MMRI Community Advisory Council in Utica, and to ladies attending the MMRI-sponsored Ladies' Luncheon at the Conference of Grand Masters of North America in Arlington, Virginia. At each presentation, she provided her listeners with science-based commentary imbued with humor, conveying complex topics to lay audiences, and drawing applause—and thoughtful questions—from both groups.

Dr. McCarthy was already quite familiar with NIH grants. In fact, Dr. McCarthy has secured various types of NIH grants over his career, including Research Project Grants (R01), which fund traditional research, and a U01 grant. The U01 grant funds a multi-center research project in collaboration with Carl Atkinson, Ph.D., of the University of Florida, which is focused on the prevention of lung transplant rejection.

Dr. Le Sommer shared updates about the lab's studies on the SHP2 phosphatase, an enzyme that helps maintain balance within the immune system. She highlighted the correlation that immune cells in people with lupus have more SHP2 than those without lupus. "Lupus mice without SHP2 in their T cells live longer and have less severe lupus," Dr. Le Sommer shared with audiences. That insight comes from the leading work of her mentor, Maria Kontaridis, Ph.D., MMRI's Executive Director, Gordon K. Moe Professor and Chair of Biomedical Research and Translational Medicine. The team from the Kontaridis Lab found that when SHP2 was deleted in T cells of lupus mice, they lived twice as long as control lupus mice, suggesting this to be a potential therapeutic target for this disease.



Samantha Le Sommer, Ph.D.



Monday, August 28 • Yahnundasis Golf Club

Visit us at mmri.edu/golf to learn more about the event and register to play or become a sponsor.

SCIENCE PUBLICATIONS: JANUARY-MAY 2023

How Does COVID-19 Affect the Heart? Sewanan LR, Clerkin KJ, Tucker NR, Tsai EJ. *Curr Cardiol Rep.* 2023 Mar;25(3):171-184. doi: 10.1007/s11886-023-01841-6. Epub 2023 Mar 10. PMID: 36897483 Review.

Cell-Specific Mechanisms in the Heart of COVID-19 Patients. Tsai EJ, Ciháková D, Tucker NR. *Circ Res.* 2023 May 12;132(10):1290-1301. doi: 10.1161/CIRCRESAHA.123.321876. Epub 2023 May 11. PMID: 37167361 Free PMC article. Review.

Myofibroblast-specific inhibition of the Rho kinase-MRTF-SRF pathway using nanotechnology for the prevention of pulmonary fibrosis. Knipe RS, Nurunnabi M, Probst CK, Spinney JJ, Abe E, Bose RJC, Ha K, Logue A, Nguyen T, Servis R, Drummond M, Haring A, Brazee PL, Medoff BD, McCarthy JR. *Am J Physiol Lung Cell Mol Physiol.* 10 FEB 2023. 324(2):L190-L198. PMID: 36625494. PMCID: PMC9925159. DOI: 10.1152/ajplung.00086.2022.

Myh6 promoter-driven Cre recombinase excises floxed DNA fragments in a subset of male germline cells. Sheldon C, Kessinger CW, Sun Y, Kontaridis MI, Ma Q, Hammoud SS, Gao Z, Zhang H, Lin Z. *J Mol Cell Cardiol.* 2023 Feb. 175:62-66. PMID: 36584478. PMCID: PMC9974737. DOI: 10.1016/j.yjmcc.2022.12.005.

Single-Nuclear RNA Sequencing of Endomyocardial Biopsies Identifies Persistence of Donor-Recipient Chimerism With Distinct Signatures in Severe Cardiac Allograft Vasculopathy. Amancherla K, Qin J, Hulke

ML, Pfeiffer RD, Agrawal V, Sheng Q, Xu Y, Schlendorf KH, Lindenfeld J, Shah RV, Freedman JE, Tucker NR, Moslehi J. *Circ Heart Fail.* January 2023. 16(1):e010119. PMID: 36524467. PMCID: PMC9852032. DOI: 10.1161/CIRCHEARTFAILURE.122.010119.

Biallelic PRMT7 pathogenic variants are associated with a recognizable syndromic neurodevelopmental disorder with short stature, obesity, and craniofacial and digital abnormalities. Cali E, Suri M, Scala M, Ferla MP, Alavi S, Faqeh EA, Bijlsma EK, Wigby KM, Baralle D, Mehrjardi MYV, Schwab J, Platzer K, Steindl K, Hashem M, Jones M, Niyazov DM, Jacober J, Littlejohn RO, Weis D, Zadeh N, Rodan L, Goldenberg A, Lecoquierre F, Dutra-Clarke M, Horvath G, Young D, Orenstein N, Bawazeer S, Vulto-van Silfhout AT, Herenger Y, Dehghani M, Seyedhassani SM, Bahreini A, Nasab ME, Ercan-Sencicek AG, Firoozfar Z, Movahedinia M, Efthymiou S, Striano P, Karimiani EG, Salpietro V, Taylor JC, Redman M, Stegmann APA, Laner A, Abdel-Salam G, Li M, Bengala M, Müller AJ, Digilio MC, Rauch A, Gunel M, Titheradge H, Schweitzer DN, Kraus A, Valenzuela I, McLean SD, Phornphutkul C, Salih M, Begtrup A, Schnur RE, Torti E, Haack TB, Prada CE, Alkuraya FS, Houlden H, Maroofian R. *Genet Med.* January 2023. 6399134. 25(1):135-142. PMID: 36399134. DOI: 10.1016/j.gim.2022.09.016.

YOUNG ROLE MODELS: NEW YORK RAINBOW GIRLS RAISE \$13,271 TO FUND AUTISM RESEARCH

The Rainbow Girls of New York raised a remarkable \$13,271 for MMRI's research on autism spectrum disorders (ASDs). In an inspiring example of this generation's commitment to charitable giving—the Rainbow Girls are between the ages of 10 and 21—this single donation includes the combined efforts of Rainbow Assemblies across the State. The New York Rainbow Grand Worthy Advisor, Alyssa, presented the donation to MMRI's Maria Kontaridis, Ph.D., at a special Grand Lodge dinner event in New York City on April 30.

"I was thrilled to see these young ladies take charge to lead a positive effort such as this," said Dr. Kontaridis, who is the Executive Director and Gordon K. Moe Professor and Chair of Biomedical Research and Translational Medicine at MMRI. "It's encouraging to see so many young women and girls from across New York work so hard to make a difference in the lives of others."

Each year, Rainbow chooses one charity as a recipient for their fundraising efforts. MMRI's autism research stood out as a significant cause to many of the Rainbow Girls because many of them have family or friends with ASDs.

"All of them have been touched by someone with autism in their life," said Gale Gould, the Supreme Hope for New York Rainbow. "We are honored to be a small part of the incredible work they do at the MMRI, and we're honored that MMRI can use our funds to further their research."

ASDs impact approximately 1 in 44 children in the United States. While anyone can be affected by these disorders, they predominantly impact boys. Moreover, the number of New Yorkers on the autism spectrum is increasing, according to the New York State Office of People with Developmental

Disabilities, prompting the urgent need for research.

Rainbow's donation will help MMRI scientists in their work to better understand the influences underlying ASDs, whether they be genetic, environmental, socioeconomic, or a combination of these factors. Three genes are of particular interest to MMRI's study because they may possibly connect ASDs with congenital heart disease (CHD). The MMRI labs use genome editing technology—like CRISPR—and inducible pluripotent stem cell technology (iPSCs) to better understand how genetic anomalies can influence embryonic development and how this might play a role in the pathogenesis of autism.

The International Order of the Rainbow for Girls is a nonprofit youth service organization with 16 Assemblies in New York. While Rainbow is a Masonic-affiliated organization, Rainbow members need not be related to a Mason, and Rainbow touts a policy of inclusion.

Funding for the MMRI's autism research program was first proposed in 2020 but delayed due to COVID restrictions. Through their determination and with the help of Rainbow Grand Worthy Advisors Malea and Haley, the New York Rainbow Girls stayed focused on their goal. Following the lifting of COVID restrictions, they hosted a series of bowling matches; raffles; gift, candy, and pin sales, to raise a larger-than-usual donation for a great cause. "Look at what these kids can do!" Gale Gould shared with pride, "When they take on a project, it's wonderful to see what they accomplish."

For more information about New York Rainbow, visit their website: nyiorg.org



Rainbow Grand Worthy Advisor, Alyssa, on stage with MMRI Executive Director Dr. Maria Kontaridis, and M.W. Richard Kessler, Grand Master of New York Masons.

“

“Look at what these kids can do! When they take on a project, it's wonderful to see what they accomplish.”

RAINBOW GIRLS OF MANASSAS, VIRGINIA RAISE FUNDS FOR AUTISM RESEARCH



The Rainbow Girls of Manassas Assembly No. 13 in Virginia hold a check made out to Masonic Medical Research Institute to help support autism research. The Manassas Rainbow Girls include Catalina Anderson, Stella Anderson, Avery Grace Armistead, Emily Chwirut, Kassidy Edwards, Darcy Gutierrez, Elina Jones, Samantha Martin, Maribel Martinez, Ella Grace Pendleton, Dalila Isabel Sosa-Hernandez.

High school days are busy for most teens. Between packed schedules, sports, chores, applying to colleges, and making memories with friends, few would expect the average teen to also lead a fundraiser on top of all that. But Maribel Martinez is no average teen. The 17-year-old high school senior rallied her friends and family to raise \$1,400 for autism research at MMRI.

“My interest in autism research stems from my own experience as someone with autism spectrum disorder (ASD), as well as that of my youngest brother, also diagnosed with autism,” shares Maribel. “I hope that the more we know about autism and how it functions, the more we can help those like my little brother.”

Diagnoses of ASD have increased in recent years, and today, approximately 1 in 44 children in the United States alone are diagnosed with this disorder. Because it impacts so many people, MMRI has made autism research one of its key research focus areas.

Autism research is not only personal to Maribel, but it is also relevant in the context of her professional plans as she is considering a career in biomedical research. “I am quite

interested in the field of microbiology and have been since I was in elementary school,” says Maribel, who is enrolled in a Biotechnology Program at her high school. “I wish to pursue a career in either virology or immunology, so I can assist with viral or bacterial research and possibly create and improve medicines.”

Maribel and her family live in Manassas, Virginia, about 35 miles outside Washington, DC, and over 400 miles from the MMRI labs in Utica, NY. So, how did a Virginia teen first hear about autism research at MMRI?

“I heard about this charity from my father, a Mason, when Dr. Maria Kontaridis, the Executive Director of the MMRI, came to speak at the Grand Lodge of Virginia,” Maribel recalls. Maribel comes from a “Masonic family,” as in addition to her father being a Mason, her mother is a member of the Order of the Eastern Star, and one of her brothers is a member of DeMolay International, which strives “to shape young men into leaders of character.” Since age 11, Maribel has been a member of the International Order of the Rainbow for Girls, a Masonic youth service organization.

Maribel rallied her friends from Rainbow to think about how they could help support autism research at MMRI. The friends from Rainbow Chapter Manassas Assembly No. 13 devised a unique idea. The result was a joint effort between a dozen Rainbow Girls and the local Masonic lodge. The Rainbow Girls that made the fundraiser possible include Catalina Anderson, Stella Anderson, Avery Grace Armistead, Emily Chwirut, Cassidy Edwards, Darcy Gutierrez, Elina Jones, Samantha Martin, Maribel Martinez, Ella Grace Pendleton, and Dalila Isabel Sosa-Hernandez.

“We held a Thanksgiving dinner fundraiser the week before Thanksgiving at the Manasseh Lodge No. 182. People came to eat a Thanksgiving meal, and many donated in support of MMRI’s autism research,” Maribel shares.

“GRIFFIN CHARITABLE FOUNDATION DONATES \$71,000 TO HELP STRENGTHEN THE HEART OF NEW YORK”

A \$71,000 donation by the Griffin Charitable Foundation, based in Rome, New York, was generously provided to the MMRI to purchase a new state-of-the-art microscope for imaging three-dimensional tissues and cells. “We deeply appreciate Griffin Charitable Foundation’s support for its positive impact in supporting our research efforts to understand and fight disease,” said Stephen F. Izzo, MMRI’s Development Director.

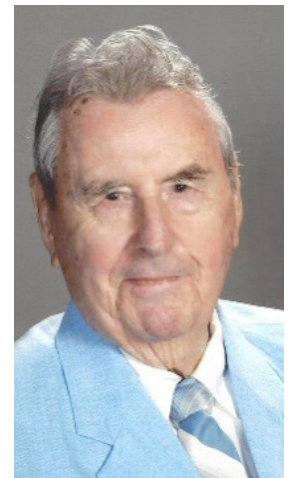
The Griffin Charitable Foundation supports not-for-profit and nonprofit entities serving Rome and select organizations in surrounding communities. The Griffin family has been a pillar in Central New York for over a century and founded Varflex Corporation, a global leader in the manufacturing of electrical insulated sleeving. Family members have also been long involved in philanthropy, creating multiple private charitable foundations in support of the local community. The Griffin Charitable Foundation, as it is known today, was formally established in 2019 following the passing of siblings Dorothy G. Griffin and William (Bill) Griffin.

According to Griffin Charitable Foundation President Daniel Burgdorf, “While we maintain the Griffin family legacy of supporting healthcare, it is rare that we support research. So often, our work helps with more immediate needs. But with this gift, we are looking to impact the greater community for generations to come. Many people we all know would not be alive today if not for the work of the MMRI.”

“We raised \$1,400 for autism research in a single day! We were looking for a worthwhile charity that supports people with ASD, and we were concerned with finding a charity that allocates the majority of donations it raises to actual research, and not to administration costs, like so many other charities out there,” adds Maribel. “I believe supporting research at MMRI will improve people’s awareness and understanding of autism and, ultimately, will improve the lives of those living with autism.”

The work of MMRI has not only helped people around the world through advances in medical science, but it has also strengthened the local community. MMRI has brought jobs to Central New York, which in turn has had a significant multiplier effect on the local economy, increasing the region’s human capital and complementing several other industries, including education, health care, and small business.

The MMRI team wishes to thank their Rome neighbors at the Griffin Charitable Foundation for helping to strengthen “the heart of New York.”



Dorothy G. Griffin and William (Bill) Griffin

HALFOND-WEIL POSTDOCTORAL FELLOWSHIP AWARDED TO DR. CHENNAPPAN



Saravanakkumar Chennappan, Ph.D.

Saravanakkumar Chennappan, Ph.D., is the recipient of the 2023 Halfond-Weil Postdoctoral Fellowship, which is sponsored by the Eighth Masonic District Association of Manhattan Charity Fund.

A postdoctoral fellow in the Kontaridis Lab since 2020, Dr. Chennappan studies human organ development in rare genetic disorders. His work is focused on reprogramming adult cells into inducible pluripotent stem cells (iPSCs), which can then be transformed into a different cell of interest, such as a heart cell or brain cell. This method allows MMRI scientists to model diseases more accurately and test potential treatments.

The Halfond-Weil Postdoctoral Fellowship is a competitive grant awarded annually to a talented postdoctoral fellow at MMRI. This grant helps support new scientists as they grow into their independent

scientific careers. Dr. Chennappan has already made an indelible mark with his work at MMRI. He co-authored two peer-reviewed studies in 2022, one concerning RASopathies in the emergence of biogenetics and the other on the role of Costello Syndrome in mediating metabolic abnormalities. We look forward to seeing how Dr. Chennappan will use this grant for additional promising projects in 2023 and beyond.

We thank the Eighth Masonic District Association of Manhattan Charity Fund for its support of The Halfond-Weil Postdoctoral Fellowship and the critical research that emanates from it!

CONNECTICUT MASONS SUPPORT MMRI RESEARCH

Masonic Medical Research Institute (MMRI) is a national (and even international) Masonic "gem" for which all Masons can share a sense of pride. We take it as a compliment, then, when Masons from jurisdictions outside of our home state of New York support our work and help share our story. For example, the Grand Lodge of Connecticut and the Connecticut Freemasons Foundation have been supporters and longtime friends of MMRI. We want to convey a special thanks to the Masons of Connecticut for their continued support of our work!

In February, at the annual Conference of Grand Masters of North America in Arlington, Virginia, the Grand Master of Connecticut, M.W. Bruce Bellmore, presented a donation of \$15,000 to MMRI. At the Conference, which included representatives from the 51 Grand Lodges of North America, Grand Master Bellmore presented the check to MMRI representatives R.W. Dr. Bob Hewson (MMRI Board President), Maria Kontaridis, Ph.D. (MMRI Executive Director and Director of Research), and Stephen F. Izzo (MMRI Development Director).

Gifts from the Connecticut Freemason's Foundation since 2014 alone surpass \$146,000 and have indelibly impacted MMRI's research work in cardiovascular disease, neurocognitive disorders, and autoimmunity.



Pictured left to right: Maria Kontaridis, Ph.D., M.W. Grand Master Bellmore, R.W. Dr. Robert Hewson, Stephen Izzo.

MMRI POISED TO START RESEARCH ON POST-TRAUMATIC STRESS DISORDER

In May 2022, the Battle Within Foundation (BWF) made the first of a proposed series of donations to fund new research at MMRI to examine post-traumatic stress disorder (PTSD). Through the support of New York Masons, an initial donation of \$25,000 was collected from tributes made directly to BWF in memory of Lady Joanne Kessler, who passed away in December 2021. The wife of M.W. Richard Kessler, the Grand Master of New York Masons, Lady Kessler's wish was for the Masonic community to support this cause for veterans battling PTSD. Starting from that seed, the goal of BWF is to grow the research fund to \$250,000 within the next year to help launch new PTSD research at MMRI.

Some New York Masons are taking the initiative to jumpstart the program through innovative fundraising ideas. For example, Unity Lodge No. 9 in Valatie is considering a "bike-a-thon" to help raise funds, an initiative championed by lodge member Kyle Kuffel.

Kyle Kuffel, who is both a New York Mason and a combat veteran, offers a unique perspective on why PTSD research needs attention and funding. Kuffel is a US Army Sergeant (Retired) who served three tours of duty—two in Iraq and one in Afghanistan. He has known fellow veterans and friends who have battled PTSD, struggling to find care and acceptance for a debilitating condition that has not yet received the same level of attention in research as other conditions or diseases. Veteran suicide in the US takes more lives than war, and it is estimated that approximately 22 American veterans die by suicide every day, prompting the urgent need for more PTSD research.

Kuffel is active in supporting veterans—he's a member of the American Legion and Veterans of Foreign Wars, and he

volunteers with groups like Wounded Warrior Project and Hope for the Warriors. He heard about the Battle Within Foundation's effort to fund PTSD research at MMRI by word-of-mouth at Masonic events, and he felt compelled to launch a fundraiser with the brothers at his home lodge.

"This is real. A lot of people might hear the name 'Battle Within' and think it's only a name, but for people like me, when I hear the name, that is real. I battle within and I'm not the only one," says Kuffel. He shares that soldiers are unique in that discussing emotions is sometimes frowned upon, adding to the difficulty in dealing with PTSD. "We're so good at hiding feelings. You can't show fear or sadness, or any emotion at all. We're told you need to be strong and put aside emotions to do what you need to do."

MMRI hopes to work to identify the underlying mechanisms and causes behind PTSD. Anticipating funding from the BWF, Drs. Gary Aistrup, Chase Kessinger, and Maria Kontaridis are prepping their labs to work on projects for this new research program.

"In the case of PTSD, there is evidence to suggest that neuroinflammation may play a role in the development and persistence of symptoms. Most of my current research background and interest, to some degree, involves inflammatory processes," says Chase Kessinger, Ph.D., Assistant Professor of Cardiovascular Medicine and the Histology/Imaging/Surgery Core Manager at MMRI. "We have proposed to investigate a molecular imaging agent to track neuroinflammation non-invasively in a preclinical model of PTSD. From that data, we can investigate the timeline of PTSD-related inflammation and its relationship to the severity and maintenance of symptoms. This preclinical model and the data gathered will then aid

us in identifying possible interventions or therapies that can ameliorate or blunt PTSD-related symptoms."

"This funding will help establish the model and preliminary data needed to generate a competitive extramural funding proposal for granting agencies such as the National Institutes of Health and others," adds Dr. Kessinger. "The funding also allows the MMRI to purchase fundamental instrumentation necessary to undertake new research in the field of PTSD."

The Battle Within Foundation's mission is supporting veterans in crisis, educating the public, and honoring heroes for their service regardless of where they died. BWF is a 100% volunteer-run 501(c)(3) charitable organization based in Buffalo, New York. To learn about the BWF please visit their website at: thebattlewithinfoundation.com.

To learn about making a donation to MMRI's PTSD research, you may contact Stephen F. Izzo, MMRI's Development Director. Call 908-477-7966 or email stephenizzo@mmri.edu. You may also donate on the MMRI website at mmri.edu/donate-now/. At the bottom of the donation page, you may leave a comment to designate your donation for PTSD research.



HEIDELBERG BREAD COMPANY HOSTS FUNDRAISER FOR MMRI

Community leaders showed their support for MMRI with a memorable event on April 15 at the Heidelberg Great Room on Route 28 in Herkimer, New York— raising over \$15,000. The fundraiser, held in a venue imbued with a German décor and in which attendees were treated to fine cuisine, live music, and singing, was organized by Boyd Bissell, the founder of the popular local bakery, Heidelberg Bread Company, and a member of the MMRI Community Advisory Committee (CAC).

In an example of grassroots fundraising and initiative, Mr. Bissell first proposed an off-campus fundraiser at his renovated café to reach new donors. Mr. Bissell is a pillar in the local community, recognized for his exemplary philanthropic work and a New York State Senate Commendation Award presented by State Senator Joseph Griffo in 2022.

MOHAWK VALLEY EDGE

Mohawk Valley EDGE featured MMRI in its news bulletin on March 17. EDGE, or the “Economic Development Growth Enterprises” Corporation, attracts and assists businesses to locate, grow, and prosper in Utica and Oneida County. EDGE is aligned with the six-county Mohawk Valley Regional Economic Development Council. Among other things, the two organizations champion the growth of the local STEM industry (Science, Technology,

“Giving back to the communities where our employees live and work is an important part of Heidelberg Bread’s corporate commitment to social responsibility, which includes charity donations, volunteering, and employee health and wellness,” Mr. Bissell shared. “Over the years, Heidelberg Bread has supported the efforts of many organizations within our communities through annual participation.”

Mr. Bissell is also a vocal proponent of healthy living, diet, and exercise, and he envisioned his bakery would reflect these values. “In a jungle of fast foods, chemical additives, and artificial flavors, I offer the supermarket public a natural and tasty alternative to the cardboard fluff breads available out here,” said Mr. Bissell. He shared that his appreciation

for cardiovascular health is what helped steer his attention toward MMRI and its beneficial work in medical research. Thank you, Mr. Bissell, for your efforts and dedication to MMRI and our research efforts!



Boyd Bissell and Maria Kontaridis, Ph.D.

Engineering, and Math), considered one of the region’s most valuable assets. The primary mission of the MMRI is to conduct high-quality basic biomedical and clinical research aimed at generating knowledge and information necessary for understanding molecular mechanisms of disease and the development of medical cures and treatments. As such, MMRI, whose vision is to “combine molecular biology, chemistry, computation,

technology, and engineering to create novel approaches to understanding and deciphering causes of disease,” is a vital part of that same STEM industry and “economic ecosystem.” The MMRI labs also bring good jobs and families to Mohawk Valley and spur economic stimulation with each new study and innovation.



Available in Gray too.

Shop Today. Have Style Tomorrow.

mmri.edu/store

ON THE CALENDAR:

June 17, America's Greatest Heart Run & Walk: Each step you take will help the American Heart Association and other nonprofits support heart-related medicine and research (like at the MMRI!). Join Team MMRI for this fun annual tradition in Whitesboro, New York.

June 21-25, St. John's Day Festivities: The Feast Day of Saint John the Baptist (June 24) draws hundreds of Masons and their families yearly to the Masonic campus in Utica, New York. The week's festivities include family games, barbecues, live music, fireworks, a parade, and exhibition tables from statewide Masonic organizations.

If you're a New York Mason, this is a terrific time to visit the MMRI. Sign up early with MMRI staff to enjoy: tours of the lab, meet MMRI scientists, hear about cutting-edge science, see the latest research findings displayed on scientific posters, and sign up your guest for the Ladies' Breakfast and science presentation. Be sure to ask about the golf outing!

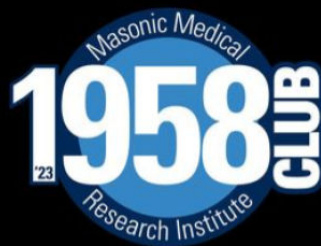
July 7-8, MVHS Health and Wellness Expo, and July 9, Boilermaker Road Race: On Friday, July 7, and Saturday, July 8, MMRI will continue its mission to raise awareness of the Institute's work from its exhibition table at the MVHS Health and Wellness Expo. Then, on Sunday, July 9, a popular annual tradition in Utica continues with the running of the Boilermaker Road Race! It features a wheelchair race, 5k-and 15k-walk-and-run events that attract thousands. "Team MMRI" participates every year, representing the Institute in uniformed MMRI shirts.

July 28, Summer Fellows Presentations and End-of-Program Ceremony: MMRI and its scientists will host—as they have annually since the Program started in 1960—an end-of-program ceremony at which the 2023 Fellows will present their research, feted by their families, dignitaries, and others.

August 28, MMRI Golf Classic: Join us for the MMRI Golf Classic at the Yahnundasis Golf Club in New Hartford, NY. This annual fundraiser will include meals, prizes, raffles, and the chance to tee off with MMRI's scientists and leadership team. To learn more, visit mmri.edu/golf. Interested in playing or becoming a sponsor? Contact Stephen F. Izzo, MMRI's Development Director, at 908-447-7966 or stephenizzo@mmri.edu. The event is filling up fast!

September 20, Mohawk Valley Gives: MMRI is a proud participant in—and beneficiary of—this annual fundraising drive. You too can be a part of the community-wide effort to boost Mohawk Valley nonprofits in the very heart of New York.

JOIN THE 1958 CLUB!
MMRI's Exclusive Donor Club!



Register online: mmri.edu/1958-club/

To learn about the 1958 Club,
contact the Development Director, Stephen F. Izzo:
Email: stephenizzo@mmri.edu
Phone: 908-477-7966



CURRENTS

Grand Lodge of New York

A publication by the Masonic Medical Research Institute

MASONIC MEDICAL RESEARCH INSTITUTE
2150 Bleecker Street • Utica, New York 13501-1787
Phone: 888-888-6675
www.mmri.edu



To subscribe to our e-newsletter and updates, go to www.mmri.edu, insert your email address under e-newsletter and click "sign up" on our home page.

Leadership

BOARD OF DIRECTORS

DAVID F. SCHNEEWEISS, MBA
Chairman
First Erie District

ROBERT A. HEWSON, DPM
President
First Erie District

PASQUALE IMBIMBO, JR.
Vice President
Saratoga-Warren-Washington District

JAMES D. SWAN, JR.
Secretary
Onondaga District

VINCENT CUNZIO, CPA
Treasurer
Second Westchester-Putnam District

ALVARO F. QUIROGA-SANCHEZ
Past President
Tenth Manhattan District

DAVID D. GOODWIN
Southern Tier District

PETER R. GRAY, MD, PH.D., FACC
Saratoga-Warren-Washington District

PAUL A. GUERRERO, CMR
Fourth Manhattan District

PAUL G. HUCK, ESQ.
Fourth Manhattan District
Suffolk District

RICHARD J. MILLER, JR., ESQ.
Old Seventeenth District

PAUL E. MOSSBERG
First Manhattan District

VIRGILIO S. QUIJANO
Fourth Manhattan District

SHELDON B. RICHMAN, ESQ.
First Manhattan District

FRANK R. WILLIAMS
Oneida District

DIRECTORS EMERITI

JOHN P. CHANG, R.PH.

PAUL N. O'NEILL

LAURENCE I. SUSSMAN

VICTOR G. WEBB

ALBERT J. WRIGHT, III

MMRI ADMINISTRATION

MARIA KONTARIDIS, PH.D.

Executive Director

Gordon K. Moe

Professor and Chair
Director of Research

LISA COOPER, CPA
Finance Director

JASON MCCARTHY, PH.D.
Science Operations Director
Associate Professor

STEPHEN F. IZZO, MA, MPA
Development Director

VARUN BALAJI
Information Technology Director

MICHAEL MAYO
Controller

CURT FOWLER
Facilities Manager

ANTHONY M. LAPOLLA, M.A., SHBRP
Human Resources Officer