



Grand Lodge of New York

CURRENTS

A publication of Masonic Medical Research Institute



***\$200,000 DONATION
FROM LADA
PAGE 4***

***MEET NEW FACULTY
PAGE 12***

***NEW \$3.9 MILLION
NIH GRANT TO FUND
TUCKER LAB
PAGE 2***

***SUMMER FELLOWS
GRADUATION
PAGE 6***

TABLE OF CONTENTS

Employee Spotlight	2
NIH Awards \$3.9 Million Grant to MMRI Researcher Investigating Cardiac Arrhythmia	3
MMRI Research Continues to be Backed by American Heart Association	3
\$200,000 Awarded to MMRI for Research on Lupus by (LADA)	4
Warm Wishes to Graduating Research Assistants	5
A Summer of Science: Congratulations to our 2023 Summer Fellows!	6
Another Successful St. John's Weekend	8
Ladies at 'La Fraternidad' Advocate for Autism Support and Research	8
Pilot Study on Positive Effects of Wellness-Based Practice for Substance Abuse Cravings	9
First Annual Golf Classic Raises \$88,000	10
Spring Science Seminar Series	11
Latest Science Publications	11
New Faculty Member from UCSD with Focus on Heart Development and Cardiovascular Medicine	12
MMRI In the News	13
MMRI Provides Unique Laboratory Experience for Students at Hamilton College	13
Welcome to The MMRI Team!	14

EMPLOYEE SPOTLIGHT



MMRI's Samantha Le Sommer, Ph.D., postdoctoral fellow, under Maria Kontaridis, Ph.D., executive director, was published in the scientific journal, *Wiley*. The article titled, "The Rising Tide Raises All Ships," addresses her struggles and successes while battling a chronic illness and struggling in school.

As a fifth year postdoctoral researcher, Dr. Le Sommer has found herself in an unusual place, where she is both a mentor and a mentee. She explains that while she isn't perfect at dealing with work-life balance, she has learned the importance of being surrounded by people who are supportive.

To read Dr. Le Sommer's article, visit mmri.edu/currents.

NIH AWARDS \$3.9 MILLION GRANT TO MMRI RESEARCHER INVESTIGATING CARDIAC ARRHYTHMIA

Nathan Tucker, Ph.D., hopes to identify genetic factors that may lead to the cardiac event

The National Heart, Lung, and Blood Institute (NHLBI) of the National Institutes of Health (NIH) recently awarded a \$3.9 million grant to a project led by Principal Investigator, Nathan Tucker, Ph.D., assistant professor of biomedical research and translational medicine at MMRI for research into the genetic risks associated with cardiac arrhythmia.

The five-year study hopes to address locations within the genome that are linked to arrhythmia risk, which can then be used for the development of new therapies.

A cardiac arrhythmia is a problem with the rate or rhythm of the heart, which can result in the heart not pumping enough blood throughout the body. When left untreated, this can lead to damage of other vital organs. While millions of Americans suffer from some form of a cardiac arrhythmia, current treatments do

not adequately address the full scope of the problem.

"While there are clear genetic factors that contribute to the risk of arrhythmias, the mechanisms through which genetics confer risk remain unclear," said Dr. Tucker. "The goal of this project is to address this gap in knowledge, and ultimately lead to facilitating new therapeutic development."

Dr. Tucker's research hopes to uncover the specific genes that could lead to a cardiac arrhythmia in order to generate novel therapeutic approaches and guide clinical practices.

"We're doing internationally recognized research in the Mohawk Valley," said Dr. Tucker. "The funding of this study will allow us to support talented scientists and their impactful projects right here in Utica, helping to grow our world-class scientific community."

"We are grateful for the support provided by NHLBI to further Dr. Tucker's research and are confident in the strong impact it

will make in the future of cardiovascular health," said Maria Kontaridis, Ph.D., executive director, Gordon K. Moe professor and chair of biomedical research and translational medicine at MMRI.



Nate Tucker, Ph.D.

Disclaimer: The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. Research reported in this press release was supported by the National Heart, Lung, and Blood Institute of the National Institutes of Health under award number R01HL170051.

MMRI RESEARCH CONTINUES TO BE BACKED BY AMERICAN HEART ASSOCIATION

The Association granted MMRI two new awards totaling \$273,432 for cardiovascular research

The American Heart Association is a valued supporter of MMRI. Within the last year, the Association awarded significant funding to MMRI's innovative research into the nation's leading cause of death, cardiovascular disease. This brings the Association's total grant support of MMRI to \$377,200.

The Innovative Project Award (IPA) for \$200,000 was awarded to Principal Investigator, Nathan Tucker, Ph.D., assistant professor of biomedical research and translational medicine at MMRI. The two-year award will allow Dr. Tucker and his research team

to focus on the strong impact that genetics have on the risk of severe cardiovascular disease (CVD). Positive CVD outcomes are directly linked to early diagnosis and genetic screening is more regularly being integrated into everyday clinical care. However, current measures to identify genetic CVD risks early in patients are lacking and typically rely on clinical tests that may not be accurately interpreted.

"It's very clear that the future of clinical care in cardiovascular disease will include genetics as well as traditional clinical measures, such as cholesterol or blood pressure," said Dr. Tucker.

"However, our understanding of how genetics impact risk is still in early days. The goal of this project is to lead the way in understanding the impact of genetic changes in a gene with a strong link to a very severe cardiovascular condition, called dilated cardiomyopathy."

The Transformational Project Award for \$73,432 was awarded to Maria Kontaridis, Ph.D., executive director, Gordon K. Moe professor and chair of biomedical and translational medicine at MMRI, for her collaborative research project titled, *Atrial Remodeling*

continued on pg. 4 >>

Precedes Ventricular Dysfunction in Proteotoxic Cardiac Disease. The Principal Investigator for the project is Rajasekaran Namakkal-Soorappan, Ph.D., associate professor of molecular and cellular pathology at The University of Alabama at Birmingham, Birmingham, Alabama. The three-year award



Maria Kontaridis, Ph.D.

will allow Dr. Kontaridis and her team to study arrhythmias. Specifically, she and her team will research the impact of damaged proteins on the structure and electrical signaling of the heart. "Our hope is to determine whether improving the control of protein quality can maintain the normal structure and electrical function of the heart,"

said Dr. Kontaridis. **"The funding provided by the American Heart Association will allow me and my team to make significant strides forward in this imperative research. All of us at MMRI are extremely grateful for the American Heart Association's generous support."**

\$200,000 AWARDED TO MMRI FOR RESEARCH ON LUPUS BY THE LUPUS AND ALLIED DISEASES ASSOCIATION, INC. (LADA)

Funding to support four innovative research projects in systemic lupus erythematosus (SLE)

On Thursday, August 17, 2023, officials from MMRI received a surprise announcement by LADA President and CEO, Kathleen Arntsen, that its three previously supported SLE research projects would receive an additional \$50,000 each this year, plus an additional \$50,000 would be allocated for a fourth new endeavor. The check was presented at LADA's 23rd annual Lupus Charity Golf Classic.

"As an organization led by individuals who are directly impacted by lupus, we are honored to support quality, groundbreaking lupus research," stated Kathleen A. Arntsen, president & CEO at LADA. "We are thrilled that a premier research facility such as MMRI exists locally and look forward to advancing breakthroughs."

The MMRI research funded by LADA is focused on preventing and treating SLE, a devastating autoimmune disease that causes the immune system to attack a

person's own tissue, causing inflammation in the skin, joints, blood, heart, lungs, brain and kidneys, and leads to extreme exhaustion, fevers, skin rashes, hair loss and anemia.

MMRI scientists will research how increased activity of specific biological enzymes in the body can affect progression and pathogenesis of SLE; identify new ways to target and treat lupus nephritis; develop and use novel therapeutic agents for the treatment of SLE; study how immune cell activity in SLE can lead to the development of venous thromboembolism.

"Our research endeavors are making tremendous strides in the fight against SLE," said Maria Kontaridis, Ph.D., executive director. "We are extremely grateful to LADA for their commitment, partnership and support of our work."

LADA has been a proud sponsor of MMRI

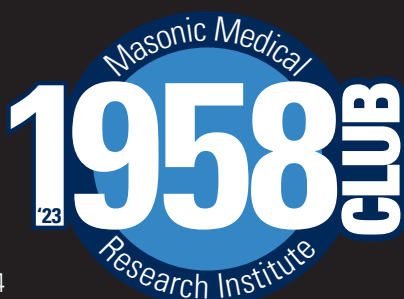
research since 1990.

On Friday, May 19, 2023, MMRI dedicated a new laboratory space in its newly renovated building, specifically for SLE research, in appreciation of LADA's dedication to continued research in lupus and allied diseases and for its advocacy of patients.

"Our partnership with LADA is invaluable and the need for continued research to find the cause of SLE is critically needed," said Dr. Kontaridis. "MMRI aims to identify new ways to treat, and hopefully cure this disease."



MMRI staff presented with check by Kathleen A. Arntsen, president & CEO at LADA.



Make a donation to our 1958 Club in 2023 and receive this year's one-of-a-kind club pin.

You'll also be invited to special events, get access to 1958 Club members-only merchandise and much more!

WARM WISHES TO GRADUATING RESEARCH ASSISTANTS

Congratulations are in order for six MMRI research assistants as they move on to pursue the next steps in their careers.

"Each of these students are so incredibly talented and hardworking, and it was an absolute pleasure to work with them," said Maria Kontaridis, Ph.D., executive director at MMRI.

Donna Le returned to MMRI as a research assistant under Chase Kessinger, Ph.D., assistant professor of biomedical research and translational medicine, after previously working under Jason McCarthy, Ph.D. as a student researcher. While in the Kessinger Lab, Le investigated the relationships of inflammation in venous thromboembolism and helped establish new imaging protocols to look at diseased hearts at high spatial resolutions.

Le has been accepted to Northeastern University, Boston, Massachusetts, and will be moving there to pursue her career at pharmacy school. "Donna was a great asset to our lab and I'm excited to see where her future takes her," said Dr. Kessinger.

Emily Marshall, a research assistant under Nathan Tucker, Ph.D., assistant professor of biomedical research and translational medicine, since 2021 will be earning her Ph.D. in genetics at the University of Rochester, Rochester, New York. While in the Tucker Lab, Marshall tackled projects ranging from familial arrhythmia mechanisms, single cell sequencing, next generation gene editing and set the framework for high throughput functional screens.

"I do not suggest graduate school to students lightly, as it's not an easy life that asks many sacrifices of an individual," said Dr. Tucker. "However, every once in a while, a person comes along that carries just the right mix of resilient attitude, work ethic, intellectual flexibility and general joy in science. Just the type of person who should go on to advanced degrees in

science and might be the person to lead a group and make that critical discovery. Emily is that person, and it was a pleasure to watch her grow from a green summer research fellow into someone who we could count on to accept any challenge in the lab. We will miss her very much but look forward to seeing what she will accomplish!"

Karlie McCumber, a research assistant under the Kontaridis Lab, will be starting a Ph.D. program in biology at the University of Albany, Albany, New York. McCumber plans on using her degree to become a professor. "I have always wanted to teach and research," said McCumber.

While at MMRI, McCumber gained first-hand experience working with top-of-the-line equipment, such as a confocal microscope to learn more about induced pluripotent stem cells (iPSCs), which was her area of study while working alongside Gary Aistrup, Ph.D., in the Kontaridis Lab.

Katherine Nelson returned to MMRI as a research assistant under the Kontaridis Lab after spending the summer at MMRI as a Summer Fellow. She will be attending the Albert Einstein College of Medicine, Bronx, New York, where she will earn her Ph.D. in biomedical science.

While at MMRI, Nelson enjoyed working with Dr. Kontaridis, Samantha Le Sommer, Ph.D., Yan Sun, Ph.D. and Sathyadev Unudurthi, Ph.D. "There was never a dull moment, my days were full of variety and stimulating new experiences," said Nelson. "You meet a lot of wonderful people at MMRI. The relationships will continue, and I will take them with me when I go to grad school."

Gianna Sisti joined MMRI as a Summer Fellow in 2022, then returned as a research assistant under the Tucker Lab where she was the familial genetics expert. "It's such a pleasure to watch someone go into the field they are meant for," said Dr. Tucker. "Gianna recognized the need for genetic

counselors and brings the intelligence, empathy and diligence that will make her an excellent counselor and a role model for others in the future as the field expands."

Sisti has accepted a position as the clinical genetics assistant at the Mount Sinai Health System in New York, New York.

Emma Zupan, a research assistant under the Kontaridis Lab joined MMRI as a Summer Fellow in 2021. She worked closely with Luana Nunes Santos, Ph.D., a postdoctoral researcher studying neurocognitive function and autism.

Zupan has been accepted into Michigan State University, East Lansing, Michigan, and is also considering universities nationwide to become a Doctor of Veterinary Medicine (DVM). "I wanted to be a veterinarian since I was a little girl," said Zupan.

The entire team at MMRI is excited to see where these professionals will go with their careers. It was a pleasure to have them!

A SUMMER OF SCIENCE: CONGRATULATIONS TO OUR 2023 SUMMER FELLOWS!

MMRI was pleased to welcome its 2023 Summer Fellows. With more than 45 applicants, this year's application pool was by far the largest and most competitive to date.

Over the ten-week program, Summer Fellows worked with their preceptors to design and research a project, which they presented at their graduation on Friday, July 28, 2023.



Joseph Detraglia

"Macrophage RhoA Improves Cardiac Repair by Promoting Clearance of Apoptotic Cardiomyocytes and Regulating Inflammation After Myocardial Infarction"
University of Rochester, Rochester, New York
Preceptors: Maria Kontaridis, Ph.D. and Bing Xu, Ph.D.



Dasomie Kim

"Design and Synthesis of Fluorescent Probe for Molecular Imaging of Thrombin Activation"
Hamilton College, Clinton, New York
Preceptors: Jason McCarthy, Ph.D. and Khanh Ha, Ph.D.



Ryan Klapmeyer

"Optimization of Protocols to Facilitate Cost Effective Human iPSC Culture and Quality Control"
University of Florida, Gainesville, Florida
Preceptors: Maria Kontaridis, Ph.D. and Kumar Chennappan, Ph.D.



Meghan Lynskey

"Linking Microtubules to Arrhythmias: the CEP68 Locus for Atrial Fibrillation"
Rochester Institute of Technology, Rochester, New York
Preceptor: Nathan Tucker, Ph.D.



Joshua Macera

"Analysis of the Inflammatory Response in a Preclinical Model of PTSD"
Binghamton University, Binghamton, New York
Preceptor: Chase Kessinger, Ph.D.



Alexander Mandia

"Using CRISPR Gene Editing to Define the Genetics of Cardiomyopathy"
Lehigh University, Bethlehem, Pennsylvania
Preceptor: Nathan Tucker, Ph.D.



Adelina Rivera

"Design and Synthesis of Myofibroblast-Specific Poly(Lactide-co-Glycolide) Nanoparticles for the Treatment of Fibrosis"
Vassar College, Poughkeepsie, New York
Preceptors: Jason McCarthy, Ph.D. and Vikas, Ph.D.



Nikita Shah

"Loss of VGLL4 Boosts YAP Mitogenic Activity in Adult Murine Cardiomyocytes"
SUNY Polytechnic Institute, Utica, New York
Preceptor: Zhiqiang Lin, Ph.D.



Caitlin Snyder*

"Molecular Imaging of Pulmonary Embolism Induced Inflammation"
SUNY Fredonia, Fredonia, New York
Preceptor: Chase Kessinger, Ph.D.

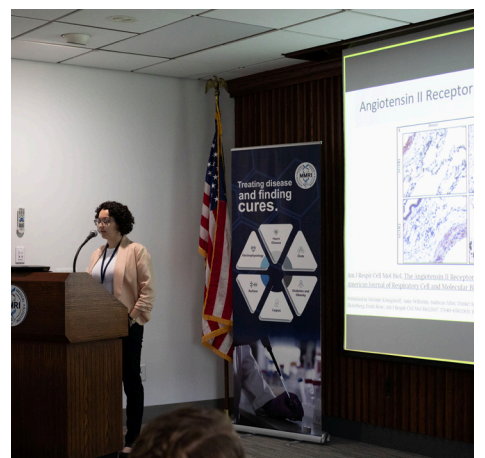
The 2023 Summer Fellowship Program would not have been possible without the generosity of our sponsors:

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*Recipient, Give Back to Utica Internship Award.

Marianne Buttenschon, New York State Representative, with 2023 Summer Fellows and Maria Kontaridis, Ph.D., executive director.





ANOTHER SUCCESSFUL ST. JOHN'S WEEKEND

Members of the Masonic community from across the state, along with their families, joined us for laughs, golf, tours of the lab, fireworks and more at this year's St. John's Week celebration. The events took place at the Masonic Care Community campus from June 22-25, 2023. This year's theme was family fun!

The fun at MMRI began with a golf outing at the Yahundasis Golf Club, followed by dinner at MMRI. After the MMRI board meeting on Friday, the weekend concluded with a ladies breakfast and tours of the campus. During the weekend, MMRI staff had the pleasure of recognizing four donors for their generosity. A small ceremony was held to honor the below:

- Louis Rosenthal has generated approximately \$437,271 in donations to support MMRI's research efforts. A plaque was unveiled in the chemistry laboratory suite with a dedication to Rosenthal's late wife, Theresa Rosenthal.



Louis Rosenthal and Dr. Kontaridis unveil plaque

- Cecelia and Ronald Gouse of New Hartford, New York, were recognized with a Vine of Life statue and leaf in recognition of their continued philanthropic support of MMRI, which now totals more than \$13,000 since 2018. Thank you!



Cecelia and Ronald Gouse with Vine of Life

- The Masons of Mariner's Lodge No. 67 of Manhattan, New York, presented MMRI with a donation of \$1,250. This donation was organized by lodge brother Michael Sachs, pictured below with Stephen F. Izzo, development director. Thank you!



Masons of Mariner's with Stephen F. Izzo, development director

- Sheldon Richman, Esq., MMRI board member, or "Shelley" as he's known at MMRI, is a talented fundraiser who encourages others to give. Shelley's own donations now surpass \$25,000 and he was honored with a Vine of Life statue and leaf during the commemoration. Thank you for giving your time, talent...and treasure to MMRI!



Sheldon Richman receiving a Vine of Life

"The MMRI staff wishes to thank the many supporters who give generously to help our mission," said Stephen F. Izzo, development director. "Our work is critical to medical science, and we couldn't do any of it without the support of the Masons and non-masons alike!"

LADIES AT 'LA FRATERNIDAD' ADVOCATE FOR AUTISM SUPPORT AND RESEARCH

Autism affects an estimated 5.5 million Americans, 343,000 of which are New Yorkers. For every person diagnosed with autism, there are many who advocate for better treatments.

The members and families of La Fraternidad Lodge No. 387, which was

founded in 1855, have come together to support MMRI's autism research efforts. Specifically, the Comite de Damas or "Ladies Committee" of this lodge has raised \$1,500 to support autism research. This donation, a series of philanthropic gifts made in support of MMRI's autism research program by this group, was

presented to Alvaro F. Quiroga-Sanchez, chairman of the MMRI Board of Directors.

MMRI's autism research is spearheaded by Maria Kontaridis, Ph.D., MMRI's executive director.

continued on pg. 9 >>

MMRI scientists and staff wish to thank all the members of the Comite de Damas at La Fraternidad for their support. This gesture, in addition to their work supporting a school in Brooklyn that houses 180 children with autism, is just one example of how a small group can make a big difference when united for a common cause.

The team leader is Dania Romero, and committee members include, Jessica Ballena, Teresa Blanco,

Angelica Boluarte, Alejandra Carrion, Rosa Carrion, Emperatriz Corrochano, Maria Flaquer, Marisol Iberti, Elsa Lopez, Madeline Lopez, Carmen Marino, Haydee Martinez, Linett Oliver, Martha Quintanilla, Laura Restrepo, Maria Eugenia Salgado, Mabel Schabib, and Ana Villalobos.



Members of the Comite de Damas presented Alvaro F. Quiroga-Sanchez with check.

SATHYADEV UNUDURTHI, PH.D., AND COLLEAGUES PUBLISH PILOT STUDY ON POSITIVE EFFECTS OF WELLNESS-BASED PRACTICE, SKY BREATH MEDITATION, FOR SUBSTANCE ABUSE CRAVINGS

Sathyadev Unudurthi, Ph.D., affiliated faculty member at MMRI, recently published an article in the Journal of Psychosocial Nursing and Mental Services titled, *Sudarshan Kriya Meditation Reduces Substance Abuse Cravings and Improves Physical and Emotional Well-Being of Individuals with Opioid Use Disorder: A Pilot Study*.

The preliminary study observed the positive effects of a rhythmic inhalation-exhalation based meditation, called SKY Breath Meditation, on those struggling



Sathyadev Unudurthi, Ph.D.

with substance use disorders, such as addiction to opioids.

“SKY Breath Meditation is unique because a) it allows subjects to achieve a calm and meditative state of mind using specific rhythms of inhalation and exhalation, which is significantly easier to practice, compared to other cognitive meditative techniques and b) it is a structured and manualized technique that is always taught in a consistent manner with little variability, which allows for standardized administration of SKY breath meditation across the world,” said Dr. Unudurthi.

Dr. Unudurthi and his colleagues worked with a mental health and addiction recovery clinic to recruit participants for the study. Eight patients from the clinic, who were also receiving clinical treatment for addiction, engaged in SKY Breath Meditation practices as part of their recovery plan. **The results were positive - participants experienced a significant decrease in depression and substance abuse cravings, as well as increased emotional well-being.**

“It is interesting to note improvements in physiological parameters such as physical functioning, in addition to improvements in psychological parameters, among patients,” said Dr. Unudurthi.

The study is unique because it focuses on the use of mind-body and wellness-based practices alongside clinical treatments. Dr. Unudurthi and his colleagues believe this supplemental therapy technique can be easily incorporated into a health care providers’ treatment plan for their patients.

“This is accessible for many people and the initial scan can even be administered virtually,” said Dr. Unudurthi.

He also points out that this is not a replacement for traditional treatments and therapies such as pharmaceuticals or cognitive-based therapy.

To learn more about Dr. Unudurthi and his work with MMRI, visit mmri.edu/affiliated-faculty.

FIRST ANNUAL GOLF CLASSIC RAISES \$88,000

On Monday, August 28, 2023, MMRI hosted its first annual charitable golf tournament at the Yahnundasis Golf Club, New Hartford, New York, in honor of its 65th anniversary. Twenty-five foursomes played 18 holes of golf, captain and crew style, while competing for the best overall score, longest drive (men's, women's and senior's) and closest to the pin (men's and women's). Players also had access to the driving range and enjoyed a cocktail hour followed by dinner and an awards presentation.

With the help of its sponsors and players, the inaugural tournament raised \$88,000 for MMRI.

"The event would not have been possible without the generosity of our sponsors and foursomes," said Stephen Izzo, development director at MMRI. "We are truly grateful for their unwavering support."

The list of sponsors include:

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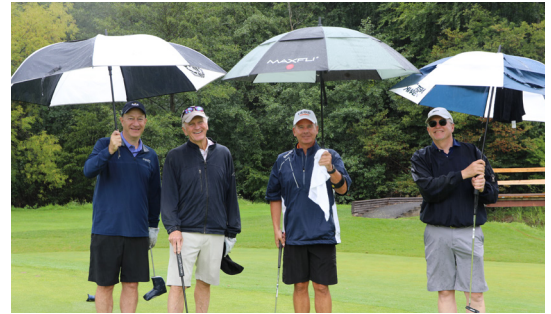
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- R.:W.: Paul Mossberg & Susanne Rowe
- Sheldon Richman, Esq.
- The Matt Law Firm

Congratulations to The Fountainhead Group team for earning the first-place trophy!

The 2024 tournament date will be announced soon. Check mmri.edu/golf for updates and to view more photos of this year's event.



SPRING SCIENCE SEMINAR SERIES

MMRI is thrilled to host scientists from around the country as part of our Science Seminar Series. This spring, Ben Prosser, Ph.D. and Richard Lee, Ph.D. were the featured speakers.

In April, Dr. Prosser, gave a presentation, titled, "Cytoskeletal Control of Cardiac Growth and Mechanics." Dr. Prosser is an associate professor of physiology at the University of Pennsylvania Perelman School of Medicine in Philadelphia, Pennsylvania. There, he leads the Prosser Lab, where his team is working to develop new therapies for the heart and brain by studying the mechanisms behind cellular functions.



Ben Prosser, Ph.D.

His presentation at MMRI explained pump function

(the squeeze and relax) of the heart. "We are studying the heart muscle on a cellular level. My lab has been really fascinated by the microtubules in the heart for some

time and how they could be contributing to the mechanical pump," said Dr. Prosser. "We study the features of the heart, as well as how they contribute to the overall homeostasis of your heart cells."

When speaking to our staff, Dr. Prosser explained the "two different flavors of heart failure," the inability to squeeze and the inability to fill/relax.

"We have lots of good therapies for the inability to squeeze, but we have almost nothing to make it relax," said Dr. Prosser. This is a particular form of heart failure called heart failure with preserved ejection fraction (HFpEF). His goal is to find a way to reverse the stiffening of the heart muscle.

Richard Lee, Ph.D., our second speaker, also studies the heart with particular attention to Growth Differentiation Factor 11 (GDF11) and the science of aging. GDF11 is a protein that affects cell growth.

Dr. Lee is a faculty member at the Harvard Stem Cell Institute (HSCI) in Cambridge, Massachusetts, and visited MMRI in May. He discovered GDF11 a decade ago along

with Amy Wagers, Ph.D. Together, their lab studies have shown that GDF11 improved the heart after an injury and reversed some features of aging in the hearts of older mice.



Richard Lee, Ph.D.

Dr. Lee also discussed the power of diplomacy when it comes to controversy among studies.

"I talked about science controversies that I have lived through and am living through now and let people know what it's like," said Dr. Lee. "Moving forward and trying to answer the questions and to resolve things is an important thing that we do rather than take things personally. If we are objective, then we move things forward for everyone."

Visit mmri.edu for a schedule of upcoming science seminar series.

LATEST SCIENCE PUBLICATIONS

Loss of the Atrial Fibrillation-Related Gene, *Zfhx3*, Results in Atrial Dilatation and Arrhythmias. Jameson HS, Hanley A, Hill MC, Xiao L, Ye J, Bapat A, Ronzier E, Hall AW, Hucker WJ, Clauss S, Barazza M, Silber E, Mina J, **Tucker NR**, Mills RW, Dong JT, Milan DJ, Ellinor PT. *Circ Res.* 2023 Jul 14. doi: 10.1161/CIRCRESAHA.123.323029. Epub ahead of print. PMID: 37449401.

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. Erratum in: *Circ Res.* 2023 Jun 23;133(1):e18. PMID: 37167361; PMCID: PMC10171292.

Recent Advances in the Development of Liquid Crystalline Nanoparticles as Drug Delivery Systems. Leu JSL, Teoh JJX, Ling ALQ, Chong J, Loo YS, Mat Azmi ID, Zahid NI, **Bose RJC**, Madheswaran T. *Pharmaceutics.* 2023 May 6;15(5):1421. doi: 10.3390/pharmaceutics15051421. PMID: 37242663; PMCID: PMC10224018.

Interaction of Filamin C With Actin Is Essential for Cardiac Development and Function. Zhou X, Fang X, Ithychanda SS, **Wu T**, Gu Y, Chen C et al. *Circ Res.* 2023;133(5):400-411. doi: 10.1161/CIRCRESAHA.123.322750. PubMed PMID:37492967 .

MMRI WELCOMES NEW FACULTY MEMBER FROM UCSD WITH LABORATORY FOCUSED ON HEART DEVELOPMENT AND CARDIOVASCULAR MEDICINE

Tongbin, Wu, Ph.D., assistant professor of biomedical research and translational medicine

Dr. Tongbin Wu's laboratory will research novel therapeutic targets and advance the development of treatments for left ventricular noncompaction (LVNC), a cardiac muscle disorder in which the lower left chamber of the heart does not develop correctly, also known as "spongy heart." His work will also focus on studying dilated cardiomyopathy (DCM), a heart muscle disease that makes it difficult for the heart to pump blood.

"My work is dedicated to mapping the intricate web of factors that control the types of proteins that are produced in the heart, which is then used to create targets for therapeutics for when the heart is affected by disease,"

said Dr. Wu. "I'm excited to join the collaborative environment here at MMRI and to continue my important research."

Dr. Wu completed his Ph.D. in biochemistry and molecular biology at Wuhan University, Wuhan, China, and his postdoctoral training in molecular cardiology at the University of California San Diego (UCSD), San Diego, California. While at UCSD, Dr. Wu's work was published in highly regarded scientific journals including, *Circulation*, *PNAS*, *Circulation Research*, *PLOS Genetics* and *Nature Structure and Molecular Biology*.

"Dr. Wu's laboratory will contribute tremendously to our growing endeavors," said Dr. Kontaridis. "We are thrilled to welcome him to our organization."

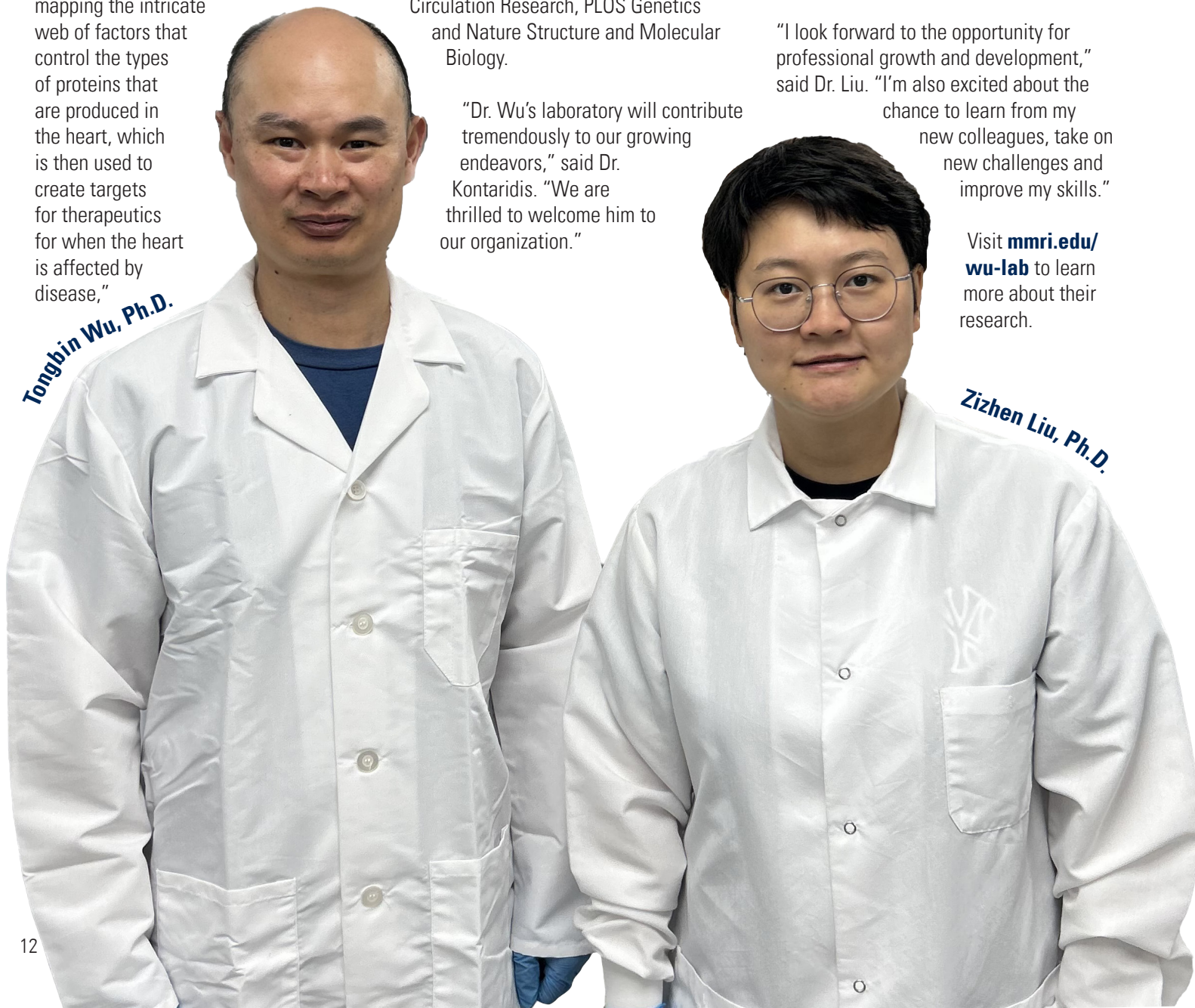
Meet Zizhen Liu, Ph.D., postdoctoral assistant for Dr. Wu's laboratory

MMRI welcomes Dr. Zizhen Liu to Dr. Wu's laboratory. Dr. Liu's focus is post-transcriptional regulation of heart development and diseases.

Dr. Liu received her Ph.D. in neuroscience from Peking University, Beijing, China, and her bachelor's degree in pharmaceutical science from Harbin Medical University, Harbin, Heilongjiang, China.

"I look forward to the opportunity for professional growth and development," said Dr. Liu. "I'm also excited about the chance to learn from my new colleagues, take on new challenges and improve my skills."

Visit mmri.edu/wu-lab to learn more about their research.



Tongbin Wu, Ph.D.

Zizhen Liu, Ph.D.

IN THE NEWS



Dr. Kontaridis Inspires, Encourages Graduates During Commencement Address

Picked up by: The Sentinel



Masonic Medical Research Institute (MMRI) Awarded \$200,000 by Lupus and Allied Diseases Association, Inc. (LADA)

Picked up by: WKTV, The Sentinel, Spectrum and Central New York Business Journal



Dr. Kontaridis Celebrates World Heart Day

Picked up by: The Keeler Show on WIBX 950



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MMRI PROVIDES UNIQUE LABORATORY EXPERIENCE FOR STUDENTS AT HAMILTON COLLEGE

In 2022, a partnership between Hamilton College, Clinton, New York, and MMRI started thanks to a grant by the American Heart Association. Khahn Ha, Ph.D., postdoctoral fellow at MMRI and Max Majireck, Ph.D., affiliated faculty at MMRI and associate professor of chemistry at Hamilton College joined forces to give students at Hamilton College hands-on experience researching a cardiovascular disease, called atherosclerosis.

Little did they imagine, the MMRI-Hamilton research team would help make a unique scientific discovery. Together, the team founded a method for creating therapeutic proteins (FTP11 molecules) that "avoid the use of toxic compounds, called oxidants, that are generally required to accomplish this reaction," said Dr. Majireck. Instead, the new method employs a sonicator, a machine that agitates particles through sound waves.

This initial discovery was made by Jason McCarthy, Ph.D., scientific operations

director and associate professor at MMRI. The Hamilton College students then joined his laboratory to optimize the reaction, study the mechanism and apply it to a broader range of peptide substrates to be adapted for medical purposes.

"We learned a lot of new techniques and worked with equipment different from anything I'd used before," said Kimberly Chase, a senior at Hamilton College. "I'm really thankful I was able to get this opportunity."

The students were able to routinely use MMRI's peptide synthesizer as an essential part of the project.

"The students have become experts on using some of the necessary instrumentation and some of the experimental methods thanks to our collaboration," said Dr. Majireck.

MMRI looks forward to more opportunities to partner with Hamilton College students

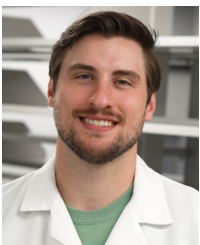


Carolyn Levin '26 transfers a newly synthesized compound into a flask for chemical analysis
photo by Nancy Ford

on these life-changing research projects. Indeed, several additional students are already continuing their scientific efforts on various research projects in multiple laboratories at MMRI.

"Given the great demand for summer research, the partnership has significantly enhanced opportunities for biomedical research at Hamilton College, not only by increasing participation by undergraduate researchers (particularly those from underrepresented groups), but also through establishing a long-term partnership between Hamilton and MMRI," said Dr. Ha.

WELCOME TO THE MMRI TEAM!



Riley Cott: Research Assistant under Chase Kessinger, Ph.D., Assistant Professor of Biomedical Research and Translational Medicine

In this role, Cott will assist Dr. Kessinger in carrying out research interests related to post-traumatic stress disorder.

"I'm excited to be part of the incredible work being done here at MMRI," said Cott.



Ariana Della Posta: Research Assistant under Maria Kontaridis, Ph.D., Executive Director

In this role, Della Posta will work with Luana Nunes Santos, Ph.D., postdoctoral fellow, under Dr. Kontaridis, on congenital heart defects and neurological deformations that

are associated with autism.

"I am excited to see how this study can possibly improve the detection and treatment of these unique, but common defects that have been linked to autism," said Della Posta. "I am excited to see where the future takes me as well as this institution!"



Frank Dinenzo, Ph.D.: Scientific Writer

In this role, Dinenzo will assist both the scientific and administrative staff to write scientific papers, including grants and publications.

"I am excited to work collaboratively with all of the scientists, postdoctoral research fellows and staff to help improve the quality of scientific manuscript and research grant submissions, as well as the communication of our science to the public, with the overall goal of supporting the mission of MMRI," said Dinenzo.

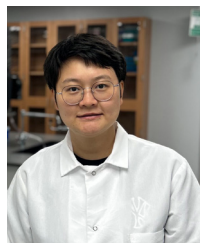


Robert Gardner, Ph.D.: Research Scientist Under Nate Tucker, Ph.D., Assistant Professor of Biomedical Research and Translational Medicine

Dr. Gardner's duties will include exploring genetic variations through research related to cardiovascular disease.

"I'm very excited to join MMRI and the Tucker Lab to use omic approaches at the single cell level to better understand human

health and disease," said Dr. Gardner.



Zizhen Liu, Ph.D.: Postdoctoral Assistant under Tongbin Wu, Ph.D., Assistant Professor of Biomedical Research and Translational Medicine

Dr. Liu will assist Dr. Wu with research related to the study of post-transcriptional regulation of heart development and diseases.

"I look forward to the opportunity for professional growth and development," said Dr. Liu. "I'm also excited about the chance to learn from my new colleagues, take on new challenges and improve my skills."



Yuriy Milobog: Research Assistant under Jason McCarthy, Ph.D., Associate Professor of Biomedical Research and Translational Medicine/Scientific Operations Director.

Milobog will assist Dr. McCarthy in carrying out research related to making and testing probes for molecules involved in the blood-clotting process.

"I'm looking forward to seeing the results of imaging probe validation being published," said Milobog.



Clara Moran: Development Officer

In this role, Moran will connect with donors and bring in funding.

"The researchers at MMRI are so impressive," said Moran. "I'm so glad there are people who have dedicated their careers to doing this kind of important work and I'm happy to be able to support it."



Sara Muhic Zukic: Research Assistant under the Kontaridis Lab

Muhic Zukic will assist Dr. Kontaridis in carrying out research.

"I love the collaborative environment as well as the smaller size of the institute, which makes it so that everyone knows each other," said Muhic Zukic. "You truly feel a part of a dedicated and hard-working team."



Millie Occhionero: Marketing and Communications Director

In this role, Occhionero will design and oversee MMRI's community outreach and marketing initiatives.

"I'm thrilled to join at such an exciting time for the organization," said Occhionero. "Our world-class researchers are doing innovative work and I'm eager to promote it."



Christie Schleider: Administrative Assistant to Development, Marketing and Communications

In this role, Schleider will assist the development and marketing and communications departments with administrative tasks, tours of the institute, preparation for large events and donor recognition.

"My favorite aspect about working at MMRI is being part of a team that is actively working to make a difference," said Schleider.

Genyu Wang, Ph.D.: Postdoctoral Fellow under Zhiqiang Lin, Ph.D., Assistant Professor of Biomedical Research and Translational Medicine.

Dr. Wang will assist Dr. Lin in carrying out research related to cardiac diseases, particularly arrhythmia.

"I love science, and I have great interest in Dr. Lin's work," said Dr. Wang. "My main hope is to unravel the hidden molecular aspects of cardiac diseases and share our findings with peers in the scientific community."



Tongbin Wu, Ph.D.: Assistant Professor of Biomedical Research and Translational Medicine

In this role, Dr. Wu will oversee a laboratory dedicated to cardiovascular medicine. Specifically, his laboratory will research novel therapeutic targets and advance the

development of treatments for left ventricular noncompaction (LVNC), a cardiac muscle disorder in which the lower left chamber of the heart does not develop correctly, also known as "spongy heart." Dr. Wu's laboratory will also research dilated cardiomyopathy (DCM), a heart muscle disease that makes it difficult for the heart to pump blood.

"My work is dedicated to mapping the intricate web of factors that control the types of proteins that are produced in the heart, which is then used to create helpful proteins for when the heart is affected by disease," said Dr. Wu. "I'm excited to join the collaborative environment here at MMRI to continue my important research."



Lauren Yager: Animal Care Technician

Yager's duties will include assisting the animal care team with providing the utmost care to our animals.

"I am excited to be welcomed into this institute by its admirable staff and all the values it encompasses," said Yager.

SAVE THE DATE

1958  Gala
MARCH 23, 2024

Visit mmri.edu/gala to learn more.



CURRENTS

Grand Lodge of New York

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

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