



Grand Lodge of New York

CURRENTS

A publication by the Masonic Medical Research Institute

IN THIS EDITION

Grand Lodge Teams Up with the MMRI for Global Webinar

Phase II Construction Reaches the Finish Line

Unlocking the Heart, One Cell at a Time

MMRI Store: Coming Soon!

Join MMRI Cornerstone Society

Cornerstone Society Member Spotlight

Through the Microscope

MMRI Welcomes New Staff

Electrophysiology and Robert Goodrow: Staples of the MMRI

MMRI Thanks You

GRAND LODGE TEAMS UP WITH THE MMRI FOR GLOBAL WEBINAR



MMRI panelists virtually line up for global webinar. Top left: Dr. Maria Kontaridis; top right: Dr. Chase Kessinger; bottom left: Dr. Nathan Tucker; bottom right: Dr. Sathya Unudurthi.

While this year has brought significant change to our daily routine, we have effectively, as a team, come together to make the transition more seamless. In the past, we regularly hosted seminars, attended conferences, and welcomed visitors. Now, our interactions are a little different. Virtual meetings have become standard, and we have all become a bit more tech-savvy.

On July 30, we virtually attended a live webinar with the Grand Master of the State of New York, MW William M. Sardone and Dr. Maria Kontaridis, Executive Director of the MMRI.

The webinar focused on the MMRI's efforts to help combat the global coronavirus (COVID-19) pandemic. In attendance were Drs. Maria Kontaridis, Nathan Tucker, Sathya Unudurthi, and Chase Kessinger. This event was so popular, that we were asked to conduct repeat performances for the Grand Masters of the Northeast (October 6), and the Grand Lodge of India (November 7).

COVID-19 is a result of a severe acute respiratory syndrome coronavirus known as SARS-CoV-2. Researchers at MMRI have been actively pursuing investigations related to the virus and its effects. Much

(cont. on next page)

of what we thought we knew about the virus in the early days of the pandemic has changed over the past several months, as more clinical information and newer research have become available. The webinar described what we now know about COVID-19 and the specific studies our scientists are doing here at MMRI to understand the role it may play on our long-term health.

Dr. Chase Kessinger, who conducts research focused on pulmonary embolism, has been investigating the relationship between COVID-19 and blood clots. Over 30% of COVID patients experience unusual blood clotting. When the body becomes infected, it normally engages systems to help fight against infection. While these responses, called inflammation, are necessary, too much can result in further damage to biological systems. Such is the case with COVID-19 patients; their bodies overreact to the virus's presence, resulting in a negative reaction and the formation of blood clots in the lungs, heart, and other organs. With this knowledge, patients admitted to the hospital are now given anticoagulants or blood thinners to potentially limit or slow this response. Dr. Kessinger's work focuses on one central question in this regard – can the body heal from the virus completely? While the answer is yet unknown, by looking at other related viruses and determining how therapies can be improved, researchers can hopefully arrive at some answers in the near future.

“Studies have shown 20-25% of all COVID-related deaths are due to underlying cardiac disease.”

Both Drs. Sathya Unudurthi and Nathan Tucker have centralized their COVID research on cardiac complications. Studies have shown 20-25% of all COVID-related deaths are due to underlying cardiac disease. Scientists have also

determined that COVID-19 increases patients' chances of contracting cardiovascular disease despite no prior history of cardiac complications. Dr. Unudurthi's research focuses on the negative impacts of hyperinflammation in response to the virus. “The virus actually causes less damage to the body than the body causes to itself, by overreacting with increased inflammation” said Dr. Unudurthi. In previous, non-COVID related research, he discovered a pathway within the heart that when blocked, or controlled, can slow down the inflammation process. Dr. Unudurthi now works to determine whether this pathway inhibition can be applied to patients with COVID-19.

Dr. Nathan Tucker's COVID approach aims to answer three questions: 1. How is the heart being affected or infected with COVID-19?; 2. Are certain individuals at higher risk for cardiac complications?; and 3. What are the effects of common hypertension medications or ACE inhibitors on Sars-CoV-2? While answers continue to evolve, recent studies have shown that certain cells within the heart have higher numbers of specific receptors for the virus, increasing their likelihood of infection. This information will aid in the development of more specific therapies. Moreover, individuals with preexisting cardiac conditions are found to not only be at a higher risk for contracting the virus, but also to experience increased cardiac complications as well. Importantly, in

these cases, research shows that use of ACE inhibitors is considered safe and should be continued as usual during COVID infection.

Along with the ongoing research, the MMRI has also partnered with the Mohawk Valley Health System (MVHS) to conduct clinical testing for COVID-19. Since June 1, we have conducted over 10,000 tests with an average turnaround time of 10 hours. Normally, test results can take three or more days through other commercial labs, delaying necessary procedures, hospital discharges and timely tracing measures that could prevent the spread of the virus. It is with great thanks to Dr. Nathan Tucker for taking the lead on managing this partnership, and Mr. Ryan Pfeiffer and Mrs. Mayurika Desai for running the tests day-to-day.

“We may be apart, but we're actually coming closer together.”

“The Institute has a history of not only doing things here, locally, but globally,” said Grand Master, MW William M. Sardone, and that is exactly what we hope to accomplish. By helping our community fight against COVID-19 and investigating numerous inquiries of the virus, our team is working towards finding solutions to resolving global problems. The webinar invited viewers from all over the world, and even though “we may be apart, we're actually coming closer together.” Thank you to the Grand Master for inviting us to share our research and speak with our supporters. We also want to thank Mr. Varun Balaji for handling all technological aspects, our development team for their help in organizing the webinars, and lastly, a huge thank you to our supporters who continually stand by our institution and mission, even during these unprecedented times.

The webinar can be viewed in its entirety on the MMRI YouTube channel at: <https://www.youtube.com/user/MMRL2150>.



Grand Master of Masons of New York State, MW William M. Sardone, hosts virtual webinar.

PHASE II CONSTRUCTION REACHES THE FINISH LINE



The new laboratory space patiently awaits the arrival of new scientists and novel experiments.

In 2019, the MMRI entered phase II of our multi-year renovation project. Now, a little over a year later, we are proud to say we have reached the finale of this phase. “The changes have successfully transitioned us into the 21st century with state-of-the-art equipment and space to continue to grow and expand our research projects” said Dr. Maria Kontaridis, Executive Director, Gordon K. Moe Professor and Chair, Director of Research. From the inside to the outside, the Institute stands transformed, marking the immense growth of the MMRI within the past few years and pointing towards much more to come in the near future.

The basement of the original research building transformed space that was once storage into a state-of-the-art research laboratory and procedural suite, enabling further recruitment of talented researchers to expand our mission. In addition, the first-floor administrative offices underwent a minor remodel, updating the space and making necessary adjustments to accommodate a more comfortable and modern office environment.

During this phase of construction, the Institute also successfully expanded

our parking lot from twenty-seven to seventy-eight spaces, allowing for ample parking for our current employees and allowing room for our future growth. It also created space for a new workshop devoted to our facilities team, completed at the end of October this year.

Phase III of our renovations, which will modernize and expand our remaining basement area to create additional office space and procedural suites for our cores, including histology, flow cytometry, and clinical laboratory space, is on the horizon. We look forward to sharing updates on our progress as it occurs.



(Left to Right): Phase II construction plans; New cold storage unit provides more space for temperature-controlled research materials.

We are incredibly grateful to the entire MMRI team for their patience and endurance during the construction period, which often caused temporary displacement. We also thank all those who supported these projects and who continue to make the MMRI a growing success. Lastly, we thank VIP Construction for their incredible work and dedicated team for creating this amazing new space.

“What started as a rough sketch...is now a completed reality.”

“What started as a rough sketch with some side notes and a conversation with VIP Construction is now a completed reality” said James Swan, Jr., MMRI Board of Directors Secretary, Building and Grounds Committee Chairman. The Institute has effectively been transformed into a comprehensive and state of the art research facility, all located inside a traditional building, in Central New York.



UNLOCKING THE HEART, ONE CELL AT A TIME

Researchers from the Masonic Medical Research Institute (MMRI), the Precision Cardiology Lab (PCL) of the Broad Institute at MIT and Harvard, Bayer USA, Massachusetts General Hospital, and University of Pennsylvania collaborated to uncover some pressing questions about the biology of the heart. While understanding the mechanisms causal to human heart disease remain active areas of research for many scientists, important knowledge gaps about its composition and function remain unknown.

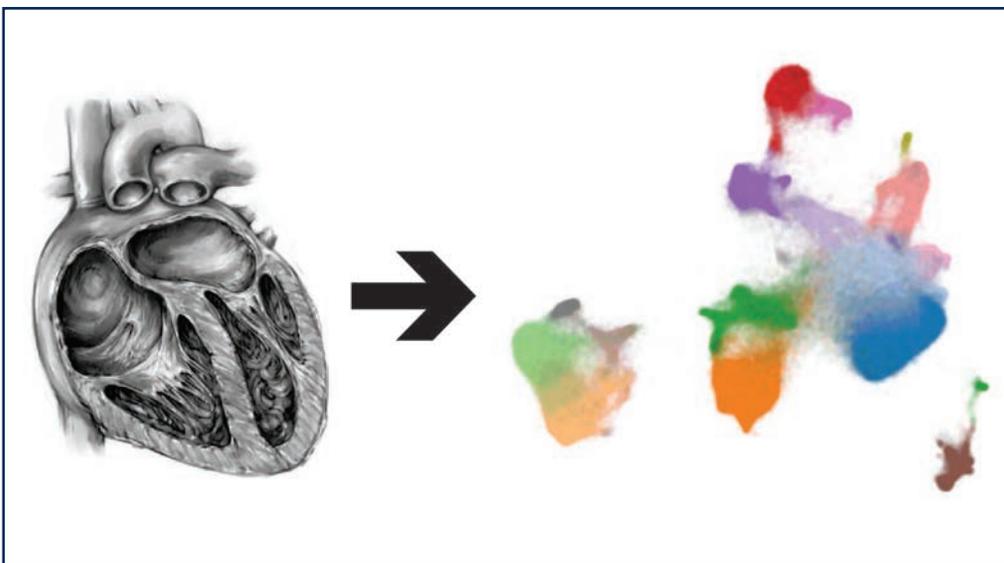
The current study, "Transcriptional and Cellular Diversity of the Human Heart," published on August 4th in the journal *Circulation*, sought to uncover how many different cell types comprise the heart, how each cell type differs between various regions of the heart, and how the differences relate to genetic risk and affect cardiac health. The team applied state-of-the-art approaches to identify these previously unknown signatures and created a map of the nearly 300,000 identified cells in human hearts.

Ultimately, this study increases scientists' understanding of the human heart, enabling a greater understanding of and

“We are proud of the strong collaborative effort that was required to make this important observation a reality.”

treatments for cardiac disease. "Understanding of human cardiac biology at this resolution was not possible just a few years ago," said Dr. Nathan Tucker, Assistant Professor at MMRI and first author of the study. "We are proud of the strong collaborative effort that was required to make this important observation a reality and are excited to see where it goes and the effect it has in the near future."

The results should also serve as a resource to scientists around the world. "One of our major aims was to create a public resource to share with our research community," Tucker noted, "We are very excited to see how this facilitates studies by other groups, both as a data source for further analysis and as a roadmap for complementary work." For more information, please visit: broadinstitute.org/news/single-cell-map-heart-reveals-wide-cellular-diversity.



To uncover the previously unknown complexity of the human heart, Dr. Tucker and colleagues used a state-of-the-art technique termed single nucleus RNA sequencing.

Lodge Presentations

MMRI's Fraternal Relations & Development Associate, Bro. Anthony Cucci, has been traveling around the state giving informational presentations about the cutting-edge research conducted at MMRI.

Since starting in 2019, Anthony has presented at more than 30 lodges and events statewide. However, we are doing things a bit differently in 2020, due to the outbreak of the global pandemic, COVID-19. Though he can no longer be on the road, Anthony is always available to virtually attend your next lodge meeting. He is excited for the opportunity to share with you the mission of MMRI and introduce you to our expert science staff and their research through a powerpoint and a digital video conference. If you are interested in having MMRI virtually visit your next meeting, please reach out directly to Bro. Anthony Cucci:

✉ acucci@mmri.edu

☎ 315.624.7492

Let's Connect!

🖱 <http://www.mmri.edu>

📘 /MasonicMedicalResearchInstitute

📷 @Masonic_Medical

🌐 [Linkedin.com/company/masonic-medical-research-laboratory](https://www.linkedin.com/company/masonic-medical-research-laboratory)

🐦 @MasonicResearch

Coffee Mugs. Notepads. Water Bott
f Balls. Scarves. Pens. Face Masks
Bottles. Coffee Tumblers. Apparel.
parel. Hats. Journals. Golf Balls. S
ks. Coffee Mugs. Notepads. Water
Scarves. Pens. Face Masks. Coffe
Mugs. Notepads. Water Bottles. Co
lers. Apparel. Hats. Journals. Golf
Mugs. Notepads. Water Bottl

COMING SOON

MMRI STORE

es. Pens. Face Masks. Coffee Mug
Notepads. Water Bottles. Coffee T
pparel. Hats. Journals. Golf Balls.
Coffee Mugs. Notepads. Water Bot
f Balls. Scarves. Pens. Face Masks
Bottles. Coffee Tumblers. Apparel.
parel. Hats. Journals. Golf Balls. S
ks. Coffee Mugs. Notepads. Water
Scarves. Pens. Face Masks. Coffe
Mugs. Notepads. Water Bottles. Co
lers. Apparel. Hats. Journals. Golf

JOIN MMRI

CORNERSTONE SOCIETY WITH A DEFERRED GIFT

1

IRA Charitable Rollover: Reduce income subject to tax (Age 70.5+)

- Avoid taxes on direct transfers from your IRA to MMRI.
- Satisfy your required minimum distribution (RMD) for the year.
- Reduce your taxable income, even if you do not itemize deductions.
- Make a gift that is not subject to the deduction limits on charitable giving.

2

Gift of securities: Realize capital gains tax savings

- Includes stocks, bonds, mutual funds, real property.
- Receive the immediate advantage of an income tax reduction.
- Avoid capital gains taxes.

3

Charitable Bequests: Retain control, leave lasting impact

- In your will or other estate plans, you can name MMRI as the beneficiary of a portion of your estate, or of particular assets in your estate. Many of the most powerful gifts with an enduring impact have been bequests, including Brother Duff M. Neely whose bequest help transform the second and third-floor laboratory spaces.

4

Life Insurance: Designate MMRI as a beneficiary

- You may consider giving a paid-up policy to MMRI by transferring the ownership of your policy and receive a charitable income tax deduction equal to the policy's cost basis.

Not-For-Profit Corporation
Tax Exempt Under 501(c)(3) of the IRS Code
Federal Tax ID 13-5648611
New York State Charities Registration Number 037227
Florida State Charities Registration Number CH36722

CORNERSTONE SOCIETY MEMBER SPOTLIGHT

The Cornerstone Society was established to recognize and thank those that have made a personal, long-term commitment to the mission of MMRI. Members show their support through thoughtful planned gifts, such as will or trust bequests, beneficiary-named retirement plans, or charitable gift annuities, just to name a few. SK Gill R. Calderon, Grand Representative to Mexico and charter member of the MMRI Cornerstone Society, generously agreed to speak with us about his reasons for supporting our Institute.

Masonic Medical Research Institute (MMRI): We are grateful for your support and are hoping that you could share why you chose the MMRI.

Gill R. Calderon (GC): The MMRI was founded by The Grand Lodge of the State of New York, and as a dedicated Mason who belongs to all the concordant bodies, I support our Fraternity as a whole.

MMRI: What does the MMRI mean to you?

GC: It is a gateway in research, constantly experimenting to find better solutions for our well-being that will prevent or treat diseases.

MMRI: How did you first hear of our Institute?

GC: I first heard of MMRI by reading the great articles about your accomplishments over the years. I also know the directors and members of the MMRI who I consider my dear friends.

MMRI: What is the impact you see us making in your community, or what would you like for our impact to be?

GC: Your research gives many people hope, as well as knowledge and understanding in what you are doing for the Masonic community and mankind.

MMRI: What is a lasting impact you would like your gift to have on the MMRI?

GC: That we can all make a charitable difference, one person at a time, for the benefit of all.

MMRI: Lastly, can you tell us a little bit about yourself?

GC: I am a retired plumber, estimator, and mechanic in the commercial and industrial industry. I also work as a certified guidance counselor over the weekends in hospitals and institutions. I act as Grand Representative in three concordant York Rite Bodies in the State of New York to Mexico and New Hampshire, and am a minister, in case

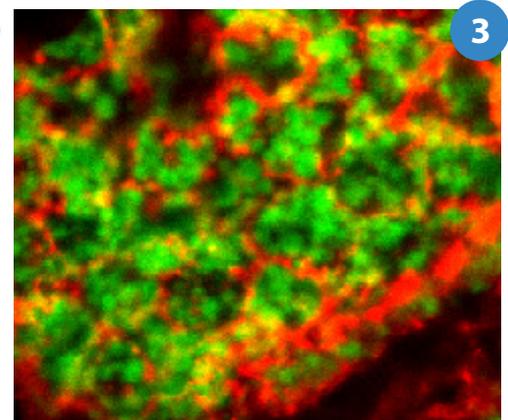
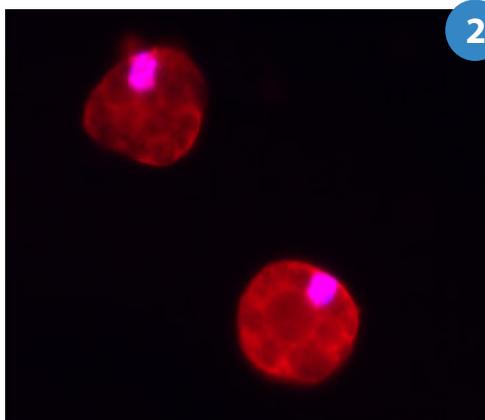


SK Gill R. Calderon, Grand Representative to Mexico and charter member of the MMRI Cornerstone Society.

anyone wants to renew their wedding vows! I love to read, write, and stay in touch with our Brethren family and friends. I am also an amateur chef who loves to cook for my family and friends.

Thank you, Gill, for taking the time to speak with us, and for your dedication and legacy to the MMRI. You will forever be an important part of our team. To learn more about the Cornerstone Society and how you can become a member, contact Anthony Cucci at 315.624.7492 or Hillary Cote at 315.624.748.

THROUGH THE MICROSCOPE



Images captured by Assistant Professor, Dr. Zhiqiang Lin. Brown adipose tissue is used for fuel for our bodies, which consumes lipids to keep us warm. Activation of brown adipose tissue has been deemed an efficient way to reduce obesity. Image 1: a mouse-model imaged using micro CT shows the presence of brown adipose tissue in the interscapular region of the tissue. Image 2: Isolated brown adipocytes show the complex membrane structure, which wraps around stored lipids. Image 3: Brown adipose tissue section stained with cell border marker (red) and lipid dye (green) displays the intracellular structure brown adipocytes.

MASONIC MEDICAL RESEARCH INSTITUTE WELCOMES NEW STAFF



Laura Coon
Animal Care Assistant

Laura Coon joins team MMRI as an Animal Care Assistant, where she will be conducting animal husbandry, maintenance and assisting the facilities director. Laura received her bachelor's degree in business administration and an associate degree in veterinary sciences from SUNY Delhi. Previously, Laura worked at Bristol Myers Squibb as part of their animal department in Syracuse, and Connectlife where she worked as part of the eye and tissue donation center for 10 years as a senior eye lab tech. Laura looks forward to getting back into this line of work and being a valuable team member to MMRI.

Michelle Hulke, Ph.D.
Associate Computational Biologist



Michelle Hulke, PhD, joins MMRI as an Associate Computational Biologist in the Tucker Lab. Originally from Richland, WA, Michelle attended Gustavus Adolphus College in Saint Peter, MN where she earned a BA in biology. Afterward, she attended Cornell University in Ithaca, NY and earned a PhD in genetics. She chose MMRI because of the impressive "community of researchers and the quality of research." Michelle is interested in studying genetic contributions to human disease, especially in relation to cardiovascular diseases. "Having a better understanding of how genetic diseases arise will provide clues for how to alleviate symptoms and minimize the disease prevalence" said Michelle.



Justin Izzo
Procurement and Contracts Coordinator

Justin Izzo joins team MMRI as Procurement and Contracts Coordinator. He holds a Bachelor of Science in accounting from Siena College, and has worked most of the last 8 years at Redco Foods Inc, holding positions as an analyst to production planning and purchasing supervisor. Along with his career, Justin has been a Master Mason for 15 years, holding multiple offices, and is currently the acting Treasurer for Dolgeville Lodge #796. "Over the years I have attended a few research presentations at the Institute and witnessed some of the success that has occurred with the group. MMRI has always amazed and intrigued me, and when I saw the opportunity to become part of the group, I could not have been more excited" said Justin. With expertise in money management, Justin looks forward to utilizing his skill sets "to help the MMRI team continue their amazing work for many years to come."

Crystal Jadwick
Payroll and Benefits Administrator



Crystal Jadwick joined team MMRI as Payroll and Benefits Administrator in September. Crystal has 21 years of experience as director of administration for a small company that installed cable systems for colleges across the country. Most recently, she comes from Hamilton College where she worked in the Registrar's Office. She heard word of MMRI through a friend who had the inside knowledge that this is a great place to work – they were right! Crystal looks forward to getting to know the people, software, and dynamics of MMRI.



Michael Mayo
Senior Accountant

Michael Mayo joins team MMRI as Senior Accountant. Michael joins us from Helio Health, in Syracuse, where he worked as accounting manager. Prior to this, Michael worked in the for-profit side of business, holding positions at Aspen Dental, Bright House Networks and Byrne Dairy. He graduated from SUNY Oswego with a BS and an MBA, and has been in accounting ever since. Michael is excited to join team MMRI, where he can utilize his skills in new ways and be a part of our bright future. "I always try to look at things as an opportunity, whether it be taking on a new position, solving a problem, or managing a project. With that, I am excited to apply what I know to the mix and help in setting the footprint necessary to accommodate the growth that MMRI has planned and is currently experiencing" said Michael.

ELECTROPHYSIOLOGY AND ROBERT GOODROW: STAPLES OF THE MMRI

MMRI has a rich 60-year history; and while it may look a little different today than it did in 1958, many core aspects of the research remain the same. In 1980, the year in which Mr. Robert Goodrow started, our researchers were focused on studying heart disease and arrhythmias, hypertension, vision, hematology, muscular dystrophy, cancer, and aging.

In this regard, the Institute's primary research strength was in an area of cardiology called electrophysiology, a field of scientific study that examines the electrical activity within a cell. Principally, this field is utilized in cardiac research to understand cardiac arrhythmias, and to develop potential treatments or therapies for patients with heart disease.

Mr. Goodrow is an expert electrophysiologist with a unique skill set in patching cells. Back in the 80's he conducted electrophysiology research using rolls of film, but today, computers and technological advancements have transformed the process. However, Bob



Mr. Robert Goodrow, Electrophysiology Manager, poses with a picture of himself at the laboratory in the 80's.

has constantly maintained his level of expertise through the years and has kept up with the technology. As a testament to the importance of his work and ability, he was recently promoted to core electrophysiology manager, to better assist and support the research team within the Institute.

After graduating from Niagara University with a degree in life sciences, Mr. Goodrow spent some time working as a painter and carpenter before hearing of the job opening at the Institute. He started here on September 15, 1980 as a research assistant in the cardiology department, and has been here ever since. With 40 years of experience at MMRI, Goodrow knows everything there is to know about the Institute and electrophysiology. Since his time here, Goodrow has been a co-author on numerous scientific publications, abstracts and book chapters, as well as on NIH and AHA grant proposals. We thank Bob for his tireless dedication to the Institute and look forward to watching him excel in his new role.

MASONIC MEDICAL RESEARCH INSTITUTE THANKS YOU



Masonic Medical Research Institute 2020 all staff picture.

2020 has been a year of challenge and change. The coronavirus (COVID-19) pandemic has forced us to undergo transition and separation from friends, family, and coworkers. Despite the social distancing, we have somehow been brought closer together. The support of the MMRI team and our supporters has been monumental and we would like to express our sincerest gratitude towards those who have stood by us, no matter what. Through the continued, unwavering donations of our MMRI family, we have

“The support the MMRI has experienced...has been monumental.”

been lucky to move forward with our research endeavors, as well as branch into projects solely focused on the impact of COVID-19. None of this would have been possible without each and every one of you. Thank you, from our family to yours.



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

Every Heartbeat Counts™

Connect to what's new in medical research via social networking sites:

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

Board of Directors

DAVID F. SCHNEEWEISS, MBA
Chairman
First Erie District

ALVARO F. QUIROGA
President
Tenth Manhattan District

ROBERT A. HEWSON, DPM
Vice President
First Erie District

JAMES D. SWAN, JR.
Secretary
Onondaga District

VINCENT CUNZIO, CPA
Treasurer
Second Westchester-Putnam District

MICHAEL A. CHAPLIN, MD
First Manhattan District
Seventh 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

PASQUALE IMBIMBO, JR.
Saratoga-Warren-Washington District

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

VIRGILIO S. QUIJANO
Fourth Manhattan District

SHELDON B. RICHMAN, ESQ.
First Manhattan District

FRANCESCO SANTONI-RUGIU,
MD
Tenth Manhattan District

LAURENCE I. SUSSMAN
Seventh Manhattan District

DIRECTORS EMERITI

JOHN P. CHANG, R.PH.

PAUL N. O'NEILL

VICTOR G. WEBB

ALBERT J. WRIGHT, III

MMRI ADMINISTRATION

MARIA KONTARIDIS, PH.D.
Executive Director
Gordon K. Moe Professor and Chair
Director of Research

SUSAN BARTKOWIAK
Director of Administration
Grants Administrator

AMY PIETRAFESA, SPHR
Director of Human Resources

LISA COOPER, CPA
Controller

JASON MCCARTHY, PH.D.
Scientific Operations Manager
Associate Professor