



GLOUCESTER MARINE GENOMICS INSTITUTE

DECEMBER 2017 YEAR IN REVIEW

Dear Friends,

As we come to the close of 2017 and move a few steps closer to realizing our vision of a vibrant science learning center and thriving world-class marine research institute on Cape Ann, we reflect with gratitude on the team of students, teachers, scientists, internship partners, collaborators, philanthropists, community leaders and staff that make GMGI possible.

In this special edition, we pay tribute to two wonderful visionaries and supporters, Maggie and Joe Rosa, to learn more about what inspires them in science, education, philanthropy and life. We also share a timeline of GMGI's 2017 highlights - from the graduation of our founding Academy class to the publishing of our first scientific manuscript, and the doubling of our staff.

We look to 2018 with great optimism as we are fully engaged in solving problems through science and changing lives through education. Perhaps best said by one of the greatest minds of all time, Albert Einstein: "To raise new questions, new possibilities, to regard old problems from a new angle, requires creative imagination and marks real advance in science."

On behalf of our team, we wish you a wonderful holiday season and a happy, healthy New Year filled with possibilities.

In appreciation,

Jim Bacon, J.C.Gutierrez-Ramos, Bill Kane, Michele May,
Tom Simons, Marc Vidal and David Walt

GMGI Board of Directors

Philanthropy makes our work possible.

Please **DONATE** today.

2017 YEAR IN REVIEW



WINTER

Governor Baker and Travis McCready, CEO of Mass Life Sciences Center, visit Gloucester Biotechnology Academy to announce a competitive capital grant award to GMGI, for building out and equipping our science research center on Gloucester harbor.

The **thirteen members of the inaugural class of Gloucester Biotechnology Academy begin their 3-month paid internships** at leading biotech organizations on the North Shore and Boston (including Dana-Farber Cancer Institute, Synlogic, New England Biolabs, and Cell Signaling). All interns complete their assignments with high marks.

GMGI needs more office space! **New administrative offices open at 2 Blackburn Center** to accommodate a growing staff as well as our bioinformatics hardware.

GMGI's **first scientific paper** -- "Highly localized divergence within supergenes in Atlantic cod (*Gadus morhua*) within the Gulf of Maine" -- is written and published in collaboration with scientists from Stanford University.

The **inaugural class of Gloucester Biotechnology Academy graduates on May 25**, with former Gloucester Mayor John Bell giving the commencement address. It is a rollicking event for the "Fabulous Thirteen" as they are affectionately branded for their wonderful and historic achievement.

SPRING



After her impressive presentations at the GMGI Science Forums in 2015 and 2016, **Andrea Bodnar, PhD**, Senior Scientist at the Bermuda Institute of Ocean Sciences, is "discovered" and recruited by GMGI as **our first Science Director**.

Chris Munkholm's position is expanded to Chief Operating Officer, as she enters her fifth year with GMGI.

With **Mark Levin**, Partner at Third Rock Ventures, as keynote speaker, GMGI hosts Cambridge biotech leaders and introduces them to biotechnology's new marine frontier, and potential for discoveries not found in terrestrial organisms.

Katherine 'KD' Dench, valedictorian of the first Gloucester Biotechnology Academy class, is hired by GMGI as teaching assistant and lab technician!

Recent graduates are **hired for full time positions** at organizations such as Lariat Biosciences, Samplify Bio, and Dana-Farber Cancer Institute.



SUMMER

With speakers traveling to Gloucester from many top research organizations, GMGI hosts our **fourth annual September Science Forum**, as part of our strategy to create a world-class science community on Cape Ann.

Students from **O'Maley Innovation Middle School's** summer program spend a day in our Academy laboratory and experience hands-on science at the bench.

GMGI continues to grow! Three new staff members join the team: **Andrey Ptitsyn**, PhD, Bioinformatics Director; **Ashley Destino**, Development and Communications Assistant; and **Elizabeth Brannon**, PhD, Teaching Assistant and Lab Technician.

The second Gloucester Biotechnology Academy class begins with **nineteen students** enrolled.

FALL



GMGI completes the **first whole genome sequence of the North Atlantic lobster**, working in collaboration with scientists at Dovetail Genomics (a California-based organization), Tufts University and University of Prince Edward Island.

Jennifer Polinski joins the GMGI team as Research Technician III, relocating from the Marine Biological Laboratory in Woods Hole, MA

GMGI expands a research project to **sequence sediment organisms collected from the ocean floor** in locations within the Stellwagen Sanctuary and Gloucester harbor -- with potential of finding new biosynthetic pathways and organisms.

Bill Kane, Vice President of commercial biotechnology leader Biomed Realty, joins the GMGI Board of Directors.



Joe and Maggie Rosa have been community activists, volunteers, and generous philanthropists since first arriving in Gloucester in 2001. We sat with them on a typically raw November afternoon, to learn more about their journey to Gloucester and how science brought them together. Their humility, quick wit, and honesty made interviewing the couple of 46 years an absolute joy!

Q: What brought you to Gloucester?

Maggie: We came to the Boston area in 1981 to work at Biogen and lived in Winchester. We used to joke that we didn't go to church, have a dog or children, and had nothing in common with anyone in Winchester. In 2001, when I left Biogen, we decided to look for a "weekend" home on the ocean and found Gloucester. We became more and more involved in the community. I was chair of the Gloucester Historical Commission, worked on the city hall restoration project, and we became involved in the Gloucester Education Foundation. I even ran for Mayor (she chuckles) – thank goodness, I didn't win. We built wonderful friendships with people – who like us - share their good fortune with the community. When Joe retired, we decided to live here year-round.

Q: When did you first hear about GMGI?

Joe: In 2007, Greg Verdine reached out to Maggie. Knowing she was a Mayoral candidate and a successful biotech person, he told us of his idea to bring biotech to Gloucester. He believed if we bring industry to Gloucester we have to create the workforce too and that was where the Biotech Academy vision came in. Maggie and I liked the idea. We had gatherings here in our home with the soon to be founders of GMGI to talk about it.

Q: What inspired you to get involved and ultimately support GMGI?

Joe: Gloucester is very economically diverse – there are children whose parents are college educated and they have a clear path and direction - college. They have the support and resources to be successful on that path. Then, there are children that come from families with no history of going to college or even sometimes high school. These kids may begin to check out in middle school simply because they don't see their path to college – so why learn?

I've always believed people have to "experience opportunity" in order to be successful. The Biotech Academy provides a vehicle of opportunity for these students. It gives them something to aspire to, something in Gloucester.

Q: Joe, you are volunteering at the Academy nearly full time. What have you observed?

Joe: The transformation of the kids from when they walk in the door to when they leave is pretty dramatic. In just a few months, the level of professionalism they develop is extraordinary. They start out – some just out of high school - not even knowing how to move in a lab or how to behave in a professional manner. We see them develop confidence in not only using the equipment, but making decisions and conducting themselves so professionally. They are in a professional environment and are expected to act accordingly. I attribute a lot of that to John and the staff. They set a high bar and have great insight into the needs of each student. The one-on-one attention is a huge differentiator in the program.

Maggie: The graduation ceremony was very touching and inspiring. To see all the families there, parents, siblings, cousins - and to see how proud they were. It was such a special occasion.

Q: As you look back on when you first heard about GMGI and see where it is today – what are your thoughts?

Joe: Getting this off the ground was far more difficult than I ever imagined. From developing the curriculum to hiring the staff and sourcing the first research project. GMGI did a great job executing on all fronts to make things happen.

Maggie: I give great credit to Michele [Michele May, GMGI Board Chair]. It takes a woman (she says with a smile). She wasn't afraid to go out and ask people for money and to work to get this off the ground. It really came together when she joined.

Q: Fast forward to 2025, what is your vision or hope of what GMGI will be?

Joe: GMGI will be on solid ground doing excellent research as they are today. The Academy program will continue to be very successful and many of its graduates will be working at GMGI. Around that time (and sooner!) Gloucester will be attracting small biotech start-ups here – perhaps some spin-offs from GMGI – perhaps on the harbor. These companies will be creating jobs and we will be the biotech hub just north of Boston.

Acknowledgement

GMGI thanks Gregory Verdine, GMGI Founder, for his generous sponsorship of the 2017 annual September Science Forum.

GLoucester Marine Genomics Institute is a non-profit enterprise that is:
 performing research focused on fisheries and marine science to foster the local economy,
 launching a training academy for Cape Ann youth to provide a trained biotech workforce,
 and establishing Gloucester as a worldwide scientific hub.