

Remarks by Dr. Brian Beal on 11 August 2018 at the Grand Opening of the Easternmost Marine Research Laboratory and Education Center in the United States at the Downeast Institute, Great Wass Island, Beals, Maine.

Good morning. Thank you for sharing your time to help us celebrate this long-awaited event.

It is a glorious day for at least four reasons!

- 1) The weather, and this venue...together, aren't they spectacular?
- 2) Friends and family, colleagues, former teachers and current and former students have come from far-and-wide.
- 3) The Red Sox are up 9 games over the Yankees, which is probably most important to some of us. And,
- 4) We are all here to mark this occasion that has been for some of us, quite a journey. A journey that has had its share of fits-and-starts, it bumps, and, as you can see, its ultimate successful finale, which is really just another beginning.

But, as we congregate and celebrate that journey and those accomplishments, we know the road ahead is going to be even more exciting as marine scientists and their students from Maine, New England, North America, and beyond come here, to eastern Maine, to this spot to enjoy perhaps the last vestiges of a truly pristine marine setting, to learn about and unlock mysteries this marine environment and this region continue to hold. New educational opportunities for K-12 teachers and their students abound, and this new facility will continue to play an important role in marine science education locally, and across the state. Similarly, we look to a time in the not-too-distant future where students from UMM, UMaine, and elsewhere enroll in a "Semester-By-The-Sea," that is, a semester-long series of ocean- and marine-related courses to be offered here with students housed in the new Residence Hall for the Fall semester. In addition, the expansion has provided a huge facelift and renovation to our shellfish production center. We now have an entire floor, separate from everything else, devoted to producing microalgae for clams, oysters, scallops, mussels, and quahogs that we raise for a variety of research and development purposes. In addition, a new production floor, renovated boreal culture area, and new larval room enhance our ability to culture and grow any and every commercially important shellfish in Maine and New England.

Discovery, Education, and Innovation. Those are the basic tenets of who we are, where we've been, and where we're going. There are many dots to connect to understand how the marine ecosystem functions and operates here. We have provided the infrastructure for those eager to begin their own journey of discovery.

This easternmost marine research laboratory and education center didn't happen overnight, and it would be inconceivable to not share some of the key elements that have led up to this day. Some of you know the story. Essentially, there have been four phases. DEI's foundation was laid during the summer of 1983 in Jonesboro through a 4-H project involving a UMaine Extension Agent, Durwood Gray, a UMaine Darling Center Aquaculture Specialist, Sam Chapman, and two local icons who served together in the Washington County Extension Association, Shirely Dunning and John Cox, Sr. Together, these four people invented a really magical program for

youth in the Jonesboro area that culminated in kids learning to spawn and rear clams in the basement of a very old and unused school building on the Station Road. The next summer, those youth and those clams were introduced to the mudflats in the Chandler River where some of the first field trials with hatchery-reared soft-shell clams took place. A young marine ecologist with a lot more hair and fewer chins than he has today had come back from three years in North Carolina, mostly at the coast in Morehead City, but also on campus in Chapel Hill, where he studied the ecology of juvenile quahogs and received a master's degree in Marine Sciences. A 13-month stint with the Cooperative Extension in Machias ultimately turned into a new position at UMM thanks to President Fred Reynolds whose constant encouragement and support gave me the scope to do something that hadn't been tried before. With Sam Chapman as the soft-shell clam aquaculture expert, a handshake from Beals businessman, Richard Carver, who generously gave us unlimited use of an old clam buying and shucking facility on a wharf overlooking Moosabec Reach, and a lot of much-needed editing by UMM's Jane Hinson on a grant proposal to the National Coastal Resources Research & Development Institute in Newport, Oregon, the second phase began. The Beals Island Regional Shellfish Hatchery (BIRSH) became a reality here on Beals Island at Perio Point where we spawned adult soft-shell clams on June 6, 1987 (for those who like to measure time, that was 31 years, 2 months, and 5 days ago). Cultured juvenile soft-shell clams produced from that spawning would eventually be planted during that same fall on mudflats in Addison, Beals, Jonesport, Jonesboro, Roque Bluffs, and Machiasport. BIRSH was a UMM project for eight years, during which time we increased our efforts and reached out to towns up-and-down the coast. By 1994, hatchery seed clams had been planted in nearly 50 coastal Maine communities (it's over 70 today). In 1995, UMM's administration decided to spin off the Regional Shellfish Hatchery, offering administrative and other oversight functions to a team of local people who wished to see BIRSH continue as an effort to enhance Maine's soft-shell clam and other shellfish resources through aquaculture, applied research, technology transfer, and public education. That team formed a nonprofit, and six of those founding members are here today, and continue to serve as board members of the organization (Lynn Alley, Wendy Beal, Jane Hinson, Sam Chapman, myself), and the sixth serves as DEI's Executive Director, Dianne Tilton. The third phase began in 1999 when the Regional Shellfish Hatchery board of directors began discussing future paths and programs. Those discussions occurred at a time when faculty at UMM were developing a new Bachelor of Science degree program in Marine Biology. Some of those discussions focused on shellfish production, and whether it would be possible to diversify the kinds of species that could be cultured. Other deliberations centered on the fact that not a lot of marine research was being conducted in this part of Maine besides ours with soft-shell clams, and we discovered why. Few scientists ventured this far east because they had no place to process their samples...no infrastructure...no place for their students to reside...no equipment such as microscopes or freezers or PCR machines. So, during 1999 and 2000, the board focused on the future, and a grant proposal was sent off in March 2000 to the Maine Science and Technology Foundation, the precursor of the Maine Technology Institute. That proposal, written more than 18 years ago, and jointly submitted with UMM, provided the path that we have veered little from. There were six objectives in that early proposal, to:

- Create a marine laboratory facility in Downeast Maine that will serve an integral role in fostering a strong B.S. degree program in Marine Biology

at the University of Maine at Machias that will become UMM's Marine Field Station;

- Provide research (running seawater labs, dry labs, offices) and teaching space (classroom/Education Center) for UMM faculty and students as well as visiting scientists and their students;
- Change the name from the Beals Island Regional Shellfish Hatchery to the Downeast Institute for Applied Marine Research and Education, and enable the new facility to grow and expand its production, education, and technology transfer capacity;
- Encourage the inclusion of marine biology and other marine-related activities in the curriculum of elementary and secondary schools in the Downeast region;
- Develop demonstration programs with fishermen and other entrepreneurs to enhance two-way communication and other beneficial interactions with the scientific community; and,
- Establish a center that will become a focal point for marine research in Downeast Maine.

While that particular proposal got shot down, along with many other attempts over the years, we believed in those objectives and basically refused to take "No" for an answer.

We moved to this spot during the summer of 2003, and, with help from the National Science Foundation, were able to begin the process of converting a lobster holding facility into a shellfish hatchery. In 2009, with support from the Maine Technology Institute and once again from NSF, we made more renovations to the infrastructure, including construction of a 1,000 square foot Education Center and a 100-ft pier built from fiber composites.

The final phase began for us when a 2-page application for \$2 million to the Next Generation of Maine resulted in a site visit in October 2014 from Mary Offut and Brian Clough. Several weeks later, we learned that the visit and our subsequent interactions had struck a nerve, and this time, it wasn't "NO," but "YES!" The biggest "YES" we'd ever gotten! When that domino fell, it opened up the long-closed curtain behind which stood the remarkable edifice you see in back of me. Over the next two years, we were able to complete the funding through the Maine Jobs Bond with the UMaine Marine Alliance, with the New Markets Tax Credit program, and the Harold Alfond Foundation.

People would like to believe that all of that was a one-man show; but, believe me, that is hardly the case. In 2015, Dianne Tilton took over the reigns as DEI's Executive Director, and, as I said at the time, she's an All-Star who knows how to make things happen! It is so exciting to work with her and listen to her ideas about the future of the organization! While my role in all of this has been primarily a grant writer for everything from the shellfish research we conduct to

repairing the two lobster pounds that function as research mesocosms, one person who has been in the background during all of this, and who shies from the recognition she deserves, providing the necessary ear combined at times with an extremely sharp wit and even sharper tongue, is my wonderful wife of 38 years, Ruth! Only she can tell you what she's had to endure. I also want to recognize the other half of my family who are sharing this remarkable day with me today, my daughter, Hannah, and son Caleb. Thank you guys for everything.

While I am reflecting, I want to thank Mike Sealander and his team at Sealander Architects. Mike has worked with us since 2010, when we first sat down to create the Education Center and Classroom. His diligence and responsiveness have been a cornerstone in our relationship, and his efforts to listen to what we wanted and how we wanted things to function have all come to fruition in both the lab and residence hall building projects. We hired a great general contractor when we decided on Bowman Constructors. Kevin and Brian Bowman have been excellent to work with, and the site manager for Bowman, Rick Clukey, has bent over backwards to accommodate our shellfish production goals that have, at times, superseded the construction timeline. Historically, it is people who provide momentum for an organization, and, while the DEI Board of Directors have played a critical administrative role over the years, it has been the people who have worked at BIRSH and DEI since 1987 that have facilitated this successful transition from a 42-ft by 20-ft building on a wharf overlooking Moosabec Reach to this marvelous structure that we're all looking forward to seeing what's on the inside. Craig Lithgow and Dwayne Shaw were the first two hatchery managers at BIRSH followed by Tonie Simmons, Bethany Walton, Jennifer Robish, and Brian Gennaco. More recently, George Protopopescu was in charge of hatchery and facilities management. These folks, some of whom are here today, deserve a lot of thanks and praise for their devoted attention to everything from raising microalgae to nurturing shellfish many times under less than optimum conditions, to cleaning floors. While they have all gone their separate ways and are doing great things as teachers, aquaculturists, and executive directors of their own nonprofits, their contributions to this organization have been unquestionably critical to the larger journey, and I thank each individually and collectively, because they know that the torch that they carried during their tenure continues to burn bright today. And, speaking of today, DEI's current staff, comprised of Dianne, Kyle Pepperman, Cody Jourdet, Colleen Haskell, Phil Yund, Bennett Ellis, Jeff Robinson, Sara Randall, Bryce Kadis, and Meggan Callahan have taken on the challenge to help grow and diversify the organization through research, education, and outreach programs. Their efforts touch many, such as the 60 K-8 students who attend the Beals Elementary School and come to DEI for lessons about the local marine environment every Wednesday during the past two school years, and the 65 or so K-12 children who took taken advantage of our recent marine science summer camps for youth to the clambers in Perry, Gouldsboro, St. George, or Freeport that we have worked with to learn more about how soft-shell clams grow and survive in the intertidal mudflats. Thank you!

So, what about tomorrow and the next day? First and foremost, "We're Open For Business!" For the past six years, DEI has been lucky to have Dr. Phil Yund as its senior scientist. Dr. Yund has had an amazing career focusing on marine and fisheries ecology and studying the evolutionary ecology of numerous marine invertebrates as well as the ecology of marine mammals, fish, and invertebrate pathogens. Dr. Yund is the epitome of the class of scientists that DEI will continue to attract to this new marine lab and this pristine setting. His collaborative

work with faculty from UMaine, Northeastern University, and UMass-Boston that examines intertidal community assemblages and dynamics provides a glance into what the future holds in terms of teams of marine scientists coming all the way to Beals, Maine to make discoveries about our marine environment that have ramifications on everything from how marine ecological systems function to how they are best managed.

I'd like to address DEI's role as the Marine Science Field Station for the University of Maine at Machias, and how it may play a role in marine science education and research within the larger University of Maine System. Besides me, UMM has been represented on DEI's Board of Directors since 1995 when the nonprofit was first conceived. Sometimes, those directors served as administrators at UMM, sometimes as faculty members. UMM's historical presence in this organization has been constant, and those individuals have helped shape the DEI we have today. Formally, DEI has served as UMM's Marine Field Station since 2003. All three of UMM's marine biology faculty, as well as other UMM faculty, have taken advantage of this unique setting and the hatchery and classroom where we have taught, conducted research, learned about shellfish aquaculture, and held annual crab picks for our students. The admissions team at UMM makes sure that every student interested in the marine biology program and their family has an opportunity to see this campus when they come for a visit to the Machias campus. In time, students at UMM will have even greater opportunities than exist today. When other Phil Yund's arrive here with educational and research backgrounds that complement existing marine faculty, those scientists, their post-docs, and others in their team will interact and hire UMM students who's education will be enhanced inordinately by those key interactions. Those same scientists may spend more than a few months here, and have an interest in offering a new course for students either in Machias or here, or initiate a weekly or monthly seminar series. With new communication technologies, those courses or that seminar can be broadcast to other campuses in the University of Maine System. While I seem UMM-centric, please know that our five current summer interns, who have worked and conducted research here since mid-May, are undergraduate students from UMaine, Maine Maritime Academy, and the University of Massachusetts-Amherst. DEI continues to be a place for workforce development initiatives for any interested students.

Just when you think you can imagine everything that could happen here, the intangibles start coming at you. About a year ago, I sat down with an artist, Robert Beck, who resides in Pennsylvania, and has been coming to the Jonesport-Beals area for over 25 years. He paints what he sees that occurs every day under our noses that we simply take for granted, whether that is of people picking crabmeat, a boat builder finishing up another winter project in his shop, a church and its choir, or a 40-ft lobster boat sitting in its cradle next to a Mark Wright dumpster on the side lawn of a house across the street from the Jonesport Post Office. If you've grown up in this area and you look at his work, the colors and textures combine to grab your inner emotions. For me, his paintings of this area are inspiring and generate a deeper understanding of who we are and what this place is all about. Robert Beck decided after our very brief meeting that he was going to create a permanent collection of his local works (16 paintings) that he has named The Jonesport-Beals Collection to be displayed in our new conference room. The last piece he painted just a few weeks ago will not be on display until this fall, but he said that the painting (of the inside of the bottom floor of our shellfish hatchery) completes the collection, and presents the research and education done at DEI as another facet of life on the Maine coast. He

said, “DEI and the fishing community are in it together, working toward a common purpose: that better life.”

Lastly, this has not only been an incredibly productive year for building the newest marine laboratory along the east coast of the U.S., but one where several colleagues from the University of Maine have graciously reached out to take advantage of new research opportunities that now exist within the new infrastructure. Those projects involve macroalgae through Dr. Susan Brawley’s lab, oysters through Paul Rawson’s lab, and sea scallops through Tim Bowden’s lab. These collaborations underscore the value of the investments that have been made recently and over time to improve the facilities so that marine research in Maine needn’t be biased toward the southwestern corner of the state anymore, that eastern Maine holds as many bounties and treasures to be discovered, and that now, whether it is long overdue or not, we have the place, we have the space, we have the staff, and we are ready to roll!

Thank you all for coming and celebrating this special day with us!