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ENHANCING THE ECONOMY

From our early success in hard clam aquaculture to our leadership in the oyster industry, VIMS science has spurred economic growth and job creation in coastal communities across the U.S.

Architectural rendering of the 22,000-square-foot Acuff Center for Aquaculture, funded with a \$21.7 million investment from the Commonwealth.

Thinking Big

**Acuff Center for Aquaculture
honors Marshall Acuff's decades
of leadership at VIMS**

VIMS will soon break ground on the Acuff Center for Aquaculture — a state-of-the-art facility funded by the Commonwealth that positions Virginia to advance as a global economic leader in sustainable shellfish aquaculture. The facility honors the exceptional leadership and generosity of A. Marshall Acuff, Jr. '62, L.H.D. '07, P '93 on VIMS' behalf, and is named for the Acuff family.

The Acuff Center for Aquaculture will be the home for a new Shellfish Aquaculture Program that integrates VIMS' world-renowned, multidisciplinary aquaculture initiatives focusing on hard clams, oysters, and bay scallops, with the potential addition of soft-shell clams in the future. Thanks to VIMS, Virginia is currently No. 1 in the U.S. in hard clam production and No. 1 on the East Coast for production of the eastern oyster.

Overseeing the aquaculture program as director will be a new faculty member appointed to the A. Marshall Acuff, Jr. Professorship, a position endowed by Marshall Acuff in 1988. The director will coordinate all of the program's research, teaching, and advisory functions and guide the work at VIMS' aquaculture facilities — the newly renovated Eastern Shore Laboratory hatchery, the Kauffman Center for Aquaculture on the Rappahannock River, and the Aquaculture Genetics and Breeding Technology Center, to be housed within the Acuff Center for Aquaculture. In addition, the director will develop a graduate-level aquaculture curriculum to augment VIMS' existing aquaculture training program.



Former W&M rector and chair of the *For the Bold* campaign at VIMS, Marshall Acuff was honored this past fall as Homecoming grand marshal.

“The combination of this wonderful new facility and the distinguished professorship — it’s really exciting to see,” says Mark Luckenbach, VIMS associate dean of research and advisory services. “All of these resources coming together, with the Marshall Acuff Professor providing direction, will put VIMS at the absolute forefront in marine shellfish aquaculture.”

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From the early 1960s, when researcher Michael Castagna developed successful techniques to grow hard clams at the Eastern Shore Laboratory, VIMS has

played a pioneering role in shellfish aquaculture. After the diseases Dermo and MSX decimated the Chesapeake Bay’s oyster population, VIMS pathologists and geneticists led by Professor Stan Allen spearheaded the extraordinary revival of the industry by developing fast-growing, disease-resistant oyster strains. On the Eastern Shore, bay scallops may be the next comeback story (see page 25).

As an Eastern Shore native who harvested oysters alongside his father growing up, Marshall Acuff has been keenly aware of the economic benefits shellfish aquaculture brings to coastal Virginia. He became an early investor in VIMS’ aquaculture program, establishing the A. Marshall Acuff, Sr. Memorial Oyster Research Fund in his father’s honor. When the time came to sell his family’s Eastern Shore farm, he could think of no better use for the funds than providing support for an integrated VIMS Shellfish Aquaculture Program. Over his lifetime, he has contributed more than \$5 million to VIMS. In addition to his financial support, Acuff has provide decades of leadership service on the VIMS Foundation Board and VIMS Council, and as chair of the *For the Bold* fundraising campaign at VIMS.

“Aquaculture has brought jobs for a new generation,

often the sons and daughters of watermen,” Acuff says. “And it’s the type of jobs, involving 21st-century technology, that really makes a difference. That’s the biggest motivation — what it does for coastal economies, not only here in Virginia, but nationwide.”

With greatly expanded laboratory space, the Acuff Center for Aquaculture will provide new opportunities for innovative research across disciplines. “We have people in biological sciences who are instrumental now in studying how ocean acidification affects the growth of oysters, especially larval ones,” says Mark Luckenbach. “World-class researchers like Ryan Carnegie in aquatic health sciences are studying emerging diseases. And people in the physical sciences are doing hydrodynamic modeling to estimate the carrying capacity for shellfish aquaculture operations in individual bodies of water.”

“The challenges we face today require comprehensive multidisciplinary teams with very, very broad expertise,” says Carnegie, whose research has been supported by the A. Marshall Acuff, Sr. Memorial Oyster Fund. Carnegie’s recent findings show that oyster aquaculture can actually limit the spread of disease among wild oysters.

The changing climate presents additional stresses, he notes. “It’s not just warming. It’s changes in precipitation, it’s distribution of marine pathogens, and harmful algal blooms.

“It’s so important that we figure this out. The Acuff Center for Aquaculture gives us the ability to think big.”

The new Acuff Center for Aquaculture will build on VIMS’ decades-long leadership in shellfish aquaculture research.





Karen Hudson

SHELLFISH AQUACULTURE SPECIALIST

When Virginia's shellfish farmers need advice, they call Karen Hudson of VIMS' Marine Advisory Program — the marine counterpart to an agricultural extension agent. "I'm that first point of contact. If someone calls and says, 'I've lost a bunch of oysters,' I'll go out there and see for myself what's going on, and I'll get on the horn and wrangle the experts."

The industry trust VIMS has developed enables Hudson to do for Virginia what other states haven't — prepare an annual report based on surveys from farmers themselves. "It's voluntary, and I think it speaks volumes that we get a lot of response," she says. "It's been really helpful demonstrating the industry's growth. They can take this report to Richmond and DC, slap it down and say, 'This is what we're worth.'"

Hudson notes that industry will be critical in evaluating research breakthroughs developed at the new Acuff Center for Aquaculture, a win-win for VIMS and the shellfish farmers who will benefit. "This is a partnership, and we couldn't do it without them."



2019 HIGHLIGHTS

VIRGINIA SHELLFISH AQUACULTURE SITUATION AND OUTLOOK REPORT



Farm gate value for Virginia shellfish aquaculture was \$53.4 M



Oysters are the most rapidly developing sector of Virginia's shellfish aquaculture



Virginia is 1st in the U.S. for hard clam production



Virginia is 1st on the East Coast of the U.S. for eastern oyster production

GO VIRGINIA

VIMS plays an active role in workforce development in the Commonwealth. As part of that role, VIMS is a key participant in GO Virginia, a bipartisan, business-led economic development initiative to create more and higher-paying jobs across the state. "We welcome this new opportunity to promote joint VIMS-industry projects," says VIMS Dean and Director John Wells, who serves on GO Virginia's Region 6 council, encompassing the Middle Peninsula and Northern Neck. "For the region's workforce, VIMS' research has generated aquaculture jobs that continue the tradition of working on the water in a modern way."

SCALLOP COMEBACK?

In the 1930s, bay scallops on Virginia's Eastern Shore became extinct when disease, dredge fishing, and a hurricane wiped out the eelgrass that made up their habitat. Almost overnight, the thriving commercial bay scallop fishery ceased to exist.

VIMS is spearheading the effort for a bay scallop comeback, taking a two-pronged approach — experimental bay scallop aquaculture at the Eastern Shore Lab and the restoration of natural populations, made possible by VIMS' unprecedented success reviving eelgrass beds in coastal bays. A new five-year commitment from a private family fund at the Hampton Roads Community Foundation will support this important work, which is coordinated through the VIMS Shellfish Aquaculture Program.



More than 200 donors contributed to Save Our Bay Scallops, VIMS' inaugural crowdfunding campaign, in support of bay scallop restoration.



A GOOD CATCH

For decades, policymakers worldwide have relied on VIMS' expertise in fisheries management to ensure the continued economic health of the global fishing industry. Graduate students work side-by-side with faculty, gaining invaluable real-world experience. The International Council for the Exploration of the Sea (ICES) recently adopted methods developed by VIMS students — using mathematical models and statistical techniques — to assess fish stocks where limited data is available. Students mentored by Professor John Hoenig traveled to ICES headquarters in Copenhagen, presenting reviews on North Sea dab and the Norway lobster, among other species. "VIMS students are participating as full members of stock-assessment meetings, and serving as external experts both in North America and in Europe," Hoenig says. "It's remarkable."

Virginia reports more than \$500 million in recreational fishing-related sales annually.