The Island University continues to incorporate its strengths in education and research. Last fall, we celebrated our inaugural Research & Innovation Week, attracting people from on and off campus with a series of activities that showcased and celebrated research, scholarship, and creative activity. The week also engaged students in laboratory visits, a photo contest, and the I3 Islanders Innovation Idea competition.

The Island campus expanded its community engagement over the past year, partnering with the Port of Corpus Christi, the City of Corpus Christi, and other local governments, industries, and organizations. In addition, the University purchased a building in the heart of downtown Corpus Christi to facilitate community relationships and ensure a strong Islander presence in our city.

I am incredibly proud of our Islander faculty, staff, and students who continue to marshal their intellectual capital in partnership with the Coastal Bend community in response to COVID-19. An interdisciplinary taskforce of University researchers has provided valuable data tracking the virus to support informed decision-making by local governments. The Special Collections and Archives at the Mary and Jeff Bell Library has gathered oral histories and other items related to the pandemic from the Island University and the Coastal Bend. The South Texas Economic Development Center is conducting a series of surveys to assess the impact of the stay-at-home period and how companies are recovering—valuable data points for policymakers. In this report, you will find myriad examples of the ways the Island community, truly an intellectual hub for the region, has responded with hard work and a focus on public service.

I close with a pledge to renew our commitment to diversity and inclusion. We continue to create funding and development opportunities in research, creative activity, and innovation for the campus and community at large as we promote the mission of our Minority-Serving Institution. A One-Team mentality is critical to our intellectual capital and service excellence goals.

Sincerely,

Ahmed Mahdy
Dr. Ahmed Mahdy
Vice President for Research & Innovation
SUPPORTING THE NEW TEXAS OYSTER AQUACULTURE INDUSTRY

Oyster aquaculture is a research focus for Islanders. Following the Texas legislature’s approval of oyster aquaculture in 2019, campus researchers quickly moved to support the burgeoning industry.

Dr. Jennifer Pollack, Chair for Coastal Conservation and Restoration at the Harte Research Institute for Gulf of Mexico Studies (HRI), will evaluate differences in oyster recruitment, oyster size, and other effects of biodegradable and plastic mesh bags used in oyster reef restoration. The work is funded by the Environmental Protection Agency. A Texas General Land Office grant will enable Pollack to continue the activities of HRI’s successful oyster recycling and conservation outreach program “Sink Your Shucks.”

Through a collaboration funded by the National Science Foundation between Texas A&M-Corpus Christi, Louisiana State University, and Dalian Ocean University in China, Dr. Wei Xu, Assistant Professor of Marine Biomedical Science, and his international partners will identify risks to oysters from exposure to petroleum products and other environmental factors.

Dr. Joe Fox, HRI Chair of Marine Resources Development, secured funding for two oyster hatcheries and a demonstration project to conduct research, grow oysters, and train a new Texas workforce. These efforts are partially supported by RESTORE Act funds.

41% annual oyster harvest plummet in Texas since 2010

90% of U.S. seafood is imported
The Port of Corpus Christi Authority (PCCA) is the top port in the nation in exporting crude oil and is now third in annual tonnage. In fall 2019, Texas A&M-Corpus Christi signed a master research agreement (MRA) with the Port to enhance activities between the two entities. The collaboration is expected to benefit the region, the Port, and the Island University through research experiences, development agreements, and community engagement between these two anchors of the Coastal Bend. The new MRA is a long-term partnership that aims to create new knowledge and best practices related to ports, particularly PCCA. The agreement will accelerate and maximize the positive impact of PCCA on the economic and societal development of the region.

The partnership has already yielded several projects including investigations of sites for oyster reef restoration, the Port’s economic impact on the regional and national economy, the impact of shipping channel changes, the Port’s submerged leases, and support for A&M-Corpus Christi’s Pollution Prevention Partnership, which seeks to reduce tailpipe emissions in the region.

In addition, a new $1.7 million contract between PCCA and the Conrad Blucher Institute for Surveying and Science (CBI) at A&M-Corpus Christi will result in an expanded network of data collection systems in and along coastal waterways.

PORTS®, or Physical Oceanographic Real-Time System, is a network of sensors that provides data designed to help ship pilots and barge captains make informed decisions when navigating waterways. In 2017, CBI installed three data collection systems in the Corpus Christi Bay area. The latest contract will add 10 new systems.

Beyond supporting maritime navigation, PORTS® serves as an important tool for coastal planning; engineering and construction; disaster preparedness, response, and mitigation; as well as environmental studies and research.

This wealth of information is also available to the public and is used by recreational boaters, commercial fishermen, wind surfers, and the sailing community.

**TEN**

new PORTS® data collection systems

**$1.7 MILLION**

new contract between the Port of Corpus Christi and CBI
Researchers from the College of Liberal Arts and the College of Business studied how the COVID-19 pandemic may affect elections based on its impact on various demographic groups.

Dr. Wendi Pollock, Associate Professor of Criminal Justice, Dr. Beth Rauhaus, Associate Professor of Public Administration, and Dr. Andrew Johnson, Assistant Professor of Management, published their work in the journal Administrative Theory & Praxis in April 2020.

Considering that COVID-19 tends to be more fatal to those who are elderly, have compromised immune systems, or have serious underlying medical conditions, the multidisciplinary team found that Americans 65 and older—who tend to vote more and are more likely Republican—are expected to be lost in greater numbers than Democratic voters.

“Numerous factors can impact an election; however, in American history we have rarely seen an event with the potential to reshape the political landscape of the nation in a matter of months,” the team noted.

Beyond the tragedy with every loss of life, this work shows the potential of a pandemic to cause profound effects on political, economic, and social systems, the team concluded.
In the midst of the COVID-19 pandemic, the Island University’s intellectual capital again proved its commitment to student success and its researchers’ resolve to solve problems for the Coastal Bend community.

In the areas of research and innovation, there was a flurry of activity from the very start. A joint team from Texas A&M-Corpus Christi, the City of Corpus Christi, and Nueces County developed models to predict the number of COVID-19 cases in the Coastal Bend and the impact on local hospitals based on different scenarios of mitigation effort.

The Conrad Blucher Institute for Surveying and Science created an interactive dashboard that mapped the spread of COVID-19 through Texas and the Coastal Bend, providing relevant and accurate information to the public.

Experts in the College of Business surveyed South Texas business owners about the impact of the COVID-19 shutdown and the prospects of getting back to work. The surveys were intended to fill the information gap on current economic conditions, particularly in relation to local small businesses, in each community of the region. This information will be key for future research in light of what many are calling the worst economic crisis of this generation.

Researchers in the College of Nursing and Health Sciences studied the workplace stress of nurses during the pandemic, and are now pursuing work examining the consequences of limiting visitors to sick patients, the preparedness of nurses to manage a pandemic, and the impact of COVID-19 on nursing students to inform teaching strategies.

Staff in the Mary and Jeff Bell Library launched a COVID-19 archival project, collecting items such as photos, interviews, social media posts, and essays to document the Coastal Bend’s collective experience during the pandemic. They also utilized the I-Create MakerSpace in the library to make face shields for health care workers at Driscoll Children’s Hospital.

Meanwhile, as the pandemic forced local school-aged children to be home from school, the Antonio E. Garcia Arts and Education Center, part of the College of Education and Human Development, launched a Facebook literacy program designed to improve reading and comprehension. The reading program put the skills of Garcia Center tutors, mostly education majors who attend A&M-Corpus Christi or Del Mar College, to work.

Faculty and staff across campus were repeatedly tapped by local, regional, and national media outlets for their expert opinions on topics including how to stay healthy during the outbreak, how the pandemic may reshape the political landscape, and cybersecurity issues during remote work situations.
For the past decade, Coastal Bend workers and job seekers have turned to the Career and Professional Education program at Texas A&M-Corpus Christi for online professional development and industry-based skills certifications.

The program, housed within the Office of Community Outreach, works with the Texas Workforce Commission, AmeriCorps, and the military to provide grants and funding resources for enrollees. Programs range from Administrative Dental Assistant to Welder Technician, and many more.

During the COVID-19 pandemic, the Career and Professional Education program offered 10 free online self-paced tutorials, including Creating Web Pages, 12 Steps To A Successful Job Search, and Marketing A Business On The Internet. More than 1,300 people enrolled in these free programs.

With the revenue generated by non-academic online courses, the Office of Community Outreach offers Impact Multiplier Grants to Island University faculty to support community engagement. In the past three years, the program has awarded nearly $25,000 to support resources, activities, and programs in the Coastal Bend.
TEXAS A&M UNIVERSITY-CORPUS CHRISTI
AT A GLANCE

RESEARCHERS FILE FIRST PATENTS IN UNIVERSITY’S HISTORY

To safeguard critical and proprietary inventions, Texas A&M University-Corpus Christi filed four patents in fiscal year 2020.

In 2017, Hyundai Motors awarded $67,361 to Dr. Jangwoon Park, Assistant Professor of Engineering, for his project to evaluate seats by comparing estimated seat dimensions from a computer-aided design model. In partnership with Hyundai Motor Company/Kia Motors Corporation, the Island University filed patents jointly in the United States, China, and Korea for “System and Method for Automatically Checking Seat Dimension Accuracy and Computer-Readable Recording Medium Recorded with Program for the Same.”

Dr. Jian Sheng, Professor of Engineering, filed a U.S. patent for his development, “Scalable Fabrication of Wrinkle-Free and Stress-Free Metallic and Metallic Oxide Films,” that was supported by three grants between 2017-2019 from the U.S. Department of Defense, The Consortium for Ocean Leadership, and The Gulf of Mexico Research Initiative totaling $1,624,311. The invention improves diagnostic testing for cell growth, cancer, and point-of-care blood analysis. It also improves electronic instruments and manufacturing.