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History of the Harte Research Institute for Gulf of Mexico Studies at Texas A&M University–Corpus Christi

JOHN W. TUNNELL, JR.

On 19 Sep. 2000, Mr. Edward H. Harte donated \$46 million to establish a new research institute at Texas A&M University–Corpus Christi (TAMU-CC) to focus on the Gulf of Mexico. Mr. Harte, philanthropist and former owner of Harte-Hanks, Inc., and the *Corpus Christi Caller-Times* newspaper, worked with Dr. Robert R. Furgason, then president of TAMU-CC, to establish the endowment to include endowed research chairs, endowed graduate research fellowships, and an endowed operating budget. Subsequently, during the fall of 2000, the Harte Research Support Foundation was established to manage the assets of the institute until it becomes fully operational. The Foundation had three trustees, Mr. Ed Harte, Mr. Jonathan M. Hornblower, and Mr. David L. Sinak. In the spring of 2001, during the Texas legislative session, Dr. Furgason was able to obtain \$15 million from the State of Texas to build a facility for the Harte Research Institute (HRI) on the TAMU-CC campus. An additional \$3 million was added to that amount from other State building funds to allow for the additional construction of four graduate instruction and research laboratories. These labs, along with eight offices, allow collaboration between Harte research scientists and faculty and students, primarily within the College of Science and Technology, but also with other colleges at TAMU-CC. Other well-established entities at TAMU-CC that will collaborate with HRI include the Center for Coastal Studies, the Center for Water Supply Studies, the Conrad Blucher Institute for Surveying and Science, the Geographic Information Science (GIS) research program, and the Texas Coastal Ocean Observation Network (Tunnell and Earle, 2004).

Mr. Ed Harte, who had been Chairman of the Board for the National Audubon Society during the 1970s and again in the early 1990s, was inspired by the book *Sea Change* (Earle, 1995) in deciding to endow and establish the research institute. After meetings and discussions between Mr. Harte, Dr. Furgason, and Dr. Sylvia A. Earle, Dr. Earle agreed to become program coordinator and chairman of the advisory council for the new institute during the summer of 2001. During that summer and the following several years, a highly distinguished advisory council of 30 members was established. Members represent academia, indus-

try, and conservation, as well as all three countries surrounding the Gulf of Mexico: the United States, Mexico, and Cuba (Table 1). I was appointed Associate Director in September 2001, and that fall the new institute was officially named the Harte Research Institute for Gulf of Mexico Studies (Tunnell and Earle, 2004).

TAMU-CC AND MARINE SCIENCE

TAMU-CC became a part of the Texas A&M University System in 1989, but its founding as a university was in 1947 when the University of Corpus Christi (UCC), a small Baptist university, was formed on Ward Island immediately after World War II and the closing of the U.S. Navy's Ward Island Radar Training Station. In 1957, the fledgling university started its marine science program under the direction of Dr. Henry H. Hildebrand. After the campus was almost completely destroyed in 1970 by Hurricane Celia, the university was transferred from the Baptist General Convention to state ownership in the University System of South Texas. Continuing as a small, primarily teaching institution in the 1970s, graduate degrees and research began to slowly take hold in the 1980s, especially with the formation of the Center for Coastal Studies and the Conrad Blucher Institute for Surveying and Science.

Unfettered by the typical long-standing academic traditions and with an entrepreneurial spirit, TAMU-CC began inviting state and federal natural resource agencies to its campus to be co-located with the academic programs. The great synergism developed by this model of operation, as well as the efficiency and effectiveness of the academic–government partnership, led the state of Texas to build a facility to house the state agencies and academic research centers together on campus. Presently, seven state agencies, three university research centers, and several A&M System components are housed in this State of Texas Natural Resources Center building. This \$10 million, 100,000–square foot building was completed and occupied in 1996. Funding for a federal Natural Resources Center is currently being sought (Tunnell and Earle, 2004). (See article on the Center for Coastal Studies at Texas A&M University–Corpus Christi by John W. Tunnell, Jr., in this Special Issue for a fuller description of this concept and program.)

TABLE 1. Advisory Council Members for Harte Research Institute for Gulf of Mexico Studies representing the United States, Mexico, and Cuba.

Name	Affiliation
Dr. Sylvia A. Earle, Chair	Explorer-in-Residence, <i>National Geographic Society</i>
Dr. Homero Aridjis	Journalist, <i>Mexico City</i>
Ms. Katherine Armstrong	Rancher, <i>Consultant</i>
Mr. William B. Baker	Environmental Manager, <i>Reliant Energy</i>
Mr. William Bradford	Former CEO, <i>Dresser/Haliburton</i>
Mr. Eugenio Clariond Reyes	Chief Executive Officer, <i>Grupo IMSA</i>
Ms. Catherine Nixon Cooke	Consultant, Author
Mr. Luke Corbett	Former CEO, <i>Kerr McGee</i>
Mr. Jean Michel Cousteau	<i>Ocean Futures Society</i>
Mr. Joseph Fitzsimons	Commissioner, <i>Texas Parks and Wildlife Department</i>
Mr. John Flicker	President, <i>National Audubon Society</i>
Dr. Robert R. Furgason	Former President, <i>Texas A&M University—Corpus Christi</i> ; Executive Director, <i>HRI</i>
Mr. Terry D. Garcia	Executive Vice President, <i>National Geographic Society</i>
Mr. Bryon Griffith	Director, <i>EPA Gulf of Mexico Program</i>
Dr. David E. Guggenheim	Ocean Science and Policy Consultant
Dr. Eric W. Gustafson	President, <i>U.S. Mexico Chamber of Commerce</i>
Mr. William Harte	<i>Harte Family</i>
Mr. Timothy Keeny	<i>National Oceanic and Atmospheric Administration</i>
Mr. C. Ray Hayes	Vice Chancellor, <i>University of Alabama System</i>
Sr. Alejandro Junco de la Vega	Publisher, <i>Monterrey</i>
Dr. Björn Kjerve	Dean, College of Geosciences, <i>Texas A&M University</i>
Dr. Kumar Mahadevan	Executive Director, <i>Mote Marine Lab</i>
Sr. Guillermo Garcia Montero	Director, <i>National Aquarium of Cuba</i>
Mr. Patrick F. Noonan	Former Chairman, <i>The Conservation Fund</i>
Dr. John Ogden	Director, <i>Florida Institute of Oceanography</i>
Mr. Raul Rodriguez	Chairman, <i>World Affairs Council</i>
Mr. Andrew Sansom	Executive Director, <i>International Institute for Sustainable Water Resources</i>
Dr. Alberto Vazquez de la Cerdá	Admiral, <i>Instituto Oceanografico, Secretaria de Marina, Mexico</i>
Dr. Don Walsh	Oceanographer and <i>Trieste Pilot</i>

Academic degree programs focused on marine science, mainly marine biology/ecology at the B.S. level in the early years with Dr. Hildebrand at UCC and at Texas A&I University at Corpus Christi (the new University's name from 1973 to 1977). In 1975, a new M.S. degree with a marine emphasis was offered. Other marine-oriented degrees were added as the university expanded and developed: Mariculture M.S. (1988); Environmental Science B.S. and M.S., with potential marine emphasis (1992); Ph.D. in Coastal and Marine System Science (2005); and Ph.D. in Marine Biology (2008). The latter degree is acquired in collaboration with two other TAMU campuses: Texas A&M University, College Station, and Texas A&M University at Galveston. The university changed names to Corpus Christi State University in 1977 and then became TAMU-CC in 1993.

INSTITUTE DEVELOPMENT

The HRI Advisory Council held two to three meetings per year during the 2001–05 period, the primary planning years (Table 2). The December 2001 Advisory Council meeting included a planning workshop with research scientists from the United States, Mexico, and Cuba (Fig. 1). This workshop proved to be pivotal, producing influential and substantial research and focus for the HRI Advisory Council. Highlights of the proceedings (Tunnell, 2002) are shown in Table 3. Information from all advisory council meetings, as well as data gathered from other leading marine/oceanographic laboratories, institutes, and universities, have assisted in developing the vision and mission statement as well as the goals and objectives of the HRI (Tunnell and Earle, 2004).

TABLE 2. HRI Advisory Council meeting location and dates.

Location	Date
Corpus Christi, TX	Oct. 2001
Corpus Christi, TX	Dec. 2001
Houston, TX	Feb. 2002
Havana, Cuba	April 2002
Veracruz, Mexico	Oct. 2002
Corpus Christi, TX	Jan. 2003
Washington, DC	April 2003
Corpus Christi, TX	Oct. 2003
Sarasota, FL	Feb. 2004
New Orleans, LA (Stennis Space Center, MS)	Oct. 2004
Monterrey, Mexico	March 2005
Corpus Christi, TX	Nov. 2005
Corpus Christi, TX (SUMMIT)	March 2006
Austin, TX	June 2006
Washington, DC	Oct. 2006
New York, NY	June 2007

VISION AND MISSION STATEMENT

It is the vision of the HRI for Gulf of Mexico Studies to be a research center of excellence providing international leadership in generating and disseminating knowledge about the Gulf of Mexico ecosystem and its critical role in the economies of the North American region (Tunnell and Earle, 2004).

The mission of the HRI, an endowed research component of TAMU-CC, is to support and advance the long-term sustainable use and conservation of the Gulf of Mexico. This mission will be accomplished through the following activities:

- Providing an environment in which to conduct meaningful and successful programs in research and education with highly qualified faculty, staff, and students;
- Promoting excellence and innovation in interdisciplinary scientific research, public policy initiatives, and education of the public concerning the Gulf of Mexico;
- Encouraging a tri-national responsibility and approach to understanding the Gulf of Mexico ecosystem, involving the United States, Mexico, and Cuba;
- Collaborating and cooperating with other organizations that are dedicated to addressing issues related to the Gulf of Mexico, in order to achieve common goals; and
- Disseminating research results freely to the scientific community, management agencies, the general public, and policy-makers, in

Fig. 1. Location of invited institutions/marine labs for Planning Workshop for Harte Research Institute for Gulf of Mexico Studies held at TAMU-CC, 12-13 Dec. 2001 (Image modified from GulfBase).

order to foster the wise and appropriate use of the Gulf of Mexico.

GOALS AND OBJECTIVES

The goals and objectives of the HRI are as follows:

- To become a leading research institute and to remain committed to high-quality, innovative research on the Gulf of Mexico;
- To lead in synthesizing, integrating, and communicating Gulf of Mexico research;
- To monitor and periodically publicize the “State of the Gulf” to uncover gaps in

TABLE 3. Principle suggestions/recommendations for the new Harte Research Institute from the HRI Gulf of Mexico Planning Workshop (Tunnell, 2002).

1. Encourage a tri-national responsibility and approach to understanding and managing the Gulf of Mexico (United States, Mexico, Cuba)
2. Cooperation and collaboration with varied Gulf of Mexico partners
3. Generate and disseminate knowledge widely, in both languages when appropriate, to scientists and the public
4. Hold regular conferences relating to the “state” of the Gulf of Mexico
5. Collate, integrate, and synthesize Gulf of Mexico science
6. Consider making policy a part of HRI
7. Develop a Gulf of Mexico (bilingual) website
8. Develop ecosystem models (both conceptual and dynamic)
9. Consider conservation biology and biodiversity as research focus
10. Consider all stakeholders

Fig. 2. Aerial view to northwest over TAMU-CC's Ward Island campus showing the location of HRI, with the City of Corpus Christi in the background, Oso Bay in the Foreground, and Corpus Christi Bay to the right (Photo courtesy of TAMU-CC).

existing knowledge, and to create initiatives to fill those gaps;

- To cooperate with state and federal resource management agencies by providing scientifically based knowledge for sound policy and management of the Gulf of Mexico and surrounding region;
- To establish partnerships and alliances with educational, governmental, nongovernmental, and private sector organizations interested in long-term sustainable use and conservation of the Gulf of Mexico;
- To develop strong public education and public policy programs, using a broad diversity of approaches, including:
- A bilingual Gulf of Mexico website of research institutes, research personnel, research projects, and other information about the Gulf of Mexico;
- A regular Gulf of Mexico Symposium; and
- Workshops on Gulf of Mexico issues, both scientific and policy, as needed at the HRI building at TAMU-CC;
- To develop a Gulf-wide GIS;
- To foster tri-national cooperation and collaboration in science and management of the Gulf of Mexico;
- To study the conservation biology and biodiversity of the Gulf of Mexico;
- To be a leader in exploration of the Gulf of Mexico; and
- To study the Gulf of Mexico as a large marine ecosystem, influenced by the Caribbean Sea and surrounding watersheds, requiring monitoring, modeling, and management.

HRI BUILDING

The HRI building was designed by Richter Architects of Corpus Christi and WHR (Watkins, Hamilton, Ross) Architects of Houston during 2002. The three-story, 57,000-square foot building with seven wet labs, two dry labs, two seawater labs, a GIS lab/suite, an education/outreach suite, a large conference room, and many associated offices, is built on the northwest side of the TAMU-CC campus on Ward Island, which is located on the south side of Corpus Christi Bay in Nueces County, TX (Fig. 2). Construction began in spring 2003, and the building was occupied in November 2005. The mission-oriented design of the new HRI facility was featured in *Texas Architect* magazine (Fig. 3) (Sharpe, 2007). Further information on the HRI building and Institute development can be found in feature articles of *Texas Coastal Enthusiast* (Williams, 2004) and *Texas Shores* (Hiney, 2005).

EARLY HRI INITIATIVE

Rather than wait until the endowed chairs were filled and the new building occupied, we decided to launch an initiative that would jump-start our plans of working together around the Gulf of Mexico. We called the new initiative, starting in 2002, "The Gulf of Mexico—Past, Present, and Future," and its theme was to focus on our mission of long-term sustainable use and conservation of the Gulf of Mexico (Tunnell et al., 2004). Components of this multiyear, tri-national initiative, involving

Fig. 3. Views of the new HRI building at TAMU-CC (Photos by Joe Aker). This view to northwest of backside.

Fig. 3. Continued. View of lobby towards conference center.

Fig. 3. Continued. Front view of building facing Corpus Christi Bay with conference center at right.

Fig. 3. Continued. View within conference center.

the United States, Mexico, and Cuba, include the following:

1. Design and maintenance of a Gulf-wide internet-accessible research database on the Gulf of Mexico;
2. Collaboration with other institutions and organizations to co-sponsor annual exploratory expeditions to the Gulf of Mexico;
3. Sponsorship of a "State of Knowledge Workshop," including leading scientists, managers, and conservationists from around the Gulf of Mexico in October 2003;
4. Preparation of an inventory of the biodiversity of the Gulf of Mexico by creating a checklist of all species, including habitat, distribution, and key references for each species;
5. Preparation of a 50-yr update of "Bulletin 89," *Gulf of Mexico: Its Origin, Waters, and Marine Life*;
6. Sponsorship of a "State of the Gulf of Mexico Summit" in March 2006, involving all users;
7. Sponsorship of an annual thematic conference at HRI on timely topics of need or interest;
8. Establishment of a Gulf of Mexico Alliance of all stakeholders; and
9. Utilization of all of the above to develop public policy initiatives that will positively affect the "state" of the Gulf of Mexico.

HRI worked Gulf-wide to be as inclusive as possible, in cooperation and collaboration with other institutions, to accomplish the initiative's objectives. All of the above items are now accomplished or operational. Details about each item or activity are listed below.

1. Research database.—The HRI database website, GulfBase at www.gulfbase.org, opened in October 2002. At present, GulfBase is a searchable and sortable website for all Gulf of Mexico researchers (over 1,600) and research institutes (over 450). It includes ever-increasing amounts of information on bays and lagoons (95+), reefs and islands (122+), and events (~195). GulfBase won first place in the Environmental Protection Agency Gulf of Mexico Program's Gulf Guardian Award in 2006 in the new "Bi-National" category.

2. Exploratory expeditions.—Annual (or regular) collaborative exploratory cruises to various parts of the Gulf of Mexico will become a hallmark of HRI. The first HRI co-sponsored exploratory expedition went to the coral reefs of Veracruz, Mexico, in 2002. This cruise,

which used the Mexican navy's oceanographic vessel, the R/V *Antares* (Fig. 4), was a collaborative effort between HRI, the National Geographic Society's Sustainable Seas Program (Fig. 5), and the Mexican navy's Institute of Oceanography. During the cruise, HRI scientists and students recorded mass spawning of corals (Fig. 6) for the first time on the Veracruz reefs (Beaver et al., 2004). Subsequent expeditions went to Cuba (2003, 2004, 2006, and 2009), Pulley Ridge (2005), Seven and One-half Fathom Reef (2006), and South Texas Banks (2009).

3. State of Knowledge Workshop.—The State of Knowledge of the Gulf of Mexico Workshop was held during 14–15 Oct. 2003 in Corpus Christi. Our new HRI research database website, GulfBase at www.gulfbase.org, was used to encourage cooperation and collaboration among workers in the Gulf boundary countries of Cuba, Mexico, and the United States.

The purpose of this workshop was to initiate a plan to determine the state of knowledge of the Gulf of Mexico. Leading marine scientists from all three countries were to determine the process and mechanism of synthesis and determination of knowledge from a holistic viewpoint of the entire Gulf. It had been almost 50 yr since a single volume, *Gulf of Mexico: Its Origin, Waters, and Marine Life*, Fishery Bulletin 89 (Galtsoff, 1954), synthesized what was known at that time about the Gulf of Mexico. Over 50 scientists contributed articles on the history, geology, meteorology, physical and chemical oceanography, biota, and pollution of the Gulf. Although coverage on each topic varied greatly in depth and length, and although the volume's focus was mainly the northern Gulf of Mexico, Bulletin 89 continued to be a strong reference for Gulf of Mexico researchers for several decades. Most of the knowledge gained and presented in Bulletin 89 was from research cruises and expeditions to the Gulf during the late 19th and early 20th centuries and from a few fledgling marine science labs and oceanography programs started in the late 1940s and early 1950s.

At the dawning of a new century, researchers at marine labs and universities encircled the entire Gulf in Cuba, Mexico, and the United States; instrumentation, technology, and communication have greatly expanded our knowledge of the Gulf. A network of United Nations' organizations designated the Gulf of Mexico as one of 64 "Large Marine Ecosystems" in the world (Kumpf et al., 1999).

HRI facilitated the State of Knowledge program to begin establishing our current state of knowl-

Fig. 4. Mexican Navy's Oceanographic ship, the R/V *Antares*, at anchor east of Anedegada de Afuera coral reef, southern Veracruz, Mexico, September 2002, during Sustainable Seas Expedition in cooperation with the National Geographic Society and HRI (Photograph by Kip Evans®, National Geographic Society).

edge for the entire Gulf of Mexico. The workshop of leading scientists from all three nations initiated the formal organization and suggested the preparation of a new digest of information on the Gulf of Mexico (see item 5 below).

4. *Biodiversity project*.—A peer-reviewed inventory of the biodiversity of the Gulf of Mexico was initiated and developed to determine the total number and kinds of species living in the Gulf of Mexico (Tunnell, 2005). A checklist was created that included habitat, distribution, range, depth, and key references for each species. Released in July 2009, the *Biodiversity* volume (Felder and Camp, 2009) includes 79 chapters by 140 authors (from 80 institutions in 15 different countries), listing approximately 15,419 species. The book was published by Texas A&M University Press as part of the Harte Research Institute for Gulf of Mexico Studies book series at TAMU-CC. Phase II of this massive project will be the conversion of the book into digital format for placement on the World Wide Web in GulfBase and the Ocean Biogeographic Information System of the Census of Marine Life. Phase III will involve data analysis, and Phase IV will involve exploration to fill data gaps.

5. “*Bulletin 89*” 50-yr update.—Along with the Biodiversity Project just discussed, preparing a 50-yr update of the *Gulf of Mexico: Its Origins, Waters, and Marine Life* (Galtsoff, 1954) is the most significant scientific, early endeavor of HRI. The new version will be an expansion from the single original volume to at least seven volumes.

Background: Just over 50 yr ago, a group of prominent marine scientists agreed to work on a digest of existing knowledge on the Gulf of Mexico. The effort was proposed by Lionel A. Walford of the Fish and Wildlife Service and Waldo L. Schmitt of the U.S. National Museum during a meeting of the Gulf and Caribbean Fisheries Institute in Miami. Paul S. Galtsoff of the Fish and Wildlife Service agreed to coordinate the project, the magnitude of which he subsequently found to far exceed his expectations. However, 3 yr of effort by 55 contributors and many months of editing resulted in the 1954 publication of a classic reference work entitled *Gulf of Mexico: Its Origin, Waters, and Marine Life* (as Fishery Bulletin 89, Fishery Bulletin of the Fish and Wildlife Service, Volume 55; Galtsoff, 1954). The title page of this work notes that it was “Prepared by American scientists under the sponsorship of the Fish and Wildlife Service,

Fig. 5. Sustainable Seas Expedition submersibles used to study coral reefs of Veracruz during August–September 2002: (a) Deep Worker and (b) Deep Rover (Photograph by Kip Evans®, National Geographic Society).

Fig. 6. Coral mass spawning on leeward side of Santiaguillo Reef, 10 m, 29 Aug. 2002, discovered and reported for the first time during HRI cruise (Photograph by Kip Evans©, National Geographic Society).

United States Department of the Interior” and that effort was “Coordinated by Paul S. Galtsoff.” Galtsoff is generally indicated as the editor in bibliographic references to this work (Tunnell et al., 2004). This reference volume, commonly alluded to simply as “Bulletin 89” by the hosts of marine scientists, agency personnel, and students who are familiar with it, has for 50 yr provided a benchmark on which to build. Treatments on the history of exploration, geology, meteorology, physical and chemical ocean-

ography, biota, and human impacts remain extremely valuable as reference works, some now primarily for historical context. Counted among the contributors were the most distinguished American marine scientists of their day, and visibility for a number of these scientists was further enhanced by the extensively cited chapters they contributed to this volume. The group included the most qualified federal agency scientists, museum curators, marine laboratory investigators, and university professors that could

be assembled. It broadly represented taxonomic authorities selected to cover almost every possible biotic group, with acknowledged omission of some groups for which willing expertise could not be found (Tunnell et al., 2004, 2009).

The plan: While the challenge is daunting, an update of "Bulletin 89" is overdue. As the 50th anniversary of its publication passed, the range and scope of primary literature sources on the Gulf of Mexico have become so expansive that they are all but unmanageable for most workers. For almost all subject areas, no authoritative digests centered on the Gulf of Mexico have appeared since "Bulletin 89." Yet, many treatments in "Bulletin 89" are clearly so dated that they are of limited value other than as historical starting points. Furthermore, there is an urgent need for updates before the marine science community sustains further loss of continuity in expertise; while we have already lost all of the original contributors to "Bulletin 89," the passage of 50 yr has also claimed a large number of the subsequent generation of workers, and others are already late in their careers. Therefore, in 2003 we proposed the expansion from one "Bulletin 89" volume to four (origins, oceanography, biota, and issue/impacts) (Tunnell et al., 2004). Subsequently, two more volumes were added (ecosystem-based management and economics), and oceanography was split in two: physical and chemical oceanography. The first two volumes [*Biodiversity* (Felder and Camp, 2009) and *Economics* (Cato, 2009)] were released in 2009, and they should serve as a benchmark reference source of knowledge about the Gulf of Mexico early in the 21st century.

6. State of the Gulf of Mexico Summit.—In March 2006, the State of the Gulf of Mexico Summit addressed the current "state" (condition or health) of the Gulf of Mexico. There was significant participation from around the Gulf, and major topics/panels included the economy, public health, the environment, and collaborative governance (Tunnell and Dokken, 2006). These meetings will likely continue at 3- to 5-yr intervals in the future, at various locations around the Gulf.

7. Annual Thematic Working Conferences.—HRI will annually sponsor small working conferences or workshops with leading scientists concerning important, current issues affecting the Gulf of Mexico (e.g., invasive species, harmful algal blooms, coastal development, dead zones, etc.). These conferences will be held in the new HRI Conference Center or at a larger venue, if

necessary, in Corpus Christi. The first two were held in 2007: The Gulf of Mexico and Caribbean Marine Invasive Species Workshop in February (Osman and Shirley, 2007) and the 2007 Law of the Sea Institute Conference in March. Many others have been held since then, most recently, the highly successful and well-attended International Conference on Sea Level Rise in the Gulf of Mexico in March 2009.

8. Gulf of Mexico Alliance.—Patterned after the highly successful Florida Ocean Alliance, we determined that such an alliance of all stakeholders or entities with concern, interest, use, or jurisdiction within the Gulf of Mexico should be formed. This alliance would include all three countries, and it would include members from private business (fisheries, tourism, oil, gas, etc.), state and federal government agencies, academia, conservation and other nongovernmental groups, and private citizens. The alliance would work cooperatively and collectively for the long-term sustainable use and conservation of the Gulf of Mexico.

After the release of the President's U.S. Ocean Action Plan in December 2004 (Committee on Ocean Policy, 2004), then-Florida governor Jeb Bush suggested the formation of such an alliance among the U.S. states (Florida, Alabama, Mississippi, Louisiana, and Texas). Working together, these five states issued the "Governor's Action Plan for Healthy and Resilient Coasts" in March 2006 at the State of the Gulf of Mexico Summit (Gulf of Mexico Alliance, 2006). That group is now working with some groups in Mexico to make it more inclusive, Gulf-wide.

9. Public policy initiatives.—As HRI develops and grows, it intends to be a leader in encouraging and achieving cooperation with multiple partners in influencing public policy for the long-term sustainable use and conservation of the Gulf of Mexico.

RESEARCH PROGRAMS

Significant deliberations and discussions during the 2001–04 period focused on which six research areas would be appropriate for the new Institute. A combination of principles guided this process:

- Consider Gulf-wide needs or issues within the Gulf of Mexico;
- Be cooperative and collaborative, not competitive, with nearby institutions;
- Include a tri-national approach;

- Consider stated or implied topics or issues within the U.S. Commission on Ocean Policy Report and/or the President's U.S. Ocean Action Plan;
- Determine "fit" with TAMU-CC academic programs or future programs; and
- Develop science or policy with application that could "make a difference" (Ed Harte's request).

Initially, Mr. Harte and the Advisory Council agreed on establishing one chair in policy and one in GIS. GIS would be the foundation for imaging and analysis of all the programs within HRI, and it was already a strong research and academic program at TAMU-CC. The final four chairs, determined using the above principles, rounded out the list of six endowed chair research programs or focus areas, as follows:

1. Coastal and Marine Policy and Law;
2. GIS;
3. Marine Biodiversity and Conservation Science;
4. Ecosystem Studies and Modeling;
5. Ocean and Human Health; and
6. Socioeconomics.

With building completion slated for 2005, we began hiring that summer. Dr. Richard McLaughlin became the first hire in June 2005 as the Endowed Chair of Coastal and Marine Policy and Law. Dr. McLaughlin's research focuses on coastal and marine policy and law issues related to the Gulf of Mexico. He is particularly interested in policy and law related to energy, the Western Gap, and Law of the Sea. Dr. McLaughlin came to HRI from the University of Mississippi School of Law, where he was a Professor, former Director of the Mississippi-Alabama Sea Grant Legal Program, Director of the Hawaii Summer Law Program, and a former Fulbright Scholar to Japan.

Dr. Tom Shirley became HRI's second Endowed Chair in the area of Marine Biodiversity and Conservation Science in July 2005. His specialty in invertebrate zoology around the world serves him well in joining and leading HRI's biodiversity of the Gulf of Mexico program. With his extensive experience with research vessels and manned submersibles, he will also be active in HRI's exploration program. Dr. Shirley came to HRI from the University of Alaska, where he had a strong and productive research and graduate education program.

Dr. Paul Montagna started in September 2006 as HRI's third Endowed Chair; he leads the research program in Ecosystem Studies and Modeling. Dr. Montagna and his highly active staff use quantita-

tive ecology as their main research tool. They use long-term data sets on benthos and water quality to study and model coastal processes, such as freshwater inflow, which are, in turn, used to help guide resource management decisions. Dr. Montagna came to HRI from the University of Texas Marine Science Institute.

After the first three senior-level, endowed chairs were hired, HRI leadership decided to look for younger scientists who had a proven track record in research and a bright, promising future. Two were hired in 2007 at the "Endowed Associate Research Professor" level, and one in 2008. They are being given the opportunity to "grow" into an endowed chair position.

Drs. Jim Gibeaut and Greg Stunz became Endowed Associate Research Professors in September 2007 in the areas of GIS and Ocean and Human Health, respectively. Dr. Gibeaut's research focuses on coastal processes, application of LIDAR and remote sensing imagery to coastal mapping, statistical analysis and mathematical modeling of beach and tidal inlet morphodynamics, coastal oil-spill damage and cleanup assessment, and high-accuracy beach and near-shore surveying. Dr. Gibeaut is currently studying coastal environmental change through analysis of historical data sets and the development of models to project the future effects of sea-level rise. He came to HRI from the Bureau of Economic Geology at the University of Texas in Austin. Dr. Stunz, who is also Associate Professor of Marine Biology at TAMU-CC, is a marine biologist specializing in marine ecology. Specifically, his research interests focus on understanding ecosystem health and the role of habitat for aquatic organisms, emphasizing marine and estuarine fishes.

Dr. David Yoskowitz was hired as HRI's Endowed Research Associate Professor for Socio-Economics in September 2008, while he had a joint appointment as Professor of Economics in the College of Business at TAMU-CC. In 2010, Dr. Yoskowitz became our HRI Endowed Chair for Socio-Economics. He brings the economic perspective to issues that impact the Gulf of Mexico region. His work helps to model the socio-economic implications of resource use, and he is particularly interested in research on ecosystem services and the productive value of the Gulf of Mexico.

Although my research career and program are winding down, as I spend more and more time in research administration, I will maintain an interest and focus on Gulf-wide synthesis projects (such as the Bulletin 89 update), Gulf biodiversity, and facilitating research in Cuba and Mexico. HRI Advisory Council member Dr.

Fig. 7. Views of Cuban professors and students conducting research and conservation work in Cuba: (a) *Boca del Toro*, characterizing the northwest coast of Cuba coral reefs, seagrasses, and mangroves, and (b) working with sea turtle populations and local communities in the Guanahacabibes National Park in far western Cuba (Photos courtesy of David Guggenheim).

Fig. 8. Logo for the HRI for Gulf of Mexico Studies was designed in 2001 by TAMU-CC employee Janice Tyler.

David Guggenheim, along with Fernando Bretos, led our HRI efforts in Cuba for several years. This work includes a characterization of Cuba's Gulf of Mexico coastline (the northwest coast), primarily coral reefs, seagrass beds and mangroves, and sea turtle conservation (Fig. 7). Most of their work is conducted in cooperation and collaboration with faculty and students at the Centro de Investigaciones Marinas (Center for Marine Research) at the University of Havana.

In addition to these endowed faculty, HRI has a research associate program, which involves faculty research associates from various departments and colleges at TAMU-CC that have research programs involving the Gulf of Mexico. Ten of these faculty associates have office and lab space in the new HRI building. This co-location promotes cooperation and collaboration among HRI endowed faculty and TAMU-CC faculty.

BEHIND THE HRI LOGO

The logo incorporates the idea of looking toward the horizon (Fig. 8). Silhouettes of three sails stand for the cooperation among the United States, Mexico, and Cuba. Influenced by the sails on sailing vessels originally used to explore the oceans of the world, the use of these particular sails implies that the Institute will be a pioneer in exploration. The sails filling with the wind symbolize moving forward into the future. The wave at the bottom represents the Gulf, while the circle symbolizes the rising sun, emphasizing the dawn of a new era for the University.

The design was inspired by the travels of Spanish explorer Álar Núñez Cabeza de Vaca, whose trail of discovery followed the Gulf Coast. The logo was designed by TAMU-CC employee Janice Tyler.

HRI's FUTURE

Dr. Robert Furgason became the first executive director of HRI in January 2005, when he stepped down from his role as president of TAMU-CC for 14 yr. HRI was endowed and established under his leadership. Dr. Larry McKinney became the second executive director of HRI in July 2008. Although it may take several more years for HRI to be fully operational, the future is indeed bright for cooperative and collaborative work around the Gulf of Mexico that will support and enhance its long-term sustainable use and conservation. Further information and current news about HRI can be found at www.harteresearchinstitute.org.

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