

Annual Report for Period: 08/2005 - 08/2006

Submitted on: 08/14/2006

Principal Investigator: Walker, Sharon H.

Award ID: 0215341

Organization: U of Southern Mississippi

Title:

Regional Center for Ocean Sciences Educational Excellence [COSEE]--Gulf of Mexico

Project Participants

Senior Personnel

Name: Walker, Sharon

Worked for more than 160 Hours: Yes

Contribution to Project:

Dr. Sharon Walker is the PI of this effort and manages all aspects of this collaborative, to include monitoring the efforts being provided by the five subcontracts to the following Senior Personnel/Co-PIs and their respective university affiliations: Dr. Rick Tinnin-UT-MES; Dr. John Dindo-DISL; Dr. Michael Spranger-UF; and Dr. Jessica Kastler-LUMCON; Dr. Dan Brook-MSU; Dr. Brook is a Senior non-Co-PI and also represents a member of this proposed effort's Senior Personnel. Annually, in Mississippi, Dr. Walker has/will implement the two-day Informal Workshop for 70 participants and the five-day 'face to face' and 10-day online portions of the 15-day Professional Development Institute for middle school teachers (grades 5-9) and scientists. She will also supervise the COSEE scientist and educator in Mississippi. Dr. Walker will coordinate the 'Teachers-To-Sea' component with Dr. Mary Alyce Lach of St. Norbert College, Dr. Shelia Brown of USM, and Ms. Brenda Smith and Mr. Mark Jarrett of NAVMETOCOM and NAVOCEANO, respectively. The Co-PIs and Ms. Smith will coordinate the minority recruitment. Dr. Walker and Ms. Smith will provide oversight management of these undergraduates, as well as securing their individual Mentors. Drs. Walker and Brown will also work with the MS Gulf Coast Community College in recruiting the two, minority undergraduate students from the Jackson County and Jefferson Davis Campuses of the MGCCC. Dr. Walker, the four Co-PIs, Dr. Dan Brook, and Dr. Shelia Brown will all work with the Evaluation Team, the Public Broadcasting Stations (PBS), the Sea Scholars Program, and the Instructional Technology (IT) Coordinators throughout the Gulf of Mexico.

Name: Dindo, John

Worked for more than 160 Hours: Yes

Contribution to Project:

Name: Kastler, Jessica

Worked for more than 160 Hours: Yes

Contribution to Project:

Post-doc

Graduate Student

Undergraduate Student

Technician, Programmer

Other Participant

Name: Brook, Robert

Worked for more than 160 Hours: Yes

Contribution to Project:

Dr. Brook's responsibilities involved the design, implementation, and application of high-speed data and video network systems. Dr. Brook is from Mississippi State University in Starkville.

Name: Brown, Shelia

Worked for more than 160 Hours: Yes

Contribution to Project:

Dr. Brown is our COSEE Scientist and she began work on this project January 2, 2003. Her duties included 'bridging the gap' between this COSEE's three thematic areas, i.e., coastal processes, habitats and organisms, and marine technology. Dr. Brown focused on NSF research efforts (and research of other agencies) being conducted in the central Gulf of Mexico to leverage those research findings for the proposed audiences of informal educators, formal educators, scientists, and the general public. Dr. Brown coordinated the recruitment of scientists and teachers for the summer institute as well as Sea Scholars. She served as an instructor for both efforts.

Name: Bosarge, Johnette

Worked for more than 160 Hours: No

Contribution to Project:

Ms. Johnette Bosarge helped maintain the Regional Gulf of Mexico-Central COSEE participants' databases and assisted in dissemination of recruitment materials with this effort's Co-PIs, Senior Non-Co-PI, the Scientist and Educators in MS, AL, and LA and within the broader Gulf of Mexico region. This is a part-time position.

Research Experience for Undergraduates

Organizational Partners

U.S. Government Agency

The U.S. Navy's NAVMETOCOM and NAVOCEANO provided personnel and oceanographic survey ships for an annual Sea Scholars/Teacher-To-Sea Voyage. The ONR and the National Oceanographic Partnership Program (NOPP) provided fiscal support to add the states of Texas and Florida which enabled this Regional COSEE:CGOM effort to be expanded to all five states. Due to the U.S. Navy's funding reduction and recruitment difficulties, U.S. Navy minority internships were not awarded. Portions of personnel salaries were also provided by ONR/NOPP.

The NOAA-Oceanic and Atmospheric Research (OAR)-National Sea Grant College Program provided fiscal funds for part-time personnel and/or consultant salaries, i.e., video conference implementation, the internal and external evaluation process, and materials and supplies. Various NOAA, ONR, and NSF scientists and/or educators were selected as guest speakers to include results from their respective research data. These partnerships allowed the original Regional COSEE:CGOM submission to be 'fully' funded for all three years, i.e., late fall of 2002-2005.

Consortium NonAcad and Acad Orgs

The National Marine Educators Association (NMEA); the National Science Teachers Association (NSTA); the FL, AL, MS, LA, and TX State Science Teachers Associations; the Marine Technology Society (MTS); the Sea Grant Network; the Consortium for Oceanographic Research and Education (CORE); the American Association for Limnology and Oceanography (ASLO); the American Geophysical Union (AGU); and the American Meteorology Society (AMS) assisted this project in recruitment of program participants, in the dissemination of the results through their newsletters and websites, or through professional presentations at these conferences.

The State Departments of Education in each of the five, Gulf of Mexico states and the LA Public Broadcasting Station were also involved in the recruitment of participants and the dissemination of project results. The Mississippi Gulf Coast Community College, Jefferson Davis and Jackson County Campuses participated in the recruitment of underserved undergraduate students.

Other collaborators included an External Evaluator (Dr. Susan Culipher-Ross) employed part-time from USM-College of Science and Technology. There were two Co-PIs who received supplemental (non-NSF) funding from ONR and NOAA/OAR/Sea Grant. These Co-PIs

included Dr. Mike Spranger from the University of FL, FL Sea Grant College Program and the FL Museum of Natural History in Gainesville, FL and Dr. Richard Tinnin from the University of Texas and the Marine Science Institute at Port Aransas.

Other Collaborators or Contacts

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Activities and Findings

Research and Education Activities:

Based on a December 7, fiscal request by the COSEE:CGOM PI and subsequent approval of this request on December 13 by the NSF Program Managers, a no-cost extension was approved due to Hurricane Katrina and the Ocean Education Program Review to reduce the number of the PD Institutes for an increased focus on evaluation of program impact on classroom practices and student learning. This approval has allowed approximately \$33,000 to be used for the Interim Scott Marine Education Center and Aquarium (MEC&A) to purchase hurricane-impacted replacement scientific materials and supplies, in support of its PD Institutes, Nonformal Workshops, and general public programming. In this vein, the entire COSEE:CGOM Management Team is appreciative of NSF's efforts in accommodating and assisting its PIs affected by Hurricane Katrina.

It should be noted in subsequent funding of the COSEE:CGOM, there is an increased focus on evaluation of programmatic impact of classroom practices and student learning. Greater specificity for the revised materials and supplies is located on the original December 7, 2005 request from the COSEE:CGOM PI to the NSF-OCE Program Managers.

Findings:

Training and Development:

All of the Co-PIs, Senior Personnel, Educators, Internal and External Evaluators, and Consultants were not only involved in each state's 15-day, 'Face to Face' (five days) and online (10-day) components and the Nonformal Educators Workshops...but, in the recruitment process for the Sea Scholar Voyages and all aspects of the varied, summative evaluations (pre- and posttests for cognitive achievement) and Likert-scale evaluations for attitudinal achievement, as well. The Co-PIs, Senior Personnel (Brook and Brown), and Evaluator have also made six presentations in 2005. Further, this group, in combination with the COSEE:CGOM Educators and Consultants (IT, PBS, and Sea Scholar Coordinators) also met as a COSEE:CGOM Management Team at the National Marine Educators Association Conference in July 2005. The Management Team also met January 4-7, 2005.

Lastly, the interaction with the individual state scientists in the Gulf of Mexico and six scientists in the 2005 COSEE:CGOM Online Institutes, combined with the Naval Oceanographers on the T-AG-60 series of Oceanographic Survey Ships provided each member of the COSEE:CGOM Management Team with enhanced science education research skills and experience.

Outreach Activities:

The five outreach facilities, the J.L. Scott Marine Education Center and Aquarium in MS; the Dauphin Island Sea Lab's Estuarium on Dauphin Island; the Marine Science Institute in Port Aransas; the Museum of Natural History on the UF's Gainesville Campus; and the LA Universities Marine Sciences Consortium in Chauvin each have an annual visitation of 80,000 or a collective annual visitation of 400,000. This number does not include the festivals in which each of these outreach facilities is involved which encompasses an additional 500,000 members of the

general public impacted by the Co-PIs, Senior Personnel (Brown and Brook), and the Educators. These COSEE:CGOM Management Team efforts certainly enhance the awareness and understanding of the citizenry of the Gulf of Mexico relative to ocean sciences and coastal processes.

As previously mentioned, the web site for this endeavor is <www.www.cosee.net/central-gom> and the 'Oceanography and Coastal Processes Resource Guide' URL, <<http://www.coast-nopp.org/toc>> both augment technological applications. Further, the 10-day Online COSEE:CGOM Institute for scientists and middle school teachers tends to 'drive' the technology for the teacher participants. Lastly, as one of the seven regional COSEE, this Central Gulf of Mexico investigation is also linked to the COSEE-Central Coordinating Office's URL, <www.COREocean.org> now <www.cosee.net>.

Journal Publications

Books or Other One-time Publications

Web/Internet Site

URL(s):

www.www.cosee.net/central-gom

Description:

The website is utilized for recruitment of summer institute, informal workshops, and Sea Scholar participants. It also serves as the site for the online component of the summer institute course.

Other Specific Products

Contributions

Contributions within Discipline:

Agenda and activities were developed by each Gulf of Mexico state to complement the three thematic topics: oceanography and coastal processes, habitats and organisms, and marine technologies for the Summer Institutes, during which research scientists and educators shared experiences, knowledge, and observations about both science and education and the interconnectedness between the two groups. In fostering a paradigm shift between scientists and teachers and developing a partnership between the two groups, the COSEE:CGOM has succeeded in linking those individuals for more than just the five 'Face to Face' days of the Summer Institute.

Further, the MS, AL, and FL educators have assisted school districts in aligning subject matter with state standards. In Mississippi core objectives within the state frameworks were aligned with the activity program, The Wonder of Wetlands. Other examples in Mississippi including the design and implementation of teacher workshops on Nuisance Species and Applications of Technology in Ocean Sciences. Numerous PowerPoint presentations have been developed by the COSEE:CGOM educators to include implementing complementary activities on a wide variety of ocean sciences content areas. Through the efforts of the COSEE:CGOM educators, participating teachers are more empowered to 'bridge the gap' with their middle school students. And, the COSEE:CGOM educators are also working with the general public in each state's Informal Center to enhance guests' awareness and understanding of ocean sciences and coastal processes.

Contributions to Other Disciplines:

The COSEE:CGOM educators will continue to lead Elderhostel programs designed to acquaint participants with local communities and issues in the five-day curriculum, e.g., in MS, the Elderhostel programmatic theme is Chains of Life. Further, these COSEE:CGOM educators also make presentations to local civic groups about the natural history of their respective state's coasts and their indigenous flora and fauna. These COSEE:CGOM educators also participate in many coastal festivals, allowing the COSEE:CGOM to serve as a catalyst for not only the 400,000 visitors of these outreach facilities but for the thousands of guests attending these coastal festivals as well. The PI and Co-PIs are all leveraging the NOAA-OAR Sea Grant, NSF, and NOPP-ONR COSEE:CGOM support enhancing their respective Informal Centers' public outreach and precollege students' programs.

Contributions to Human Resource Development:

All of the COSEE:CGOM educators are involved in 4-H programs, scouting events, science fairs, ocean bowls, and career events for precollege

students. The informal presentations made by the COSEE:CGOM educators assist in demonstrating the interconnectedness of all species, thereby resulting in a more science literate populace.

Contributions to Resources for Research and Education:

For Mississippi, funds were used to replenish classroom supplies that were destroyed by Hurricane Katrina.

Contributions Beyond Science and Engineering:

- ø Dr. Walker has also served as the Marine Technology Society's Educational Chair since 1993.
- ø Dr. Brown is a Board member for the Coastal Training Program for Grand Bay National Research Reserve (NOAA and MS Dept. of Marine Resources).
- ø Dr. Walker is Chair of the COSEE Council.
- ø Drs. Walker and Brown are members of the National Marine Educators Association Board.
- ø Dr. Dindo is Co-Chair of the Long Range Planning Committee for the National Marine Educators Association.
- ø Dr. Tinnin is the Chair of the National Marine Educators Association By-Laws Committee.
- ø Dr. Walker is the Chair of the Grants Committee and the Membership Secretary for the National Marine Educators Association .

Special Requirements**Special reporting requirements:**

Unobligated funds are anticipated to be spent on salaries and other expenses by February 14, 2003. The Year 2 commitment will be needed by February 15, 2003.

Change in Objectives or Scope: None

Unobligated funds: \$ 0.00

Animal, Human Subjects, Biohazards: None**Categories for which nothing is reported:**

Activities and Findings: Any Findings

Any Journal

Any Book

Any Product