

Project Title: Immersion Simulation: Interdisciplinary Training for the Gulf of Mexico Workforce (ISIM)

Award Amount: \$124,931

Awardee: Mississippi Gulf Coast Community College

Award Start Date: 09/01/15

Award End Date: 09/01/16

NAS Grant ID: 2000006015

Project Director: Joan Hendrix*

Affiliation: Nursing and Allied Health, Mississippi Gulf Coast Community College

Project Key Personnel:

- John Shows, Associate Vice President for Career, Technical and Workforce Education, Mississippi Gulf Coast Community College
- Millie Hyatt, Special Projects, Mississippi Gulf Coast Community College
- Larry Porter, Master Trainer, Mississippi Gulf Coast Community College

I. ORIGINAL PROJECT SUMMARY (from proposal)

The Mississippi Gulf Coast Community College proposed Interdisciplinary Training for the Gulf of Mexico Workforce project will explore the potential of simulated work environment training to enhance the interdisciplinary skill sets of and communication abilities between middle skills workers in the oil and gas industry and healthcare professions. The project will focus on the use of simulation techniques as a different and non-traditional pedagogical approach to training for this target group of middle skills workers

Oil and gas workers and healthcare professionals are extensively trained via on-the-job training, classroom instruction, and demonstration (skills) lab work. However, it is not common for each group to receive more than an elementary level of introduction to the other's craft. This project will develop innovative training scenarios utilizing simulated environments which will expose participants to emergency situations in a safe and controlled environment. Scenarios will immerse healthcare professionals in a simulated oil and gas production (industrial) environment and will immerse oil and gas workers in a simulated healthcare environment. The two groups will also be combined in simulated training sessions designed to enhance communications.

Specific project goals will: 1) expose healthcare students to the Gulf of Mexico work environment, 2) expose students in oil and gas applicable programs to the healthcare work environment, and 3) enhance the communication between the two groups when they are required to interact, work together and

*Tiffany Zyniewicz was awarded this grant; it was transferred over to Joan Hendrix.

respond to medical, healthcare related, or other issues in the Gulf of Mexico work environment. Specific objectives of the proposed project are:

- Objective 1: Development of curriculum and simulations exercises for healthcare and oil and gas related students.
- Objective 2: Explore/Research potential for cross disciplinary certifications.
- Objective 3: Pilot test developed curriculum and simulation exercises.
- Objective 4: Assess results.

The proposed project addresses the three goals of the Gulf Research Program.

Goal #1: Foster innovative improvements to safety technologies, safety culture, and environmental protection systems associated with offshore oil and gas development.

- Response: The project directly enhances the safety culture in the Gulf of Mexico by aiding to bridge the communications gap between the professional disciplines.

Goal #2: Improve understanding of the connections between human health and the environment to support the development of healthy and resilient Gulf communities.

- Response: The project places trainees in the simulated work environment on a larger scale than tradition education, thus creating a greater understanding of connections between their training and the environment, understanding which is often only gained after work experience has been attained by the individual.

Goal #3: Advance understanding of the Gulf of Mexico region as a dynamic system with complex, interconnected human and environmental systems, functions, and processed to inform the protection and restoration of ecosystem services.

- Response: The proposed project intertwines two traditionally distinct workforces, thus bringing to fruition among trainees the interconnectedness of their professions as they pertain to the Gulf of Mexico thus resulting in greater understanding of each professions roles and the interplay between those roles in the production environment and the ecosystems within which they are working.

II. PROJECT RESULTS

Accomplishments

The problem we were trying to address is if interdisciplinary simulation-based training would increase and provide adequate, effective training to improve the outcomes during disasters and emergencies in the oil and gas industry environments when healthcare is needed or on-site.

We developed a curriculum that included core competencies, simulation scenarios, pre-questions, and evaluations.

The results that we collected from the pilot project were that communication within the distinct professions is good, however we found that there was a deficit in communication when placing the two

professional together in realistic environments. They have knowledge, skills and attributes individually just not together.

Initial Outcomes

The implications of the project results for other current and any further work of the project team is that if given the change, having a control group would be ideal to see the difference in data from individual professions in reference to when the participants are then expected to train together. New funding would help to expand the project and work the project to establish, and build professional relationships to run the exercises with working professionals (oil and gas/EMS/Trauma Teams) rather than students.

The implications of the project results for research/practices of others is that implementation of a program of this type can enhance and improve communication widely when it comes to professions working together.

Our results are important to science/society because the results prove that there is a deficit when it comes to inter professional/interdisciplinary training because this form of training is not widely used or used often and therefore when emergencies arise communication is lacking and affect the outcomes of the emergencies.

Unexpected Results

The expectations of the project prior to beginning were that we would find communication and teamwork need improvement when working together. However, an unexpected result was that the knowledge, skills and attributes of the participants in teamwork and communication were high on their individual days working in the other professions environments however when placed in their professional environments and expected to work with another profession the results decreased. The results show that the knowledge and skills are there for teamwork and communication with other professionals however there isn't an avenue that is being used to harness this knowledge and skills to enhance teamwork between multiple professionals.

Project Relevance

Researchers, educators, community leaders, state government officials, federal government officials, the private sector, and oil and gas training facilities would be interested in the results of this project.

The selection of groups is based on the fact that the exploratory pilot project was for interdisciplinary training and many groups would be interested in this form of training especially along the coastal lines and when multiple professions are required to come together to work and function as a unit to save lives and decrease mobility rates during disasters and emergencies.

Education and Training

Number of students, postdoctoral scholars, or educational components involved in the project:

- Undergraduate students: 40
- Graduate students: 1

- Postdoctoral scholars: 3
- Other educational components: 2

The other educational components were the instructors employed for the project. There were two instructors, one instructor from Oil and Gas and the other from Healthcare.

III. DATA AND INFORMATION PRODUCTS

This project produced data and information products of the following types:

- Data
- Curricula for education and training

DATA

See attached Data Report.

Relationships between data sets:

Immersion Simulation Instructor Training Manual
 Immersion Simulation Participant Training Manual
 ISIM Pre-Questionnaire
 ISIM Post-Assessment: Participants
 ISIM Post-Assessment: Instructors
 ISIM Pre-Assessment: Interprofessional Team Simulation
 ISIM Post-Assessment: Interprofessional Team Simulation
 ISIM Pre Questionnaire Frequency Tables
 ISIM PreQuestionnaire (Combined)
 ISIM Post-Assessment Participant (Combined)
 ISIM Post-Assessment Participant (Session I)
 ISIM Post-Assessment Participant (Session II)
 ISIM Post-Assessment Participant (Combined)
 Post Assessment Feedback Frequency Tables V
 ISIM Post-Assessment Instructor (Session I)
 ISIM Post-Assessment Instructor (Session II)
 ISIM Post-Assessment Instructor (Combined)
 Instructor Feedback Frequency Tables V
 ISIM Interprofessional Team (Session I)
 ISIM Interprofessional Team (Session II)
 ISIM Interprofessional Team (Combined)
 ISIM Interprofessional Team Sim V
 ISIM Interprofessional Team Post (Session I)
 ISIM Interprofessional Team Post (Session II)
 ISIM Interprofessional Team Post (Combined)
 Interprofessional Team Simulation Training Post V
 ISIM Interprofessional Master
 ISIM Data
 ISIM Data 2
 ISIM Executive Summary Report (Final)

Other activities to make data discoverable:

The information and documentation that has been uploaded to a repository has also been retained on public accessible drives within the college.

INFORMATION PRODUCTS

Curricula:

See attached.

Other activities to ensure access to information products:

Presented ISIM presentation to Workforce Development Meeting and MGCCC Nursing and Allied Health Divisional Meeting.

Data Report										
<i>Italicized text are sample answers.</i>										
Data Type: Select the option (from the dropdown) that best matches the data's domain or discipline (e.g., earth science data, ecological data, human health data)	DigitalResourceType: Select the option (from the dropdown) that best matches the resource format (e.g., data set, text, image or visual data, etc.)	Title: Provide a title for the resource	FileName: Provide the name of the digital file(s) (including file extension)	Creators: Provide the names of the persons who produced the resources (last name, first name; last name, first name; etc.	Point of Contact: Provide person responsible for answering questions about the data if other than project PI	PublicationYear: Provide the year that the resource was published or made available	RepositoryName/Publisher: Provide the name of the digital repository or curation facility where the resource is archived and available	DOIorPersistentURL: Provide a persistent identifier for the resource's location	Dataset Keywords: Please list any keywords used to describe the resource.	Publications: Provide the DOI for any publication that uses or references this resource
Data Type	DigitalResourceType	Title	FileName	Creators	PointofContact	PublicationYear	RepositoryName	DOIorPersistentURL	Keywords	Publications
<i>Education and Training</i>	<i>Text</i>	Immersion Simulation Instructor Training Manual	Immersion Simulation- Interdisciplinary Training for the Gulf of Mexico Workforce (ISIM) Exploratory Pilot Project Instructor Training Manual.pdf	Prial, Sarah	<i>Project Director: Joan Hendrix joan.hendrix@mgccc.edu 601-766-6425</i>	<i>2016</i>	Open Science Framework	osf.io/25dnr	<i>training; manual; policy; procedure; instructor</i>	osf.io/25dnr
Education and Training	Text	Immersion Simulation Participant Training Manual	Immersion Simulation- Interdisciplinary Training for the Gulf of Mexico Workforce (ISIM) Exploratory Pilot Project Participant Training Manual.pdf	Prial, Sarah	<i>Project Director: Joan Hendrix joan.hendrix@mgccc.edu 601-766-6425</i>	<i>2016</i>	Open Science Framework	osf.io/25dnr	<i>training; manual; policy; procedure; participant</i>	osf.io/25dnr
Education and Training	Text	ISIM Pre-Questionnaire	ISIM Pre-Questionnaire.pdf	Prial, Sarah	<i>Project Director: Joan Hendrix joan.hendrix@mgccc.edu 601-766-6425</i>	<i>2016</i>	Open Science Framework	osf.io/25dnr	questionnaire	osf.io/25dnr
Education and Training	Text	ISIM Post-Assessment: Participants	ISIM Post-Assessment-Participants.pdf	Prial, Sarah	<i>Project Director: Joan Hendrix joan.hendrix@mgccc.edu 601-766-6425</i>	<i>2016</i>	Open Science Framework	osf.io/25dnr	assessment; participants	osf.io/25dnr
Education and Training	Text	ISIM Post-Assessment: Instructors	ISIM Post-Assessment- Instructors.pdf	Prial, Sarah	<i>Project Director: Joan Hendrix joan.hendrix@mgccc.edu 601-766-6425</i>	<i>2016</i>	Open Science Framework	osf.io/25dnr	assessment; instructors	osf.io/25dnr

Education and Training	Text	ISIM Pre-Assessment: Interprofessional Team Simulation	ISIM Pre-Assessment- Interprofessional Team Simulation Training .pdf	Prial, Sarah	<i>Project Director: Joan Hendrix joan.hendrix@mgccc.edu 601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	interprofessional; assessr	osf.io/25dnr
Education and Training	Text	ISIM Post-Assessment: Interprofessional Team Simulation	ISIM Post-Assessment- Interprofessional Team Simulation Training.pdf	Prial, Sarah	<i>Project Director: Joan Hendrix joan.hendrix@mgccc.edu 601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	interprofessional; assessr	osf.io/25dnr
Education and Training	Text	ISIM Pre Questionnaire Frequency Tables	Pre Questionnaire Frequency Tables.pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix joan.hendrix@mgccc.edu 601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	questionnaire; tables	osf.io/25dnr
Education and Training	Text	ISIM PreQuestionnaire (Combined)	Pre Questionnaire (Combined).pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix joan.hendrix@mgccc.edu 601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	questionnaire; combined	osf.io/25dnr
Education and Training	Text	ISIM Post-Assessment Participant (Combined)	ISIM Post Assessment Participant (Combined).pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix joan.hendrix@mgccc.edu 601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	assessment; participants;	osf.io/25dnr
Education and Training	Text	ISIM Post-Assessment Participant (Session I)	ISIM Post Assessment Participant (Session I).pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix joan.hendrix@mgccc.edu 601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	assessment; participants;	osf.io/25dnr
Education and Training	Text	ISIM Post-Assessment Participant (Session II)	ISIM Post Assessment Participant (Session II).pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix joan.hendrix@mgccc.edu 601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	assessment; participants;	osf.io/25dnr
Education and Training	Text	ISIM Post-Assessment Participant (Combined)	ISIM Post Assessment Participant (Combined).pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix joan.hendrix@mgccc.edu 601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	assessment; post; partici	osf.io/25dnr
Education and Training	Text	Post Assessment Feedback Frequency Tables V	Post Assessment Feedback Frequency Tables V.pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix joan.hendrix@mgccc.edu 601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	post; assessment; feedba	osf.io/25dnr
Education and Training	Text	ISIM Post-Assessment Instructor (Session I)	ISIM Post Assessment Instructor (Session I).pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix joan.hendrix@mgccc.edu 601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	post; assessment; instruc	osf.io/25dnr

Education and Training	Text	ISIM Post-Assessment Instructor (Session II)	ISIM Post Assessment Instructor (Session II).pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix</i> <i>joan.hendrix@mgccc.edu</i> <i>601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	post; assessment; instruc	osf.io/25dnr
Education and Training	Text	ISIM Post-Assessment Instructor (Combined)	ISIM Post Assessment Instructor (Combined).pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix</i> <i>joan.hendrix@mgccc.edu</i> <i>601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	post; assessment; instruc	osf.io/25dnr
Education and Training	Text	Instructor Feedback Frequency Tables V	Instructor Feedback Frequency Tables V.pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix</i> <i>joan.hendrix@mgccc.edu</i> <i>601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	instructor; feedback; tabl	osf.io/25dnr
Education and Training	Text	ISIM Interprofessional Team (Session I)	ISIM Interprofessional Team (Session I).pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix</i> <i>joan.hendrix@mgccc.edu</i> <i>601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	interprofessional; team; s	osf.io/25dnr
Education and Training	Text	ISIM Interprofessional Team (Session II)	ISIM Interprofessional Team (Session II).pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix</i> <i>joan.hendrix@mgccc.edu</i> <i>601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	interprofessional; team; s	osf.io/25dnr
Education and Training	Text	ISIM Interprofessional Team (Combined)	ISIM Interprofessional Team (Combined).pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix</i> <i>joan.hendrix@mgccc.edu</i> <i>601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	interprofessional; team; c	osf.io/25dnr
Education and Training	Text	ISIM Interprofessional Team Sim V	ISIM Interprofessional Team Sim V.pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix</i> <i>joan.hendrix@mgccc.edu</i> <i>601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	interprofessional; team; s	osf.io/25dnr
Education and Training	Text	ISIM Interprofessional Team Post (Session I)	ISIM Interprofessional Team Post (Session I).pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix</i> <i>joan.hendrix@mgccc.edu</i> <i>601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	interprofessiona; team; p	osf.io/25dnr
Education and Training	Text	ISIM Interprofessional Team Post (Session II)	ISIM Interprofessional Team Post (Session II).pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix</i> <i>joan.hendrix@mgccc.edu</i> <i>601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	interprofessional; team; p	osf.io/25dnr
Education and Training	Text	ISIM Interprofessional Team Post (Combined)	ISIM Interprofessional Team Post (Combined).pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix</i> <i>joan.hendrix@mgccc.edu</i> <i>601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	interprofessional; team; p	osf.io/25dnr
Education and Training	Text	Interprofessional Team Simulation Training Post V	Interprofessional Team Simulation Training Post V.pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix</i> <i>joan.hendrix@mgccc.edu</i> <i>601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	interprofessional; team; s	osf.io/25dnr

Education and Training	Text	ISIM Interprofessional Master	ISIM Interprofessional Team Master.pdf	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix</i> <i>joan.hendrix@mgccc.edu</i> <i>601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	interprofessional; master	osf.io/25dnr
Education and Training	Tabular/Spreadsheet	ISIM Data	ISIM Data.xlsx	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix</i> <i>joan.hendrix@mgccc.edu</i> <i>601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	dataset	osf.io/25dnr
Education and Training	Tabular/Spreadsheet	ISIM Data 2	ISIM Data 2.xlsx	Prial, Sarah; Swanson, Adam	<i>Project Director: Joan Hendrix</i> <i>joan.hendrix@mgccc.edu</i> <i>601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	dataset	osf.io/25dnr
Education and Training	Text	ISIM Executive Summary Report (Final)	ISIM Executive Summary Report (Final).pdf	Prial, Sarah	<i>Project Director: Joan Hendrix</i> <i>joan.hendrix@mgccc.edu</i> <i>601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	report; final; summative	osf.io/25dnr
Education and Training	Video	<i>ISIM Immersion Simulation Video</i>	ISIM combined.mp4	<i>Prial, Sarah; Sewell, Michael</i>	<i>Project Director: Joan Hendrix</i> <i>joan.hendrix@mgccc.edu</i> <i>601-766-6425</i>	2016	Open Science Framework	osf.io/25dnr	video; media	osf.io/25dnr