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http://linux.savannahstate.edu/rimi/index.htm

PROGRAM DEVELOPMENT

NIH-RIMI Program Associate and Grant Manager Appointed

Carrie L. McCullough, NIH-RIMI Program Associate
Ms. McCullough is a recent graduate of SSU with a BS degree in Environmental Science and was appointed as Program Associate, NIH-RIMI in January 2010. As RIMI Program Associate, she is responsible for coordinating all program activities, including the 3 major health disparities research projects, the mini-grant research projects, monthly seminars, external and internal advisory committees, and curriculum enhancements.

Linda Meier, NIH-RIMI Grant Manager
Ms. Meier joined the University in November 2009. She has experience in grants administration from her previous positions as a Grants Officer at Cornell University and the University of New Hampshire. As Grant Manager for the NIH-RIMI program, she is responsible for the grant budget and for ensuring compliance with the NIH award terms and conditions. In addition, Ms. Meier is Post Awards Coordinator for the Office of Sponsored Research Administration.

SHARED RESEARCH RESOURCES CORE

Shared Core Lab
The RIMI Shared Core Lab is the core lab facilities located in Rooms 118 and 135 of the Drew Griffith Building of the Department of Natural Sciences. The major focus is to establish a long term facility with the latest state of the art equipment to support research in the areas of Biomedical Research, Chemistry and Behavioral Science.

The facility has been developed by Dr. Sivapatham Paramasivam, Associate Professor of Environmental Science, with assistance from Dr. Challa Suresh, Research Associate. Sustaining multi-users in the research core facility plays an important role in supporting the research efforts of the faculty and students and will integrate research methods and health disparities research for the RIMI program. The students are assisting faculty while learning scientific concepts which form the basis for future research that will provide opportunities for students to progress to graduate programs in the biomedical/health disparity fields. The core establishment includes an ultramodern facility for cell culture studies with a laminar hood, CO₂ incubators, ELISA reader and Inverted Microscope for imaging research.

Health Disparities Database
Dr. Deden Rukmana is an Assistant Professor and Coordinator of the Graduate Program in Urban Studies and Planning at Savannah State University. As part of the Shared Resources Core, Dr. Rukmana is developing a regional health disparities database and compiling population statistics and spatial information on the health disparities of Metropolitan Savannah. With the assistance of a student research assistant, data has been collected for health disparities for Metropolitan Savannah, including Chatham, Effingham and Bryan counties, from OASIS (Online Analytical Statistical Information System).
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RESEARCH FACULTY DEVELOPMENT CORE

Himangshu S. Bose, Ph. D. Professor, Mercer University School of Medicine and Memorial University Medical Center and NIH-RIMI Senior Visiting Scientist, Savannah State University.

Dr. Bose was appointed to work as an Adjunct Associate Professor (Senior Visiting Researcher) of Chemistry at Savannah State University. Dr. Bose works collaboratively with the Shared Core Lab Leader, Dr. Sivapatham, and the Program Coordinator, Dr. Chetty, to direct the efforts of the Research Faculty Development Core. Dr. Bose supervises the 3 RIMI Research Subprojects and is a valuable mentor to the junior faculty.

NCMHD SCIENTIFIC SUBPROJECT I:

TITLE: Characterization of Novel Compounds to Use in Light Therapy for Cancer
PI: Cecil Jones, Ph.D., Associate Professor of Chemistry
STUDENT RESEARCHER: Lana Thomas, Rising Sophomore, Chemistry

The long-term goal of this work is to improve the health of patients suffering from solid tumors such as breast, gastric, colon, and prostate cancer. Enhancing both the selectivity and efficacy of photodynamic therapy (PDT) will have a substantial impact on patient prognosis. The treatment relies on the photosensitization of singlet oxygen by porphyrin-type molecules. Singlet oxygen in turn interacts with proteins and membranes in ways that cause the destruction of cancerous cells. Limitations to the method include: (1) Low absorbance in the phototherapeutic range of 600-900 nm by photosensitizers currently employed in PDT; and (2) Porphyrin-type drugs exhibit poor selectivity between cancerous and normal cells. Circular dichroism, fluorescence, UV-Visible spectroscopy and fluorescence microscopy will be employed to accomplish the objectives of this work. Successful results will expand the applicability of PDT to tumors well beneath the surface of the skin. The design of photosensitizing drugs aims to optimize binding and localization in targeted tissue. Techniques in fluorescence microscopy will be employed to correlate drug-carrier protein binding affinities with localization and modes of cell death. Since PDT is recognized as a technique that can be applied to heart disease, successful outcomes of this work will decrease health disparities by improving the health of patients suffering from the number one and two causes of death in the United States.

NCMHD SCIENTIFIC SUBPROJECT II:

TITLE: Developing Novel Derivatives of Betulinic Acids for Fighting HIV
PI: Hua Zhao, Ph.D., Associate Professor of Chemistry
STUDENT RESEARCHER: Shaletha Holmes, Rising Senior, Chemistry

About one million people are infected with HIV viruses in the US. The epidemic is spreading more quickly among our nation’s minority populations, and the death rates associated with HIV/AIDS in minorities are higher than national average rates. There is an urgent need to develop effective anti-HIV drugs in reducing the health disparity of HIV disease. Betulinic acid is a natural compound with various biological properties including anti-HIV activities. The major objective of this project is to produce ionic liquid forms of betulinic acid with high water solubility and high biological activities against HIV viruses.
NCMHD SCIENTIFIC SUBPROJECT III:

Title: Measurement of GLP-1 and Estrogen in African American Women under Controlled Conditions of Weight Maintenance and Physical Exercise.

PI: Johnny Johnson, Ph.D., Assistant Professor of Biology

STUDENT RESEARCHERS: Christelle T. Bakatukanda, Rising Sophomore, Biology, and Brittany Smith, Rising Senior, Biology

The regulation of food intake is a complex process that is inclusive of interactions among reward pathways in the central nervous system, societal and environmental influences mediated through higher neural centers, and signals along the gut-brain axis. Recent efforts at unraveling this complexity have focused on glucagon-like peptide 1 (GLP-1), a gut hormone that enhances postprandial insulin secretion. Once secreted, GLP-1 is rapidly degraded to inactive metabolites. Independent of sex, age, adiposity and postprandial changes in other metabolites, the postprandial GLP-1 response is associated with activation of some areas of the human brain that have been previously associated with satiety, meal termination and the regulation of food intake. In addition to a diminished presence of GLP-1 in obese individuals, in obese women in particular, the hormone estrogen is increased. Because women with a high lifetime exposure to estrogen may be at higher risk for breast cancer, it is important to understand how lifestyle and environmental factors, such as diet, can affect the levels of estrogen.

RIMI would like to congratulate Dr. Karla-Sue Marriott for becoming an independent investigator. Originally, Dr. Marriott was approved as a PI for a RIMI Subproject; however, in the meantime she was awarded her own R03 grant by the NIH. The main goal of the RIMI subprojects is to establish and develop Savannah State University’s junior faculty as independent investigators receiving their own funding. Congratulations to Dr. Marriott for leading by example.

Dr. Karla-Sue Marriott, Assistant Professor, Chemistry/Forensic Science, NIH National Institute on Drug Abuse (NIDA), EARLY CAREER AWARD IN CHEMISTRY OF DRUG ABUSE AND ADDICTION (ECHEM-R03), Synthesis of Novel Agents for Use in Addiction Treatment, April 2010 – March 2012, $233,187.

ACADEMIC ENRICHMENT PROGRAMS FOR STUDENTS CORE

Core Leader: Hetty Jones, Ph.D., Professor of Biology

Faculty Investigators: Paramasivam Sivapatham, Ph.D. and Deden Rukmana, Ph.D.

New/enhanced courses include:

Geospatial Analysis of Health Disparities

This is a new course designed to advance students’ knowledge of the application of Geographic Information Systems (GIS) concepts and methods on health disparities. GIS provides a means of integrating information in ways that will help the students understand and address a variety of problems involving health disparities. This advanced level course in GIS will place emphasis on the concepts and spatial reasoning of the analysis techniques. By the end of the course, students are expected to have a thorough understanding of GIS functionality, methodology for implementing the technology, and its potential usefulness in health disparities.

Environmental Health Disparities

This new course provides students with a framework integrating psycho-social and environmental influences that produce social and ethnic environmental health disparities. Disparities exist for many health outcomes, including cancer, cardiovascular disease, and diabetes. The course discusses how social processes interrelate with environmental toxicants and why some ethnic groups and races experience greater illness compared with other ethnic groups and races. Students will be exposed to structural factors pertinent to environmental health disparities including the local and national economy, neighborhood physical conditions, land use patterns, and health infrastructure.
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The Research Methodology course will focus on introducing steps needed in successful planning, execution, data management, presentation and manuscript preparation. A major part (75%) of the course will be dedicated to introducing various research techniques (Theory, Fundamentals and Application) in the field of biomedical research. This course will be a 4-credit hour course and at least 5 - 6 major techniques frequently used in biomedical research areas will be explored in detail.

Biostatistics
Increasingly, advanced skills are needed to deal with the large volume of numerical information gathered from various scientific areas including biomedical research areas. Students will be able to reduce the large amounts of information into concise and meaningful forms to enable them to make effective interpretations, judgments, and decisions. This course has been developed to provide knowledge on fundamental concepts and practical applications used to deduce large amounts of data gathered in scientific experiments in order to make meaningful interpretations and decisions.

EVENTS
The RIMI Reception, held January 28th, 2010, was an introduction of the RIMI program and a celebration of Savannah State University’s accomplishment for receiving a four million dollar collaborative research grant from the NIH National Center on Minority Health and Health Disparities.

SEMINARS
RIMI Seminar, 1st of a monthly series
"Minority and Rural Underserved Populations - Barriers to Success & Lessons Learned"
This seminar was presented March 23rd, 2010 by Dr. H. A. Zaren, Medical Director of the Nancy N. and J.C. Lewis Cancer & Research Pavilion of St. Joseph’s/Candler Health System in Savannah. Dr. Zaren is SJ/C’s Principal Investigator for the National Cancer Institute’s (NCI) Community Cancer Centers Program (NCCCP) Pilot project.

RIMI Seminar, 2nd of a monthly series
“Obesity, the plot is thickening...”
The seminar took place on Tuesday, April 20th, 2010. We were honored to have Mr. Robert Thornton present. Mr. Thornton is the District Epidemiologist for the Coastal Health District, Georgia Division of Public Health.

COMMUNITY ADVISORY BOARD (CAB)
Chair Person: Nicole Oretsky, Ph.D., Assistant Professor of Urban Studies
The RIMI CAB consists of over 20 community partners, who meet monthly to discuss local community health topics and ongoing and proposed research and service programs. CAB meetings are held on the 3rd Wednesday of every month, 11:30 am – 1 pm, 209 Colston. Past presentations have included:
January 2010, “Nobody is Left Behind”, presentation by Dr. Miriam Rittmeyer, Community Health Mission
February 2010, “Cancer and Cancer Care - An Analysis”, by Dr. Jim Repella, President, Southeast Georgia Cancer Alliance
March 2010, RIMI Research: “Carcinoma: Fluorescence Detection and Photodynamic Therapy,” Presentation by Dr. Cecil Jones, SSU
March 2010, “Kids Matter!, 2008 Annual Status Report, Select Health Indicators,” presentation by Mr. Edward Chisolm, Chatham-Savannah Youth Futures Authority
April 2010, RIMI Research: “Synthesis of Novel Agents for Use in Addiction”, Presentation by Dr. Karla Sue Marriott, SSU
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CAB Presentations, Continued
April 2010, “Georgia Department of Behavioral Health and Development Disabilities,” by Mr. Charles Ringling, Region 5 Coordinator
May 2010, RIMI Mini-grant: “Effectiveness of Omega 3 and Fitness Training in Reducing Obesity for African American Adults Females in Savannah, GA”, presentation by Mr. Michael Cohen, SSU
May 2010, RIMI Mini-grant: “Health Disparities and Childhood Lead Exposure in the Benjamin Van Clark Neighborhood, Savannah, GA,” presentation by Dr. Nicole Oretsky, SSU

Upcoming News and Events
RIMI Seminar, 3rd of a monthly series – OPEN TO ALL
Featured speaker will be:
Dr. Wayne C. Glasgow, Ph.D., Interim Senior Associate Dean
Chair, Department of Biomedical Sciences
Professor of Pharmacology
Mercer University School of Medicine – Savannah Campus
June 24, 2010, 4 pm

COMMUNITY ADVISORY BOARD (CAB) Future Meetings - OPEN TO ALL
June 16th: 11:30 am – 1 pm, 209 Colston: Agenda will feature two presentations: 1) Dr. Hua Zhao, SSU, Developing Novel Derivatives of Betulinic Acid for Fighting HIV, and 2) Mr. Chuck Powell, Community Cardiovascular Council
July 21st
August 18th
September 15th

RIMI Mini Grants
The RIMI program funds approximately two mini-grants each year. The objective of this program is to provide seed funds to enable these junior faculty/staff to conduct health disparities research as small-scale pilot projects in order to develop the preliminary data with which to prepare new and competitive proposals in biomedical/health disparities.

This mini-grant research project will examine the effectiveness of Omega 3 and fitness training for reducing obesity levels for African American adult females in Savannah, GA. It will also examine the efficacy of Omega 3 supplementation as a cost effective treatment for obesity. This proposal is highly relevant for the Savannah, Georgia region as it directly addresses a significant health disparity for the region.

Dr. Nicole Oretsky, Assistant Professor, Urban Studies, RIMI Mini-Grant, “Health Disparities and Childhood Lead Exposure in the Benjamin van Clark Neighborhood, Savannah, GA,” May 2010 – April 2011, $10,000.
This mini-grant research project addresses childhood risk for lead poisoning in the Benjamin Van Clark neighborhood of Savannah, GA. Dr. Oretsky will implement a Lead Exposure and Health Risk Survey; test children for elevated blood lead levels, and test housing for lead presence. This study will produce data on the relationship between environmental lead hazards and related biomedical impacts on low-income neighborhoods.