

180th 2YC<sub>3</sub> Conference

*“Building a Foundation for Research:  
Preparing Students for Global Challenges”*

Baton Rouge Community College

Baton Rouge, Louisiana

April 4-5, 2008

## **Conference Program**

### **Friday, April 4th**

8:30 AM-4:00 PM

**Conference Exhibits**

8:00am - 9:00am

**Conference Registration & Continental Breakfast**

Lobby of LCTCS Board Room, Louisiana Building Room 108

9:00am - 9:15am

**Plenary Session: Louisiana Community and Technical College System (LCTCS)**

Board Room; Louisiana (LA) 108

**Welcome and Opening remarks**

9:15am - 10:15am

**Keynote Address**

*Do You Want to Prepare Students for the Challenges of Research? “Teach them How to Learn”*

**Dr. Sandra McGuire**, 2006 Presidential Award Recipient for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM), Associate Dean of University College, Louisiana State University, Baton Rouge, LA

10:00 AM to Noon:

**Set-up for student poster session**

Cypress Building Lobby

10:15am - 10:35am

**Refreshments**

Lobby of LCTCS Board Room, Louisiana Building Room 108

10:45am - 11:30am

**2YC<sub>3</sub> COCTYC Committee General Meeting**

Cypress Conference Room-Cypress 240

10:45 am - 11:30 am

### **Concurrent Sessions**

#### **Session A Room LA 108**

*Building an Infrastructure for Quality Learning Experiences Through Global learning Networks: MERLO (Multimedia Educational Resource for Learning and on-Line Teaching), MAN (MERLOT AFRICA NETWORK) and GLOBE (Global Learning Brokerage Exchange)*

MERLOT, MAN, and GLOBE are initiatives aimed at providing the network and resources to improve teaching effectiveness and design quality learning experiences. (abstract 1)

Presenter: **Dr. Mous Diack**, *President of the Louisiana Academy (LAS) of Sciences and Professor of Chemistry and Science and Math Education, Southern University, Baton Rouge, LA*

#### **Session B New Process Development in the Area of Bromination Reactions; Isolation of Larger Scale Michael Reactions**

This presentation will include case studies in the area of bromination reactions and will provide examples of new process developments and reagents including work-up and product isolation of Large Scale "Michael Reactions." (abstract 2)

Presenter: **Dr. Hassan Elnagar**, *Albemarle Chemical Corporation, Baton Rouge, Louisiana*

#### **Session C Room Cypress 215**

*Journal of Chemical Education (JCE): Discover the JCE DLib and Chem Ed DL*

Interested in using digital resources in your classroom? Explore the multitude of resources found at the /JCE/DLib in this hands-on guided inquiry workshop. (abstract 6)

Presenter: **Linda N. Fanis**, *Assistant Editor, Journal of Chemical Education, Madison, Wisconsin*

10:45am - 12:15pm

#### **Session D Cypress Building, Room 131, A & P Lab**

*Chemistry Connections in the Classroom (C3) using Inquiry*

This session will focus on using inquiry in the classroom to make teaching and learning chemistry innovative and fun. The presenters will describe an existing partnership designed to enhance science teaching and learning in the K-16+ community using exhibits and "snacks" that focus on inquiry. (abstract 5)

Presenters: **Dr. Lauria Stubblefield**, **Dr. Joseph Meynsse** and *Dr. Bobbie Remble* (Department of Curriculum and Instruction, Southern University, Baton Rouge Louisiana)

11:45am -12:30pm

## Concurrent Sessions

### Session A LCTCS Board Room, Louisiana Building Room 108

#### *STEM ENGINES: Undergraduate Research Collaborative*

Stem engines is a five-year, 2.7 million NSF-funded project that is exploring ways to engage community college students in authentic undergraduate research and train the next generation of the scientific workforce. (abstract 17)

Presenters: **Dr. Tom Higgins** (Harold Washington College), **Dr. Wily Hunter** (Illinois State University) and **Dr. Stephanie Pearson** (Illinois State University)

### Session B Cypress Room 103

#### *Pearson- Prentice Hall: Mastering General Chemistry: On-line Homework Assessment*

Mastering Chemistry is the first adaptive-learning on-line tutorial and assessment system for general chemistry. This session will demonstrate the mastering chemistry program, discuss the advantages/disadvantages and show how instructors can use this tool to save time, energy and assist in identifying student problems. (abstract 11)

Presenter(s): **Don Oneil** and **Kensie Hingle** (Pearson Education-Engineering, Science, Math and Technology)

### Session C Cypress Room 129

#### *Elementary Classroom Visits: A General Chemistry Laboratory Project*

Students taking the principles of General Chemistry II course on the Coon Rapids Campus of Anoka-Ramsey Community College participate in classroom visits at nearby elementary schools to perform chemistry demonstrations and hands-on activities. This session discuss the evolution of this program, objectives and activities, and its incorporation as an integral part of the laboratory course.(abstract 7)

Presenter: **Mr. Lance Lund**, *Assistant Professor of Chemistry* at Anoka-Ramsey Community College, Minneapolis, Minnesota and the *2009 Chair Elect* for the 2YC3 Membership Committee.

### Session D Room Cypress 125

#### *The Effects of Globalization on Trends in Research and Development (R & D)*

This session will describe the role of R & D in advancing the frontiers of knowledge, developing novel technologies and bringing new products to the marketplace. It will also discuss globalization and its effect of R & trends both nationally and internationally. (abstract 18)

Presenter: **Dr. Mahmood Sabahi**, *R & D Advisor*, Albemarle, Chemical Corporation, Baton Rouge, Louisiana

12:30pm - 1:30pm

## **LUNCH**

Magnolia Conference Room 110

1:45 PM - 4:00 PM      **Judging of Student Posters**  
Magnolia Library Foyer- West

1:45pm - 2:30pm      **Concurrent Sessions**

### **Session A      LA 108**

#### *Institutionalizing Undergraduate Research*

The Council on Undergraduate research (CUR) was awarded a grant from the NSF CCLI Program to support regional workshops on institutionalizing undergraduate research. The presenters have served as facilitators for two of the workshops and will share information from the workshops, insights gleaned from their own experiences working with undergraduate researchers and suggestions on how to approach the quest to institutionalize undergraduate research. (abstract 9)

Presenters: **Dr. David Brown** (Department of Chemistry, Southwestern College, Chula Vista, California), **Dr. Mary K. Boyd** (Department of Chemistry, Georgia Southern University, Statesboro, Georgia)

### **Session B      Cypress Room 103**

#### **CHEMISTRY IN CONTEXT**

The President and CEO of LaTEst IDEas Inc will discuss the latest contextual, pedagogical features, and innovations employed in the 2006th and 2009th editions of "Chemistry in Context." As a prolific user on this text since its inception and as editor-in chief for the latest editions; Eubanks will share about the utility of this text from diverse perspectives. (abstract 4)

Presenter: **Mrs. Lucy Eubanks**, *President and CEO of LATEst IDEas Inc* (Clemson, Southern Carolina); *Editor in Chief* (2006th and 2009th Editions of *Chemistry in Context*) (abstract 4)

### **Session C:**

#### *Integrating Research and Laboratory Instruction: Using Computers to Engage Students in Experiment Design and Evaluation*

The nationally recognized importance of research experience for undergraduates and inquiry-centered learning is difficult to reconcile with time limitations in most laboratory courses. This presentation will describe a course structure that uses a rotating "research extension" for each experiment, and involves all students in both the experiment design and evaluation components of the scientific method. (abstract 10)

Presenter: **Dr. John R. Amend**, *Retired Professor Emeritus* (Montana State University) and *President of MicroLab Inc.*, Bozeman, Montana

3:00pm - 4:30pm

**General Session**

LA 108

*Revising the ACS "Guidelines for Chemistry in the Two-Year College"*

This session will involve interactive discussions on the emerging changes to the ACS "Guidelines for Chemistry at Community Colleges. (abstract 15)

Presenter and Facilitator: **Dr. Delores C. Aquino**, ACS Task Force Member, Immediate Past 2YC3 Chair and Professor of Chemistry, San Jacinto Central College, Pasadena, Texas

4:30pm - 5:30pm

**Glass Blowing Demonstration**

Cypress 129

Presenters: **Mr. Jack Korfhage**, Senior Scientific Glassblower, Albemarle Chemical Corporation and **Mr. Ben Spaulding**, Glassblowing Apprentice and former BRCC Division of Math and Sciences student

5:30pm-6:30 pm

MeasureNet FUN-SCI Program

Cypress 103

This session will present examples of the unique academic program called the "FUN-SCI" experiments developed by the FUN-Science Academics Group/Chem-Chek. Experiments in this program are strategically geared for undergraduate teaching of analytical instrumentation and entry-level research.

Presenter: **Dr. Jerry DeMenna** (FUN Science Academics Group, Sacred Heart University, MeasureNet Technology, Ltd, Cincinnati, Ohio)

5:50-6:30

Tour of BRCC Lab Instruments-Varian Instruments (**Patrick Simmons** and **Byron Taylor**)

Cypress 125

6:30pm - 8:30pm

**Social and Banquet**

Bienvenue Student Center

Banquet Speaker: **Dr. Shirley Malcolm**

*Head of the Directorate for Education and Human Resources for the American Association for the Advancement of Science (AAAS)*

**Saturday, April 5th**

8:00 AM TO 2:00 PM

**Conference Exhibits**

8:00am - 9:00am

**Conference Registration & Continental Breakfast**

Lobby of LCTCS Board Room, Louisiana Building Room 108

9:00am - 10:15am

### **Plenary Session**

LCTCS Board Room LA 108

Keynote Address:

*Preparing Students for Global Challenges: "Quality Teaching and Mentoring are the Keys"*

Presenter: **Dr. Diola Bagoyoko**, *Distinguished Professor of Physics and Teacher of the Year, U.S. Presidential Award For Excellence In Science, Mathematics and Engineering Mentoring recipient and Director of the Timbuktu Academy, Southern University, Baton Rouge, LA;*

10:15am - 10:35am

### **Refreshments**

Lobby of LCTCS Board Room, Louisiana Building Room 108

10:45am - 11:30am

### **CONCURRENT SESSIONS:**

#### **STUDENT SESSIONS A** Cypress 125

I. *Mid-IR Characterization of Volume Holographic Gratings and Nanofabrication of Optical Structures*

An NSF funded project involving a collaborative research venture between a community college and small business enterprise with goals of characterizing Ondax VHGs in the IR spectral region and to explore nanofabrication of optical structures in VHGs through chemical etching. (abstract 19)

Presenter: **Manuel Alingog**, Department of Chemistry, Southwestern College, Chula Vista, CA

II. *Facilitating Access For Science Student Success (Fass2) Peer Led Team Learning (PLTL)*

The Facilitating Access for Science Student Success program initiated the Peer Led Team Learning Workshop Chemistry series where students worked in collaborative teams facilitated by trained student leaders who were performing well or had either successfully completed the course. (abstract 23)

Presenter: **Chris Felton** (Science Major, Baton Rouge Community College)

III. *Increasing Homework Motivation in Urban Middle School Student*

Urban educators experience a unique set of conditions in the process of teaching and learning. Action research is a dynamic tool that lends itself to the individuality of any condition that may arise in the setting of urban education. (abstract 22)

Presenter: **Ms. Toneka Hayward**, Doctoral Candidate; Clark Atlanta University, College of Education

## **SESSION B** Cypress 103

### *Strengthening Minority Access to Research and Training (SMART) Program*

The Strengthening Minority Access to Research and Training (SMART) program at Southern University-Baton Rouge in an HBCU-UP (Historically Black Colleges and Universities Undergraduate Program) implemented to address the historical under-representation of minorities in science, technology, engineering and math (STEM) disciplines of study and the undergraduate and doctoral levels. Funded by the National Science Foundation (NSF), this program is designed to enhance the research and training infrastructure at the university. (abstract 16)

Presenter: **Dr. Karen Crosby**, *Assistant Professor Mechanical Engineering and SMART Co-Principal Investigator*, Southern University, Baton Rouge

## **SESSION C** Cypress 120

### *ChemEd Bridges: NSF Supported 2YC Faculty Development*

ChemEd Bridges is a new project sponsored by the National Science Foundation (NSF) whose aim is to increase the number of two year college chemists undertaking research through building collaborative bridges with faculty from four year institutions. (abstract 3)

Presenter: **Dr. Harry Ungar**, *Assistant Professor of Chemistry*, Cabrillo Community College, Aptos, California.

11:45am -12:30pm

## **Concurrent Sessions**

### **Session A:** LCTCS Board Room; LA

#### *The Power Law of Performance*

The Power Law of Performance and Academic Preparedness index (API) is used to explain the dynamics behind student retention and success/ The Integrated Law of Performance (ILP) will also be used to show that applying the PLP to a variety of tasks over a large period of time enhances the performance of students in STEM areas or any discipline. (abstract 14)

Presenter: **Dr. Diola Bagayoko**, *Distinguished Professor of Physics and President and Founder of Southern University's Timbuktu Academy*.

### **Session B** Cypress 125

#### I. *Facilitating Access for Science Student Success (FASS2)*

Funding from the Louisiana Board of Regents Two-Year College Enhancement Program was utilized to implement integrated programming to provide access, mentor, and empower students for success in science study. (abstract 8)

Presenters: **Dr. Esperanza Zenon**, *Assistant Professor of Curriculum and Instruction*, Clark Atlanta University; *Former BRCC Instructor of Physics and Project Co-Director*; **Mrs. Karen Stephens**, *Project Director*

II. *Building Degree Programs in Environmental and Engineering Technology*

Faculty in the Division of Math and Sciences at Baton Rouge Community College have developed and are implementing new concentrations in applied Sciences. This session will discuss the building of these programs from the group up. (abstract 12)

Presenters: **Dr. Jo Dale Ales** Assistant Professor of Biology, **Mrs. Laura Younger**, Assistant Professor of Biology and **Dr. Francesca Mellieon Williams**, Instructor of Biology, Baton Rouge Community College Department of Natural Sciences

12:30pm - 1:30pm

**Lunch**

Magnolia Conference Room 110

1:45pm - 2:30pm

**Concurrent Sessions**

**Session A Cypress 120**

*Preparation of Undergraduate Students in Science for Research at the 2 Year Community College Level: Effective Use of Open Inquiry Projects*

This presentation will summarize how students became involved in an "Open Inquiry" research project that emerged as a result of routine academic activities in a chemistry course designed for science majors. (abstract 13)

Presenter(s): **Dr. Kenneth Maloney**, CASE Professor of the (Keep) and Retired Professor of Chemistry at Baton Rouge Community College), **Ms. Ana Frye**, former BRCC student and Secondary Science Instructor, Trinity High School, Weaverville, CA, and **Ms. Cecile Grisby**, former BRCC student and Health and Nutritional Professional with Woman's Hospital and the East Baton Rouge School System)

**Session B Student presentations Cypress 125**

I. *Curve-fitting and Deconvolution Methods Applied to Spectroscopic Measurements in Two State Chemical Systems: Acid-base indicators*

This project involves the application of UV-visible spectrophotometry to determine the pH of several solutions. Methodology involves deconvolution of overlapping spectral lines to achieve individual peak integration. (abstract 20)

Presenter: **Chona dela Cruz**, Department of Chemistry Southwestern College, Chula Vista, CA

II. *Formation of Aluminum Oxide Using Extruders*

This project describes a technical process for improving the yield of aluminum oxide in an industrial process employing the use of extruders. (abstract 21)

Presenter: **Mr. Gregory Manchester**, Chemistry Major, BRCC Department of Physical Sciences and *Chemical Technician*, BASF Wyandotte Corporation, Port Allen, Louisiana



- 2:30pm - 3:45pm      **Break**      *Sponsored by J. H. Freeman Publishers*  
Lobby of LCTCS Board Room, Louisiana Building Room 108
- 2:30pm - 3:30pm      **Meeting of student paper and poster presentation judges**  
Room 240 Cypress
- 3:00pm - 4:00pm      **Roundtable Discussion**  
LA 108
- Building Research Capabilities: Partnerships and Consortia that Facilitate Research at 2 and 4 Year Institutions
- Facilitator: **Ann Zanders**, *BRCC Executive Director, Institutional Advancement*  
Panelists: **David Brown, Tom Higgins, Diola Bagoyoko, Ken Maloney, Cecile Grisby, Anna Frye**
- 4:00pm - 4:30pm      **Conference Closing - LA 108**
- Presentation of student awards**

## Student Posters

1. *A Study of Eutrophication Affecting Using Crawfish Waste as a Soil Amendment* - **Torry Ingram**  
Research Advisors: **Dr. Aubrey Williams** (Southern University Department of Chemistry) and **Dr. Yemane Ghebreiyessus** (Southern University Department of Urban Forestry)
2. *Analysis of Heavy Metals Using the Ion Coupled Plasma Optical Emission System to Detect Heavy Metals in the Outer Shell of the *Amblema Plicata* Mussel from the Upper Mississippi* - **Syisha N. Morgan**  
Research Advisors: **Dr. Aubrey Williams** and **Dr. Samuel Washington** (Southern University Department of Chemistry and Center for Energy and Environmental Studies respectively)
3. *A Study of the Residual Effects of Residual Lead from Automobile Exhausts in Undisturbed Soil Environments* - **Gregory Cornell**  
Research Advisor: **Dr. Aubrey Williams** (Southern University Department of Chemistry)
4. *A Study of Shallow Well Water in the Lower Pearl River Basin Using the Ion Coupled Plasma Optical Emission System for Heavy Metal Detection in Well Water* - **Kristy Green**  
Research Advisor: **Dr. Aubrey Williams** (Southern University Department of Chemistry)
5. *3 Inch Double Gen for X-Ray Fluorescent Detector* - **Derrek Anderson**  
Research Advisor: **Dr. Peter Siddons** (Southern University Department of Physics)
6. *The Effects of *Neisseria Gonorrhoeae* on Expression of the Antimicrobial Peptide LL-37 in Human Epithelial Cells* - **Rolisha M. Jackson**, CCZARS (Center of Coastal Zone Assessment and Remote Sensing Research Program)  
Research Advisor: **Dr. Cindy Grove Arvidson** (Michigan State University)

7. *Alaska Summer 2007: Bearing Glacier Research Experience* - **Jacquole Landry** and **Mykel Delandro**, (CCZARS (Center of Coastal Zone Assessment and Remote Sensing Research Program)  
Research Advisor: **Dr. Lionel Lyles** (Southern University)
  
8. *Mid-Infrared Characterization of Volume Holographic Gratings and Nanofabrication of Optical Structures* - **Manuel Alingog** and **Héctor-Eduardo Mendoza Solano**  
Research Advisor: **Dr. David Brown** (Southwestern College)
  
9. *Curve-fitting and Deconvolution Methods Applied to Spectroscopic Measurements in Simple Two-State Chemical Systems: Acid-Base Indicators* - **Chona dela Cruz** and **Héctor-Eduardo Mendoza Solano**  
Research Advisor: **Dr. David Brown** (Southwestern College)