2012-13 LaSIP PROFESSIONAL DEVELOPMENT PROJECTS

COVER PAGE

Indicate content focus (Science, LIGO, ELA/Literacy, or Mathematics): Science **Grade Level(s) Targeted: 9-12** **Number of Targeted Participants:25** **Number of Targeted LA GEAR UP Schools: 3**	**School Districts To Be Served:** **Indicate high-need districts with an asterisk *** **Morehouse*, Union*, Richland*, Lincoln*, and Ouachita***

Name(s) of Submitting Institution(s) of Higher Education (Include Branch/Campus/Other Components):
Louisiana Tech University

Address of Institution of Higher Education (Dept/Unit, Street Address/P.O. Box Number, City, State, Zip Code):
PO Box 3163 Ruston, LA 71272

Title of Proposed Project:
C3: Chemical Concepts and Connections

Funds being requested for each funding cycle:

May 1, 2012 – June 30, 2013	July 1, 2012 – June 30, 2013	Total Requested
$76,902.79	$123,489.43	$200,392.22

Matching funds from partners:

IHE:	High-need LEA(s):	Other:
$61,184.91		

The signatories certify that the institution and the proposed project are in compliance with all applicable Federal and State laws and regulations.

Name/Title/Institution (if different from the primary institution listed)	Dept./Telephone No. Email Address	Signature
Principal Investigator **Dr. Glenn Beer**	SciTEC/318-257-2866 gbeer@latech.edu	
Co-Principal Investigator **Dr. William Deese**	Chemistry/COES/318-257-4878	
Campus Head or Authorized Institutional Representative **Dr. Dan Reneau**	**President, 318-257-3785** **reneau@latech.edu**	
Dean, College of Education **Dr. David Gullatt**	**College of Education/318-257-3712/** **gullattd@latech.edu**	
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Authorized Fiscal Agent **Mr. Joe Thomas**	**Finance and Administration/318-257-2769** **jthomas@latech.edu**	

2012-13 LaSIP PROFESSIONAL DEVELOPMENT PROJECTS

PROJECT ABSTRACT

Name of Institution (Include Branch/Campus): Louisiana Tech University

College/Department: SciTEC Center

Principal Investigator(s):Dr. Glenn Beer & Dr. William Deese

Phone: (318) 257-2866 Fax:(318)257-4753

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Title of Project: C3: Chemistry Concepts and Connections for Teacher Leaders

Abstract (maximum of 500 words): Address each item below in the order given:
(1) A brief paragraph describing the overall vision of the project
(2) The project's specific content focus and measurable objectives
(3) The high-need LEA(s) and targeted schools/districts involved
(4) The participants for which the project is designed (i.e., classroom teachers, special ed teachers, paraprofessionals, and/or administrators)
(5) The number of days & contact hours during the summers
& AY (6) The number of participants & content coaches
(7) The targeted grade levels
(8) The primary activities and proposed outcomes

The primary vision of the C3 Project is to provide high school (9-12) chemistry and physical science teachers an effective, well-designed, intensive PD experience which will improve chemistry content knowledge, model research-based pedagogical strategies, and increase conceptual understanding of chemical principles. There will be 25 high school educators selected for participation from the following target parishes: Morehouse, Ouachita, Lincoln, Richland, and Union. Each of the target parishes are identified as high need LEAs. Recruitment of teachers will also include additional LA GEAR UP parishes and high need LEAs.

The project will include 90 hours of rigorous professional development experiences and will be modeled on the highly-evaluated "Chemistry, Concepts and Connections for Teacher Leaders" project funded by NSF from 2002 through 2005. Staff from the original project and staff from other LASIP-funded LIGO projects are collaborating to ensure that the program maximizes effectiveness and improves student academic achievement in the discipline. To ensure that the two-week summer institute and four academic year follow-up days are effective, pre-and post-evaluations, including the General Chemistry Conceptual Examination (American Chemical Society Division of Chemical Education Exams Institute), will be administered to participants. Student performance will be measured by student scores on the PLAN an ACT tests.

TABLE OF CONTENTS

2012-13 LaSIP PROFESSIONAL DEVELOPMENT PROJECTS
PROJECT PROGRESSION TIMELINE OF ACTIVITIES TABLE

Time line	Contact Hours	Action/Activities	Measureable Objective for each activity	Staff Responsible
April 2012	N/A	Recruitment and Registration of Participants	Recruitment will last at minimum one month.	All Project Staff
May 2012	N/A	Notification of Selection for Project Participants	The 25 selected participants will be notified no later than the first week of May.	Ms. Diane Madden
July 2012	60 hours	Two-week, Ten-day, Residential Professional Development Workshop at Louisiana Tech University	Units 1-6 Louisiana Comprehensive Curriculum Chemistry	All Project Staff / Organized and Facilitated by Dr. Deese and Ms. Blanchard
September 2012	15 hours	Two-day Academic Year Follow Up	Unit 7 Louisiana Comprehensive Curriculum Chemistry	Dr. Bill Deese, Ms. Diane Madden and Ms. Lindsey Keith-Vincent
September 2012-February 2012	N/A	Two AYF Site Visits to each participant's Classroom		Ms. Diane Madden and Ms. Lindsey Keith-Vincent
February 2013	15 hours	Two-day Academic Year Follow Up	Unit 8 Louisiana Comprehensive Curriculum Chemistry	Dr. Bill Deese, Ms. Diane Madden and Ms. Lindsey Keith-Vincent
April 2013	N/A	Final Binders and Portfolios Submitted		Ms. Diane Madden and Ms. Lindsey Keith-Vincent

Proposal Narrative

1. Rationale and Need for the Project

President Barack Obama recently stated in his State of the Union Address that, "We know a good teacher can increase the lifetime income of a classroom by over $250,000. A great teacher can offer an escape from poverty to the child who dreams beyond his circumstance… Most teachers work tirelessly, with modest pay, sometimes digging into their own pocket for school supplies -- just to make a difference." In order to be an effective teacher, one who makes an impact on the lives of his or her students, individuals must have not only content knowledge but also a firm grasp of instructional and pedagogical strategies to meet the needs of students. Teachers must also be cognizant of project implementation and initiatives at the state and national levels.

Teachers also need resources for supplies to ensure that, particularly in STEM disciplines, students learn by research based inquiry strategies and exploration. Students need opportunities to learn by doing and witness through guided inquiry the process of science. Over 50% of Louisiana students live in poverty. It is essential that educators provide an alternative lifestyle to that poverty through the promise of a quality education. According to the report card for STEM education published in 2011 by STEM Connector, there will be at minimum 69000 "STEM-related jobs Louisiana will need to fill by 2018." It is anticipated that students entering the STEM fields will make an average of $74958.00 annually. Students excelling in STEM disciplines with the help of quality teachers can reach those goals and fill those positions. NAEP scores from 2009 indicate that in both science and Mathematics, Louisiana lags behind the national average. There is much evidence that Louisiana is not as effective as some states at engaging students in STEM concepts such as Chemistry.

Currently Louisiana also has a STEM Alliance, established, " to enhance the preparation and effectiveness of STEM educators." There are partnerships between regional hubs such as museums and institutions of higher education. It is ideal that in the spirit of the alliance, LASIP partner with Louisiana Tech University's SciTEC Center, College of Engineering and Science, and IDEA Place Math and Science Center to engage teachers in the inquiry-based instructional

practices for Chemistry and Physical Science. With the support of LASIP, and the desire to impact the state, C3 can enhance teachers' skills in order to improve their students' learning of chemical principles effectively, ultimately sparking an interest in the field and inspiring entry into post-secondary studies and the lucrative STEM occupational arena.

A. Detailed Profile of Students and Teachers to be served

Teachers and students from the following districts will be served: Morehouse, Union, Richland, Lincoln, and Ouachita. All of the districts to be served are high need LEAs. There will be 25 9th-12th grade Chemistry teachers selected for participation in the project. The table below indicates pertinent information as it relates to each district to be served. Note that all parishes that will be targeted are high need LEAs. All parishes targeted also have at least thirty percent of the students in the 8th grade scoring at approaching basic or unsatisfactory on the LEAP exam as reported in the 2011 data.

*Identified as High Need LEA

District	% Free and Reduced Lunch	% Minority	% Highly Qualified Teachers	LA GEAR UP School	LEAP 8TH Science Approaching Basic	LEAP 8th Science Unsatisfactory
Morehouse*	82.8	67.79	96.7	X	33	4
Union*	77.4	53.3	91.9	X	31	14
Richland *	80.5	52.9	85.5	X	30	20
Lincoln*	59	51.9	99.7		22	17
Ouachita*	57.79	36.00	94.7		24	9

B. Specific Content Needs of Students and Teachers

It is evident through the scores reported through the Louisiana Department of Education above, that there is a dire need for students to gain a better understanding of science content

knowledge. Chemistry has been found by many to be challenging subject matter. It is imperative that Louisiana high school students are not only adequately prepared for the material, but Louisiana teachers must also be knowledgeable in the art of conveying the information to the students in an engaging and unique fashion. The C3 project seeks to not only equip teachers with necessary knowledge but to also inspire them to seek additional opportunities to grow as professional educators and life-long learners.

2. Project Design

During the summer institute and AY follow-up workshops, content development will occur as the project staff model research-based strategies. Units will follow a leaning cycle approach where each new topic will be introduced by an exploratory activity. Traditional lecture will be kept to a minimum. Participants will work in small groups as they make observations, design experiments, collect and analyze data and construct their own knowledge of chemical concepts. Results will be organized and shared with peers via group presentations. Literacy strategies will be integrated throughout each unit. Vocabulary will be introduced on a need-to-know basis. As the learning cycles are renewed, understanding and confidence will be constructed through various methods. Concept mapping, demonstration assessments, graphing, molecular-level drawings, and other literacy involvements will be utilized. Step by step laboratory procedures will not be conducted. Investigations will be guided inquiries where the participants are involved in procedure development. Card sorts, graphic organizers, and peer-led instruction will be routinely involved. Throughout each day, as new concepts, laws, and discoveries are encountered, a "Time-line Card" will be read and taped to the timeline on the wall. This helps integrate a historical perspective to chemistry and stresses that like all science, chemistry is a human endeavor.

a. Measureable Objectives

In order to meet the goals of the project and measure success, we'll use the following objectives:

<u>LaSIP Goal 1</u>: Increase student achievement on State high-stakes testing.

Goal 1, Objective 1:

Students of participating Chemistry teachers will make a higher score on the ACT than projected by PLAN and score higher than students of teachers who did not participate in the project.

Goal 1, Objective 2:
Students of participating Chemistry teachers will show a 20% gain in Average Percent Score on the Quality Core Chemistry post-assessment as compared to the pre-assessment.

LaSIP Goal 2: Plan effective PD based on the high-need LEA(s)/schools' data-driven needs an developed using research-based PD strategies that will take place in summer institutes, during the academic year (AY), and/or through on-line or web-based assignments and job-embedded activities.

Goal 2, Objective 1:
Chemistry content and conceptual knowledge as well as pedagogical practices and research based literacy strategies, as recommended in LACLiP, will be used to meet the needs of the participants as indicated by district 8th grade Science LEAP data.
Goal 2, Objective 2:
A minimum of 80% of project participants will post materials, reflect, and collaborate on the Moodle site established for the class through Louisiana Tech University's College of Education OPEO site.

LaSIP Goal 3: Increase leadership capacity and pedagogical skills for target schools through school/district buy-in, school-based implementation, and mentoring during the AY.

Goal 3, Objective 1: At minimum 75% of project participants will score higher on the post Chemistry Conceptual Exam by ChemED than the pre-test.
Goal 3, Objective 2: All participants will score at least 20% higher on the post ACT Quality Core Chemistry Assessment.

b. Specific Subject-Matter Content/Instructional Strategies

The C3 project will address chemistry content, pedagogical practices, and literacy strategies. Participants will engage in inquiry-based activities and "snack" construction to explore chemistry concepts. Provided below is a list of specific examples:

Chemistry Content	Pedagogical Skills	Literacy Strategies
Scientific Method	Learning Cycle	AlphaBoxes
Atomic Theory	Cooperative Learning	Brainstorming
Gas Laws	Classroom Management	Card Sorts
Chemical Reactions	Laboratory Safety	Concept Maps/Graphic
Reaction kinetics	Inquiry Learning	Organizers
Spontaneity	Experimental Design and Data	Demonstration Assessments
Mole Concept	Analysis	Frayer Model of Vocabulary
Stoichiometry	Graphing and Graph	Development

The following literacy strategies were used in the LASIP-funded RIPPLE projects and will be incorporated in the C3 project as well. Many of these are from the Content Literacy Strategies developed by Dr. William G. Brozo for the Louisiana Comprehensive Curriculum, May 2008. The current LACLiP initiative focuses on a need for research based strategies. Brazo's strategies have been found to be effective.

- **AlphaBoxes**: AlphaBoxes is a graphic organizer that can not only activate students' prior knowledge about a topic, but can be used to collect vocabulary during a unit of study. It is like the student's own personal word wall. If this graphic organizer is given to students at the beginning of a unit, they can fill in all of the vocabulary they know about that topic. The teacher can quickly assess student knowledge. As the unit progresses, students add to the AlphaBoxes as new words are introduced. AlphaBoxes also can be used to stimulate writing about the topic. Students will be able to refer back to this graphic organizer to get the appropriate words as they explain their learning.
- **Brainstorming**: Brainstorming involves students working together to generate ideas quickly without stopping to judge their worth. In brainstorming, students in pairs or groups freely exchange ideas and lists in response to an open-ended question, statement, problem, or other prompt. Students try to generate as many ideas as possible, often building on a comment or idea from another participant. This supports creativity and leads to expanded possibilities. The process activates students' relevant prior knowledge, allows them to benefit from the knowledge and experience of others, and creates an anticipatory mental set for new learning.

- **Card Sorts:** Vocabulary knowledge is one of the five essential components of effective reading. The content areas are packed with concepts and technical vocabulary that students must understand if they are to be successful readers and learners. A strategy designed to help students learn content-specific terminology is the use of vocabulary cards. This strategy has been shown to increase depth and breadth of word knowledge, resulting in greater comprehension.
- **Concept Maps/Graphic Organizers**: Graphic organizers are visual displays teachers use to organize information in a manner that makes the information easier to understand and learn. Graphic organizers are effective in enabling students to assimilate new information by organizing it in visual and logical ways. Flowcharts, semantic maps, t-charts, webs, KWL charts, and Venn diagrams are all examples of graphic organizers. Using graphic organizers is associated with improved reading comprehension for students.
- **Demonstration Assessments:** Demonstration assessment is an effective pedagogical tool for improving the learning of concepts. In demonstration assessments students view a short demonstration, record their observations, and write an explanation of what they observed. Rubrics, or formalized assessment scales, are applied to score student responses and promote class discussion. Demonstration assessments promote critical thinking and deeper conceptual understanding of important principles.
- **Frayer Model of Vocabulary Development:** The Frayer Model is a graphical organizer used for word analysis and vocabulary building. This four-square model prompts students to think about and describe the meaning of a word or concept by defining the term, describing its essential characteristics, providing examples of the idea, and offering non-examples of the idea. This strategy stresses understanding words within the larger context of a reading selection by requiring students, first, to analyze the items (definition and characteristics) and, second, to synthesize/apply this information by thinking of examples and non-examples.
- **How to write an experimental report:** Step-by-step process of how to write an experimental report using data collected from hands-on experiments conducted by the student.

- **RAFT Writing:** Once students have acquired new content information and concepts they need opportunities to rework, apply, and extend their understandings. RAFT writing is uniquely suited to do just that. This form of writing gives students the freedom to project themselves into unique roles and look at content from unique perspectives. From these roles and perspectives, RAFT writing has been used to explain processes, describe a point of view, envision a potential job or assignment, or solve a problem. It is the kind of writing that, when crafted appropriately, should be creative *and* informative.
- **Science Learning Logs:** A learning log is a notebook, binder, or some other repository that students maintain in order to record ideas, questions, reactions, and reflections, and to summarize newly learned content. Documenting ideas in a log about the content being read and studied forces students to "put into words" what they know or do not know. This process offers a reflection of understanding that can lead to further study and alternative learning paths It combines writing and reading with content learning.
- **Timelines of Scientists:** A scientist or discovery is presented each day as it pertains to the content area being taught. Students make real world connections with the content to the actual person and/or event.
- **VVWA: Verbal Visual Word Association** - The VVWA strategy puts together in a graphic a vocabulary word and its definition with both a visual of the term and a personal association of characteristic of the term. This strategy helps students learn vocabulary on their own and helps them retain the new vocabulary through visual characteristic associations.
- **Word Wall:** A word wall is an organized collection of words prominently displayed in a classroom. This display is used as an interactive tool for teaching reading and spelling to students. They teach students to recognize and spell high frequency words, see patterns and relationship in words build phonemic awareness skills and apply phonics rules. Word walls also provide reference support for students during reading and writing activities. Students learn to be independent as they use the word walls in daily activities.

Chemistry Content

The eight units of the Louisiana Comprehensive Curriculum for Chemistry will serve as a platform for the order of topics in the workshop sessions. The initial C3 project funded by NSF

was very influential to this document. The Comprehensive Curriculum is closely aligned with the GLE's for chemistry and scientific inquiry. A direct reference to both the Comprehensive Curriculum and the GLE's will be stated for each activity. Below each unit label listed are three examples of some of the activities in which the participants will engage.

Summer Workshop-Unit 1: Measurements and Problem Solving

Activities: 1. The Giant Ruler
2. Which Container Should You Use
3. Dimensional Analysis and Conversion Problems

Summer Workshop-Unit 2: Matter

Activities: 1. The Hand in the Water Puzzle
2. The Cartesian Diver
3. Molecular Level Drawings – Solids, Liquids, Gases

Summer Workshop-Unit 3: Atoms and the Periodic Table

Activities: 1. Atomic Theory Timeline Card Sort
2. Explaining the Laws of Combination (Dalton's Atomic Theory)
3. Mendeleev's Card Sort (Build a periodic table)

Summer Workshop-Unit 4: Chemical Bonding and Formation of Compounds

Activities: 1. Building Atomic Orbitals
2. Building Molecular Models (VSEPR models)
3. How Polar Is It? (Ionic vs. Molecular compounds)

Summer Workshop-Unit 5: Moles, Reactions and Stoichiometry

Activities: 1. Counting Atoms (Mole analogies)
2. Balancing Chemical Reactions with Colored Paper Clips
3. Grams to Moles to Moles to Grams Carousel

Summer Workshop-Unit 6: States of Matter, Energy Changes and LeChatelier's Principle

Activities: 1. Plexiglas and BBs (Models of the Phases)

2. The Superheated Steam Demonstration

3. Fish Tank Equilibrium Demonstration and Analogies

Academic Year Follow-up- Unit 7: Solutions and Acids and Bases

Activities: 1. The Cabbage Juice Caper

2. Beads in a Bag Analogies for pH

3. Dilutions and Solutions

Academic Year Follow-up -Unit 8: Carbon and It's Compounds

Activities: 1. Ball and Stick Models of hydrocarbons

2. What's Its Function? (functional groups)

3. How Many Isomers Can You Make?

Snack-Like Samples

The IDEA Place Math and Science Center has a rich history of collaboration with the Exploratorium in California. Currently there is a set of more than 10 exhibits on loan from the stellar museum. The collection includes a Giant Tornado, the Aeolian Landscape, and even a Pendulum Snake. Participants will visit The IDEA Place on Louisiana Tech's campus during one of the academic year follow up sessions and explore the exhibits on site. The majority of the C3 staff have also attended professional development sessions at the Exploratorium related to inquiry-based instruction and "snack" construction. In past projects, teachers created Exploratorium "snacks" tied closely to exhibits. The Exploratorium promotes the use of snacks or small-scale exhibits to explore STEM content. The distribution of materials useful in conducting activities and demonstrations to teachers is important to the success of C3. As in previous LaSIP projects at Louisiana Tech, apparatuses and materials for activities will be assembled by the participants. In the spirit of Exploratorium "Snacks", these kits will help ensure that project activities and demonstrations will be integrated into school systems. At least five kits will be constructed including the following:

1) A plexiglas box with a volume of 22.4L,
2) Styrofoam Egg models of atomic orbitals, and
3) A set of large ball and stick molecular models.

Other kits will be developed based on feedback from participants concerning their needs.

c. Delivery Method

1.Participant Selection Process

Louisiana Tech University staff will utilize electronic correspondence and mailers to recruit additional participants. Information and applications will be disseminated through the central offices in each target district and through various other science-related organizations such as LSTA. Official recruitment will begin following notification of the award. Paper applications will be received by the Office of Professional Education and Outreach and reviewed by project staff. Selected applicants will be notified of selection no later than the first week of May. Once notified, participants will receive additional information related to the summer workshop sessions, including location, time, and lodging details. The information will also be posted on the Louisiana Tech University College of Education Office of Professional Education and Outreach site.

In order to be selected for participation, applicants must fulfill the qualifications set forth by the Louisiana Department of Education to be deemed a teacher in Louisiana and teach Chemistry or Physical Science. Participants will contribute to the achievement of the project's objectives by attending at minimum85% attendance of total project hours and submitting a project portfolio. Administrators from each selected participant's school and the participant will be required to sign a letter of agreement indicating that all project requirements such as attendance and project portfolios will be addressed.

2.Contact Hours

The design of this project will be framed after previously funded LASIP LIGO Science projects and the NSF-funded C3 project. Program components include a total of 90 hours of direct instructional contact. Components are listed as follows:

- A 10 day, 60-hour residential summer institute to be held July 2012 on the campus of Louisiana Tech University.

- Graduate credit for a three-hour course through Moodle on the site for Louisiana Tech University's Office of Professional Education and Outreach.
- Two two-day workshops totaling 30 hours on the campus of Louisiana Tech University.
- Documentation of project implementation through participants' individual project portfolios.

3.Stipend Payment Option

Attendance is expected for all 90 hours of the project . Participants will receive $25 per hour for attendance and participation at the summer institute and the academic year follow up sessions as indicated by sign-in documentation (Option A).

4.Use of Instructional Coaches/Teacher Leaders

With the implementation of the Common Core State Standards in Louisiana schools by 2014, it is imperative that our teachers are adequately prepared for the transition. ACT's Quality Core program is 100% aligned with the Common Core State Standards and will provide an ideal transition for the Chemistry teachers into more rigorous and relevant Chemistry material before Louisiana's full-scale implementation. Quality Core assessments will be used during the project to familiarize the teachers with the effective transitional material while also helping increase conceptual and content Chemistry knowledge. The Louisiana Comprehensive Literacy Curriculum will also be utilized to ensure that the participants are teacher leaders in the Louisiana initiative. The Common Core State Standards currently include a literacy component with respect to science. Use of the LACLiP plan that promotes best practices will again ensure that project participants are on the forefront of state and national education initiatives. Brazo's strategies will be the strategies to use to meet LACLiP recommendations. In order to foster leadership among participants, C3 staff will maintain contact and continue mentoring through the Moodle coursework in Fall 2012, site visits, and academic year follow up meetings.

5.Plan for Providing Feedback and Support

The Site Coordinator will make a minimum of two (2) visits per teacher during the academic

year, between August and March. The LaSIP Observation Tool (LOT) will be used during observations at each of the site visits. Correspondence with participants will occur before the site visits and a follow up contact will occur after the site visits transpire. During the fall of 2012 participants will also engage in online coursework related to the Chemistry project. The Moodle site will be monitored, and the course will be facilitated by Ms. Diane Madden. Ms. Madden will provide feedback to participants related to the posts on the discussion boards and the uploads. Participants will utilize Moodle to discuss effective implementation of project strategies and collaborate with colleagues from the summer sessions on the creation of new and exciting applications for the information and material. All participants will be given contact information for all project staff during the first summer session week to ensure that participants feel comfortable contacting any of the staff with questions, comments or ideas via email, mail, or phone. Social networking sites such as Facebook will also be utilized to establish a project page where pictures, videos, materials, and comments can be shared to highlight project successes. Photo and video waivers will be signed by all participants.

6.Plan for Project Dissemination

Project staff and participants will be encouraged to share presentations at state and national conferences and publish articles in the local newspaper and refereed journals. Teachers will also be asked to engage in meaningful discussion and reflection via Moodle. Participants will, too, be encouraged to present project materials to other staff and faculty in their schools and districts.

d. Collaborative Partnerships and Participant Recruitment

The staff of C3 has a lengthy history working with Louisiana teachers and teachers throughout the nation. The Office of Professional Education and Outreach within Louisiana Tech University's SciTEC Center, reaches hundreds of educators and counselors each fall. Through the years of experience, project staff members have formed strong relationships with partner districts throughout the state. District support for this project is evident by the large amount of feedback from teachers and administrators as indicated by the signed commitment letters attached. In service educators from the targeted parishes will benefit greatly from the material

and the overall professional development experience. The consistent correspondence and support from project staff will ensure effective implementation of project strategies and creation of new ideas and opportunities for participants.

3. Quality of Key Personnel

Dr. Glenn Beer, a certified mathematics teacher and Director of SciTEC, a K-12 science/math education outreach center, will serve as the Principal Investigator for the project. Dr. Beer is an Assistant Professor in the College of Education and manages the operation of the IDEA Place Math & Science Discovery Center, the Louisiana Tech Planetarium, and the NASA Educator Resource Center. In addition, in fulfillment of the mission of SciTEC, Dr. Beer has 12 years' experience developing and directing professional development programs for teachers of both science and math. As Director of SciTEC, Dr. Beer manages approximately $2 million per year in externally funded projects promoting student achievement and school improvement through various professional development initiatives. Dr. Beer will handle all project administrative duties including the oversight of the project budget, the analysis of project data, and the preparation and submission of all reports. He will consult on the development of professional development materials for the project and serve as a member of the instructional staff. **Dr. William C. Deese**, Professor of Chemistry, serves as Co-PI, a content specialist, and a member of the instructional team. He has served as PI and Co-PI on numerous science education projects and was the primary content specialist and instructional leader on the NSF-funded Chemistry Concepts and Connections Program. His original program will be the basis for the proposed C3 project. With over 30 years' experience in education, Dr. Deese is also responsible for many of the activities and documents within Louisiana's Comprehensive Curriculum for Chemistry. He also served as a member of a team that developed an integrated science/science education course for pre-service education teachers. **Diane Madden** will serve as Co-PI. She has 15 years' experience teaching in high school science classrooms (including physical science) and over 30 years in education. Ms. Madden served in this capacity for the Best of RIPPLE IV project. Ms. Madden has 12 years experience as a professional developer and has attended a Jim Knight Instructional Coaching workshop in Kansas City. In addition, she attended the Inquiry Institute at the Exploratorium in February 2009. **Lindsey Keith-Vincent** will serve as Site Coordinator for the project. The site coordinator's primary responsibilities will be to conduct visits to project

participants, collect and help analyze project data, participate as an instructional team member in the follow-up workshops, and review participants' portfolios. She has served in this capacity for LASIP- funded RIPPLE and other projects. She is a former classroom teacher with certification in Secondary English and Biology. She also serves as the Museum Educator for the Louisiana Tech University IDEA Place. **Mary Helen Blanchard** will serve as a principal advisor and literacy specialist. Ms. Blanchard has worked in education over 30 years and has recently become a children's author. She works with the Cain Center at LSU in Baton Rouge, LA and has a wealth of experience in professional development for pre- and in-service teachers. Ms. Blanchard has collaborated with project staff on the previously-funded LASIP RIPPLE projects hosted at Louisiana Tech University.

4. Quality of Project Evaluation

Below are the three objectives of C3 and the assessments that will be used to determine if the project is successful:

1. We plan to increase student achievement and content knowledge in Chemistry to be reflected on the end of course exams and PLAN by spring 2013, through increased teacher content knowledge. Student achievement will be evaluated by student performance on the PLAN and ACT assessments. Louisiana has recently submitted a waiver to the US Department of Education to opt out of NCLB and utilize ACT assessments such as EXPLORE, PLAN, and ACT to monitor student achievement. It is thought that use of these tools will not only determine any change in the achievement of the students in the STEM disciplines, but it will also prepare students for the evaluation they will now be accountable for and prepare teachers for the rigorous and relevant content that is included in the new assessments. The scores of the students on the plan will also indicate projected performance on the ACT evaluation. Students of participating C3 teachers will be expected to score higher in the STEM disciplines as evaluated by the summative exam administered in spring 2013 as a result of the teachers engaging instruction stemming from the summer workshop.

2. Our goal is to plan and execute effective PD based on the high-need LEAs/schools' data-driven needs and developed using research-based PD strategies, particularly literacy strategies,

that will take place in summer institutes, during the AY and/or through online or web-based assignments and job- embedded activities. Teachers will be given the diagnostic assessment, Conceptual General Chemistry Exam as a pre and post assessment to determine growth with respect to basic chemistry content knowledge. The evaluation is created and distributed by CHEM ED EXAMS and includes 60 items related to basic chemistry concepts. Teachers will also be assessed using Quality Core Chemistry Assessments by ACT. The Quality Core evaluation, used also as a pre and post tool will monitor growth in content knowledge.

3. It is our intent to increase leadership capacity and pedagogical skills for target schools through school/district buy-in, school-based implementation, and mentoring during the AY. A rubric will be used to indicate which components of the project were completed by the participants and to what degree they were successful with respect to component completion. The criteria evaluated will include implementation as observed during formative assessments during site visits, information submitted related to encouraged dissemination of information to colleagues, and overall change in student engagement and performance as measured by student achievement on exams. Additional formative assessments that will be used throughout the project include informal observations during the summer and academic year follow up workshops and site visits, discussion and reflection during not only the workshops but during the academic year on Moodle, daily exit slips including "Two Stars and a Wish," and learning logs. Teachers will also utilize the MOODLE forum to collaborate and obtain additional resources related to Chemistry and other STEM education initiatives.

APPENDIX A

BUDGET REQUEST FORM

LOUISIANA SYSTEMIC INITIATIVES PROGRAM

PROPOSED PROJECT BUDGET REQUEST - FORM BR

PROJECT NAME: C3: Chemisty Concepts and Connections

PROJECT CONTENT AND STRAND FOCUS:Science: Chemistry

PROJECT DIRECTOR, UNIVERSITY:Glenn Beer, Louisiana Tech Unievsrity

A	B	C	D	E	F
Reference	**Budget Item**	**Brief Description of Budget Item**	**Funds Requested 7/1/12-9/30/12 Max of $80k for this period**	**Funds Requested 10/1/12-6/15/13**	**Total Funds Requested**
A. University Employed Staff					
1	Director/Faculty Member	Glenn Beer	0.00	3,750.00	3,750.00
2	Co-Director/Faculty Member	Bill Deese	4,141.50	12,424.50	16,566.00
3	Faculty Member	Diane Madden	0.00	12,000.00	12,000.00

4	Faculty Member		0.00	0.00	0.00
5	Student worker	12 weeks, 20 hours per week at 7.25	580.00	1,160.00	1,740.00
6	Secretary/Student Worker	Misty Byrd	0.00	6,000.00	6,000.00
7	Other (Specify)	Mary Helen Blanchard	0.00	4,000.00	4,000.00
8	Other (Specify)	Lindsey Keith-Vincent	0.00	12,600.00	12,600.00
9		**Total Salaries and Wages**	**$ 4,721.50**	**$ 51,934.50**	56,656.00
10	Fringe Benefits: Rate__41.86%__ ____		1,733.63	21,254.21	22,987.84
11		**Total Salaries, Wages, and Fringe**	**$ 6,455.13**	**$ 73,188.71**	**$ 79,643.84**
B. Staff Not University Employed					
12	Consultant		0.00	0.00	0.00
13	Consultant		0.00	0.00	0.00

14	Consultant		0.00	0.00	0.00
15		**Total Staff Not University Employed**	**0.00**	**0.00**	**0.00**
16		**Total Staff Costs**	**$ 6,455.13**	**$ 73,188.71**	**$ 79,643.84**
C. Participant Support					
17	Stipends	25*25*90	37,500.00	18,750.00	56,250.00
18	Employer Contributions on Stipends: Enter rate (TRSL 25.15%)		9,431.25	4,715.63	14,146.88
19	Substitute Pay		0.00	0.00	0.00
20	School Resource Materials		0.00	0.00	0.00
21	Project Supplies	25*300	5,000.00	2,500.00	7,500.00
22	Other		0.00	0.00	0.00

23	Other				
24		**Total Participant Support**	**$ 51,931.25**	**$ 25,965.63**	$ 77,896.88
D. Travel					
25	Staff Travel		0.00	6,000.00	6,000.00
26	Participant Travel		18,000.00	12,000.00	30,000.00
27		**Total Travel Costs**	**18,000.00**	**18,000.00**	**36,000.00**
E. Indirect Costs					
28		**Direct Costs Minus Participant Support**	**$ 6,455.13**	**$ 79,188.71**	**$85,643.84**
29	Indirect Costs	Line 27 x 8%	516.41	6,335.10	6,851.51
30		**TOTAL FUNDS REQUESTED**	**$ 76,902.79**	**$ 123,489.43**	**$ 200,392.22**
F. Core Costs					

31	Core Costs	$ 157,540.71			
32	Number of Participants	25			
33	**Core Cost per Participant**	**$ 6,301.63**			

APPENDIX B

BUDGET NARRATIVE

LaSIP 2012-2013 Professional Development RFP				
BUDGET NARRATIVE - FORM BN				
PROJECT NAME: Chemistry Concepts and Connections				
PROJECT DIRECTOR/UNIVERSITY: Glenn Beer, Louisiana Tech University				
A	**B**	**C**	**D**	**E**
Section 1				
Form BR Line Item	Staff Name and/or Title	Roles and Responsibilities	Cost Basis	Rationale/Justification
1	Glenn Beer, project Director	Overall management and administrative responsibilities including recruiting, logistics, etc. Also consultant for project design and implementation,	Based on monthly salary of $7,500. Funds are requested for 1/2 month with one month provided as match	Based on a 1.5 month commitemt to project with 1 month provided as institutional match

		various presentations, and reporting requirements.		
2	Bill Deese, Co-PI	Dr. Deese will assist with overall project management and assume primary responsibility for project instruction	Based on a monthly salary of 8283.00 with a 2.5 month commitment to the project and 1/2 month provided as match	Dr. Deese will commit to 15 instructional days, one month planning and an additional 1/2 month for administrative and reporting duties
3	Diane Madden	Ms. Madden will assist with overall project management, project development and implementation, and serve on the instructional staff for the project. She will also assist with academic year site visits	Based on an annual salary of $48,000 and a three month commitment to the project	Ms. Madden will commit 15 project days, one month planning, an additional 1/2 month for administrative and reposrting duties and approximately 1 month for site visits

5	Student Worker	A student worker will serve as a lab assistant to mix chemicals, set up labs, and provide general assistance to project staff	Based on 12 weeks of service, 20 hours per week @ 7.25 per hour (no fringe)	Student worker will be utilized during July, August and prior to and during academic year follow up sessions
6	Misty Byrd	Ms. Byrd will provide clerical support including processing stipends, travel, supply orders, etc.	Funds requested based on an annual salary of $36,000 and a 2-month commitment to the project	Time commitment is based on the estimated time needed to process all administrative paperwork associated with the project. It is expected that Miss Byrd will spend 60 days on project business.
7	Mary Helen Blanchard	Ms. Blanchard will provide literacy connections presentations during summer institute and academic year follow-up sessions. In additon, she will assist as a member of the instructional staff	Funds are based on a monthly salary of $4000 and a 1 month commitment to the project	Based on 15 project days and an additional 5 days of planninfg

8	Lindsey Keith-Vincent	Ms. Keith-Vincent will serve as the site coordinator for the project	Funds requested are based on a monthly salary of $3,150 and a four month commitment to the project	In addition to the .75 months of project days, Ms. Vincent will spend 1 month planning, 1 month in completion of required reports, and an additional 1.25 months visiting project participants
Section 2				
Form BR Line Item	Other Expenses	Description or Purpose	Cost Basis	Rationale/Justification
17	Stipends	25 participants will receive a stipend of $25 per hour for the 90 hours of PD provided	Based on $25 per hour for 90 hours or $2250 each participant	Prevailing rate for PD
18	Employer Benefits for stipends	Required by school systemns through which stipends are paid	based on current rate of 25.15%	Mandatory
21	Project supplies	Copying costs, binders, and workshop materials, including resources needed to facilitate project activities.	Estimated costs based on $300 per participant	Project materials include all materials necessary to conduct the project successfully

25	Staff Travel	Travel to schools for site visits as well as to LSTA for project presentations	Estimated travel based on current state travel guidelines	Travel necessary to accomplish project goals
26	Participant Travel	Travel to project site and for selected participant travel to state conference	$300 per participant for mileage and as many as 15 participants requiring overnight accommodations during project days	Travel paid based on current state tavel guidelines

APPENDIX C

COST SHARE WORKSHEET

PROPOSED COST SHARE - FORM CS				
LaSIP PROFESSIONAL DEVELOPMENT RFP 2012-2013				
PROJECT NAME: Chemistry Concepts and Connections				
PROJECT DIRECTOR, UNIVERSITY: Glenn Beer, Louisiana Tech University				
A	**B**	**C**	**D**	**E**
Description	**Type of Matching Funds (Cash or In-Kind)**	**Partner Providing Matching Funds (University, District, School, or Private)**	**Source of Funds (Federal, State, Local, or Private)**	**Cost Share**
Staff:				
Glenn Beer, 1 month salary	K	University	State	7,500.00

Bill Deese, 1/2 month salary	K	University	State	4,141.50
				0.00
				0.00
				0.00
Sub-Total Staff Cost Share				**$ 11,641.50**
Participant Support:				
Tuition waiver for graduate credit earned: 25 @ $634 each	K	University	State	15,850.00
				0.00

Sub-Total Participant Support Cost Share				**$ 15,850.00**
Travel and Other Costs:				
Fringe Benefits on matching salary @ 41.86%	K	University	State	4,873.13
Indirect Costs waived based on 52.23% Salaries less allowwed costs	K	University	State	22,739.92
Sub-Total Travel and Other Cost Share				**$ 27,613.05**
Indirect Costs (on Match):	K	University	State	**$ 6,080.36**
COST SHARING TOTAL				**$ 61,184.91**

APPENDIX D

CURRICULUM VITA

WILLIAM C. DEESE
T. W. RAY JOHNSON PROFESSOR OF CHEMISTRY
LOUISIANA TECH UNIVERSITY

Ph.D. - Inorganic Chemistry; University of Arkansas; Fayetteville, Arkansas (1982)
B.S.- Chemistry; University of Central Arkansas; Conway, Arkansas (1976)

HONORS

College of Engineering and Science Excellence in Education Award - 2001
The William Craig Outstanding University Educator Award - Louisiana Science Teachers Association - 2001
Commencement Speaker, Louisiana Tech University Summer Commencement 2002
College of Engineering and Science Award for extraordinary success in preparing science teachers – 2009
The Helen Free Award for Outreach in Chemistry – American Chemical Society - 2010

PUBLICATIONS IN CHEMICAL AND EDUCATION RESEARCH

1) "Synthesis of Pyrazolide-bridged Heterometallic Binuclear Complexes", W. C. Deese, D. A. Johnson, *Journal of Organometallic Chem., 232,* 325 (1982).
2) "Pyrazolide Bridged Binuclear Complexes of Platinum(II) with Carbonyl Ligands", D.A. Johnson, A.W. Cordes, B.A. Fithen, and W.C. Deese, *J. Coord. Chem., 34*, 1-9 (1994).
3) "Using Demonstration Assessments to Improve Learning", W.C. Deese, L.L. Ramsey, J. Walczyk, D. Eddy, *Journal of Chemical Education,* Vol. 77, 1511-1516, (Nov., 2000).

PUBLICATIONS IN SCIENCE EDUCATION

1) "Evaporation", W. C. Deese, *Encyclopedia Encarta 2000.*.
2) "Vapor Pressure", W.C. Deese, *Encyclopedia Encarta 2000.*
3) "A Simple Method for Demonstrating Enzyme Kinetics Using Catalase from Beef Liver Extract", K.A. Johnson, checked by W.C. Deese, *Journal of Chemical Education Vol.77*, 1451, (Nov., 2000).
4) "The Test Tube Buoyancy Demonstration", W.C. Deese, *CHEM 13 NEWS*,, No. 343 (Dec., 2006).
5) "DIY: p-atomic orbitals", W. C. Deese, *CHEM 13 News, No. 346, p. 12, (Mar., 2007)*
6) "Card Sorts: Non-Traditional Versions That Add Critical Thinking and Inquiry to Science Classrooms", L. Ramsey, W.C. Deese, C. Cox, *The Science Teacher*, Dec., 2007.
7) "The Blue Bottle Demonstration", W.C. Deese, L. Ramsey, C. Cox, *Science Scope*, Vol. 31, No. 4, Dec., 2007.
8) "DIY: p-subshell", W. C. Deese, *CHEM 13 News*, No. 352, p. 15, (Dec., 2007).
9) "DIY: d-orbitals", W. C. Deese, (CHEM 13 News, No. 378, p.10-12. (Nov., 2010).
10) "DIY: s-orbital", W.C. Deese, (CHEM 13 News, No. 382, p. 13, (Apr., 2011).

FUNDED PROJECTS IN SCIENCE EDUCATION (PI or Co-PI)

1.) LEQSF (Louisiana Education Quality Support Fund) Undergraduate Enhancement Program, "Incorporating Materials Science into Chemistry and Physics Curricula" (Funded 1996-1997, $44,500).
2.) Dwight Eisenhower MSEA, "Collaborative Chemistry Team Teaching Project". (Funded 1993-94, $33,000)

3.) Henry and Camille Dreyfus Foundation, “Developing and Assessing Conceptual Understanding of Chemistry with Demonstrations.” (Funded June, 1997 – June 1998, $20,000)
4.) Louisiana Space Consortium, “Developing and Assessing Conceptual Understanding of Chemistry with Demonstrations.” (Funded June, 1997 – June 1998, $7,366)
5.) LEQSF (Louisiana Education Quality Support Fund) Undergraduate Enhancement Program, "Incorporation of Electrochemical, Magnetic, and Thermal Experiments into Chemistry Laboratories at Louisiana Tech" (Funded 1997, $53,448)
6.) Educational Advancement Foundation, "Effect of Science Demonstrations on Student Achievement in Introductory Chemistry Classes" (Funded Fall, 1998 - Fall, 1999, $20,000)
7.) Louisiana Collaborative for Excellence in the Preparation of Teachers (LaCEPT), "Continuation of Research Starter Grant" (Funded January - July, 2000, $41,756.)
8.) Louisiana Systemic Initiatives Project (LaSIP), "Incorporating the History of Science into the Science Curriculum" (Funded June - September, 2001, $25,075).
9.) National Science Foundation, "Chemistry Concepts and Connections for Teachers". (Funded Fall 2001 - Spring 2005, $1,600,000)
10.) Louisiana Collaborative for Excellence in the Preparation of Teachers (LaCEPT), "Continuation of Research Starter Grant" (Funded January - July, 2002, $41,756.)
11.) LEQSF, "Introduction of Peer Instruction into Introductory Chemistry Classes", (Funded June 1, 2000 - June 30, 2002, $12,778)
12.) Student Technology Fee Board - Louisiana Tech University, "Technology to Supplement Existing Classroom Performance System", (Funded February 11, 2002, $23,230.
13.) LaSIP, “The Best of RIPPLE”, Co-PI (Funded May 2008, $216,252)
14.) Louisiana Department of Education, “Ouachita Parish Louisiana Tech Math-Science Partnership”, Co-PI (Funded May, 2008, $53,964)
15.) LaSIP, “the Best of RIPPLE II”, Co-PI (Funded April, 2009, $ 250,066)
16.) Louisiana Department of Education, “Ouachita Parish Louisiana Tech Math-Science Partnership”, Co-PI (Funded May, 2009, $55,000)
17.) LaSIP, “the Best of RIPPLE III”, Co-PI (Funded April, 2010, $ 250,000)
18.) LaSIP, “The Best of RIPPLE IV”, Co-PI (Funded Feb, 2011, $ 259,138)
19.) Louisiana Department of Education, “Ouachita Parish Louisiana Tech Math-Science Partnership”, Co-PI (Funded April, 2011)

RECENT PRESENTATIONS (Invited)

Featured Speaker at 2009 National Science Teachers Association Conference, New Orleans, LA - April, 2009. (Approximately 500 high school chemistry teachers.)

Demonstration Lecturer for PITTCON’s Science Week Supporting Science Education Program, New Orleans - March 6, 2008. (Approximately 1200 high school students.)

Texas Instrument Lecture Series at Chem Ed 2007, University of North Texas – July 24, 2007.

The Memphis University School, Memphis, Tenn., Jan. 2012, (Demonstration program presented to 750 Grade 6-12 students and their teachers.)

Glenn S. Beer

Director, Science and Technology Education Center, Louisiana Tech University;
Tel. (318) 257-2866; Fax (318) 257-4753; Email – gbeer@latech.edu
Home: 318-255-5305 Cell: 318-548-7390

(a) Professional Preparation

2009	Ed.D.	Curriculum, Instruction, and Leadership; Cognate: Educational Leadership, Louisiana Tech University
2002	M.S.	Curriculum & Instruction, Adult Education, Louisiana Tech University
2000	B.S.	Secondary Education, Mathematics, Louisiana Tech University

(b) Appointments

2000-Pres.	Director, Science and Technology Education Center, Louisiana Tech University
2009-Pres.	Assistant Professor, College of Education, Louisiana Tech University
2002-2009	Instructor, College of Education, Louisiana Tech University
2000	Adjunct Professor, Business and Math Instructor, Career Technical College, Monroe, Louisiana
1999	Secondary Math Teacher, Glenbrook School, Minden, Louisiana Algebra I, Algebra II, and Geometry
1998-1999	Secondary Math Teacher, Bethel Christian School, Ruston, Louisiana Algebra I, Algebra II

(c). Publications

Beer, G., Livingston, M., & Tobacyk, J. (2011). Promoting college access in first generation college students through creating a college-going culture: A multipronged systemic approach in the spirit of appreciative advising. *The Mentor: An Academic Advising Journal*. http://www.psu.edu/dus/mentor/; In Press.

Beer, G. (2010). Key institutional research area: Expanding college access. White paper submitted to the Louisiana Tech University Research Council.

Beer, G. (2009). The impact of summer/academic year learning projects on the academic achievement of student participants. Louisiana Tech University.

Beer, G., Robert, S., & Cobb, J. (2008). Louisiana GEAR UP summer camp counselor handbook, College of Education, Louisiana Tech University distributed by LaSIP/LA GEAR UP.

C(1) Grantsmanship

2011 $230,979.73; USDE through LaSIP/LA GEAR UP; Louisiana Tech/LA GEAR UP Explorers Camps

2011 $288,315.50; USDE through LaSIP/LA GEAR UP; Statewide Management of the Summer Academic Year Learning Projects: Louisiana College Access and Mentoring Programs for Success (LaCAMPS)

2011 $461,242.18; USDE through LaSIP/LA GEAR UP: Implementation of Quality Core in all LA GEAR UP Schools as Part of a Comprehensive School Reform Effort

2011 $222,380.20; USDE through LaSIP; Best of RIPPLE IV: A Physical Science Project for Middle and High School Teachers

2011 $222,570,76; USDE through LaSIP; W-7 Literacy Project (Co-PI with C. Cummins, A. Vessell, & K.K. Lopez)

2011 $103, 711.75; USDE through LaSIP/LA GEAR UP; Building Bridges to the Future Camp (Co-PI with Don Schillinger)

2011 $115,161.50; USDE through LaSIP/LA GEAR UP; Louisiana Tech Sports Medicine Camp (Co-PI with T. Schilling and L. Dornier)

Selected Presentations

International

Tobacyk, J., Livingston, M., Beer, G. (2009) Psychological type of children from underperforming schools: Implications for interventions. Paper presented at the annual meeting of the Association for Psychological Type International, Dallas, TX, August 6-9, 2009.

Beer, G. and Basinger, D. (2005). Year 2: Louisiana Tech Explorers Camps. Paper presented at the Hawaii International conference on Education, Honolulu, HI, January, 2005

National

Beer, G. (2011). Promoting rigor and relevance in core content areas in all LA GEAR UP schools. Paper presented at the annual meeting of the National Council for Community and Education partnerships, San Francisco, CA, July 17-20.

Beer, G. and Schilling, T. (2009). Using adventure education to promote leadership development. Paper presented at the annual meeting of the National Council for Community and Educational Partnerships, San Francisco, CA, July 19-22.

Lindsey Blair Keith-Vincent
2049 Cedar Creek Road
Ruston, LA 71270
318-805-3277
lbkv@latech.edu
lindsey@relianted.com

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Education:

- Louisiana Tech University, Ruston, LA
  Graduated Magna Cum Laude May 2007
  BS Curriculum and Instruction, Secondary English Education
  *Additional certification obtained in Secondary Biology Education per Praxis scores.

- Louisiana Tech University, Ruston, LA
  MS Curriculum and Instruction, Adult Education November 2008

- Louisiana Tech University, Ruston, LA
  Pursuing Ed.D. in Curriculum and Instruction through LEC
  Grambling State University, The University of Louisiana at Monroe,
  and Louisiana Tech University Expected Graduation May 2014

Professional Experience:

- August 2011-Present
  Louisiana Tech University College of Education- Special Topics Courses
  Ruston, LA
  Adjunct Faculty
- June 2008-Present
  The IDEA Place Math and Science Discovery Center
  Louisiana Tech University, Ruston, LA
  Museum Educator
- February 2008-June 2008
  Ruston High School, Ruston, LA
  Secondary English Teacher
- June 2007-June 2008
  Louisiana Tech University, Ruston, LA
  Graduate Assistant
- May 2006-August 2006
  Louisiana Tech University, Ruston, LA

LA Gear Up Summer Camp Counselor

Recent Grant Work and Professional Projects:

- Graduate Assistant, EPAS Grant 07-07
- LA GEAR UP Preparing Parents for Possibilities (P3), Director, 07-08, 08-09, 10-11, 11-12
- LA GEAR UP Academic Summer Camp Session, Facilitator, 07-08, 08-09
- Summer Science Institute Director, 07-08, 08-09, 10-11, 11-12
- STEM Camp with the LA Center for the Blind, Educator,08-09, 09-10
- Sci-Tech Space Institute for Teachers with Sci Port Discovery Center, Facilitator, 09-10
- LA GEAR UP Guidance and Counseling Project, Site Coordinator, 09-10, 10-11, 11-12
- The Best of RIPPLE (LASIP), Site Coordinator, 09-10, 10-11, 11-12
- Project INVEST Service Learning Grant, Director, 09-10,10-11, 11-12
- LA GEAR UP Explorer Academic Summer Camp, Co-Director, 10-11
- NASA Summer of Innovation Summer Camp, Co-Director, 10-11
- LA GEAR UP/ ACT Quality Core, Site Coordinator, 10-11
- LA GEAR UP Explorer Academic Summer Camp, Director, 11-12
- LA GEAR UP Aviation Academic Summer Camp, Co-Director, 11-12
- LA GEAR UP STEM/ Ballooning Academic Summer Camp, Co-Director, 11-12
- LA GEAR UP Film/ Documentary Academic Summer Camp, Co-Director, 11-12

LOUISIANA SYSTEMIC INITIATIVES PROGRAM
2012-2013 PROFESSIONAL DEVELOPMENT PROJECTS

CURRICULUM VITAE

Name Diane S. Madden **309 Forest Creek Drive** **Ruston, LA 71270**	**Current Position Title** **STEM Outreach Coordinator** **Science and Technology Education Center** **Project Position Title: Site Coordinator**

EDUCATION (Begin with baccalaureate or other initial professional education and include postdoctoral training.

INSTITUTION AND LOCATION	DEGREE	YEAR CONFERRED	FIELD OF STUDY
Louisiana Tech University	**Bachelor of Arts (BA)**	**1966**	**Elementary Education (Grades 1-8)**
Louisiana Tech University	**Masters of Science (MS)**	**1996**	**Curriculum and Instruction—Science Education**
Post Graduate			
Louisiana Tech University	**+30**	**2007**	**Certification in Adult Education**
University of Kansas		**Spring 2008**	**Instructional Coaching Institute, Train the Trainer, Dr. Jim Knight**

PROFESSIONAL EXPERIENCE

Louisiana Tech University 8/2001-Present

IDEA Place/ Science and Technology Education Center Louisiana Tech University (08/02- present)

Professional Development Coordinator and STEM Education Specialist 2008-2012
Instructor for graduate extension courses in elementary science 2008-present
Adjunct Faculty. 2003-present
Presenter, Site Coordinator, CO-PI for Louisiana Systemic Initiate Programs
RIPPLE—Inquiry based Physics and literacy Co-PI 2011
Site Coordinator 2008-2010
Beacon Literacy—How to engage students in literacy 2009
Beacon Math—Integrating math and literacy 2009
Experiment Gallery Project—General science and literacy 2002-2003
Math/Science Partnership Grants 2008- 2012

Lead Presenter and Site Coordinator for Ouachita Parish Schools system
Project Achieve 2007 Developed and presented professional development science modules for 3rd and 4th grade teachers.
Creating Science Tasks for Grades 3 through 8. 2007
Developed LEAP-Like Science Tasks
Integrating Science and Technology. 2007
Integrating technology into the science classroom
"Live in Louisiana" Ouachita Parish Second Grade Project. 2005 and 2006
Lead Presenter and Site Coordinator
Louisiana Tech Enhancing Science Teaching 2005 and 2006.
Lead Presenter and Site Coordinator
Engineering Higher Student Achievement in math and Science TIMA 489C &TISC 489, Lead Presenter and Site Coordinator 2004-2005
Standards Based Science Education Ouachita Parish Education 589 C. 2003.
Lead presenter of physical science lessons and Site Coordinator
LA GEAR UP Project Staff Developer and Presenter. 2003-2008.
Environmental Science Exploration Coordinator
K-16 Partnership for School Reform for Monroe City Schools. 2006-2010.
Site coordinator.
Educational Planning and Assessment System. 2005-2007.
University Faculty for student teachers and interns. 2004-present.
Digital Edge Program, Master Teacher, Louisiana Tech University. 2004
PK-16+ Alternative Certification Program Louisiana Tech University. 2003-2004
Engineering 289C Problem Solving for Future teachers Co Instructor. 2002 -2003
Environmental Protection Agency (Mystery Litter Zone) project. 2001-2002.
Graduate Assistant, College of Education, Louisiana Tech University. 2001-2002

Public School Teaching Experience

Ruston Junior High School, 8th Earth Science Teacher,1999-2002.
Lincoln Parish Secondary Alternative School, 1998-1999.
9th-12th grades Physical Science, Environmental Science, and Biological Sciences.
Choudrant High School, 1995-1998.
7th and 8th grade Life and Earth Sciences
Cedar Creek High School, Ruston, LA. 1992-1995.
7th and 8th grade Life and Earth Sciences
Platt Elementary School, Haughton, Louisiana, 1970-1972.
Librarian/Resource Director
Apollo Elementary School, Bossier City, Louisiana, 1969-1970.
Saline High School, Saline, Louisiana, 1-1969 to 5-1969.
West Springfield Elementary School, West Springfield, Virginia 1966-1969.

Professional organizations

National Council of Teachers of Mathematics
Louisiana Association of Teachers of Mathematics
National society for Gifted and Talented
National Council for Social studies
National Science teachers Association
Louisiana Science Teachers Association
Louisiana Association of Computer Using educators

APPENDIX E

CURRENT AND PENDING SUPPORT

2012-13 LaSIP PROFESSIONAL DEVELOPMENT PROJECTS

CURRENT AND PENDING SUPPORT

List all State and federal funding support for each IHE faculty member during the funding cycle. Duplicate this form for each IHE faculty member, and use additional sheets as necessary.

NAME OF FACULTY: Glenn Beer

Status of Support: _Current XX Pending Submission Planned in Near Future

Proposal Title (or Semester Teaching Support):La Tech Explorers Camps

Source of Support: USDOE through LA GEAR UP

Award Amount (or Monthly Teaching Rate): $104,892.68 Period Covered:04/01/12-06/15/13

Location of Activity: Louisiana Tech University

Person-Months or % of Effort Committed to the Project: Cal Yr AY .75 mo. Summer

Status of Support: Current XX Pending Submission Planned in Near Future

Proposal Title(or Semester Teaching Support):Statewide management of Summer/Academic Year Learning Projects

Source of Support: USDOE through LaSIP

Award Amount (or Monthly Teaching Rate): $$282,751.55 Period Covered:04/01/12-06/15/13

Location of Activity: Louisiana Tech University

Person-Months or % of Effort Committed to the Project: 3 mo. Cal Yr AY Summer

Status of Support: Current XX Pending Submission Planned in Near Future

Proposal Title (or Semester Teaching Support): Aviation Summer Camp

Source of Support: USDOE Through LA GEAR UP

Award Amount (or Monthly Teaching Rate): $105,826.02 Period Covered04/01/12-09/30/12

Location of Activity: Louisiana Tech University

Person-Months or % of Effort Committed to the Project: Cal Yr AY 1 mo. Summer

Status of Support: Current XX Pending Submission Planned in Near Future

Proposal Title (or Semester Teaching Support): Film Camp

Source of Support: USDOE Through LA GEAR UP

Award Amount (or Monthly Teaching Rate): $107,112.29 Period Covered04/01/12-09/30/12

Location of Activity: Louisiana Tech University

Person-Months or % of Effort Committed to the Project: .75 mo Cal Yr AY . Summer

Status of Support: Current XX Pending Submission Planned in Near Future

Proposal Title (or Semester Teaching Support): C3 Chemistry Project

Source of Support: LaSIP

Award Amount (or Monthly Teaching Rate): $200,392.22 Period Covered07/01/12-06/15/13

Location of Activity: Louisiana Tech University

Person-Months or % of Effort Committed to the Project: .5 mo. Cal Yr AY Summer

2012-13 LaSIP PROFESSIONAL DEVELOPMENT PROJECTS
CURRENT AND PENDING SUPPORT

List all State and federal funding support for each IHE faculty member during the funding cycle. Duplicate this form for each IHE faculty member, and use additional sheets as necessary.

NAME OF FACULTY: William C. Deese

Status of Support: x Current Pending Submission Planned in Near Future

Proposal Title (or Semester Teaching Support):The Best of RIPPLE IV

Source of Support: LASIP

Award Amount (or Monthly Teaching Rate): $222,380.20 Period Covered: July 2011-June 2012

Location of Activity: Louisiana Tech University Ruston, LA

Person-Months or % of Effort Committed to the Project: X 0.8 months Cal Yr AY Summer

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Status of Support: Current Pending Submission Planned in Near Future

Proposal Title(or Semester Teaching Support):

Source of Support:

Award Amount (or Monthly Teaching Rate): $ Period Covered:

Location of Activity:

Person-Months or % of Effort Committed to the Project: Cal Yr AY Summer

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Status of Support: Current Pending Submission Planned in Near Future

Proposal Title (or Semester Teaching Support):

Source of Support:

Award Amount (or Monthly Teaching Rate): Period Covered

Location of Activity:

Person-Months or % of Effort Committed to the Project: Cal Yr AY Summer

(Form 7 - 2012-13 LaSIP PD, Revised 7/2011)

APPENDIX F

MEMORANDUM OF AGREEMENT AMONG PARTNERS

2012-13 LaSIP PROFESSIONAL DEVELOPMENT PROJECTS
Memorandum Of Agreement Among Partners

Louisiana Tech University (Name of Sponsoring Institution or Institutions)	Project C3 (Project Title)
Dr. Glenn Beer (Principal Investigator)	Dr. William C. Deese (Co- Principal Investigator)

This cooperative agreement reflects the overall commitment as well as the specific responsibilities and the roles of each of the partners listed below. This MOA documents the actual working partners who are responsible for contributing to the writing of the proposal, collecting and reporting data, and for the day to day success of the project.

Type of Partner	Name of Active Partner	Title	IHE or District & School	Signature
Teacher Preparation Program ***(Required)***	David Gullatt	Dean	Louisiana Tech University	
Dept./School of Arts & Sciences ***(Required)***	Stan Napper	Dean	Louisiana Tech University	
High-need Local Education Agency/Agencies ***(LEA – Required)***	See attached support letters.			
Additional Targeted Partners				

(Form 8 - 2012-13 LaSIP PD, Revised 7/2011)

APPENDIX G

COOPERATIVE PLANNING EFFORTS

LETTERS OF SUPPORT

2012-13 LaSIP PROFESSIONAL DEVELOPMENT PROJECTS

Cooperative Planning Efforts

Describe the process of collaboration between the high-need LEA(s), other targeted schools, and the IHE(s) in determining the needs of the LEA(s) in planning and writing this proposal. The statement should be endorsed and dated by an official from each participating institution. In addition, Letters of Support must be included in the appendices of the proposal.

	Typed Name, Title, Organization	Signature	Date
1.	Ricky Edmiston, Secondary Supervisor, LPSB		2/14/12
2.	Randy Hammett, Secondary Supervisor, QPSB		2-15-12
3.	Sheldon,Jones, Superintendent, RPSB		2-15-12
4.			
5.			
6.			
7.			
8.			
9.			
10.			

(Form 9 - 2012-13 LaSIP PD, Revised 7/2011)

PROJECT C3
LASIP Principal Commitment Form
2012-2013

We are excited about the possibility of offering C3: Chemical Concepts and Connections to teachers in your district. In order to receive LASIP funding, it is imperative that we indicate your district's commitment to the project and willingness to share the opportunity with your teachers.

The goals of the proposed project are as follows:

1. increase student achievement and content knowledge in Chemistry to be reflected on the end of course exams and Plan by spring 2013, through increased teacher content knowledge
2. plan and execute effective PD based on the high-need LEAs/schools' data-driven needs and developed using research-based PD strategies, including literacy strategies, that will take place in summer institutes, during the AY and/or through online or web-based assignments and job- embedded activities
3. increase leadership capacity and pedagogical skills for target schools through school/district buy-in, school-based implementation, and mentoring during the AY.

It is not possible to accomplish these goals without your support. Therefore, we are asking that you complete and sign this commitment form indicating your understanding of the project requirements and your willingness to support the project participants as they work to implement the strategies presented through this project. The following statements describe the specific commitments we are seeking in support of the project.

As a representative of the district listed below, I agree to do the following:

1. Disseminate project recruitment information to area educators;
2. Allow project participants to attend the AYF sessions following the 2012 Summer Workshop;
3. Allow project participants to implement strategies and utilize materials obtained during the LASIP workshop sessions;
4. Allow project participants time to redeliver project content to the entire school faculty during a school professional development day or at scheduled school faculty meetings.

Names of school representatives participating in project:

District Representative : Sheldon Jones District: Richland Parish

e-mail: sjones@richland.k12.la.us Contact Phone: (318) 728-5964

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Names of school representatives participating in project:

District Representative : _____ District: Morehouse

e-mail: dnordman@mpsb.us Contact Phone: 318-283-3472

David Nordman

PROJECT C3
LASIP Principal Commitment Form
2012-2013

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4. Allow project participants time to redeliver project content to the entire school faculty during a school professional development day or at scheduled school faculty meetings.

Names of school representatives participating in project:

District Representative : Randy Hammett District: Ouachita Parish

e-mail: hammett@opsb.net Contact Phone: (318) 432-5209

PROJECT C3
LASIP Commitment Form
2012-2013

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Names of school representatives participating in project:

District Representative : [signature] District: Lincoln

e-mail: rcdunston@lincolnschools.org Contact Phone: (318) 255-1430 xt. 236

Lincoln Parish
ACHIEVE
Accelerating Children Higher In Educational Values Everywhere

February 13, 2012

Dr. William C. Deese
Dr. Glenn Beer
Louisiana Tech University
SciTEC C3 Program
P. O. Box 3163 T.S.
Ruston, Louisiana 71272

Dr. Deese and Dr. Beer:

It is with pleasure that I offer the support of Lincoln Parish Schools as you pursue funding for the proposed C3 (Chemical Concepts and Connections) Institute slated for summer 2012. It is with great anticipation that we spread the word about this outstanding professional development experience and look forward to having several teachers from our district involved.

Having worked closely with Louisiana Tech University and its various professional development workshops and institutes over the past thirty years, I am confident that this will be yet another tremendous opportunity for Lincoln Parish teachers. Specifically, having the possibility of the C3 Institute return is extremely important for our district due to the shortage of qualified science teachers available at this time. In fact, we are currently searching for two chemistry teachers so the promise of having more teachers become qualified through this program makes it even more attractive.

I have had the pleasure of working closely with those involved in the preparation and delivery of C3 as well as the C3 Institute itself since its inception. This has enabled me to see the program firsthand as an excellent teacher professional development that offers an unparalleled training opportunity for those involved. Therefore I am confident that the support Lincoln Parish openly offers as Louisiana Tech pursues funding to continue its training of teachers is certainly well placed. We look forward to continuing an already exceptional partnership with all involved.

Cathi Cox-Boniol
ACHIEVE Coordinator

APPENDIX H

MEASURABLE OBJECTIVES WORKSHEETS

2012-13 LaSIP PROFESSIONAL DEVELOPMENT PROJECTS

Measureable Objectives Worksheet (1)

Aligned with the first LaSIP goal stated below, design at least two measureable objectives which answer each of the following five questions:

(1) **Who** is involved?
(2) **What** is the desired outcome?
(3) **How** will progress be measured?
(4) **When** will the outcome occur?
(5) What is the **level of proficiency**?

Refer to page _____ for a detailed explanation of each question. Combine the five answers to form a sentence for your measureable objective. Use the checklist provided on page ___ to ensure the objectives contain all necessary components. This page may be duplicated if additional objectives are desired.

LaSIP Goal 1: ***Increase student achievement on State high-stakes testing.***

Who: Chemistry Students of Participating Teachers

What: Increased Chemistry Content Knowledge

How: Increased school science knowledge in Chemistry as measured by the Plan and ACT

When: Spring 2013

Proficiency Level: Students of participating teachers will score higher on the ACT in science than their projected score as indicated by PLAN scores.

Goal 1, Objective 1:

Students of participating Chemistry teachers will make a higher score on the ACT than projected by PLAN and score higher than students of teachers who did not participate in the project.

Who: Chemistry Students of Participating Teachers

What: Increased Conceptual Content Knowledge

How: Increased school science knowledge in Chemistry as measured by Quality Core Chemistry Assessments aligned to the Common Core State Standards and administered as pre and post exams

When: Spring 2013

Proficiency Level: Students of participating teachers will show a 20% gain in Average Percent Correct on the Quality Core Chemistry Assessment.

Goal 1, Objective 2:

Students of participating Chemistry teachers will show a 20% gain in Average Percent Score on the Quality Core Chemistry post-assessment as compared to the pre-assessment.

2012-13 LaSIP PROFESSIONALDEVELOPMENT PROJECTS

Measureable Objectives Worksheet (2)

Aligned with the first LaSIP goal stated below, design at least two measureable objectives which answer each of the following five questions:

(1) **Who** is involved?
(2) **What** is the desired outcome?
(3) **How** will progress be measured?
(4) **When** will the outcome occur?
(5) What is the **level of proficiency**?

Refer to page _____ for a detailed explanation of each question. Finally, combine the five answers to form a sentence for your measureable objective. Use the checklist provided on page 44 to ensure the objectives contain all necessary components. This page may be duplicated if additional objectives are desired.

LaSIP Goal 2: ***Plan effective PD based on the high-need LEA(s)/schools' data-driven needs and developed using research-based PD strategies that will take place in summer institutes, during the academic year (AY), and/or through on-line or web-based assignments and job-embedded activities.***

Who: Project Director and Project Staff

What: Summer Institute 2012, Academic Year Follow-Ups 2012-2013

How: Sign-in Sheets, anecdotal records of faculty and staff, site visit log forms, and participant work and feedback

When: Summer 2012 and Academic Year Follow-Ups 2012-2013

Proficiency Level: Small scale snacks, participant portfolios, and pedagogical strategies developed, disseminated, and closely connected to the LACC, ACT College Readiness Standards, and the CCSS.

Goal 2, Objective 1:

Chemistry content and conceptual knowledge as well as pedagogical practices and literacy strategies stemming from LaCLIP will be used to meet the needs of the participants as indicated by district 8th grade Science LEAP data.

Who: Participating Teachers

What: Online, web-based, Job Embedded Activities

How: Moodle Online Course Management System Fall 2012

When: Fall 2012

Proficiency Level: A minimum of 80% of teachers will utilize the Moodle course to share in discussion board topics, upload reflection pieces, and collaborate with other participants throughout the 2012 Fall Quarter.

Goal 2, Objective 2:

A minimum of 80% of project participants will post materials, reflect, and collaborate on the Moodle site established for the class through Louisiana Tech University's College of Education OPEO site.

2012-13 LaSIP PROFESSIONAL DEVELOPMENT PROJECTS

Measureable Objectives Worksheet (3)

Aligned with the first LaSIP goal stated below, design at least two measureable objectives which answer each of the following five questions:

(1) **Who** is involved?
(2) **What** is the desired outcome?
(3) **How** will progress be measured?
(4) **When** will the outcome occur?
(5) What is the **level of proficiency**?

Refer to page _____ for a detailed explanation of each question. Finally, combine the five answers to form a sentence for your measureable objective. Use the checklist on provided on page 44 to ensure the objectives contain all necessary components. This page may be duplicated if additional objectives are desired.

LaSIP Goal 3: Increase leadership capacity and pedagogical skills for target schools through school/district buy-in, school-based implementation, and mentoring during the AY.

Who: C3 Project Participants

What: Increase teacher conceptual understanding of Chemistry

How: Increased content and conceptual knowledge as indicated by improvement on the Chemistry Conceptual Exam by Chem ED as Pre and Post evaluation tools.

When: Summer 2012

Proficiency Level: At least 75% of the teachers will score higher on the post test than the pretest for Conceptual Chemistry.

Goal 3, Objective 1: At minimum 75% of project participants will score higher on the post Chemistry Conceptual Exam by ChemED than the pre test.

Who:C3 Project Participants

What: Increase teacher content knowledge related to Chemistry

How: Increased content knowledge as indicated by improvement on the ACT Quality Core Chemistry Assessments as Pre and Post evaluation tools.

When: Summer 2012

Proficiency Level: Participants will score at least 20% higher on the post test than the pretest.

Goal 3, Objective 2: All participants will score at least 20% higher on the post ACT Quality Core Chemistry Assessment.

APPENDIX I

STIPEND OPTION

2012-13 LaSIP PROFESSIONAL DEVELOPMENT PROJECTS

APPENDIX J: Stipend Options

You must choose either Option A or B for use in your project, and document your choice in your proposal. Should your proposal be funded, you must provide this information to your participants within a Participant Agreement or Project Syllabus. For either option, you must insert the number of days and hours for your project and the hourly stipend rate, and provide a list of your project deliverables. Projects must provide a total stipend hourly rate at a minimum of $20 per hour and a maximum of $30 per hour. LaSIP encourages the use of Option B.

Option A

Attendance is expected for all ____ days (total of ____ hours) of the project. Participants will receive a maximum fee of $**25** per hour for attendance participation at the summer institute and academic year workshops. Payment will be made only on approval of and documentation from the principal investigator, *(Name of authorized person),* according to the LaSIP Attendance Policy. Participant will be paid only for the actual hours he/she participates in the professional development program. If the Participant has unexcused absences for more than 15% of the scheduled program hours, Participant may be dropped from the program at the discretion of the principal investigator and will not be eligible to receive instructional materials from the project. Any instructional materials already received must be returned to the principal investigator. LaSIP Attendance Policy regarding unexcused absences will be enforced.

Option B

Attendance is expected for all **14** days (total of **90** hours) of the project. Participant will receive a $**20** per hour for attendance participation at the summer institute. Upon completion of the required activities/deliverables (designed by PI) and days of attendance during the AY, participant will receive the remaining $**5** for each full hour attended during the summer project. This will in effect raise the stipend rate to $**25** per hour attended and will only apply if participant meets required obligations. Stipends for the AY workshops will be $**25** per hour for attendance. Payment will be made only on approval of and documentation from the principal investigator, *(Name of authorized person),* according to the LaSIP Attendance Policy. Each participant must complete the assigned deliverables during the AY. If the participant has unexcused absences for more than 15% of the scheduled program hours, the participant may be dropped from the program at the discretion of the principal investigator and will not be eligible to receive either instructional materials from the project or the additional $**5** per hour for attendance participation at the summer institute. In this event, any instructional materials already received must be returned to the principal investigator. LaSIP Attendance Policy regarding unexcused absences will be enforced.