

C₃ BONDS

VOLUME 1, ISSUE 1

FALL 2002, SESSION 1



C₃ BONDS DEBUTS!!



Welcome to the premiere issue of C₃ BONDS, the quarterly newsletter for C₃, Chemical Concepts and Connections for Teacher Leaders. Each issue will highlight what your session of the course has been busy doing, from workshops and other types of professional development, to your success in and out of the classroom. In addition, you will be given further resources to add to your ever growing bag of tricks as well as information to assist you in your continuing professional growth. And in an effort to get the word out about the exciting things that you are doing in the field of science education, we will also send a copy of each newsletter to your principal and supervisor! So get ready to shine like we know you can. The spotlight is going to be on YOU!!!



To celebrate the kickoff of our newest newsletter program, we are challenging each of you to a contest! It took several days and MANY attempts to finally come up with a title that we all could agree on. Here is where your challenge comes in. We would like for you to come up with your best response as to WHY the title "C₃ BONDS" was selected. Simply e-mail your answer or response to Cathi at ccox@latech.edu and after careful judging, the BEST answer will be determined and announced. Naturally, the winner will receive a "fabulous prize pack" including two passes to the cinema of your choice to see the new James Bond film! And of course, we will print the winning entry and its author, as well as the two runners up. This should be fun so everyone get in on the action . . . We'll see who can really get inside Cathi's mind! Good luck and again, welcome to your first edition of C₃ BONDS!!



C₃ Enjoys Successful Kickoff in June



After concentrating on professional development projects that focused on the biological sciences, Louisiana Tech University's Project LIFE team successfully launched its first in depth workshop for Chemistry and Physical Science teachers. Funded by the National Science Foundation, the innovative grant enables its participants to engage in a two year program that includes summer course work, academic year workshops, an electronic learning community, and classroom

visits and observations by the program coordinator. Teachers from across Louisiana and Arkansas gathered on the Tech campus in June during two different sessions. Using the Hindenburg disaster as the developmental focal point, the teachers engaged in a thread of learning experiences that covered topics such as alternative energy sources, density, gas laws, buoyancy, combustion, and stoichiometry. Both groups did an exceptional job and are to be commended for their dedication and hard work during the summer months. No doubt their students will be the beneficiary of such a commitment! Great job!!

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C₃ CELEBRATES SESSION 1



The C₃ Team is proud to salute the participants who made up Session 1 during the Summer 2002 project. Because this was the first time a program of this nature had been offered, recruitment was aggressive and teachers had to commit to a project that they really knew nothing about! Your vote of confidence is appreciated more than you can know. Here are the teachers from across Louisiana and Arkansas that our gratitude goes out to and whose success we celebrate:



Nathaniel Adams, Green Oaks High School
Betsy Chism, East Ascension High School
Mandy Dugdale, West Feliciana Middle School
Julie Dubois, Simsboro High School
Sherri Ferrel, Simsboro High School (now La Tech)
Bill Gallien, Fair Park High School
Jane Hamby, Morehouse Magnet School
Cindy Hampton, Cedar Creek High School

Cleo Head, Riverfield Academy

Tyron Lacy, North Caddo Magnet High School

Brenda Kelley, Winnfield Senior High School

Leslie McClure, West Feliciana Middle School

Mary Beth McCoy, Ouachita Junior High School

Richard O'Neal, Crossett High School

Aleta Overby, Ruston High School

Annette Parker Gentry, Zwolle High School

Dan Sassone, East Ascension High School

Carolyn Smith, Start Elementary School (now La Tech)

Carolyn Sykes, Ouachita Parish High School

Michelle Underwood, Chatham Jasper Henderson High

Andre' Varnado, McDonogh 35 High School

Missy Wooley, Rayville High School



C₃ Gets on the Board!



During the September meeting with the C₃ teachers, Program Coordinator Cathi Cox instructed the group on the use of Blackboard, the electronic on-line learning tool that will be used throughout the academic year. As a means of maintaining the sense of community that was established during the summer program and to facilitate the on-going instruction of the group, Blackboard will be used to post assignments that each teacher will complete and then share on line. In addition, it will be used as a communication tool so that each teacher can respond to their colleagues and



maintain a discussion concerning the issues and concepts that have been addressed in the course, as well as introduced during this on-line component. The participants have already jumped in and enthusiastically embraced this unique program and all signs point to an exciting on-line learning experience for everyone involved! Remember that the first official assignment was posted and ready to roll for Monday, October 7, 2002. All C₃ participants have until the end of October to get this assignment completed. Visit the Tech Blackboard site at <<http://blackboard.latech.edu>>.



C₃ AND LSTA GO HAND IN HAND IN 2002



C₃ is delighted to be able to offer the opportunity for its teachers to attend and participate in the 2002 Louisiana Science Teachers Association Convention, "*Inquiry Without Limits*". Held in Lafayette, Louisiana, October 24-26, short courses will be offered the first day with breakout sessions and workshops following on the next two days. All C₃ teachers will be provided registration, two nights hotel stay, and a travel allotment in an effort to facilitate their attendance at this typically outstanding meeting. The C₃ team will be presenting an inquiry based session from its summer course at 10:50AM-1:00PM on the 25th in the Evangeline room of the Acadiana. Bill and



Cathi will then present the annual Dead Chemists Society session from 2:20-3:20PM in the Acadia room of the Acadiana and this year, the Rock and Roll Revue is back! Then the entire C₃ group, both Session 1 and 2, will meet together on the 26th for a morning session from 9:00-12:00 in Ballroom A of the Hilton. It should be an exciting time of professional development as well as lots of fun for everyone involved and we look forward to having the entire C₃ family together during this time. All participants are reminded to register and make room reservations ASAP in order to be ready when the convention begins! For more information, contact Cathi immediately!





LEARNING WITH THE LEARNING CYCLE



C₃ participants got their academic year program in gear with a special "joint" session held on the Louisiana Tech campus on Saturday, August 24, 2002. Before leaving the course in June, both sessions were challenged to develop a project that utilized the learning cycle and focused on a content unit from the physical sciences that would be covered in their classroom during the 2002-03 school year. The project was to include learning experiences that engaged the student, allowed an exploration phase, developed concepts, had an application component and assessment. During 3 hours of the workshop, Project Co-Director Linda Ramsey and Program Coordinator Cathi Cox guided the teachers as they



individually presented their projects to the group and discussed how it could be implemented. In addition, each participant made copies of their project for everyone else in their session so that each teacher was able to return to the classroom with twenty or more new ideas and strategies to reflect on when planning throughout the academic year. It was a wonderful time of reflection and sharing and both Linda and Cathi appreciate the hard work that these teachers put into a strategy that was new to many of them. You are doing a fantastic job!! Cathi now looks forward to seeing how the strategy is being utilized in the classroom as she begins her first semester observations!



PLAYING WITH THE PERIODIC TABLE

During the second half of the C₃ workshop held on August 24, the teachers were engaged in a series of learning experiences that had them "Playing With the Periodic Table". Led by Project Co-Director Bill Deese and Donna White, the participants used everyday items and information to explore the periodic table of elements. From designing a chart of favorite foods, to organizing the early periodic table using Lego blocks, the teachers worked cooperatively to fully explore the different components of something that is certainly



a staple in every high school classroom. The workshop was designed to follow the learning cycle and therefore be an appropriate companion piece to the other part of the day's activities where the teachers shared their learning cycle projects. Rotating between the two parts of a workshop that initiated the academic year follow-up to the summer course, both C₃ sessions did a terrific job and made the entire C₃ team eagerly anticipate when everyone would be together again. Terrific work everyone!



C₃ TEACHERS GET SMALL ON A SATURDAY

No, it wasn't a science experiment that went wrong—it was simply Session 1 C₃ teachers back on the Tech campus for the second workshop of the academic year. On Saturday, September 28, 2002, Project Co-Director Bill Deese once again got the day started by leading the group in a series of learning experiences that focused on the discovery of the atom, its structure, and atomic theory. Bill used common objects such as play dough, bb's, ping pong balls, cardboard, and various craft supplies to illustrate how students can explore concepts that are sometimes too abstract for students to grasp. In addition, classroom demon-



strations were shared as well as a strong history component with a timeline constructed throughout the workshop. Once again, the C₃ teachers rose to the occasion and did a fantastic job while sharing their precious weekend time with their colleagues and leaders. Your efforts are appreciated more than you can know—keep up the good work!



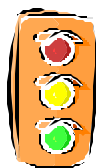
CLASSROOM VISITS ARE ABOUT TO BEGIN . . . BE WATCHING FOR YOUR SCHEDULE ARRIVE IN THE MAIL!!



SPOTLIGHT ON C₃ SUCCESS



Aleta Overby, Ruston High School, shares that she has been using card sorts as pre-assessments in her class before the students actually make color coded concept maps based on the cards. Ideas that the students KNOW are written in green for "go", things they are somewhat sure about are coded in yellow for "caution", and the things they have no idea about are in red for "stop". Sounds great **Aleta!!** . . . **Betsy Chism, East Ascension High School**, reports that her students are donating organisms for her new Biology class. She also



says that card sorts are working well as a review for her students and will soon have pictures of Cell Projects from her classes. Fun! . . .



Cindy Hampton, Cedar Creek High School, is using cooperative groups and says that her kids are loving it! She also shares that she is incorporating writing strategies into all her content areas. Terrific! . . . **Richard O'Neal, Crossett High School**, says that his physics students are



involved in the BEST Robotics Competition in Northwest Arkansas. 35 schools are competing and his students will enter their robot on Oct 19 in Fort Smith. Good luck **Richard!!** . . .



Cleo Head, Riverfield Academy, brought the Bowling Ball in a Boat to his Chemistry students and reports that it blew their minds just like it did everyone this summer! Looks like he's following in Bill's footsteps!! . . . **Brenda Kelley, Winnfield Senior High School**, says that several teachers at her school



have started calling her room the "Starship Enterprise" because of all the fabulous equipment, electronics, and gadgets she has in place now. Sounds like an exciting place to be learning! . . . **Andre Varnado, McDonogh 35 High School**, has started a new Science Research course that gives his students lots of hands-on research experience. In addition, he has incorporated lots of fun activities that can be used to develop critical thinking skills within the cooperative learning groups. Excellent! . . . **Missy Wooley, Rayville High School**, shares that she is implementing everything from portfolios to new student notebooks to alternative assessments. Furthermore, she says that carousels are WONDERFUL!! Good job **Missy!!** . . . **Mary Beth McCoy, Ouachita Junior High School**, reports that she and her students are really enjoying the new balances she got with her C₃ money. There are so many new things they can do! Fantastic! . . .



Julie Dubois, Simsboro High School, and **Cleo Head, Riverfield Academy**, report that their annual Science Shower was a HUGE success. Held on September 17, it was expanded to a school wide event this year with lots of parents involved which meant they got lots of goodies for their science program. Outstanding!! In addition, **Mandy** shares that her students have done a wonderful job with circulatory system models while **Leslie** has been focusing on properties of light with her classes. Excellent work girls!! . . . **Dan Sassone, East Ascension High School**, says that he has been using foldables for review with his students and so far, it has worked so well that he feels it will be a tool used regularly in his classes. Sounds good! . . . And it looks like we're off to a super start with the super teachers in the first session of C₃. We look forward to seeing what other exciting things you have up your sleeve as the year progresses—keep up the good work!

Mandy Dugdale and Leslie McClure, West Feliciana Middle School, report that their annual Science Shower was a HUGE success. Held on September 17, it was expanded to a school wide event this year with lots of parents involved which meant they got lots of goodies for their science program. Outstanding!! In addition, **Mandy** shares that her students have done a wonderful job with circulatory system models while **Leslie** has been focusing on properties of light with her classes. Excellent work girls!! . . . **Dan Sassone, East Ascension High School**, says that he has been using foldables for review with his students and so far, it has worked so well that he feels it will be a tool used regularly in his classes. Sounds good! . . . And it looks like we're off to a super start with the super teachers in the first session of C₃. We look forward to seeing what other exciting things you have up your sleeve as the year progresses—keep up the good work!



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TEACHER CADETS, C₃STYLE!!

Aleta Overby, Ruston High School, has implemented a new program on her campus this year and there's only one word for it—AWESOME! She shares that this is a teacher preparation class that focuses on science education. 22 students have enrolled this year and are currently training at the Experiment Gallery housed in the IDEA Place on the Louisiana Tech University campus. **Aleta** also reports that the students have been volunteering



to help different teachers at **RHS**, as well as local elementary schools. In their work so far, the students have logged hundreds of hours of volunteer work as they get an early look at the role of the science teacher in schools today. In addition, she has secured an agreement with Tech that enables those students with an ACT score of 22 or higher the opportunity to earn 3 college credit hours with full tuition waived. Fantastic job **Aleta**—you may want to share some tips with others on how they can get a similar program started at their own school!!



Congratulations to our first year teachers from C₃: **Julie Dubois, Simsboro High School**, and **Cleo Head, Riverfield Academy**. We're proud of you!

C₃ Teachers Pave the Way With Professional Development

In addition to working hard in C₃, many of our teachers have been involved in additional professional development opportunities. **Mary Beth McCoy, Ouachita Junior High School**, is participating in a special Physical Science class designed specifically for Ouachita Parish middle grades teachers and things are going great! **Cleo Head, Riverfield Academy**, and **Michelle Underwood, Chatham Jasper Henderson High School**, went right into Project LIFE at Tech this summer after completing C₃ and are now involved in its academic year follow up as well. **Michelle** also upgraded her teaching certificate to include Environmental Science and Physics. **Richard O'Neal, Crossett High School**, attended the "Modeling Physics" at Arkansas State University in Jonesboro, AR. **Cindy Hampton, Cedar Creek High School**, attended two different in-services with Ricky Bruce on quick writing assessments and she is now incorporating them with her C₃ strategies. Terrific work everyone. No doubt you will have lots to share with your colleagues when you all get



LOOK AT OUR LEADERS!

Sherri Ferrel and **Carolyn Smith** both have left the classroom to assume leadership positions with the Louisiana Tech University CATALyST Project. **Sherri** is serving as the primary CATALyST Facilitator and is teaching the Physical Science class now offered in Ouachita Parish. **Carolyn** is now the Project LIFE Site Coordinator and is supervising the academic year follow up program for its participants. In addition, both are part of the team instructing Project LIFE during the summer months. Way to go girls! **Bill Gallien, Fair Park High School**, has been named Science Department Head and **Missy Wooley, Rayville High School**, is on the LINC'S Leadership Team while **Carolyn Sykes, Ouachita Parish High School**, serves as a Mentor for Louisiana's National Board Certification. We are proud of the outstanding work that each of these educators continues to do to improve science education for their colleagues and students.



CONGRATULATIONS

C₃ congratulates **Andre' Varnado, McDonogh 35 High School**, on being named Science/Math Pre College Teacher of the Year by the New Orleans Chapter of the Sigma XI Chemical Research Society. In addition, **Andre'**



was also inducted into the Big Easy Kiwanis Club of New Orleans where he is sure to make a big splash as well. In Sigma XI news from the other end of the state, both **Sherri Ferrel**, formerly of **Simsboro High School**, and **Carolyn Sykes, Ouachita Parish High School**, were



both honored with Outstanding High School Science Teacher of the Year Awards at the joint Tech/ULM awards banquet. We are proud of the outstanding work of ALL these fantastic C₃ participants!

WE DO EXTRA CURRICULAR, TOO!!



When not exciting students in their chemistry labs, C₃ teachers are also engaged in the lives of their students outside the classroom. **Missy Wooley, Rayville High School**, sponsors both the Student Council and Science Club. And she says she's looking for ideas for activities for her Science Club gang so you can help her



there! **Cleo Head, Riverfield Academy**, spends all his extra time either on the football field or in the gym. After running practice all week, he is serves as the press box "eye in the sky" for the Raider football team as they make a run for the playoffs. Then he turns around and serves as Head Coach for the girls' basketball team set to tip off next month. Looks like Richland Parish has its hands full with these two teachers!!



Congratulations to ANNETTE PARKER, ZWOLLE HIGH SCHOOL, who discovered the real meaning of "chemistry" AFTER C₃ AND MARRIED HER BEAU. Best wishes to Mr. And Mrs. Gentry from everyone!!

BULLETIN BOARD

The Aerospace Vehicle Systems Technology Office, Langley Research Center, in partnership with Glenn Research Center and the Federal Aviation Administration announce the first NASA student competition for Revolutionary Vehicles . For further details and more information, visit <http://avst.larc.nasa.gov/competition.html>

The Dropping In a Microgravity Environment (DIME) program allows high school aged students to work in a team to research microgravity, develop a hypothesis, and write a proposal for a microgravity experiment. If selected, the team then designs their experiment, builds it, and sends it to NASA Glenn in Cleveland, OH, for operation in the 2.2 second Drop Tower facility. Four students and an adult advisor from each selected team win travel and per diem to NASA Glenn for the three days of DIME Drop Days in late April. To request information about DIME as well as other educator resources, e-mail your name and mailing address to <dime@grc.nasa.gov> You may also obtain DIME information from the internet at the following address: <http://microgravity.grc.nasa.gov/DIME.html>

NATIONAL MOLE DAY IS OCTOBER 23; MARK YOUR CALENDAR AND CELEBRATE!
Check out <<http://moleday.org>> as you make your preparations!

Don't miss out on Creative Classroom's Contest of the month, sponsored by ETA/Cuisenaire. For more details and your chance to win a \$700 ETA/Cuisenaire product gift certificate, log on to <http://www.etaquisenaire.com/creativeclassroomcontest>

Need help with Power Point resources? Try the following links from Google:
<http://www.uni.edu/profdev/rubrics/pptrubric.html>
http://www.education-world.com/a_tech/tech013.shtml
<http://www.teach-nology.com/tutorials/powerpoint>
<http://www.indezine.com/products/powerpoint/ppedu.html>

Working on a timeline in your classroom? The following resource may be helpful as you work to integrate history and science!

TEAM AMERICA ROCKET CHALLENGE: The Team American Rocketry Challenge is the 1st national model rocket competition for U.S. high school and junior high students. Five winning student teams will share a total prize pool of approximately \$50,000 in savings bonds and their teacher's departments will share \$9,000 in cash. In addition, the top ten teams will compete for three \$2,500 grants to design, build, and launch an advanced rocket with NASA Marshall Space Flight Center. Each of the top 25 teams will be invited to send one of their teachers to an advanced NASA rocketry workshop. For information and an application, visit <www.rocketcontest.org> or <www.aia-aerospace.org>

Sponsored by the Aerospace Industries Association . . .

WEB RESOURCE: A DEBATE—HOW FAR DOES LIGHT GO? <http://kie.berkeley.edu/KIE/web/hf.html>
"How Far Does Light Go" is a debate project in which students examine the scientific properties of light. The culminating activity is an informal classroom debate where groups present their arguments about how far light goes and respond to questions from other students. Visit the web site or for more information, send an e-mail to <kie_info@kie.berkeley.edu>

The latest installment of the popular high school curriculum supplement series from the National Institutes of Health "Sleep, Sleep Disorders, and Biological Rhythms" is now available. Order your copy of the teacher ready module by visiting <<http://science.education.nih.gov/h4>>

ReActions newsletter, published by the American Nuclear Society, is your source for information about nuclear science and technology. Get it at <http://www.ans.org/pi/teachers/reactions/>

The Tetra company will give classroom teachers a free classroom aquarium! It's nice 10 gallon aquarium with accessories. Then, they will team up with a local Tetra dealer for the gravel and fish. The e-mail address to ask for a classroom aquarium from the Tetra company is <Denise@bcf-m.com> A teacher who received her kit actually got a 15 gallon aquarium with a heater, thermometer, light, plants, filter, and chemicals. Then Wal Mart provided the fish and gravel. In addition, she received a teacher's guide with lessons, a poster for data collection and daily observations. All reports state that is really is worth going for so give them a try!

Copies of the new publication "Spill Prevention: Invest Now or Pay Later" can be obtained by contacting the BTNEP Program Office. The 24 page color booklet is intended to encourage development and implementation of a strategy to address petroleum and related fluid spills. Call them at 1-