

---

---

# TEST TUBE

*Communication for Tennessee Earth Science Teachers*

Volume 17 Issue 1

February, 2008

## **A Word From The President**

By Bryan Byrne

Greetings fellow Earth Science enthusiast: For those of you who do not know me, let me introduce myself, my name is Bryan Byrne and I am your new President. I'm going to start things off by telling you a few things about me. I'm an 8<sup>th</sup> grade Science teacher in Columbia at E. A. Cox Middle School. This is my 8<sup>th</sup> year of teaching and my 4<sup>th</sup> year in TEST. I'm extremely happily married (newly) and have 4 kids from ages 14 to 22. I have been an enthusiast of geology and astronomy since I was a wee little tyke. That has grown over time till I have reached a point of teaching others about my interests.

I have certain goals that I would like to achieve during my term as president of this fine organization. First: We have designated representatives for the various regions of the state. These representatives will act as liaisons between TEST and the members in their region. This will give members of an area of the state a more personal relationship and should improve efficiency of distributing materials. These regional reps will also be encouraging and actively seeking professional development opportunities for their region and contacting members about this. The designated representatives are Jim Watson for the SE section of the state, Jane Luhn for the NE, Nancy Stetton for Middle, and Pat Royle for West. Details of what counties are included in what region will be forthcoming soon.

Second: I feel it is vitally important for TEST to increase its membership. I would like to see us double our membership in the next two years. I believe we are an extremely valuable resource that should be taken advantage of by as many teachers as possible; whether they be public,

private, home school, or any others interested or involved in teaching Earth Science.

Finally, free-flowing communications among members of this organization and each other is a must. I believe I can speak for the other officers and advisors of TEST when I say that "my door is open at all times" should be the attitude of all TEST members. This should apply to working with fellow teachers as well as members of the community. I would like to see TEST members actively involving their communities in activities to promote Science awareness; whether they be stargazing parties, rock digs, inviting a local scientist to talk at their school, etc. I know that some members of TEST already do this. I would like them to make themselves available to assist others in undertaking such endeavors. Let's spread the word of TEST from one end of this state to the other.

I look forward to serving you as president of TEST. Together, we can do great things for Earth Science education in the state of Tennessee.

## **Grandfather Mountain Residential Workshop NC. June 23-28, 2008**

Workshop for educators in the mountain environment. We will share with visitors from Brazil and Finland. Lectures, discussions with scientists, outdoor activities on air quality, mountain bogs, habitat preservation, biodiversity, and human influences. Participation in fieldwork, technology applications, environmental monitoring. Email: [sci-link@ncsu.edu](mailto:sci-link@ncsu.edu)

## NASA-Sponsored Educator Field Experience - Floods and Flows: Exploring Mars Geology on Earth

The Lunar and Planetary Institute invites you to participate in: **Floods and Flows: Exploring Mars Geology on Earth** A NASA-sponsored field-based workshop, 13-19 July 2008 for intermediate grade level science teachers (other educators are invited)

Spend the week with planetary scientists visiting the site of Ancient Glacial Lake Missoula and tracing its flood waters through Montana, Idaho, and into Washington. Examine the geologic evidence for catastrophic flooding, as well as for past volcanism in this region. From these field experiences and accompanying classroom activities, participants will build an understanding of surface processes on Earth, including water flow, volcanism, glaciation, and sedimentation. Attendees will extend their understanding to interpret what the features on the surface of Mars suggest about the past environments and history of the red planet.

The experience will be divided between the field and lab, where participants work with classroom-tested, hands-on inquiry based activities and resources that can be used to enhance Earth and space science teaching in the classroom. Participants receive lesson plans, supporting resources, and presentations. A limited number of grants are available to cover registration.

Join us for hands-on, real-world experience to enhance your teaching about Earth and space science - and to make

connections between these exciting fields of research!

For more information about costs and logistics, and to apply for the experience, please visit:

<http://www.lpi.usra.edu/education/fieldtrips/2008/>

Applications are due April 7, 2008

Participants will be notified of their acceptance by April 15, 2008



Ms. Vicky leads Camden JH students to the Coon Creek dig pile where they anticipate finding many fossils from the Cretaceous Period.

## Discovering Coon Creek's Treasures

By Pat Royle

Camden's Science Club members were a buzz with questions about what they would discover at The Coon Creek Science Center in .

rural McNairy County. How old are the fossils? Will I find a lot of fossils? Will we be able to keep what we find? Can we walk in the creek?

Boarding the bus our anticipation grew. Meanwhile, the Pink Palace Museum staff was preparing the Science Center for our arrival.

Ms. Vicky and Ms. Pat greeted us with a general tour of the facility. After settling in, Ms. Vicky conducted an informative, hands-on class session about Coon Creek. Coon Creek is about 70 million years old. The land used to be covered by the ancient Gulf of Mexico. When the Gulf of Mexico's waters receded, Upper Cretaceous marine invertebrates (clams, snails, shrimp, etc.) and vertebrate fossils of the sea-going reptile Mosasaur were left in an unconsolidated clay/sand matrix. There are two Mosasaur sites currently being excavated and studied. Even though these sea reptiles grew between 17 and 56 feet long, they were not dinosaurs. They were however powerful swimmers with carnivorous appetites. Mosasaurs aren't the only Cretaceous animal being studied at Coon Creek. Coprolite studies are also being conducted at the current time. What's a Coprolite you ask? You'll have to ask one of my students. They held many specimens of Coprolite.



Brandi Lenz, Summer Watson, and Paige Brinley find out what Coprolite really is!

Hands-on materials prevailed and the students engaged in sorting fossils from non-fossils before heading to the dig pile. Armed with linoleum knives (Don't worry Mom, they handled the tool safely like a professional!) and aluminum foil, the students spent

about an hour digging through matrix extracted from the dig pile searching for the perfect fossil. The aluminum wrapped treasures were then transported to the picnic table where Ms. Pat demonstrated how to process the fossils for identification and preservation. The students used the simple tools (spray bottles with water, water-color paint brushes, and picks similar to what your dentist uses) provided by Coon Creek to reveal a variety of superbly preserved fossils found in the creek. Coon Creek fossils are the "real deal!" The matrix that holds the fossils preserved them for over 70 million years.

After our successful fossil dig we walked our appetite across the street to McDonalds for lunch – not! As noted above, Coon Creek Science Center is in *rural* McNairy County. We raided our sack lunches in order to restore our energy for the much awaited walk through the creek.

The walk through Coon Creek was surprisingly easy "pickings" since there was little water in the creek due to the lack of rains in recent months. Students found Coprolite, imprints, and more to add to their collection of fossils. A few fossils poked from the sides of the creek bed reminding us that if you dig deep enough anywhere on the property you would find fossils.

After a few group photos were taken, we headed back to the classroom to collect our Coon Creek fossils before boarding the bus back to Camden. Scanning the treasures beside the students on the bus I thought of what a great opportunity we were afforded in just a few hours. The knowledge gained outside of the classroom was invaluable not to mention the memories made.



Ashley Conrad shows off her fossil, Pterotrigonia (Scabrotrigonia) Thoracica, which happens to be the Tennessee State Fossil.

## Astronomy Workshop Planned for TSTA (2008) by TEST

By Lionel Crews

This year at TSTA, TEST will be focusing on astronomy. We will have a full day workshop devoted to standards-based topics and activities on Thursday and several one-hour sessions on Friday.

In particular, we will be focusing on orientations in the sky including phases and seasons, properties of objects in space including planets, stars, and galaxies, and the latest discoveries and space missions in astronomy. The Thursday workshop will be led by Dr. Lionel Crews, an advisor to TEST and assistant professor of physics at UT Martin, and will feature TEST members demonstrating their best activities in astronomy.

The Friday sessions will focus on astronomy sub-topics and activities, as well as open forum discussions on the latest and greatest in astronomy.

Come to TSTA in November this year to have all your astronomy questions answered!

### Evolution Corner: *The Counter-Creationism Handbook* Answers Recurring Questions about Evolution

Michael A. Gibson  
(Winter, 2008)

The Dover “intelligent design” trial is a thing of the past; once again teaching science was victorious over forced unscientific dogma. Creation science was again affirmed as non-scientific and a disguised attempt to force one world view into a science classroom as a way to control developing youthful minds. As I mentioned in several earlier articles of *Evolution Corner*, the issue of some parts of the public attempting to change what is science and what is good science education to more closely follow specific religious or other agendas is not going to go away; it only gets quiet for a while. The

current hiatus in attack makes it possible for us to take a breather and focus on other things...or so we thought. Many of you who know Dr. Crews, who teaches astronomy at UT Martin and has become an active TEST educator, also know he often participates in online talk groups, etc. related to the concepts of evolution. Dr. Crews and I often have lunch together and he often shares with me the most recent set of exchanges or challenges to some aspect of evolution posted by John Q. Public. Often he asks me how I would respond to a particular question that relates to paleontology or geology, which he then takes back to the discussion board. We have noticed that many of the same old (and I do mean old!) arguments or pundits reoccur continuously. We lament how time consuming and tedious it is to respond to these as they have been refuted over and over again in numerous places. It becomes clear to us that many of the people participating in the forums do not research anything, but merely repeat the same old “urban” legends *ad nauseum*. It is kind of like us as teachers having to write the same response on a student’s test or essay for almost everyone in the class every year. Wouldn’t it be nice if there was a single source where all of these issues, questions, and most importantly, the responses and refutations were available in a single well organized place....there is!

Mark Isaak has published *The Counter-Creationism Handbook* (2007, University of California Press, Berkeley, 330p) to help those of us who need a quick reference to what the original creationism charge is (reference included), how it has been countered and what the real science says about the issue (references included). Isaak serves as the editor for the *Index of Creationist Claims* on the *Talk Origins* website. The book is divided into 10 sections according to the topic area (e.g., philosophy & theology, paleontology, biology, astronomy, physics, biblical creationism, etc.), each of which is subdivided according to subareas (e.g., in paleontology – physical anthropology, transitional fossils, fossil record, methodology). Each entry is relatively short (1/2 to 2 pages long)

and follows the simple format. Entries are organized according to mainstream science and type of “claim” against evolution. For example: CA113.1 is found in the section on Claims of Philosophy & Theology (CA) and is citation 113.1. CA113.1 begins by noting Darwin recognized a problem with explaining the complexity and evolution of the human eye (this issue has now been solved), which creationists such as Huse in 1983 like to quote as evidence of evolution not being adequate. To effectively counter this claim (over and over) it would be nice to tell someone to simply refer to CA113.1 in the book (or on the website referenced below) for a complete rebuttal of the issue. The book entry then goes on to identify the proper scientific rebuttal (several even) that could be argued.

Some claims that are tackled: CA001 Evolution is the foundation of an immoral worldview, CA005 Evolution is racist, CA301.1 Naturalistic science will miss a supernatural explanation, CB300 Complex organs could not have evolved, CB361 Vestigial structures are evidence of decay not evolution, CB701 Haeckel falsified his embryo drawings, CB901 Macroevolution has never been observed, CC150 If we evolved from apes, how come apes still exist, CC371 Evidence of blood in *Tyrannosaurus* bone indicates recent fossilization, CF001 The second law of thermodynamics, and the trend to disorder, is universal, or CH 350 Organisms come in discrete kinds. Several hundred claims are addressed.

You can use the book site to get the answers for yourself to many questions that students will ask. Once you have the reference, you can avoid discussion of opinion and refer to a single, short, to the point, summary of the problems with the claim. It is especially useful when dealing with misquotations and shallow knowledge issues that so plague creationist literature and discussion. The text is written for the non-scientist, so that makes it even more useful. What if you cannot find a response to a

creationist claim or question in the book, or just simply want to follow a debate on that topic. Isaak’s book has a companion web site, from which most of these items have been taken, on the *Talk Origins* (<http://www.talkorigins.org>) provides extension support. *Talk Origins* is a forum for the evolution debate, but be forewarned, when you get involved in the site, it can be a time sink and you can feel frustrated by reading “fights about the same old naive arguments”. Hence the utility of Isaak’s book...simply refer the neophyte inquisitor to a previous discussion or summary and you can move on the more challenging issues related to the subject. You can dismiss the question as not being terribly critical as it has been dealt with often before, while at the same time now demeaning someone for the attempt. Hopefully the student or parent will read further in the same book or peruse the site deeper to “self-correct” misconceptions from a more balanced literature than they are usually exposed to. Happy reading!

**Announcing the UT Martin  
Master’s of Education: Interdisciplinary  
Studies - Geoscience Education  
By Michael Gibson**

Beginning Fall, 2008, UT Martin will begin offering its long awaited on-line degree program leading to the Master’s of Education: Geoscience Education. A more complete description of the curriculum will be provided through other outlets, but we want readers of the TEST TUBE to know the ME:GES is now up and running. The degree program consists of education-related courses offered through the School of Education and a minimum of 18 hours of geoscience content area courses from the Dept. of Geology, Geography, and Physics. Content area instructors for the degree program include Dr. Michael A. Gibson, Dr. Lionel Crews, Dr. Mark Simpson (University of TN Martin) and Dr. Ann Holmes (University of TN Chattanooga); we

anticipate additional faculty in the program. Once accepted into the UTM graduate program, an application will be evaluated to determine if the applicant has the necessary science background to enter the geoscience education specialty area. The geoscience courses for the degree program are:

**Geoscience 700 Advanced Earth Systems Science (3)** Investigations in Earth Systems Science using inquiry-based exploration of Earth's processes and environments including the lithosphere, atmosphere, biosphere, hydrosphere, and astrosphere. The course will focus on Problem-Based and Student-Centered learning techniques, so it will be especially applicable to anyone intending to or currently engaged in teaching science courses. The course is taught completely online, with the participants doing a combination of individual and group coursework via an asynchronous discussion board. An optional field trip for hands-on learning will be made available.

**Geoscience 710 Advanced Physical Geology for Educators (3)** A study of advanced physical geology intended to provide teachers with the foundation knowledge of earth's internal structure, plate tectonics, the rock cycle, weathering and earth materials; natural resources, geochemical cycles; and the basis for geologic time and the history and nature of science.

**Geoscience 720 Oceanology for Educators (3)** Detailed study of modern and ancient oceans. Topics include ocean floor topography and bathymetry; marine sediments and ocean floor volcanism; waves, tides, and currents; air/sea interactions, ocean chemistry, marine ecosystems; paleoceanography.

**Geoscience 730 Understanding Evolution (3).** Detailed study of cosmic, geologic, organic evolution and with emphasis on the history of

evolutionary thought and methods scientists use to investigate evolution. Special emphasis is given to common misconceptions about evolution, includes approaches to correcting inaccuracies, incomplete knowledge, and misconceptions students have about evolution as well as strategies for improving teaching and learning about evolution.

**Geoscience 740 Field Experience in Geoscience (3)** May be satisfied with one 3-hour geoscience field course or a series of approved graduate credit field geoscience experiences pre-approved by the faculty. Field experiences may include summer workshops or institutes, extended weekend field courses, travel courses, field camps, or extended field trips. Field experiences may have an on-line component, but the core of the course is practical in-the-field participation emphasizing the application of principles and methods of geoscience investigation and education.

**Geoscience 750 Global Climate Change (3)** A study of the patterns and processes of global climate change throughout the history of the earth and assessments of future climate change scenarios. The course will also examine the evidence of climate change from the geologic and fossil record and will assess the different types of models that generate forecasts for future climate scenarios.

**Geoscience 760 Astrophysics for Educators (3)** Detailed study of the formation, evolution, and structure of the universe, galaxies, and stars. Topics include the Big Bang model, nucleosynthesis, the interstellar medium, dark matter and dark energy, stellar remnants and star nebulae, stellar activity, the Sun as a star, modern instrumentation and space missions, and studying motion and light.

As the program builds, we anticipate additional elective courses coming on-line.

The education courses required for the MS degree are:

### FOUNDATIONS COURSES

**EDEV 710 Educational Statistics (3)** An elementary course in methods applied to educational problems; resolution of assigned or chosen problems in educational statistics.

**EDFN 710 Research in Education (3)** Introduction to graduate study. Consideration of the various techniques appropriate to the production and consumption of educational research. *Prereq: EDEV 710; for counseling majors: PSYC 318, EDEV 710 or a similar course.*

**EDFN 720 Educational Studies: Multicultural Issues in Education and Counseling (3)** Emphasis is on multicultural education and cultural foundations in education and counseling; developing knowledge, effectiveness in teaching and counseling services in Pre K-12 schools.

**EDST 710 Models of Instruction, Curriculum Development, and Advanced Teaching Strategies (3)** Advanced principles of curriculum and instruction as applied to education; study of a variety of curriculum designs used regularly or experimentally; development and organization of the curriculum; analysis of current practices, problems and trends in education; an exploration of significant alternative approaches to teaching in education.

### EDUCATION APPLICATION COURSES

**EDST 750 Advanced Computer Applications and Technologies in Education (3)** Intended to give background in microcomputer technology necessary to enable the teacher to be computer functional in the classroom use of software, word processing, use of data bases and

spreadsheets, low and high resolution graphics, as well as administrative software applications. In addition, there will be a review of up-to-date technologies used in education. A research paper regarding computer applications in the student's field of study will be required. *Prereq: HLRN 311, the equivalent, or demonstrated proficiency.*

**TCED 791 Master Research Project, K-12 (4)** The culminating professional research project for the Master of Science in Education with a major in Teaching Programs. Seminar topics to include but not limited to educational reform, curriculum design, student achievement, parent involvement, cultural diversity, educational technology, assessments, and educators as collaborative leaders and mentors (in a K-12 setting). *Prereq: EDEV 710 and EDFN 710. May repeat enrollment. P/N only.*

All of the education courses are currently available on-line and the first geoscience content courses, Geoscience 700 – Advanced Earth Systems and Geoscience 710, will be offered this Fall through UT Online. For more information concerning admissions and registration for the program contact Dr. Michael A. Gibson, Dept. of Geology, Geography, and Physics, University of Tennessee at Martin, Martin, TN 38238 [mgibson@utm.edu; 731.881.7435]

## New TEST Officers

TEST officers for the 2008-2010 biennium are listed below. The members of the TEST organization look forward to your leadership and thank you for your willingness to serve.

President	Bryan Byrne
President Elect -	Pat Royle
Secretary	Tina Coleman
Treasurer	Christine Henry
Historian	Jane Luhn
TEST Tube Editor	Jane Skinner
Webmaster	Jim Hunt

## ARTICLES AND ANNOUNCEMENTS WANTED

This newsletter is published three times annually, February, May, and October. The deadline for articles is January 15, April 15, and September 15 respectively. We want to hear about what you are doing so please email articles and photographs to Jane Skinner at [jaskinne@hotmail.com](mailto:jaskinne@hotmail.com)

## WANTED NEWSLETTER EDITOR

If you would like to take a more active role in TEST, this is a great opportunity! I will be happy to help you get started. If interested please contact Jane Skinner at [jaskinne@hotmail.com](mailto:jaskinne@hotmail.com)

## Fossils of the Black Belt – A Hands-On Field Workshop

By David C. Kopaska-Merkel

Many of you have participated in our Livingston fossil field workshops before and some of you have not made it yet. This is the first announcement for the October 2008 workshop. Last year's workshop filled up rapidly and some people did not get to go. If you want to attend this year I urge you to send in your registration early. I hate to see anybody miss out on such a fun and educational experience. **See attached flyer.**

## A Mashup Workshop: Using Interactive Maps, Data and Images to Teach Science

“Free-Workshop” offered at Pellissippi State Technical Community College in Knoxville, March 17, 2008. **For details see attached flyer.**

### TEST Membership Application

Last Name \_\_\_\_\_

First Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

Please indicate below where in TN you live:

\_\_\_\_\_ East \_\_\_\_\_ Middle \_\_\_\_\_ West

Home phone \_\_\_\_\_

Work Phone \_\_\_\_\_

E-mail \_\_\_\_\_

School Name \_\_\_\_\_

School Address \_\_\_\_\_

Subjects and grade(s) Taught \_\_\_\_\_

Degrees Earned \_\_\_\_\_

Discipline of study \_\_\_\_\_

***Dues are \$10.00 per year. Make checks payable to TEST.***

Mail to: Christine Henry  
2805 Woodson Drive  
Knoxville, TN 37920



# *Science Teachers:*

## **Fossils of the Black Belt – A Hands-On Field Workshop**

**Space is Limited!**

*Visit and collect at some of Alabama's most famous fossil localities!*

**Where:** University of West Alabama in Livingston and vicinity.

**When:** Tuesday, October 21, 2008, 7:30 am to 4:30 pm.

**Cost:** \$15 (preregistration required)

**What you get:** A certificate of participation (8 C.E.U.'s), a field guidebook, *Lost Worlds in Alabama Rocks* (\$25 value), other books and DVDs, a geologic map of Alabama, fact sheets on Alabama fossils, box lunch, a fossil kit you will make as part of the workshop, and more. You must be present at the workshop to receive these materials.

**Who Should Attend:** In-service and pre-service science teachers who will be teaching earth science or other science courses with earth-science components.

**Contact:** Dr. David C. Kopaska-Merkel, Geological Survey of Alabama, P.O. Box 869999, Tuscaloosa AL 35486-6999. Phone: (205) 247-3695 (office) or (205) 246-9346 (cell). Fax: (205) 349-2861. Email: dkm@gsa.state.al.us

### **Schedule**

7:30-8:15 am: Registration and Orientation (at the University of West Alabama, Livingston)

8:15-1:00 pm: Field trip to Cretaceous sites in west Alabama, Sumter County

1:00-1:30 pm: Box lunch (provided)

1:30-4:00 pm: Curriculum development workshop (at UWA, Livingston, AL)

---

### **Registration Form**

Name: \_\_\_\_\_ Position: \_\_\_\_\_ School: \_\_\_\_\_

Address: \_\_\_\_\_

Home phone: \_\_\_\_\_ School phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

\_\_\_\_ Yes, I plan to attend the Hands-On Field Workshop in Paleontology. I enclose the \$15 preregistration fee.

**REGISTER SOON.** Attendance is limited to 39! Late registrants will go on a waiting list and will be included if possible. More details, including map & directions, will be sent to registrants two weeks before the workshop.

**Return to** David Kopaska-Merkel, Geological Survey of Alabama, PO Box 869999, Tuscaloosa AL 35486-6999. Make checks out to GSA –Educational Fund.

## Workshop Summary

Sign up for a one-day workshop in paleontology (the study of fossils)! The workshop is geared for elementary school, middle school, and high school science teachers (both in-service and pre-service), and has four objectives:

- To familiarize participants with the study of fossils and field geology, so that they will be more comfortable imparting this information to their students.
- To provide information about well-documented sites that can be visited by classes, or used to provide material for classes.
- To provide the teachers an opportunity to develop fossil kits, under supervision by experienced geologists, for classroom use. All objectives will further the goal of integrating real earth science into the school curriculum. Workshop participants will be better able to recommend meaningful science-fair projects in earth science and to assist students with the projects.
- To give participants a copy of the book *Lost Worlds in Alabama Rocks*, a major resource for teaching the geology and geologic history of Alabama.

This course will provide material useful for, or training in, ACOSS Processes and Applications in all grades, the Geology and Earth & Space Science electives at the high-school level, concepts in the high-school biology core, and concepts in the life-science strand at all other grade levels.

Children love collecting fossils; field trips are excellent attention-grabbers and often seem like Easter-egg hunts. Alabama is one of the best places in the world for fossil collecting. In an area the size of England, Alabama has well-preserved fossils of almost every age. It is no exaggeration to say that amateur and professional paleontologists come from all over the world to collect fossils in Alabama.

The workshop will follow the format of successful field workshops held in previous years in the same area. The workshop will be in three parts. The first part will be spent at the University of West Alabama in Livingston, where the principles of field study in earth science will be briefly introduced. The emphasis will be on the basics: keeping a field notebook, reading geologic and topographic maps, and proper collection and labeling of samples. Laws regarding fossil collecting will be discussed. The second part of the workshop will be spent at two (or more) excellent outcrops of fossiliferous Cretaceous marine strata near Livingston. The outcrops contain diverse marine fossils, including oysters, other bivalves, snails, bryozoa, worm tubes, and shark teeth. If very lucky, someone might find remains of ancient sea turtles or of a large mosasaur (a giant sea lizard). The third part of the workshop will take place at The University of West Alabama. Participants and project leaders will identify and label fossils that were collected that morning, developing fossil kits that the teachers will take back to their schools.

### Workshop Leaders

Dr. David C. Kopaska-Merkel is head of the Petroleum Systems and Technology Section at the Geological Survey of Alabama. He has studied trilobites and other fossils, and has led workshops and field trips for teachers, children, and others. Dr. Kopaska-Merkel has written many educational publications.

Dr. Andrew K. Rindsberg has been studying the paleontology of Alabama since 1989 and currently teaches at The University of West Alabama. He is a specialist in marine invertebrate paleoecology. Dr. Rindsberg has written numerous reports on Alabama geology, including field trip guidebooks and educational publications on fossils.

Dr. Doug Wymer is an environmental scientist at The University of West Alabama. Dr. Wymer has co-led other geological and biological workshops for teachers, children, and the general public. His main interests lie in ecological restoration, particularly Blackland Prairie restoration. A visit to his prairie restoration project is part of the workshop.

Dr. John C. Hall is Curator of the Black Belt Museum at The University of West Alabama. He is the retired chief naturalist at the University of Alabama Museum of Natural History. He has led archaeological and paleontological programs throughout Alabama since 1979 and has published on Alabama meteorites and famed naturalist William Bartram.

***Previous workshops held in 1997, 1998, 2001-2007!***

Sponsored by: Geological Survey of Alabama, The University of West Alabama and Discovering Alabama

**“Free-Workshop”** at Pellissippi State Technical Community College in Knoxville  
**Agenda: Using Interactive Maps, Data and Images to Teach Science**

**A Mashup workshop**

Monday, Mar 17

Room 147

ER Building

8:30-8:45 Registration.

8:45-9:00 Getting organized--Introduction of participants

9:00-10:30?Overview

10:30-10:45 Break.

10:45-12:15 Building a Mashup from existing data and images

12:30-1:15 Lunch.

PSTCC Cafeteria Meal Ticket Plan---Sit anywhere except the Annex.

1:00-3:00 Use a GPS unit (including an outdoor lab)

3:00-4:20?Building a Mashup with your data and images

4:20-4:25-Wrap up and head out for dinner.

**Workshop Instructor: [Charlie Peck](#) -**

Charlie Peck is a 1984 graduate of Earlham College (Computer Science) and has been teaching at the College since 1992. His primary research interests are in relational database systems, high availability, Beowulf clusters, and open source software. He regularly teaches principles of computer organization, networks and networking, operating systems, parallel computation, software engineering, database systems, and open source software. He also focuses on engaging educators in learning about the latest technologies and applications in computational science including high performance computing resources in education.

**Interested? Contact Kathleen Affholter, [kaaffholter@pstcc.edu](mailto:kaaffholter@pstcc.edu)**

An example of a mashup would be a picture like the above created with Google My Maps. Pictures and data can be added to a topographic map. An exercise such as this makes it a personal experience (every student will have their own set of pictures to add), and the end-product is very informative. In the future, it would be good to superimpose a geologic map or add video clips to the map.