

## PRESIDENT OF THE TENNESSEE ACADEMY OF SCIENCE FOR 2010

Let me begin by thanking the Academy leadership and membership for placing confidence in me as the 2010 President of the Tennessee Academy of Science. I feel honored and am looking forward to the opportunity to serve you, hopefully with distinction. Tradition has it that these addresses are written to allow you to learn about new presidents and their perspective and goals for the Academy. The first thing about me you should know is that I grew up in Williamsburg, Virginia, steeped in colonial history and tradition, where I also earned a B.S. in Geology from the College of William and Mary. So, I have been instilled with tradition. Let me be brief with my biographic sketch; if you want to learn more about my "evolution" as a paleontologist and educator, I refer you to my 2007 National Association of Geoscience Teacher's Neil Miner Award Citation which chronicles my entire history (Byerly, 2008; Gibson, 2008).

You have already learned two things about me: where I grew up and went to college and that I am passionate about teaching. Most of the rest of what you should know about me can be gleaned from my accompanying photograph, which was taken while I was collecting fossils at the Coon Creek Science Center in McNairy County, Tennessee (my "home away from home"). First, notice my smile (which is my normal countenance when in the field). I consider myself one of those fortunate people doing just what he enjoys most—being in the field. You see, I gave up a "budding and promising career" (my employer's assessment to convince me not to quit my job in the hotel tourism business) to become a paleontologist. I had entered William and Mary as a typical undergraduate and majored in Geology because that is where fossils were studied, and I liked fossils (no thought of a career in it at that point). Literally, my backyard was Pliocene age (5- to 8-million-year-old) marine fossils. My fossil collection had begun when I was in fifth grade and grew to hundreds of specimens by college. I mentored with paleontologist and field mapper Dr. Jere Johnson. Geology was still not my career path, however, as I had worked my way up to managing two motels in Williamsburg. But upon graduation, I had reached a crossroads—continue the career path I had already carved out or change directions down the path I studied for and that was my real passion. Easy choice as it turns out.

With my graduation from W&M in 1979, I decided to walk away from the hotel business that had funded my education and follow my academic passion for fossils by moving to Auburn, Alabama, to begin my M.S. in Geology under paleobotanist Dr. Bob Gastaldo. My fossil collection grew; this time my fossils were considerably older (Pennsylvanian age—more than 300 million years old). My thesis was a reconstruction of the invertebrate paleocommunities preserved in the shale-rich beds between coals in the Upper Cliff coal zone of northern Alabama. My thesis research required me to spend weeks in the field, often working alone, followed by even more time in museum collections (my first foray into the collections at the Smithsonian) and labs. I broadened my academics to include fossil plants, and I remained at Auburn



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after my degree to teach invertebrate paleontology and historical geology. I had successfully landed my first teaching position, at Auburn, within three years of leaving Williamsburg. My association with Bob has continued over the years, most recently with our naming a new genus and species of fossil marsh lycopod—*Hartsellea dowensis*, Gastaldo, Gibson, & Blanton-Hooks 2006.

In 1984 I moved to The University of Tennessee, Knoxville, to pursue my Ph.D., this time working with echinoderm specialist Dr. Tom Broadhead, where I worked on even older invertebrate fossils (Devonian age—415 million years old). My dissertation was on the paleogeography, depositional environments, and biotic interaction paleoecology of the Ross Formation of West Tennessee. Upon completion of my degree I moved to my current position at the UT Martin where I have been happily collecting fossils and reconstructing the geologic past of Tennessee and many other regions ever since. Tom Broadhead and I have worked together as colleagues for many years now. I am proud to say that the fossil collection at UT Martin has now grown to museum scale with well over 2 million specimens. I currently have active research projects in the Cambrian, Ordovician, Silurian, Devonian, Mississippian, Pennsylvanian, Cretaceous, Paleogene, Neogene, and Quaternary geologic periods. Also, I have broadened from invertebrates and plants to vertebrates and cyanobacteria, and my work spans local to international sites. In 1994 I began working in Belize, Central America, and

Quintana Roo, Mexico, and have taken eighteen trips to the region conducting research on stromatolites, *Jute* snails, and hurricane damage on coastal cayes. I am confident that I made the right choice in 1980.

Looking back at the photograph, which was taken as part of a teacher education workshop, you can also deduce that I consider myself an educator at all levels. I have my college courses (Physical Geology, Environmental Geology, Historical Geology, Marine Geology and many more), but I have also spent my summers since 1989 running K-12 teacher workshops. I am currently the National Chair of Education and Outreach for the Paleontological Society, have served on the executive board of NAGT, and am a charter advisor for the Tennessee Earth Science Teachers (TEST). I have run numerous summer teacher workshops, most of which are field oriented requiring extensive travel for several days to weeks. I also teach dual-enrollment geology in the local high school, so I even can claim to be a public school educator. I believe in hands-on, minds-on experiential learning. I also follow the premise that students need relevance to properly appreciate science and that early immersion in the process of science itself is the best way to learn science and for recruiting the next generation of scientists.

This brings me to the Tennessee Academy of Science. I need not tell you about the function and importance of the Tennessee Academy of Science as this was well presented by past-president Dr. Cindi Smith-Walters (2008) in her presidential address. I encourage you to read her essay as she also ably summarizes the many resources of the Academy available to researchers and educators. As the Academy approaches its Centennial Celebration in 2012, I wish to focus my activities on (1) laying the groundwork for celebrating this milestone and (2) increasing the visibility and use of the *JTAS* as an outlet for research. Watch for announcements regarding the Centennial and think of ways to participate!

As researchers and educators we live in a very different world from that when the Academy was chartered and the journal begun. At that time information transfer was slower and through fewer outlets. Scientific research often was more interdisciplinary, more endemically focused, and took longer to complete (recall the days of pen-and-ink drafting and typewriters). Progress has resulted in many journal outlets and online information transfer updated more frequently. With this increased productivity comes competition for research to focus on larger impacting questions, bigger issues, and to have to wider readership. Much research requires integration at the regional, continental, and global scale. The "publish or perish" climate of academia, the hypervelocity "rat race" expectation of grant funding, and numbers of "pubs" have forced many scientists, especially those from younger generations, to turn away from state academies as publication outlets and to focus on larger, glossier, wider-ranging journals (especially society-driven journals) just to keep alive. What does this mean for *JTAS*? I have heard a number of potential authors say that they focus on the bigger scale science issues and publications because that is what they need to do for tenure, promotion, etc. Consequently, "small science" is left without an outlet or

overlooked as not important to share. I think this is a growth niche we need to embrace (and indeed a perusal of our journal will show that this has always been our forte).

This brings me to the "big science–little science" scaling debate. By small science I do not mean insignificant minutia in science; rather I mean locally applicable to regionally based quick contributions that are so necessary to amass the basic data that ultimately all "big-scale science" must rely on. In my own area of geology, individual locality interpretations and mapping *ARE* the data points that must be compiled to make any picture of a present or past landscape. It is important to document these occurrences as they often disappear under the bulldozer's blade as the next road or parking lot is constructed. These scientific contributions are vital to Tennessee's natural and economic history and should not be undervalued. They may not be as glamorous or sexy as the bigger picture investigations, but they are absolutely as important.

I began this address by talking of tradition, so following the example set by the long exemplary tradition of the scientists of the Tennessee Academy of Science, I ask you to pause from your work for a few moments and reflectively walk through your lab and go through your files. Find those interesting and important projects that you know should be shared with other workers and preserved for the future, but perhaps you have not gotten back to finishing or publishing. I also began this essay by using a photograph to make points about my background. As I noted, the photograph shows me happily studying West Tennessee fossils in the field. I consider some of my best contributions to science to be the many local finds and reported occurrences I have made over the years. I consider myself foremost a regional field geologist, one who learns all he can about the site-level world of Tennessee and brings that to the attention of other scientists, educators, and the general public. Small science *IS* big science.

I close by encouraging you to focus attention on local Tennessee curiosities (geologic, biologic, historical, and otherwise), sites in peril of being lost which you can study and other scientific questions (chemical, mathematical, and engineering) that you can share with fellow Tennessee scientists. Gather students and give them projects to research. Teach them by participatory example and experiential learning. Add to our knowledge of Tennessee through scientific inquiry and dissemination. Recruit practicing scientists from the academic ranks to cut their professional teeth on real Tennessee science issues. Foremost, share this work through *JTAS*. At the very least, you will reacquaint yourself with local Tennessee issues and clean up some unfinished projects!

#### LITERATURE CITED

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