

# **Sigma Pi Sigma 2008 Quadrennial Congress**

Report by Abilene Christian University  
Society of Physics Students

## **Summary of Our Experience:**

Overall the conference broadened our horizons on what is truly possible in the field of physics. The conference allowed all of us to look outside of our own personal experience as physicists, be it as students, researchers, or teachers, and view things from a more national and global perspective. It brought about reflection on what it means to live not just as a scientist, but as a citizen scientist, and imbued a sense of greater responsibility to the community that invests in us. Through all the things we learned as Society of Physics students, the Abilene Christian University chapter plans to engage our campus in a science forum held in the spring. By doing so, and offering open conversation on the importance of science to society even on controversial topics within our community such as creationism vs. evolution, we feel like we are taking what we learned at the conference and applying it at home. This is the first step in achieving the goals and vision of the congress.

*Below you will find posts made by various ACU students during the conference on specific topics and lectures. They offer synopsis and opinion on a number of the talks given.*

## **Opening Remarks and SETI - Nov 07 9:54AM**

We have been officially welcomed to the 2008 Quadrennial Congress for SPS! We arrived at the hotel, registered, enjoyed some free popcorn, and perused the tables set up by graduate schools and summer internships lobbying for fresh faces and talent. We were then treated to cookies and coffee prior to attending the first lecture of the weekend. With several people still munching on sweets, the organizing committee of the congress offered a formal welcome to an audience of over 500 students and professionals attending the meeting. After some introductions and more formalities we launched right into the introductory lecture, entitled "Science as a 'Contact' Sport: Experiences of a SETI Researcher." Jill Tarter, director of the Center for SETI (Search for Extra Terrestrial Intelligence) Research at the SETI Institute, provided an overview of the motivation behind SETI and elaborated on the techniques employed in their search for life beyond earth. She expressed her desire to unlock some of the deepest mysteries of the universe through research at SETI, such as: How did life start? How will the universe end? Do humans comprise the only intelligent population in an incomprehensibly vast reality? All of these questions have plagued humanity for centuries, and various cosmologies and "myths" have been embraced by humans in an attempt to understand our place in the world and the universe. Using science as a tool to provide observational evidence for the history of the universe, through research like that of SETI, previously unimagined doors may be opened to understanding our origins. Tarter talked about her tedious and painstaking search across the expanse of interstellar space and the hope of finding a signal of some sort. Such a signal would have to be either "almost natural" or "engineered" to set off any alarms at SETI. However, any beacon that might appear in the data collected from the depths of space would demand answers: what made the signal, what does the signal imply about the future of technology on earth, and what are the implications of two intelligent societies existing at the correct times to find signals from each other? All of these questions are constantly in the back of Tarter's mind, and the probabilistic

hope of finding something meaningful coming from the stars keeps her looking upward. All of this is a lot to take in after a full day of travel. Thankfully Tarter's presentation was light-hearted, witty, and intelligent: a merciful gesture when working with an exhausted audience. I found her talk very interesting, yet while it raises some thought-provoking questions and highlights the incredible beauty and vastness of our universe, I couldn't help but ask myself, "Why do we care?" It seems that the search for intelligent life in the universe is a fascinating endeavor that would raise more questions than it would answer. Were we actually to find a signal or something to alert us to the possibility of intelligent life elsewhere, what would we do? Chances are decent that the civilization would have died out by the time their signal reached us. Also, finding a signal in the first place presupposes that they would have thought to send us a signal at all. What if there is no other life at this time in history? Perhaps life on earth developed at the fastest rate possible and we beat others to the chase. Or perhaps, despite the math of the matter, we really are alone among the stars. I thoroughly enjoyed the talk and have the highest respect for Jill Tarter and her work, but it all seems somewhat of a wild goose chase. If SETI succeeds in finding a series of beeps emanating from the cold, black abyss of space then it would bring us no closer to understanding those who sent it. We would be left with only a proof that something with a discernible pattern arrived at earth, but no clues about the nature of those who sent it, what it means, why it was sent, or how we could ever respond. While it would open a vast array of doors, it still seems beyond our reach to act on it.

### **Evolution vs. Creationism/Intelligent Design - Nov 08 12:21AM**

Good evening! Here are a few thoughts regarding today's morning presentation....  
(Evolution vs. Creationism/Intelligent Design)

The speaker really only had three points. After stating these, he merely repeated these points in different words. The points are as follows...

1. School systems and cosmic evolution
2. FLAT - Families for Learning Accurate Theories
3. The reactions of Christians and Atheists

So, there were quite a few things that bothered me. One was the simple fact that every word was coated in a malicious disdain intent to ostracize any who hold a religious view that are integrated into his or her life. This speech essentially negatively targeted any who held a different view, be it religious or scientific.

Saying that those who believe in Creationism may be "reasonably well-educated" merely patronizes others and discourages academic discussion of science. Through the use of words like "attack", and the implication that all Creationists are "anti-science people", the freedom of speech, thought, religion, and academic knowledge were systematically rejected.

Now, I do not claim to have all the answers, nor do I claim that the Big Bang Theory/Big Bounce Theory lacks scientific data that should be shared. My only request is that different viewpoints

be accepted in a non-condescending manner, without malice or anger.

The tensions between Creationism and Evolution, even religion and science, is not something that will ever vanish. The most we can do is ease the tension of both parties by listening, truly listening, not just hearing, and accepting that there are differences in this world. Not everyone will believe in one concept, some will believe in neither. Others will believe in a combination of the two. But all of us have a right to be honest and open without the fear of being discredited, despised, or even fired. After all, isn't that what America stands for?

Also, I recommend watching Ben Stiles' "Expelled". It contains some very interesting views on this matter, and confronts the stifling of the sharing of scientific knowledge.

### **Vision** - Nov 08 5:37PM

Today, one of the speakers at the Sigma Pi Sigma Quadrennial Congress was Dr. Aziza Baccouche. She obtained her Doctorate in Nuclear Physics in 2002 despite being legally blind and has since been involved in producing and creating informative short clips. She is president of Aziza Productions, Inc and works a lot with CNN and other news stations reporting on the benefits that science has brought to society. During her speech, she stressed the concepts of the scientific community's responsibility to accurately communicating scientific content, though still recognizing who the audience is. Aziza Baccouche emphasized these points through a series of video clips she had previously produced. In addition, Baccouche shared a documentary about a surgery she under went. Dr. Baccouche views life in a common theme: though her sight is 2400, her vision is complete inside of her.

### **"Political" Science - How We Fit in Wash., D.C.** - Nov 09 12:14AM

So, due to the style of presenting during the "From Researcher to Representative" Workshop, I have heard from various sources that the speech lacked clarity and was difficult to follow.

During this workshop, I found it was easier to follow the speakers' main concepts rather than what was actually said. This is what I learned....

Louis J. Lunzerotti: Mayor of Harding Township

1. Researchers/Physicists need to be active in the community.
2. Scientists should be leaders who are not afraid to speak to non-scientists
3. Scientists make well-educated leaders.
4. Science is everywhere, even in politics
5. Talk and be active at town hall meetings- this opens doors for input, as well as future officer positions.

Mike Fortner: IL State Representative

1. Physics and politics can coexist
2. Science adds strength and veracity to politics
3. Get active in the community/state
4. You can lead no matter where you are in your life/education
5. Be willing to share your knowledge- you'll gain coworkers' respect

Craig Jones: Fermilab's Citizen's Task Force

1. Be open with those who are non-scientists
2. Trust is the key to success.
3. Avoid actions that may injure trust
4. We need to tolerate others' views
5. Avoid confrontation and encourage positive relations.

So, I hope this was useful, and I'll see y'all in the morning!