

SPOTLIGHT ON “HIDDEN PHYSICISTS”



MAJOR MATTHEW BRIGGS, U-2 PILOT AND AIR FORCE OFFICER, BEALE AFB, CA

“Since earning my BS in physics from the University of Alabama in 1997, I have committed the last 10 years as a pilot in the USAF. I began my post-training AF career at Little Rock AFB, AR, as a co-pilot and then aircraft commander in the C-130 Hercules. I followed that assignment with a three-year tour to Ramstein AB, Germany, as an instructor pilot in the C-130. During my time as a C-130 pilot I

deployed numerous times to the Middle East and eastern Europe in support of Operations Joint Forge, Joint Guardian, Southern Watch, Enduring Freedom and Iraqi Freedom, and to Antarctica in support of Operation Deep Freeze.

During my overseas tour I applied and was accepted to the U-2 high-altitude reconnaissance community at Beale AFB, CA. My missions consist of one-hour pre-breathing of 100% oxygen in a full-pressure suit (same ones worn by NASA astronauts) followed by 10-12 hour missions above 70,000 feet—‘Alone, Unarmed, and Unafraid.’ Each day the U-2 ‘Dragonlady’ proves to be the most challenging aircraft to fly and employ.

I work outside the ‘traditional’ physics community, but my academic background certainly helped me attain my goals.”

ROBERT L. GREESON, PATENT ATTORNEY, FULBRIGHT & JAWORSKI, LLP, DALLAS, TX

“I am a patent attorney at the international law firm of Fulbright & Jaworski, LLP, in Dallas, TX. My practice largely involves the prosecution of patents before the United States Patent & Trademark Office.

My practice further focuses on the patents in the areas of fluid analysis, wireless communications, audio recognition, semiconductors, networks, and energy. Also, I am involved in various patent litigation matters.

I became a member of Sigma Pi Sigma as an undergraduate student at Austin College, in Sherman, TX. Afterward, I attended the University of Texas at Dallas, where I received an MS in Applied Physics.

As a graduate student I had the opportunity to work on industry specific applications, particularly in the fields of telecommunications and semiconductor

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“Hidden Physicists”

One of Sigma Pi Sigma’s greatest assets is its diversity. Stemming from a common interest in and aptitude for physics, our members have gone on to pursue a multitude of interesting and unusual career paths. Now, more than ever, we seek to draw on the wisdom and experience of our alumni.

With help from the American Institute of Physics, Sigma Pi Sigma is attempting to locate the names and whereabouts of people with BS, MS, or PhD degrees in physics whose careers have taken them away from the “traditional” physics community. We ask for your help in finding the universe of people who are trained in physics—what they do and where they are. As the

physics community faces new challenges and opportunities, we would like to engage these “hidden physicists” in the fellowship of physicists. Therefore, if you work outside the traditional physics community, please provide us with the following information. Also, if you know of others in similar situations, please encourage them to contact us. Several responses will be selected for publication in each issue of *Radiations*.

Material for publication must be received by February 15 for the spring issue and by August 15 for the fall issue. ♦

Name _____ Position _____

Company _____

Address _____

Telephone _____ Fax _____ E-mail _____

Comments _____

Send to: Sigma Pi Sigma, American Institute of Physics, One Physics Ellipse, College Park, MD 20740
Telephone: (301) 209-3007 ♦ Fax: (301) 209-0839 ♦ E-mail: sps@aip.org.

processing. I received my law degree from Baylor Law School in Waco, TX. During law school I passed the Patent Bar to become registered to practice before the USPTO.”

ROBERT E. MALTBY, GLASS DEVELOPER, WAYNE, OH

“In 1958 I graduated with a BS from Ohio State University and went to work in development of a large glass company. 49 years later I am still doing development work in the glass industry. I give a presentation on glass breakage every year at the Glass Association of North America’s training meeting. I have made up and taught a course called Physics for Glass Workers in all the major glass companies (that make windows for architectural and automotive applications). I have presented this course in many specialty glass plants. I have developed new processes and new inspection equipment and have about 30 patents that belong to various companies. I have built a shop/laboratory on our small farm where I continue to work on measuring methods for quantifying glass optical quality—what does the end user see by reflection from these windows or when he looks through these windows. The way in which the eye brain system works has been an ongoing subject to study so that the measurements our instruments make agree with what you and I see.

I greatly enjoy teaching though I have never been a faculty member in a school. At 76 years young I do ‘physics’ almost every day, as well as golf (I shot my age last year) and have a new hobby of raising orchids.

Being chosen to Sigma Pi Sigma was the highlight of my relationship with the physics community. Thank you.”

NEWEL STEPHENS, OPTICAL ENGINEERING GROUP LEADER, GROTE INDST., LLC

“I graduated with an MS in physics from Ohio State University in 1991. I spent several months looking for a job in various traditional physics fields, then responded to an ad from a company that made lights for trucks. I have spent the 16 years since then designing the optics for

many different vehicular lights. This has been an exciting field to work in, especially as we make the transition from traditional incandescent light bulbs to Light Emitting Diodes (LEDs). My physics training has been invaluable as I work with others to synthesize the mechanical, electrical, and optical aspects of these lamps. It has also enhanced my ability to understand the details involved in the operation of the LEDs.”

MICHAEL A. VOLPE, TARRYTOWN, NY

“In 2005 I received a BA in Physics from the State University of New York at Geneseo and went on to join the U.S. Peace Corps as a volunteer in South Africa. I wanted to balance the strong analytical skills I learned in physics with social and cross-cultural skills. I was an education volunteer for two years in rural South Africa, aiding in the development of primary school teachers. Not only did I succeed in strengthening my social skills, but I gained a new perspective of the world. I witnessed both the educational value of a background in physics and its shortcomings.

Problem solving is perhaps the most valuable tool a student gains from an education in physics. As physicists, we are trained to first identify the problem, generate possible solutions using available knowledge or information, test these hypotheses and ultimately reach a conclusion. Working with people is not that easy. An individual can truly express the dynamic nature of a variable better than any letter of the Greek alphabet. Things like culture, language, race, and personality all must be considered in order to understand relationships and create positive change. Living and working in a developing nation made this clear to me.

For example, let’s take the problem of a teacher showing up late for school. After research and observation, I, as a physicist, determine the reason for the problem is laziness on behalf of the teacher. The solution is simple: the teacher must report to work on time. In order to ensure punctuality, rules must be enforced by a principal. Keeping tabs on the principal and the behavior of teachers is the responsibility of the school govern-

ing body and the district officials. Thus, the system should maintain discipline. What if the principal is just as lazy as the teacher? What if the school governing body can’t organize a meeting and the district is understaffed and overworked? What if I’m the only one motivated to remedy the problem? The teacher remains late to school. Challenging situations such as these made me adapt to new methods of problem solving. Rather than berate a lazy teacher for showing up late, I would inquire why he or she thinks the students are being disruptive during class, or whether the students’ behavior has anything to do with the teacher’s tardiness. I used the critical thinking skills I learned as a physicist and taught them to educators in order to achieve the goals of my volunteer assignment.

Another adaptation I had to make was that of being immersed in a foreign environment and its people. Living in a community where I was a different color, spoke a different language and was used to eating different foods, it became essential to adopt many aspects of the culture I was surrounded by. Embracing a new way of life acted as an exciting and fascinating way of broadening my worldview, previously limited by the rigor and demand of scientific study.”

