

# SPOTLIGHT ON "HIDDEN PHYSICISTS"

DELORES BEARD, SR. ASBESTOS ANALYST, EMSL ANALYTICAL, INC., WESTMONT, NJ

"I received my BS in Applied Physics from Stockton State College in Pomona, NJ in 1982 and I am a member of Sigma Pi Sigma at Stockton State College.

"Since graduation I have been a gamma technician at Radiation Management Corp. (1982-1983) and an asbestos analyst for three different environmental companies—Alternative Ways (1984-1990), GA Environmental Services, Inc. (1990-2000) and my present company—EMSL (2000-present). At Alternative Ways, I was an asbestos analyst trained on Phase Contrast Microscopy (PCM), Polarized Light Microscopy (PLM), Scanning Electron Microscopy (SEM), and Transmission Electron Microscopy (TEM). As Laboratory Director of GA Environmental Services, Inc., I was responsible not only for PCM and PLM analyses but for all the required quality control and equipment maintenance. In my present company (EMSL), I perform PCM, PLM, and TEM analysis as an asbestos analyst.

"Having a degree in physics has enabled me to understand the theories

behind the analyses that I perform and enable me to be a more knowledgeable and more proficient analyst. Also the logical reasoning and analytical thinking that physics requires has enabled me to solve problems more easily by breaking them down into small parts.... I have maintained my interest in astronomy and current science events and am involved with music and theater outside my work life.

"I also have been participating in the annual Jersey Shore Science Fair at Richard Stockton State College as a judge for at least 15 years."

JEANNE A. DI GRAZIO, PATENT EXAMINER, US PATENT & TRADEMARK OFFICE, BALA CYNWYD, PA

"To begin, I suspect that my MA concentration in chaos theory/nonlinear dynamics (MA, Bryn Mawr College; BS *cum laude*, Dickinson College) was particularly appropriate for me because physics and I are the ultimate strange attractor. Throughout my life, I have found myself on an interesting trajectory that keeps leading me back to physics no matter how far I might stray from its grip.

"After receiving my Masters in physics, I decided to pull away from graduate school and to pursue teaching. I found myself teaching at The Overbrook School for the Blind in Philadelphia, PA, where I taught mathematics to visually impaired students of various ages. This turned out to be one of the most rewarding experiences of my life—I had the distinct honor and challenge of teaching math to students with serious life challenges. My knowledge of physics, and its highly visual nature, gave me the ability to help those without vision to visualize math. I had to learn how to describe math in a way that would help others to 'see' math. I recall one student in particular, whom I taught at a local summer camp, who was absolutely brilliant. Once I described certain graphs to him, he could actually tell me what I was looking at and he learned calculus with tremendous ease. My life would soon take another fascinating turn.

"I once again tried to stray off of the strange attractor by pursuing law school (JD, Widener University School of Law; LL.M, Franklin Pierce Law Center) and I found myself drawn to the field of intellec-

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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	_____
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Telephone: (301) 209-3007 ♦ Fax: (301) 209-0839 ♦ E-mail: sps@aip.org.

tual property. Law school then led me to the US Patent & Trademark Office where I am currently a Patent Examiner. [This] requires me to draw upon my knowledge of physics, my knowledge of patent practice and procedure and patent law, and my ability to write concise technical papers.

"I guess that one could call me a 'hidden physicist' because I know that I will always be a physicist at heart!"

**MICHAEL GUTZWILLER, PHD,  
SOFTWARE LEAD, LANVISION,  
CINCINNATI, OH**

"I am also a member of the Amateur Sky Survey ([www.tass-survey.org](http://www.tass-survey.org)) a loose group of amateur astronomers dedicated to observing the sky looking for variable stars, hot Jupiters, etc."

**ROBERT L. HOPKINS, SUBMARINE  
SONAR SYSTEM LIFE CYCLE  
MANAGER, NAVAL SEA SYSTEMS  
COMMAND, WASHINGTON, DC**

"I received a BS in physics from the University of Texas at Arlington in 1967. I then gathered some graduate physics hours from Tulane University and American University. My first job out of school was as a civilian scientist with the Navy, collecting and processing radiated acoustic noise data from submarines and surface ships. After three years of that field, with over half the time at sea, I went to the University of Texas Law School, graduating with a Doctor of Jurisprudence degree in 1973. I was a corporate lawyer for a Washington, DC, consulting firm for two years. But that profession never really clicked, and I realized that science was my strong area.

"I returned to Navy work and have now spent 30 years working with new combat system development, procurement, installation and testing on submarines. We receive funds from Congress, through the Pentagon, for buying new sonar systems from defense system producers. The blend of physics and law backgrounds supports me very well for sonar system acquisition activities. I deal with scientists, signal analysts, engineers of various disciplines, and many fine U.S. Navy personnel. Also, I have had duties involving government contracting staff, negotiations with large defense contractors, and sales to the navies of foreign countries. This is demanding but fulfilling service. Navy requirements have sent me all over the country during these years. I made a presentation at a national sonar conference in March 2002. And I recently earned a

Masters in Public Affairs from Indiana University. This career is a great adventure and I am very proud to be part of this effort!

"I am not only a 'hidden physicist', but also a 'hidden lawyer'. We learned that only about half of law graduates actually practice, and physicists appear about the same. And although I may leave the government, I never plan to retire. I hope to find interesting work in the business world or in the educational field, as long as I am able."

**AMANDA J. KILPATRICK,  
SOFTWARE ENGINEER, ALTAIR  
ENGINEERING, INC., TROY, MI**

"After receiving a BS in physics and mathematics from Alma College (Alma, MI), I returned to Altair Engineering, where I had been an intern for a summer while in college. I currently work as a software engineer, developing software which is used in many industries, particularly the automobile industry."

**JACK MCGEE, ENGINEERING  
SUPV., ROCKWELL INT'L.,  
ANGLETON, TX (RETIRED)**

"Worked in aerospace projects such as XF-104, C-130, Corvus Missile, and Titans I and II; engineering, sales, undersea warfare, Hi-Rel Subsea oil well control systems; for the last 17 years worked in the space shuttle program."

**MAUREEN MELODY,  
CONGRESSIONAL FELLOW,  
WASHINGTON, DC**

"I was inducted into Sigma Pi Sigma in 1995 at Virginia Tech."

"I am almost three-quarters of the way through my fellowship year as Congressional staff for Representative Howard L. Berman (D-CA). Mr. Berman is Ranking Member for the Subcommittee on Courts, the Internet, and Intellectual Property.

"My job is surprising almost every day. Each day, I come to work expecting to do a certain task, but invariably something else comes up that needs to be done instead. The environment here is fast-paced and varied. I am preparing for a hearing on how to protect digital copyrighted content (music, movies, software) from piracy. I am also working on legislation to prevent domain name registrations on the internet from being registered with fraudulent information.

"Does the fact that I can solve Maxwell's equations help me in my job? No, of course not. However, my physics

background has provided me with solid problem-solving skills, along with the ability to talk easily with people in academics, the patent community, and technology industries. Also, I have to say, when people hear that I have a PhD in physics, my stock immediately improves in their eyes—I am given much more respect and authority because of it."

**WILLIAM F. PRICKETT, PROJECT  
MANAGER, CANADA CUSTOMS  
AND REVENUE AGENCY, OTTAWA,  
ONTARIO, CANADA**

"I received my PhD from Indiana University in 1968 and went to the University of Manitoba as a post-doctoral fellow. By 1970, the job market for physicists had completely dried up. Fortunately, I had strong computing skills and was hired as a programmer by Revenue Canada, Taxation. I have remained with this organization, the Canada Customs and Revenue Agency, ever since and will retire this August, with 32 years of service. I became a Canadian citizen in 1980.

"Incidentally, I can give further proof of 'Murphy's Law'. For my PhD, I had to learn two out of three languages: French, German, or Russian. I chose Russian and German and then came to Canada, where French is mandatory for senior civil servants!"

**ANTONIO SACIN, SOFTWARE  
ENGINEER, BAE SYSTEMS, BURKE,  
VA**

"I have drifted away from a career in physics to that in computer systems integration. I would like to explore other physics-related careers as I am preparing for a shift in my own career."

**LYNN YOUNG, STAFF SCIENTIST,  
NATIONAL INSTITUTES OF  
HEALTH, BETHESDA, MD**

"I received my B.S. in physics from Centenary College of Louisiana and my M.S. and Ph.D. in physics from Purdue University. My thesis work was in computational biophysics, and I noticed I enjoyed the computational aspect the most. Thus, my transition to bioinformatics was a natural one, and the National Institutes of Health has proved to be an excellent training ground for this exciting field. Studying physics satisfied my curiosity about the natural world and instilled in me a type of mental discipline toward problem-solving which I did not have." ♦