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What a fortunate path I've travelled, from my first arrival as a graduate student in the Space Physics & Astronomy Department at Rice in August 1989 to my impending return to Texas this summer as I become Dean of Natural Sciences and Professor of Physics at St. Edward's University in Austin, Texas. Along the way, I have been honored to have been both a National Research Council Post-Doctoral Fellow (1994 – 1997, NASA Goddard Space Flight Center) and a Fulbright Scholar (2008 – 2009, Japan). I am grateful to the SPAC family – professors, colleagues, fellow students, and all the support staff – who provided a tremendous foundation upon which to build a career.

My career has included rewarding teaching opportunities as well as the pursuit of interesting research projects around the world, with both activities focused on undergraduate student development and success. In 2004 while at Rice as a Physics Instructor, I established the Tropospheric Ozone Pollution Project (TOPP), now the largest and longest continuous ozonesonde profile database in an urban megacity. This summer will mark the 11th year of the project – thanks to the Shell Center for Sustainability at Rice for the seed money and to the Texas Commission on Environmental Quality for the funding from 2005 to the present. More recently, I have participated in the establishment of a model math & science high school teacher curriculum with \$500,000 support from the NSF STEP program.

As a graduate student of Arthur Few's, it may be no surprise that I, too, have enjoyed an academic career as a dedicated educator focused on achieving student learning outcomes by leveraging appropriate and available technologies inside and outside of the classroom. Throughout my teaching career, I have been an early promoter, adopter, and creator of innovative approaches in science education. While working at the NASA Goddard Space Flight Center in Greenbelt, MD in the early 1990s, I was one of the two lead authors of an electronic, online textbook on stratospheric ozone, the first of its kind and one of the earliest such resources on the web. When I began teaching introductory pre-med physics at the University of Maryland Baltimore County in 1997, I was one of the first faculty in the nation to put an entire physics course online, from lectures to homework assignments, from solution sets to grade distributions. My students were very appreciative of the access to information and my efforts to facilitate their learning. By the time I came back to Rice in 2000 as a Weiss Instructor of Physics, I had been inspired deeply by Eric Mazur's *Peer Instruction* approach and Arnold Arons' *Teaching Introductory Physics*. Integrating the best available approaches, I reinvented the pre-med class at Rice and saw growing enrollments from under 100 in 1999 (the year before my arrival) to over 180 by 2004 (my last year at Rice). I was truly honored when Rice students presented me with three awards for my teaching in four years, including the 2003 Pre-Medical Society Outstanding Faculty Fellow Award, of which I am most proud.

Not only have I been able to incorporate Mazur's approaches in my classes, I have also had the pleasure and privilege of collaborating with his group and him at Harvard University on several physics education research projects, leading to two publications in the *American Journal of Physics* and a recent submission to *Science*. Our collaborations continue to this day – Eric's work inspires me always to improve my pedagogy and re-evaluate what works in the physics classroom.

Before moving from Rice to Valparaiso University in 2004, I established the TOPP program to better understand Houston's ozone pollution. Leveraging a small start-up grant from the Shell Center for Sustainability of \$40,000, TOPP has now received more than \$1.2 million in grants to support ozonesonde launches in Texas (Houston, Ft. Worth, Beaumont, College Station, and Nacogdoches), Oklahoma, Indiana, Michigan, Pennsylvania, and Maryland in the United States as well as in Panama (NASA's TC4 mission), Japan (my Fulbright research), and Costa Rica (NASA Ticosonde project). The Houston record now includes ~500 ozone profiles over 10 years, making it the largest continuous ozonesonde profile data set for a megacity in the world.

My Fulbright project in Japan examined the influence of Chinese pollution before, during, and after the Beijing Olympics by making balloon sonde measurements from Sapporo in August of 2008 and 2009. To identify the plumes coming from China, we developed a technique that would allow us to simultaneously measure ozone and sulfur dioxide. This technique resulted in a NASA funded collaboration that continues to this day, with our instruments carried by balloon sondes in San Jose, Costa Rica to measure the volcanic plumes coming off Volcan Turrialba and validate satellite observations of SO₂.

Of all of my research projects, I am particularly proud of the roles undergraduate students have played. Students on TOPP condition and calibrate the instruments, assemble the balloon train, get clearance from the FAA for launch, monitor the flights, post the data to the web, and analyze the data. They also have travelled with me to Japan, Panama, and around the United States to launch our ozone measuring payloads and have presented their work at national conferences. In the last 10 years, my research has produced 26 peer-reviewed publications with my students and/or me as authors or co-authors and more than 60 conference presentations. Given its genesis at Rice, I am deeply grateful to the institution and the investment of seed money in TOPP that took a chance on my vision for an ozone pollution research program in Houston – one that has turned out quite well, indeed!

For the last three years, I have served as the Associate Dean of Arts & Sciences at Valparaiso University, where I led the STEM Task Force, charged with envisioning the future of STEM Education at Valparaiso University. That work is now guiding the design and construction of the first element of what will be a STEM Village of buildings on the southeast corner of campus, facilitating closer collaborations between the sciences, mathematics, and engineering. Since 2010, I also have served as the Principal Investigator of our 5-year, \$500,000 NSF STEP grant designed to recruit, train, and graduate the next generation of inspirational middle and high school math and science teachers, fulfilling a national need. This grant was inspired by a goal I shared with a colleague of mine in the Department of Education: closer collaboration between education and science faculty. The resulting program now includes 29 students pursuing B.S. degrees in math, biology, chemistry, or physics as well as a teaching license, with another 15 arriving in Fall 2014. I am also proud to have been promoted to full professor in my 10th consecutive year at Valparaiso University as a member of the Department of Physics & Astronomy.

A new chapter of my academic life begins as I return to Texas to assume the position of Dean of Natural Sciences at St. Edward's University in Austin this summer. I am looking forward to the opportunities this new position of leadership will provide, including deepening my collaborations on air quality research with my colleagues at Rice, the University of Houston, and at other institutions in Texas. I am flattered to have been nominated for this award, particularly given the quality of the many outstanding SPAC graduates from the 1990's, and look forward to seeing you all at the reunion in April.