

Retirement remarks - Mr. Smedley for George Ruff.

Reflections on George Ruff

Presented by John Smedley at the May 5, 2008 faculty meeting.

Physics may be defined as the study of two fundamental constituents, matter and energy, and the interactions between them. This characterization applies equally to the career of esteemed colleague George Ruff, who has applied tremendous personal **energy to interactions that matter**, namely, those that have educated scores of Bates students and inspired his colleagues.

George retires this year as Dana Professor of Physics, an appointment he's held for more than twenty years. He came to Bates in 1968, having followed his undergraduate years at LeMoyne College with a Ph.D. from Princeton. Atomic physics is his area of research, one he has made important contributions to through sabbatical collaborations with colleagues who are leaders in the field. He has a reputation as an excellent experimentalist and relentless researcher with a knack for solving hard problems. With steadfast determination, George makes difficult experiments work.

Without a doubt, George could have succeeded at a research oriented institution, but instead chose Bates, in order to work closely with students and colleagues within an undergraduate context. Bates would be a logical choice given the senior thesis requirement, which compels students to go beyond the course curriculum and design independent projects with faculty. As a Colby senior, I visited Bates in the late 1970's to hear famous theorist Yakir Aharonov speak. After the talk, one of George's students told me about his senior thesis project, and I was blown away that this guy was actually *doing* physics, instead of just learning from texts.

Anyone who knows George knows that, professionally, he lives for the lab. Some years ago, faced with the ongoing office constraints in Carnegie, he gave up his space on the third floor and basically moved into his lab, a sacrificial gesture that was at once noble, logical and probably a great relief to George. Physical manifestations of his myriad and semi-infinite contributions to our labs abound, and continue to draw favorable comments from visitors. Recently I showed a search candidate some expensive equipment I'd bought with external grants for my musical acoustics course. He didn't seem to notice, but instead marveled at the electronic breadboards George had built. He's always in production mode; in the past year, for example, he has worked closely with our assistant Gabe Ycas to improve the computer interfaces in our advanced lab.

I was very impressed when I interviewed at Bates and saw George in action. Coming from graduate study at a high-powered research institution, with minimal research background as an undergraduate, I had no great expectations for the labs of Carnegie Science. Instead I found George and a contingent of nitrogen lasers and dye lasers and a carbon dioxide laser, all home built. At that time his technological focus was on semiconductor lasers, which had recently burst on the scene as highly desirable light sources for atomic physics. Not only was his equipment up to date, but George had four or five thesis students, several doing Honors, working in the lab virtually every night. It was exciting, much more like graduate school than my undergraduate experience had been. Several of these energetic students were known by the ironic acronym SLUG – Semiconductor Laser Users Group.

While some of his students have had outstanding scientific careers, both in academia and industry, George has always been equally available to less endowed students. He once remarked how all our students seemed to find successful careers, independent of their physics aptitude.

As comfortable in the classroom as he is in the lab, his lectures are models of clarity and enthusiastic devotion to physics. I've never seen him use any notes during a presentation, and would be shocked to learn that he ever has. Many years ago a student missed class and asked for notes, but George had none to share. He eventually located another student who had taken excellent notes, and photocopied the entire semester's worth for himself in order to see what he'd presented! In another semester, he videotaped all of his quantum mechanics lectures so students could review them.

Although every Ruff course is a classic, Physics 231, known as Laboratory Physics, best epitomizes his teaching. A wonderful blend of classical and modern era experiments and techniques, the course is a foundational tour de force that anchors the experimental component of the physics major. When the Carnegie renovation was completed in 1990, we hosted the fall meeting of the New England Sections of the American Physical Society and American Association of Physics Teachers. George gave a talk on the laboratory physics course that, along with subsequent tours, wowed the participants.

While he has devoted himself to his students, he has also lavished support on his colleagues. When an aging vacuum system I was using failed, George readily disconnected a much newer system from his experiment and gave it to me. In those good old days, our teaching load was six semester courses each year **plus** two short term units every three years. My experiment required a faster oscilloscope than we could afford, but I was able to borrow one from the manufacturer for a month or two. Right around the end of the winter semester, my student and I finally got everything working beautifully...just in time to shut it all down because it was my turn to teach the all-consuming electronics short term. I casually mentioned the situation to George, without any expectation. He selflessly offered, *on the spot*, to give up his short term leave and teach electronics so that I could finish my research. I almost succumbed to gravity. In this and innumerable other ways, he has been a model colleague, as I'm sure others in the department could attest.

Dedicated service to the College has been one of George's strengths. He has been department chair, division chair, and presidential search committee member. He played a major role in the expansion and renovation of Carnegie Science, acting as liaison between the departments and the architects as labs, offices and classrooms were planned. Another type of service stems from George's legendary ability to scrounge equipment: driving his VW van to Bell Labs to pick up whatever they had to offer, hosting compact disc player disassembly parties with students to harvest semiconductor lasers and optics, piecing together the elements of the department's machine shop, or scrupulously tracking the offerings on eBay. All this to do more with less, in the historic tradition of the College.

Equally legendary are the parties and cookouts at the Ruff home, which have waned over the years as George and Nancy have become grandparents who devote significant time to visiting their extended family. These events did a great deal to establish a strong sense of community amongst physics faculty and students, and perhaps in part explain why Bates has produced, for many years, a disproportionate number of physics majors amongst undergraduate institutions in the country. Or, as one colleague has noted, maybe students were attracted to our department because of George's tendency to "treat our students like human beings."

Also in this vein, it is appropriate to mention George's dedication to his family. He always eschewed noontime functions to walk home and have lunch with them. On several occasions many years ago, I'd be in George's office when there'd be a knock at the door, followed by the appearance of one of his four children. George would pause mid sentence, offer a gentle hello, and then break into a radiant smile.

When George donned the golden parachute three years ago, I fretfully wondered how physics could continue at Bates without him. Now I'm confident that we will succeed, in large part because of the foundation he has built here. On behalf of my colleagues, I extend grateful thanks and best wishes.