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Biophysicist in Profile

Barry Lentz

Barry Lentz is often recognized by the broad-rimmed western-style hats he wears. But those who know him well also recognize him for the many hats he wears in his professional and personal life.

Currently he is a professor and Director of Biophysics at the University of North Carolina, a mentor and research director for his laboratory colleagues who work on the mechanism of membrane fusion and on the role of lipids in regulating blood coagulation, an Associate Editor of the Cell Biophysics Section of *Biophysical Journal*, and now, President of the Biophysical Society. Equally important, he is a husband of 40 years, a father, and seven times a grandfather! He describes himself as a person who can't turn away when he thinks he can make a difference, and he brings passion to everything he does.

> "Nobody thought Biophysics would amount to a hill of beans . . ."

Son of John and Florence Lentz, Barry was born on September 2, 1944, in Philadelphia. His father, an alumnus of the University of Pennsylvania, was a physician and on the staff at Penn's Philadelphia General Hospital. His mother worked in store security as a detective, and now at 93, lives just ten minutes away from Lentz and his wife Charlotte. After adopting Barry, his parents had two children, Deborah and Don. Don runs a four-star French restaurant in upstate New York, while Deborah now teaches in Seattle.

Despite his father's hope that Barry would follow him into medicine, the younger Lentz "always wanted to be a scientist." He received his first chemistry set in the fifth grade, which he used to build rockets and stink bombs. As he grew more adept at these activities, the neighbors and his mother grew more impatient, so he turned his focus to academic science. By ninth grade, Lentz was staying after school daily to help the teacher set up for class and discuss advances in physics. "I carried a briefcase, was 5'2" and chubby," he says about his younger years, admitting sports were not his strong suit.

In eighth grade, a career guidance test indicated his future lay in auto-mechanics. "They said I liked to understand how things work," explains Lentz. Barry remains fascinated with "how things work," including automobiles, but the mechanics he's now passionate about are the mechanics of cells and biomolecules.

Lentz attended the University of Pennsylvania because his father was willing to pay for his son to attend the family school and enter the "family profession." His pre-med/chemistry major led to a Bachelor of Arts in 1966, however, rather then a Bachelor of Sciences. Pre-med required many classes outside math and science, which instilled in Barry a love for history, music, art, and philosophy. He did, however, find time to take undergraduate and graduate physical chemistry courses, which turned out to be his favorite classes. "If I had to do it over again," says Lentz, "I'd do exactly what I did and earn a BA because of all I learned."

After graduating from college and surviving a mistake by his draft board that would have sent him to Vietnam, Barry headed directly to graduate school at Cornell University to study Biophysical Chemistry. There he worked with Harold Scheraga. Because no one else in Scheraga's group of roughly 35 people was working on water structure, Lentz had the privilege of working closely with Scheraga throughout his graduate career. "Harold is a granddaddy of protein biophysics and was a master at

seeing to the heart of an issue and asking tough questions, "Lentz explains, "I learned a great deal from him." Upon earning his PhD at Cornell in 1973, Barry traveled south to the University of Virginia (UVA) to join Tommy Thompson's lab as a postdoc. "UVA was the center of membrane biophysics at that time," says Lentz. He refers to his two years in Charlottesville as his "Camelot years."

While with Thompson, a former President of Biophysical Society, Lentz began attending Society meetings. "I told him that everyone who is a serious biophysicist must join the Society," says Thompson. As a family man with three young children, Barry did not actively participate in the Society during his early career; however, it quickly became his intellectual home. As time passed, he served on the leadership committee and became chair of the Membrane Structure and Assembly Subgroup. Soon Lentz was organizing workshops and symposia and later was nominated to Council by members of that Subgroup. "He has always had the ability to be not only a fine scientist," says Thompson, "but also a scientific leader."

Lentz has always been passionate about applying his physical chemistry background to biomedical science. This passion took him to the University of North Carolina at Chapel Hill Medical School as an Assistant Professor of Biochemistry rather than to a chemistry department. Once there, he did the same thing he had done as an undergraduate student seven years earlier: he located an empty office, commandeered an empty lab, scrounged and "borrowed" whatever supplies he could, and with $5000 from UNC's Cancer Center, he built a lab. His first graduate student, Bryant Moore, was the first African American to ever enroll in UNC's Biochemistry Department. A second student, David Barrow, was the son of a UNC Pathology professor and at the time was fixing arcade games at the local mall. Together, the three liberated an old fluorometer and an old Zeiss spectrophotometer, provided them with car batteries for power supplies, and modified the fluorometer to do polarization measurements. Thus was the Lentz lab was born!

> "The things I'm most proud of are the things most people still don't believe"

After two years on NSF's Biophysics Panel and four years on NIH's Biochemistry, Biophysics, and Cell Biology Study Section, Barry turned his attention to building biophysics at UNC, which turned out to be a slow process. "We were simply overjoyed to move our lab from the dungeon of MacNider to the modern facilities of the Faculty Laboratory Office Building (now Mary Ellen Jones building) and to keep getting sufficient funding to keep the lab going," explains Barrow, who is now Director of the Bioanalytical Core Labs for the UNC General Clinical Research Center, and Laboratory Manager for the Center for Oral and Systemic Diseases within the UNC School of Dentistry. It was these small steps that mattered most because UNC's Medical and Arts & Science Schools interacted very little in those days. It took over four years to convince chairs and deans that it would be beneficial to train students in this interdisciplinary field. "Nobody thought Biophysics would amount to a hill of beans," Barry states. Over the next 15 years, Lentz worked tirelessly to recruit faculty and students, and now he is proud to say that UNC's biophysics program "is one of the best in the country."

Lentz loves to spend time outdoors, and kayaking is one of the many activities he does year round.

Along the way, Lentz has earned a reputation as a tough but fair mentor. "He could be tough but was always very considerate," explains Moore, "and always found time to listen and work with the student through problems both academic and personal." Moore, who is now Vice President of Product Development & Technology for Medtronic's New Therapies and Diagnostic Management Organization, notes that "it was quickly apparent that Barry is a very compassionate and caring person." The relationships he has formed with his students lasting long after the students have left the classroom are evidence of his caring.

Now that the Biophysics Program at UNC-Chapel Hill has been established, Lentz has been able to cut back on teaching and spend more time on research. He loves both his work on membrane fusion and his work on the role of lipids in blood coagulation. And with his family and career now secure, he has been able to take more scientific risks. One of these led to showing that blood coagulation is regulated by a platelet membrane lipid, phosphatidylserine, leading to a protracted disagreement with the blood coagulation community. Recent work with exocytotic fusion proteins has also led to disagreements with many in the neuronal release community. "The things I'm most proud of are the things most people still don't believe," Lentz states proudly, admitting a certain pleasure in being considered a scientific maverick. No matter how crazy people might think he is, Lentz has

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continued to get his papers published and to challenge dogma that he sees as questionable. He has been no less passionate and active in his role within the Society. As the chair of the Minority Affairs Committee, Lentz shepherded the Herman Branson Summer Course in Biophysics, which is meant to introduce minority students to the possibility of careers in biophysics. Bernie Chasan, Wilma Olson, and Lentz designed the course, which was held the first year at Hampton University and the second year at Boston University. Lentz has now submitted a grant application to the MORE Division of NIH to fund the course in future summers. Also, for nearly eight years, Lentz has served on the Editorial Board of BJ, first as a Board Member, and now as Associate Editor for the Cell Biophysics section.

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During his term as Socity President, Lentz would like to re-examine how well the Society's current activities work towards achieving the mission stated 50 years ago when the Society was founded. "When I came in," he explains, "I promised to work to make the Society feel like a small society even as we continue to grow." To accomplish this, he plans to lead a discussion within the Executive Board and Council to address several ways in which the Society works towards this mission, including considering how subgroups might take a greater role in the life of the Society. Lentz was encouraged by the enthusiasm and ideas offered at the subgroup chairs meeting in Salt Lake City, and looks forward to continuing this discussion.

Science may be Lentz' professional passion, but his family takes center stage in his personal life. His wife of 40 years, Charlotte is a dedicated teacher. Originally a pre-med student, she took some teaching courses, which turned out to be valuable as life unfolded. She taught and was an assistant principal in public schools for many years, later switching to a private school, which matched better her teaching philosophy and desire to help children. She is now retired and involved in local art projects. The Lentz' adopted three children, Luke, Adam and Tessa. "They are all very different but all reacted with similar negativity to their fathers work habits," muses Lentz. He explains that they have all made lives for themselves that are more balanced than that of an academic scientist. They have also presented Charlotte and Barry with seven wonderful grandchildren. "Being a grandfather is the pinnacle of existence!" proclaims Lentz.

In his spare time, Lentz loves exercise and the outdoors. He rides his bike to work every day, plays pick-up soccer matches on weekend mornings, and loves to kayak year round. He coached his children in soccer for 17 years and ultimately took it up himself on his 40th birthday. "It's a whole lot cheaper then going to a psychiatrist," he says. "You get all your frustrations out."

Barry feels his science is most fun when it is shared with others. As his Presidency begins, his goal is to help Society members feel more connected through their science. This challenge keeps him going. Whether he is acting as the President, Associate Editor, researcher, teacher, family man, or soccer player he never forgets why he is doing this: his passion for science and the life around him.

Board and Council

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- Approved moving the Society's reserves position over the next two years from a 40/60 percent equities/fixed income position to a less conservative 50/50 position.
- Approved a Society Organizational Handbook as well as document retention and whistleblower protection policies.
- Elected *Stephen White*, of the University of California, Irvine, as Chair of the Nominating Committee that will prepare a slate of candidates for the 2007 Society elections. Also elected to that Committee were *Paul Allen*, *Sharona Gordon*, and *Steve Mayo*. Past-President Steven Block will serve on the Committee ex officio as will David Millar, past commitee chair.

Stephen White

- Approved formation of a new subgroup, Instrinsically Disordered Proteins, chaired in its first year by *Keith Dunker*, of Indiana University.
- Approved the scientific program for the 2007 Annual Meeting.
- Approved the slate of candidates for the 2006 Society elections. That 2006 Nominating Committee was chaired by *David Millar*, of Scripps Research Institute. Members of the Committee were *Suzanne Scarlata*, *Stephen Harvey*, *Taekjip Ha*, *Linda Kenney*, and *R. John Solaro*.