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2000

Robert Blystone

Bob Blystone was born and raised in El Paso, Texas. His father repaired vending machines and juke boxes by day and was a musician by night. Bob learned as a young teenager how to repair juke boxes, and figures he averaged visits to 15 bars or cafes each summer day while working with his dad. He moved on when he was old enough to become a gate keeper for his dad's hillbilly dance band. But Blystone's interests more closely tracked his mother, a registered nurse who wanted her eldest son to become a medical doctor. Growing up on a farm during the Depression, Blystone's mother worked six years in a country store to earn the money to go to nursing school.

Blystone, like many in research, traces his interest in science to an early distinct curiosity about how things work. He recalls wryly that he was "excellent at taking things apart, but not quite so good at getting them back together." A child of the Sputnik era, Blystone and friends from his neighborhood built rockets and flew kites; sometimes they would fly kites all night to see how long they could keep them up in the strong March winds of El Paso. The dramatic climax of their aeronautical phase was when the FAA ordered the boys to take down a box kite that, at 3,000 feet, had entered an air traffic pattern.

In 1961 Blystone enrolled at Texas Western College, now UT El Paso. Attending a distant, especially private university hadn't occurred to him since "the annual tuition at a private school was greater than my father's annual income." He was torn between chemistry and biology, but found "good grades were easier to obtain in biology," which decided his major.

Following college, Blystone went to the University of Texas at Austin for a master's degree in Zoology, where he studied under Austen Riggs, a protein chemist. Blystone's initial work was on the protein chemistry of invertebrate hemoglobin, but he did not enjoy it, so he moved to the lab of John Bieseke, "as kind a soul as one could ever want for a Ph.D. mentor," recalls Blystone. Blystone's initial interest was in the cell culture of hemoglobin-producing cells from the crustacean *Daphnia*, but he and Bieseke recognized early that the invertebrate visual system lent itself better to a Ph.D. thesis. Howard Arnott in the Botany Department was working on light-gathering pigments and became a second collaborator with Blystone. "Between Arnott and Bieseke, I had two very caring mentors who gave me a lot of slack to explore... but I was an outlier in both labs," Blystone recalls. Despite his self-doubts in graduate school, Blystone believed that it was keeping him out of Vietnam, so he stuck with it (having married young and later picking a high draft lottery number helped, too.)

As Blystone earned his Ph.D. in 1971, he heard that Trinity University in San Antonio was looking for someone to run two new electron microscopes. Blystone went and has been at Trinity ever since, now serving as professor of biology. Blystone is clearly proud of the growth of the school during the course of his 29-year tenure, transforming itself from a small, regional private church school to an undergraduate liberal arts and science college with 2,400 students and a solid reputation. Blystone has found it hard to "do big time research" given Trinity's size and the fact that there is no longer a graduate program. This has inspired him to redirect his work to digital imaging transitioning from electron microscopy to "photon" microscopy.

Blystone's research interests have evolved with technological developments and national needs. In the 70's, the U.S. Air Force School of Aerospace Medicine in San Antonio was interested in laser effects on visual systems. Blystone transitioned from invertebrate to vertebrate visual systems and contributed to a research effort dealing with monkey retina response to laser energy input. From there he switched his research concentration to lung development, using chicks as his model system. About ten years ago he returned to Air Force-sponsored research involving microwaves and cell culture. They discovered that under certain conditions, microwaves could initiate viral expression in some cell cultures. This project has transitioned into microwave-initiated nitrate production in rats, Blystone's current funded research project.

In the past decade, driven by the power of desktop computing, Blystone began to focus on light microscopy and digital imaging processing. Today he concentrates on adapting computer analysis and imaging techniques to anatomical reconstruction and analysis. Blystone calls himself a "gadget guy" who is primarily interested in technique.

In the mid 1980's, Blystone served as Chairman of Trinity's biology department, learning as many do in such roles that he "much preferred being in the classroom," so he returned to teaching. He feels lucky to be in an environment that honors high quality teaching and that values a passion to gather, organize and then synthesize information to enhance student understanding.

Education has always been an interest of Blystone's (he first served on the ASCB Education Committee in 1985); his own priority is learning ways he can be more rigorous and challenge students at an appropriate level. This focus has led to Blystone's extensive inclusion of computers into teaching, which

he described at a recent Education Initiative Forum presentation at the 1999 Annual Meeting of the ASCB. "Microscope images lend themselves to incorporation into digital databases which then can be quantitatively explored," explains Blystone. He has his undergraduate students explore problems such as blood transit times through single capillaries in kidney nephrons and osteocyte distribution in compact bone. Blystone is concluding a four-year NSF Curriculum & Course Development grant where he and a Trinity mathematics colleague have been developing statistical approaches to image analysis for undergraduate students.

Blystone feels that "the ASCB has been very important to my professional life," having attended his first ASCB meeting on a student travel award in 1969. He recalls that at that meeting, in Detroit, he was able to eavesdrop on an informal convention floor debate among Dick McIntosh, Bill Brinkley and Andrew Bayer about some "hot" microtubule research. Being in an organelle seminar class led by Gordon Whaley at the time, Blystone confessed that, "I picked up some info for a presentation two weeks later." He also still remembers, thirty years later, meeting in an elevator at the Hilton the "most awesome of them all," Keith Porter. Blystone remarks, "I am glad that after all these years that I can play a small role in helping today's graduate students go to ASCB meetings," remembering how important that support was to him as a student.

Blystone feels that he is different from the "typical ASCB member." His "differentness" is his definitive teaching orientation and not being funded by the NIH, which he feels has given him a perspective that often diverges from the typical bench scientist member. He has identified with a solid core of other ASCB members with strong dedication to undergraduate teaching issues, including Bill Heidcamp, Mary Lee Ledbetter, Chris Watters and Malcolm Campbell. He credits the ASCB with facilitating these valuable interactions. "I can't stress enough how important the Society has been to me in enabling me to maintain contacts with [those who] are pushing the education frontiers as much as the 'conventional' bench members are pushing the science frontiers." Most ASCB members know Blystone for his regular ASCB Newsletter feature, WWW.Cell Biology Education.

Says Education Committee Chair Frank Solomon, "Bob has singlehandedly created and sustained a unique and valuable resource for ASCB members who teach. Based on his knowledge, critical judgment and dedication, he has taken on a task which might ordinarily be the work of an entire committee." For his part, Blystone says, "it helps me and my students as much as the ASCB."

Finance Committee member Gary Ward remarks that, "the website column is one of my favorite features of the newsletter. Some of the sites I've learned of through the column have proven to be quite useful for teaching, others are just plain fun. I don't know how Blystone ferrets these sites out, but I really appreciate his efforts."

Blystone and his wife of 35 years, Donna, personify the small-town romance cliché: they've known each other since they were six, attended grade school, junior high and high school together, and married in college. Donna left college after one year to support them as a legal secretary while her husband earned his degrees; after their son Daniel was born, she typed court reports at home. Donna Blystone returned to college when her husband took the position at Trinity and completed her degree Phi Beta Kappa in art history and studio art. She now operates a custom framing and art consultation service in San Antonio.

The Blystones live 20 miles north of downtown San Antonio, in "the far suburbs," where the hills are reminiscent of their hometown of El Paso. Many of their relatives farm and ranch south of San Antonio and the Blystones enjoy periodic visits to the "country." The rest of Bob's time is spent trying to keep up with the "next new thing in computerland." Dan Blystone lives north of San Antonio, in Boerne, Texas, with his wife and son. Dan shares his father's intense interest in computers and operates a computer consulting business and advertising agency.