Professor Bryant Rossiter was a scholar, mentor, exceptionally gifted intellect, father, scientist, and former professor at Brigham Young University. Dr. Bryant Rossiter was a professor from 1985-1994. His life was tragically and prematurely cut short by Cancer. He was only 41 when he passed away, but his contributions to Chemistry, and the lives of his students make an impact to this day. Bryant had a child-like curiosity that enabled him to be a life-long learner. He loved tackling projects that were challenging, and was an out-of-the-box thinker. This led him to a life time of unique discovery.

One of Bryant’s loves in life was his research involving asymmetric synthesis using non-chiral carbon starting materials to produce chiral carbon molecules using asymmetric metal-mediated catalysts. As a student at Stanford, and later MIT, Bryant distinguished himself working for Professor K. Barry Sharpless. Bryant was the first person to perform an asymmetric reaction to make chiral epoxides using a Vanadium catalyst with a chiral diethyl tartrate ligand. This work, and the work that followed by Bryant and his fellow students at Stanford became part of the work which was recognized for a Nobel Prize in Chemistry awarded to K. Barry Sharpless.

After Bryant obtained his Ph.D., he took a job at Merck, in Basil Switzerland. He worked there for several years learning more about metal-mediated transition metal catalysts. After his work at Merck, Bryant accepted the position as an Assistant Professor at BYU. His first PhD student was Masakatsu (Matt) Eguchi. Matt’s work was partially supported by a research grant that Bryant obtained through a collaborative effort with Searle. They were exploring asymmetric syntheses of adding alkyl groups to enones to create new chiral molecules. Another student, Nicole Swingle, also obtained a M.S. degree continuing the research that Matt and Dr. Rossiter began in the group. This research was funded by a grant from the Petroleum Research Fund. He also spent some of this money to fund several undergraduates who worked with Dr. Rossiter on this project. Dr. Rossiter loved to lead students and was a mentor to many who began a career in Chemistry. His research in making alkyl-substituted enantiomeric-enriched cyclopentanones was applicable to making prostaglandins – an area of research to this present day.

Dr. Rossiter’s love of synthesis, and other challenging problems was infectious. One of his undergraduate students, Amelia Hernandez, was complaining that she did not well-understand molecular orbital theory, quantum mechanics, and other theories that often give undergraduates difficulty. Dr. Rossiter grinned, and said, “Why don’t we start a ‘Dead-German-Physicists Society’ (after a movie of that time called Dead Poet Society) so we could meet and all present to each other aspects of quantum mechanics. Dr. Rossiter insisted that we all take turns teaching each other advanced concepts from textbooks on advanced bonding theories which he purchased with his own money, and then donated these books the group. I learned many things at the feet of Dr. Rossiter, and his servant-leadership left a lasting impression on myself as a beginning graduate student. I also learned then that to truly learn a concept, one must teach it to a peer. Under Dr. Rossiter’s mentorship, I not only learned a great deal about Quantum Mechanics, but I learned how to teach, and how to listen to others teach – and incorporate their teaching styles to make me a better teacher (which I still use to this day at my present job at Cosumnes River College).
Dr. Rossiter loved collaborative efforts, and loved to work in teams. Parallel to the pioneering work doing asymmetric cuprate synthesis, Dr. Rossiter was invited to be part of a collaborative effort with Dr. Jerald Bradshaw and Dr. Milton Lee. This research group initially centered around making chiral stationary phases for Gas and Supercritical Fluid Chromatography, and later expanded to include other metal-mediated (and for the time) advanced organic synthesis methods to solve difficult problems. Some of his contributions to the chromatography group centered around making chiral ligands for copolymers for GC phases that had previously not been synthesized. Debbie Johnson obtained a M.S. degree based on a chiral cyclohexyl diamine stereocollider that Bryant suggested she try to make. A new Ph.D. student, Shawn Reese, joined the group at this time and also made some chiral stationary phases for GC and SFC which extended the work that Debbie Johnson began. Bryant was always happy to help make key suggestions and he rejoiced at the success of others.

The Chromatography group expanded when other Rossiter students joined the group. Shawn Reese, Sarah Morgan (undergrad), and Brent Johnson (undergrad) worked on other challenging aspects of new ligands for GC that had not previously been synthesized. Dr. Bradshaw remarked one day that a CN-biphenyl stationary phase could not be made to use in GC phase research. After we left the group meeting, Dr. Rossiter told me in the hallway, “OK Shawn, Dr. Bradshaw has thrown down the gauntlet to you. Not only are you going to make a CN-biphenyl ligand, you are going to make every isomer imaginable and you are going to make silicones that incorporate this group in it.” His confidence and challenge to me gave me inspiration to do something I did not know I would be able to do. Dr. Rossiter suggested I start with a metal-mediated catalysis and believed that I would find a Pd (0) catalyst to create many isomers of CN-biphenyls, and diCN-biphenyls which previously had never been synthesized and later, these stationary phases showed unique selectivities for GC and SFC. Shawn Reese, Bryant Rossiter, Jerald Bradshaw, and Milton Lee patented the cyanobiphenyl stationary phases—some consider to be one of the most versatile phases ever made. These phases were used at the National Institute of Standards and Technology (NIST) in the early nineties to characterize and separate many PCB’s that had not been separated before this time.

Brent Johnson and Sarah Morgan Black assisted in some of the literature searches, and some of the scale-ups when microscale synthesis suggested we were going to be successful. It is noteworthy: even though Brent and Sarah were only in the group for a summer each, both were inspired by Dr. Rossiter to pursue graduate degrees (Brent later got a PhD and a Law degree—and now is a partner at a patent-law firm, and Sarah got a M.S. at BYU and is now a professor of chemistry at Dixie College). They joined the group as undergrads per Dr. Rossiter’s invitation to them (they were taking his OChem class), and his enthusiasm enticed them to try their first research experience.

Beyond Dr. Rossiter’s technical prowess, and inspired ideas, he was a ton of fun. He had a zest for life. He loved to laugh, and have a good time. One time when I was struggling with passing 3rd-year literature exams, failing to remove my CN-biphenyl protecting groups, and struggling to balance my research load and teaching load I mentioned to Dr. Rossiter it was a ‘shame’ that I had not learned how to ski even though I had lived in Utah for several winters, and I was likely to graduate, and never learn how to ski. Dr. Rossiter laughed and said, “why don’t you take a ski class?” I looked up the class and saw that it only was available on Friday afternoons. I was extremely nervous—I did not really think he
was serious that he would approve me taking time from my research time to go ski. He later asked me if I signed up for the ski class and I told him that I was nervous that my ‘boss’ would find out I was goofing off when I should be doing research. He grinned that awesome grin of his, and said, “He won’t find out if we both go.” He signed up for the class with me, taught me to ski, and taught me the importance of balance in our lives.

Dr. Bryant Rossiter was a gifted individual and a great blessing to all the many lives that he touched. Even though his time here on the earth was cut tragically short, his impact on my life, and the lives of other students cannot be exaggerated. His legacy will continue through the lives of his students. All in all, Dr. Bryant Rossiter was a shining example of a student, scholar, mentor, advocate for students, and made the world around him much better because of his generosity of character and spirit. Many may not know that all the while he was contributing to the lives of others, he was battling cancer for almost his entire time at BYU. I never heard him complain, nor get discouraged. He was an example of grace under pressure. He always approached his medical struggles with optimism, and amazing courage. I think his positive attitude, and his courage extended his life.

In so many ways, Dr. Rossiter taught me so much about life. He was an example of servant-leadership, and embodied the type of scientist, and person I long to be. I have counted myself extremely fortunate to be one of his students, and to pass on his love of chemistry and life to my students and the souls I encounter on this earthly journey.

With Great Respect,
Shawn Reese, PhD
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