

## Essay: In memory of Robert Siemann

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Bob Siemann and I first met 32 years ago at a Cornell workshop. The workshop subject was Collective Instabilities. He was a young assistant professor—energetic, confident, full of ideas—and I was a postdoc. Since then we both had gone our own paths, but curiously from hindsight, it seemed that I had been trying to follow his footsteps, or at least it might have been the case. Those footsteps included activities in HEPAP, in the APS Division of Physics of Beams, and in the *Physical Review* journals. It seemed that Bob was a perfect role model, although I will be the first to say that I did not fit those roles nearly as well. He was also the driving force that brought me back to SLAC—again following his footsteps—after the demise of the SSC. Although unintentional at the time, I must admit that I draw much pride in finding that my priorities and my values are apparently not dissimilar to those of Bob's. This essay will be a personal tribute in memory of Bob.

I mentioned the SSC, the Superconducting Super Collider. Let me begin there. During the SSC days at Berkeley, after the Conceptual Design Report was issued in 1985, Bob was appointed by the DOE to chair a review of the accelerator physics part of the CDR, which I was responsible for. The main issue was the SSC magnet aperture. I defended the design of a 4-cm aperture, while he led the questioning of whether that aperture was too small. Our views were confrontational, to say the least. The aperture issue remained after the review, and eventually it was changed to 5 cm four years later by another SSC management. But throughout the review in 1985, as difficult as it was, never in the heated debates had we lost respect and trust of each other. Bob and I were close friends before, during, and after the encounter. I am confident that this was Bob's view too.

Bob Siemann came to SLAC from Cornell in 1991. With the support from Burton Richter, then Director of SLAC, he took on a leadership role to formulate an academic program in accelerator physics at SLAC and the development of its accelerator faculty. Throughout his career he championed accelerator physics as an independent academic discipline, a vision that he fought so hard for and never retreated from. He convinced Stanford University and SLAC to create a line of tenured accelerator physics faculty and over the years he also regularly taught



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classes at Stanford and the U.S. Particle Accelerator School. After the shutdown of the SSC Laboratory, I returned to SLAC in 1993 to join the accelerator faculty he was forming. He had always visualized a need to have a professional academic journal for the accelerator field, and played a pivotal role in creating the journal *Physical Review Special Topics - Accelerators and Beams*, now the community standard for accelerator physics after nine years of his editorship. Today, Bob's legacy of accelerator physics as an independent academic discipline continues at SLAC as well as in the community, from which we all benefit.

Bob fell ill in June 2006. He had not said much to me about that until March 2007 when he came to talk to me. He told me that he had leukemia. The treatment so far had been successful, but that was only a temporary solution. A long-term solution would be a risky procedure of bone marrow stem-cell transplant. For that he would stay home for three months, and he might also not make it at the end of the procedure. Two things, he said, were on his mind, and he wanted my help in case the worst happened. First thing he wanted was for me to take care of two of his five students. The second thing was that he wanted me to be one of the three candidates to take over the *PRST-AB* editorship from him. It was a touching moment when he talked about things closest to his heart. I chatted with him and agreed to his first request. A few weeks later, with much difficulty on my part, I hesitantly declined his second request. Fortunately, a few months later, in June 2007, he told me that he was doing fairly well and could return to work. He said that he really missed the joy of visiting his dusty laboratory and doing experiments with his students. Also happily, I found later that an excellent candidate, Frank Zimmermann, was chosen for *PRST-AB* editor and that Frank had accepted.

Bob's illness made a bad turn in September. The worse news arrived when I was in the middle of a meeting in Beijing. It was the saddest day for a long time and it took me quite an effort to reassemble myself back to the meeting and to recover from the shock.

Bob was a great experimentalist. He specialized in experimental techniques and instrumentation, but what he wanted to learn is physics. If he had to learn theory—heaven forbid—to reach that goal, he would not hesitate one second to do so. In fact, he had written several theoretical papers as results of these efforts. Now this is what I call a true experimentalist! Ultimately, however, I think it was experimental instruments that he loved most. His eyes widened when he talked about his instruments. Prompted by a question, he would proceed to a nearby blackboard, with a satisfying grin, and draw his experimental device in a careful thinking manner, then describe his experiment and educate the questioner with some insightful physics. These moments were most enjoyable, to him and the questioner alike. When I think of Bob today, it is these moments that first come to mind, and it is these moments I will miss the most.

I should like to mention another curious thing about Bob, namely he had a special talent of finding persuasive arguments that went his way. It was difficult to argue with Bob because it was so difficult to win. Generally quiet otherwise, he was too good and too methodical a debater. I had never seen him losing a debate on a policy issue or in a committee setting. However, when it comes to physics, his soft spot, he occasionally let go some weakness. When so doing, he would lose the debate, but his grin revealed that the loss was more than compensated by the physics he gained together with his debater.

It is hard to believe that the office around the corner is now empty. The dear colleague we have come to know, to talk to, and to seek advice from, together with the feet-on-the-desk posture and the familiar grin, are no longer there. I wonder, who will now occupy that office next? And who will continue to carry on Bob Siemann's legacy? Many of us are waiting.

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SLAC from 1974 to 1983 when he left to join the then sparkingly new Superconducting Super Collider project in charge of its accelerator physics design. Nine years later, he returned to SLAC after the termination of the SSC Laboratory in Texas and became a Professor at Stanford. He is a Fellow of American Physical Society, and an Academician of the Academia Sinica in Taiwan. He was awarded the Wideroe Prize of European Physical Society in 2008.