Ed Sonnenblick was simply an intellectual giant in the field of cardiovascular research, and the work that he did will forever shape everyday treatment of heart disease. This piece will briefly summarize his accomplishments, but will mainly serve to honor him as a mentor, teacher, colleague, and friend.

Ed’s education took him from Wesleyan University where he was elected to Phi Beta Kappa and graduated summa cum laude in 1954, to Harvard Medical School, where he graduated cum laude and was a member of Alpha Omega Alpha. His residency at Columbia Presbyterian Hospital in New York culminated in 1960, after which he moved to the National Institutes of Health, where he worked with Stanley Sarnoff. It was there that he wrote his seminal, single author paper in 1962 that concluded that the mechanical performance of the heart was intimately linked to its properties as a muscle. At this point in time, this seems so obvious, but this research changed the face of cardiovascular therapeutics and provided the scientific justification for therapeutic afterload reduction. He stayed on at the NIH where he worked on the relationship of contractility and disease states until 1967, when he moved to the Peter Bent Brigham Hospital as Director of Cardiovascular Research. In 1975 he was appointed the first Director of the Cardiology Division at the Albert Einstein College of Medicine, where he remained for the rest of his career.

While at Einstein, Ed attracted many young colleagues to work on cardiac physiology and convinced me, a relative newcomer to the field, that knowing the molecular biology of muscle was not of much use in the absence of understanding its function. During the ensuing years, one of the first Molecular Cardiology Programs in the country was formed. Ed’s support of this program was critically important, and many of the people trained under its auspices have gone on to leadership positions in numerous institutions across the country. Ed and I ran this program together until 1995, when I left for the University of Colorado. One of the hardest phone calls I ever had to make was to tell Ed that I had decided to move.

Understandably this remembrance is too short to give a comprehensive review of Ed’s full impact on the scientific careers of some of today’s top leaders in cardiovascular medicine and research. However, I hope that the following testimonies from some of Ed’s closest colleagues will be instantly recognizable as “quintessential Ed” to those who knew him, and will provide a glimpse into this special person for those who did not know him.

Heinrich Taegtmeyer, MD, Professor of Medicine, Codirector, Division of Cardiology at The University of Texas Medical School in Houston

Once Ed Sonnenblick made up his mind he would move swiftly and decisively. A case in point is the way he brought me to Boston, just out of medical school in Germany. In 1971 Ed gave a lecture at the spring meeting of the “Deutsche Gesellschaft fuer Kreislaufforschung” (German Society for Cardiovascular Research) in Bad Nauheim. I do not know whether it was his lecture or his personality that fascinated me. At the end I mustered up the courage to speak to him, and we had lunch together. That was in April. In June I started my residency on the Harvard Medical Service at the Boston City...
Hospital! I still remember the expression on my wife’s face when I told her we were moving to Boston. Nothing has changed our lives more than this encounter with Ed. It saved me a lot of subsequent soul-searching.

Although we never published a single paper together (as far as the laboratory was concerned, Ed quickly passed me on to Mike Lesch, another fortuitous event), I remember the incredible air of excitement around the E-Ground of the old Peter-Bent-Brigham Hospital. These were, after all, the days when the Fabiatos discovered $Ca^{2+}$ triggered $Ca^{2+}$ release from the sarcoplasmic reticulum! Ed no longer did experiments himself, but he came to the laboratory every day, in shirt and tie, to make rounds with us at the bench. Ed was quick to recognize important new findings, and, like all of us, he also got easily carried away. In the end, surprisingly, his papers followed a very tight logic and his presentations at meetings were extremely polished.

To this day I remember how Ed explained to me the importance of funding for research. “It’s like having several balls in the air—you don’t know where they are, but you must be careful not to drop any.” Today, 35 years later, I am the one who comes to the laboratory in a shirt and tie, and I am the one who tries to keep the balls in the air. And I realize that Ed was extremely good at this game.

Peter Buttrick, MD, Professor of Medicine, Chief, Division of Cardiology, University of Colorado Health Sciences Center, Denver

I was a junior faculty member at Einstein in the late 1980s. Dr Sonnenblick was obviously an iconic figure at that time but as far as the laboratory was concerned, Ed quickly passed me on to Mike Lesch, another fortuitous event), I remember the incredible air of excitement around the E-Ground of the old Peter-Bent-Brigham Hospital. These were, after all, the days when the Fabiatos discovered $Ca^{2+}$ triggered $Ca^{2+}$ release from the sarcoplasmic reticulum! Ed no longer did experiments himself, but he came to the laboratory every day, in shirt and tie, to make rounds with us at the bench. Ed was quick to recognize important new findings, and, like all of us, he also got easily carried away. In the end, surprisingly, his papers followed a very tight logic and his presentations at meetings were extremely polished.

To this day I remember how Ed explained to me the importance of funding for research. “It’s like having several balls in the air—you don’t know where they are, but you must be careful not to drop any.” Today, 35 years later, I am the one who comes to the laboratory in a shirt and tie, and I am the one who tries to keep the balls in the air. And I realize that Ed was extremely good at this game.

Piero Anversa, MD, Department of Medicine, Cardiovascular Research Institute, New York Medical College, Valhalla

In the late sixties and early seventies as a young physician in Parma, Italy, I was reading with great admiration a series of papers published by Ed Sonnenblick in the leading journal in cardiology, Circulation Research. Ed had a brilliant intuition; he felt strongly that to actually understand how the heart works we had to understand the behavior of its cells—the cardiomyocytes—and most importantly the behavior of the contractile units of the cardiomyocytes—the sarcomeres. By using extremely sophisticated methodologies and electron microscopy, Ed moved our understanding of the function of the heart to a new and unprecedented level. These contributions have formed the basis of all the work that has been done in the last 35 years, in terms of ventricular remodeling of the diseased heart and its progression to irreversible heart failure.

I met Ed for the first time in Paris at a meeting of the International Society for Heart Research. He was smoking his pipe and speaking at the microphone at the same time. He was making everybody’s life miserable, with extremely difficult and challenging questions. He was clearly running the show. He did not mind that role, which he continued to play for nearly four decades. Because of the impact that Ed’s science was having on the field, I obtained a NATO fellowship and came to the United States. Ed and I began working together in the mid seventies shortly after he moved from the Brigham to Albert Einstein College of Medicine. This was a wonderful association, both personally and professionally.

Very quickly, our professional interaction evolved into a strong, unshakable friendship. Ed Sonnenblick taught me many things about the heart, but most importantly he taught me to become a scientist. I can comfortably say that everything I have accomplished in my career has been influenced dramatically by Ed’s suggestions, support, and affectionate involvement. I have not made a single important decision without consulting my friend. For the last 25 years, our weekly Wednesday morning laboratory meeting has represented a way to see each other, discuss recent results, and address personal issues. This meeting would officially begin at 8 AM, but Ed and I would normally meet at 7 AM, and after the meeting was over at 9 AM, we would spend another hour together. What I always found remarkable and unique about Ed was his curiosity and desire to challenge old paradigms and promote outstanding research. Together we moved into the field of stem cells, and together we discovered that the heart contains a pool of resident cardiac stem cells that can regenerate the infarcted heart.

Quite often we discussed how we would like to be remembered and how our life could be stated in a few words. Being more pragmatic than Ed, I always indicated to him that I hoped it would be possible to write on my tombstone that I died funded by NIH. Because of his great passion for science and restless curiosity, Ed wanted us to remember him with these two words: “I wonder.”

Jil Tardiff, MD, PhD, Assistant Professor, Department of Physiology & Biophysics and Department of Medicine in Cardiology, Albert Einstein College of Medicine, NY

Respect is an understatement when it comes to Dr Sonnenblick. One thing is clear: he transmitted his fascination at the interplay between the biophysics of myofilament activation and human disease. Others paid lip service to the concept, but few found it as endlessly intriguing as Ed. Plus he was the quintessential physician-scientist, he could be bantering about length-dependent activation, and a minute later he was relating the discussion to a patient he had seen that morning. It was invigorating to talk with him.
He had a delightful sense of humor about how we still struggled with questions that we *thought* we had answers to. So his legendary intellectual generosity began to combine with a classic old sage’s intellectual humility regarding the continuing mysteries of myocellular function. It was a great combo—especially for a junior person. And there was nothing quite like having him say how interesting a finding was or how much he liked a set of experiments.

I remember once being visibly frustrated trying to pin a mechanism on the improved contractile response to dobutamine in a murine model and I said something along the lines of “I just wish I understood this better” and he chuckled and admonished me, saying “isn’t that the fun part?”

Larry Sinoway, MD, Director of Penn State Heart and Vascular Institute, College of Medicine, MSHMC Cardiology, Hershey

The two things I remember most about Ed Sonnenblick were his intellect and his passion for ideas. Dr Sonnenblick had an amazing fund of knowledge. This database encompassed not only science but also history, literature, and current events. He would often weave these various areas of study into his conversations and discussions of research ideas. It was not uncommon for Dr Sonnenblick to use an analogy based on history to make a point about science.

When discussing science, he had an uncanny knack of taking new ideas and placing them within the proper perspective. Sonnenblick would begin his discussions by first extemporaneously discussing the related literature. He would then take the new pilot data and suggest how they might explain some important issue. He would then pose a series of questions that would direct you toward the next series of experiments. Ed Sonnenblick was a great conductor!

Dr Sonnenblick had an incredible passion for research. He enjoyed seeing the raw data and having small group research meetings. He loved the new approach, the unexpected finding, and the critical observation. He wasn’t interested in statistical presentations or probability values; he was interested in the ideas, the concepts, and the ways in which new data might change things. In my estimation, it was this passion that most characterized this unique man. Dr Sonnenblick had a great impact on the world of cardiovascular medicine and science. He was a giant and he will be missed.

Acknowledgments

I would like to thank Drs Taegtmeyer, Buttrick, Anversa, Tardiff, and Sinoway for their contributions to this piece.
Edmund H. Sonnenblick (1932–2007)
Leslie A. Leinwand

Circ Res. 2007;101:1222-1224
doi: 10.1161/CIRCRESAHA.107.166603

Circulation Research is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2007 American Heart Association, Inc. All rights reserved.
Print ISSN: 0009-7330. Online ISSN: 1524-4571

The online version of this article, along with updated information and services, is located on the
World Wide Web at:
http://circres.ahajournals.org/content/101/12/1222

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Circulation Research can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Circulation Research is online at:
http://circres.ahajournals.org//subscriptions/