In Memoriam
Ashley Hale Carter, 1924-2008

This special issue is dedicated to the memory of Dr. Ashley H. Carter. Faculty and many of his former students have contributed remembrances of their varied and close interactions with Ash. Photos bring back his enthusiasm and delight with all that is Drew Physics.

Ash Carter joined the physics department as an adjunct professor in 1975 while he was still at work at Bell laboratories. Since that time he was as much a member of our department as any full-time faculty member. He truly found a second career here after retirement when he joined the RISE program in 1990, and became its director in 1997. It would be surprising if anyone in the academic sphere (and others too) at Drew did not know him - he participated in everything and loved learning about it all, indeed a renaissance person. Students from all schools at Drew and numerous faculty members sought him out for his expertise in relating his science to religion and the humanities. He taught almost every upper-level course in physics, took on numerous independent study projects, and even an honors thesis or two. His complete and clear lecture notes from his thermodynamics class became a well-respected physics text in colleges throughout the world. We thought of him as a full member of our department and he never missed a single event - picnics, trips, talks, department meetings, Spring Saturday, etc. If there was an important Drew event, especially related to the sciences or his students, Ash was there. He was fiercely loyal to his students and their activities, and he supported them with zeal both in and out of the classroom. And they loved him for it as can be seen in the heartfelt remembrances inside. Students regularly worked harder for him than for the rest of the department, and yet he consistently got the highest teaching evaluations! He will leave a huge hole in the fabric of Drew, but especially so in the physics department.

A New RISE Study/Reading Space

Donations in memory of Dr. Ashley Carter may be made to the Charles A. Dana Research Institute (RISE), Drew University, Madison, NJ 07940. Contributions will support reorganization of RISE space to include a new reading/study/gathering area for students and faculty, and where Ashley's extensive physics library (over 45 boxes of books) will reside. Books were essential in Ashley's life – he collected them, read and discussed them, loved them, and gave them away to all of us. What better way to remember Ashley than to have a space devoted to the reading about and study of science.
Ash arrived at the door of the physics department in September 1975 and never left us. In all of those years he taught one or more upper level physics courses every year, and was in all ways, a full participating member of our department. Upon retirement from Bell Laboratories, he contemplated applying for a tenure-track position in the department, but then found his way to the challenges of the growing RISE program, ultimately becoming its director.

Ash and Eva became close personal friends, with Ash, as only he can, arranging for our honeymoon location on his beloved Nantucket, and then becoming a devoted godparent for our daughter Sara. We played tennis every Wednesday afternoon for over twenty years until his hip replacement, and I remember often finishing those afternoons in Ashley’s kitchen laughing uproariously while reading each other excerpts from a latest book of humor or satire that Ash or Eva had found – his exceptional martinis no doubt helped that process (and we shared them as often as possible!).

I could always count on Ash to be open to what I called adventures, even on short notice. We flew in hot air balloons at dawn over NJ farmlands, drove to Penn State to watch a Penn State/Alabama game with 100,000 fans in the rain, and traveled to Barbados to photograph Halley’s Comet in the dark South Atlantic skies.

And we had physics adventures. Ash took me to one of Richard Feynman’s last lectures at Bell Labs, and then I mysteriously received an autographed copy of Feynman’s book at Christmas. We flew to San Francisco for an American Physical Society Meeting, and upon arrival I was surprised to be whisked off to a first for me: a shiatsu massage! It was indeed an Ashley experience. The physics meeting had a memorial session scheduled for Richard Feynman, and Ash and I were there an hour early to sit in the very first row to see the legends of physics extol Feynman: Hans Bethe, John Wheeler, and others. And Ash had stories about or had met most of them.

When Ash described an event that he and Eva had attended, a play, a concert, or going to a special restaurant, you learned that Ash had a way of wonderfully expanding the experience: meeting the soloist personally, or the chef perhaps. I experienced this Ashley charm and magic in San Francisco as we attended a huge public reception for a new textbook author. As the evening ended, there we were having a celebratory dinner with the author and his family and the publishing team in a very fine restaurant. And this led to Ash’s first contacts for the publication of his thermodynamics text.

I’ve not met anyone else who lived, breathed, and enjoyed physics so much. His classes and students were his center, and we all were his students. I could go to him and ask, “Ash, is there an easy way to understand how two sample points per cycle can store both amplitude and frequency information?” And, as others of us have experienced, a set of his elegant handwritten notes would appear in your mailbox, fully detailing the answer! We will miss his stopping by our offices to excitedly share a latest subtle connection or insight that he had discovered last night and couldn’t wait to share.

In the last few years, we had many discussions about science and religion, with Ash reading all the latest books, writing a few papers, and attending a conference on the topic in Oxford. In the last few days when Ash was in the hospital, a chaplain entered the room to ask about his religious denomination. Eva, barely hesitated, and said, “He is a scientist.” The chaplain retreated, saying: “Oh, I understand, I understand...”

I will so very much miss Ash Carter, my friend…and scientist.

- Bob Fenstermacher ’63
A Constant Source of Encouragement...

I remember first hearing about Dr. Carter as a professor who was a difficult grader and assigned a lot of time-consuming work. Those rumors proved to be true, but what I wasn’t told was the effect he would have on me. We all felt that Dr. Carter was a genius, and somehow he had missed the memo that we were not. We spent hours working on his math-phys homework sets each week, only to give up in frustration when we found ourselves staring at yet another difficult integral. Eventually Dr. Carter became fed up with our incomplete assignments, so one day he brought to class a recommendation letter he had written for another student. He read a part that praised the student’s thorough problem sets. “She did more than just solve the problem; she made the math her own,” Dr. Carter read. He then looked all of us squarely in the eye and asked us, “Does that sound like any of you?” That day he severely humbled us all. It was probably the best gift he ever gave us. None of us ever gave up on a problem in his classes again. He expected only the best from us, and we in turn rose to the challenge, learning more than any of us thought possible.

Early in my first semester with Dr. Carter, I skipped his class. Later that day, I received a concerned email from Dr. Carter, asking if everything was OK. Before our next class, one of my classmates showed up at my door with a photocopy of Dr. Carter’s notes from his entire lecture. I felt incredibly ashamed. As time went on, I noticed Dr. Carter never missed a class, no matter what. After his lung collapsed this semester, Dr. Carter came back to class, dressed in his button-down shirt and bowtie, telling us, “While I was waiting to have a CT scan this afternoon, I wrote up some notes on Green’s functions.” That was simply his way. When he felt a sense of duty, nothing could stop him.

Math-phys and thermal physics were the first classes that seemed impossible to me, no matter how hard I tried. I began to reevaluate my decision to stick with the physics major, falling back into the trap of feeling inadequate. In desperation I visited Dr. Carter for help with my homework. I am not sure how he managed to do it, but somehow he convinced me that understanding the material was indeed important for my future, and that I did have the ability to do so. He sat with me for about two and a half hours that afternoon. I had gone into his office nearly in tears of frustration, and left with a drive that has yet to leave me. He spent hours each week for the rest of the semester guiding me through problem sets and swapping stories. That semester, Dr. Carter transformed me back from the disenchanted shortcut-seeker I had become, to the enthusiastic physics student I used to be in high school. Only this time I did not have the naive idea that physics is easy. Last summer, Dr. Carter called me at home to ask me to work on a research project involving an archival collection about Einstein from the Drew Library. This fall, we bonded over those papers, laughing at the scandal of Hans Albert Einstein marrying the interviewer’s cousin and arguing over correct word usage in my paper. He always valued my opinion, which surprised me, the inexperienced undergraduate student.

Over only a short span of a year and a half, Dr. Carter became like another grandfather to me. If it were not for him, I would not be going to graduate school in physics, much less trying for a doctorate. I would probably still think I was too dumb for physics. If it were not for him, I would not have the courage to strive for the best, even if there is a good chance of failure. I have never known a man who had accomplished so much during his lifetime and had so many crazy stories. I can only imagine how many other lives he has touched. I am sorry to have only known him for so short of a time, but the time I had with Dr. Carter will remain with me forever. It was an honor and a privilege to have him for a professor. It was a joy to have him for a friend.

- Laura Barclay ‘08
Twice Lucky…

I’ve been lucky twice. Not bad.

I had the joy of working with Ash Carter in what seems like two different universes. During much of my time at Bell Labs, Ash was my boss’s boss. What a joy. Normally, one does not “go around” one’s boss, but I so wanted to connect with Ash that I would find a way. I’d start a conversation with Ash in the cafeteria. I’d wonder: Could a short remark catch his interest? I quickly learned that, yes—it was easy to get Ash’s interest, because he was always interested in everything of substance. He was also generous. He invited me to his office for private presentations of my work. He stayed interested. He encouraged me. Nice.

At Drew, everything was different—except Ash, the unexpected constant. Ash was still interested, and still generous. I’d ask him questions because he was interested in any subject. Oh, and yeah, he knew the answers. Maybe twice in twenty years I asked Ash a question that he felt unprepared to answer. Each time that happened, I came to work the next morning and found four or five pages of crisp, detailed, handwritten notes on my desk. How did this happen so quickly, while I slept? The tooth fairy? The physics muse? No, it was Ash, of course. His curiosity and generosity were constant.

- Jim Supplee

A Colleague and Mentor…

The passing of Ashley Carter is a tremendous loss for the entire Drew community. His leadership of RISE, engaging presence at Drew events, and outstanding teaching will never be replaced. And yet, these were just a small portion of Ash’s contributions to Drew. Not surprisingly, much of Ash’s love for Drew was demonstrated through innumerable contributions that happened quietly in ways perhaps not visible beyond a small group of faculty. His mentoring of faculty is one example. In preparing to teach courses previously taught by Ash, faculty had access to a wealth of material, including lecture notes, homework problems, and most importantly, Ash’s time. In my own experience at Drew, I was fortunate to have spent countless hours with Ash as I prepared for courses in the physics department. He helped me craft syllabi and select problem sets appropriate for the level of the course. He also encouraged me (and others) to add variety to physics courses by supplementing the traditional “problem-set” approach with student presentations and term papers on aspects of physics not usually covered in textbooks.

Ashley was also instrumental in helping the Drew Summer Science Institute carry on through some rather lean years. Ash was committed to helping students gain practical laboratory experience with RISE. He thought there was no better way to do this than to pair up students with RISE fellows for a summer of full-time professional experience. For four consecutive summers, Ash pledged significant funding from RISE, and the RISE-sponsored student research teams often made up a considerable fraction of the overall DSSI program. He was a regular contributor to the DSSI summer meetings, and his presence at every Fall Poster Session provided a great sense of encouragement and support for students.

Ash’s work with faculty and his contributions to DSSI is just one dimension of his many contributions to the Drew community. They happened below the surface so to speak, but their impact on faculty development and student engagement spreads far. In working with Ash over the past few years, I considered him to be a full-time physics faculty member, and had to remind myself many times that this was Ash’s “second career” after his first retirement from Bell Labs. Most of all, though, I would find myself daydreaming about how wonderful it would have been to be a student all over again, but in a class taught by Ash.

- Dave McGee
Although I have been thinking about what I would write about Dr. Carter for many months, I have continually delayed the actual writing. I believe that this is some form of denial about him truly no longer being with us. For me to come to terms with his passing is not only to say goodbye to the best teacher and mentor I have ever had, but it also feels like the end of a major era in my life. I sort of always assumed that I would be able to call him up to complain about graduate school or talk about life in general. And, he would, in his grandfatherly way, always give me advice, or tell me that he thinks I am doing a good job.

Dr. Carter had a huge hand in making me who I am today. When I met him during my sophomore year at Drew, I was unsure of myself as a physics student, angry that I was not getting the kind of grades that I knew I was capable of, and unhappy that I was not learning as much as I wanted to be learning. Over the next year, I took two of his classes and met with him many times in his office to talk, and I was transformed. He taught me how to think, study, and act like a physicist. He pushed me to the limits of my abilities and demanded the best. And, I wanted to be the best to make him proud. In my senior year at Drew, he took me on for an independent study. It was in this independent study that I fully developed into an academic thinker and became sure that I could make it in graduate school. And, his unique way of inspiring confidence in me (in particular, I remember that he once told me that the Born Approximation was well beneath my mental capacities so we should not put too much energy in it) motivated me to continually want to improve and learn more physics.

I have so many happy memories of Dr. Carter. There are a few in particular: When he found out I was dating a history student (who is now my wife, Caroline Young, CLA ’04), he decided that he needed to do a bit of a background check to find out if she was “good enough for me.” So, he went over to the history department to talk with her mentor, who, coincidentally wanted to do a background check on me. He told me he put in a good word for me. And, after this “meeting” I stopped having the impression that elderly history professors were spying on me. But, even after this chat, he did some more reconnaissance work by attending all of the concerts of the madrigal singers (of which my wife was one) for the whole semester before deciding she was okay. (On a side note, I am pretty sure Dr. Carter also asked around about my graduate thesis advisor.) My wife tells me that her fondest memory in her entire time at Drew was when Dr. Carter got a little tipsy at the senior dinner and asked her to dance to a hip-hop song and then didn’t wait for an affirmative reply (I actually have a picture of this).

Of course, my favorite memories of Dr. Carter are from my independent study when we would sit in the RISE Reading Room and either he would lecture to me or force me to lecture to him and we would get side tracked. He would tell me stories about his early career, like when a couple of deckhands on a navy boat that he was boarding dropped his trunk containing all of his undergraduate notes into the ocean (I think that this was his reply when I told him I always save all of my notes). Or, he would continually repeat the story about how the conclusions of one of his first published papers were challenged during a softball game. And, we would discuss pretty much everything else, like politics and current events, of which he always had an opinion. He used to tell this same joke over and over again about a guy who was working for a fish monger and was instructed to put up a sign advertising “fresh fish today.” They guy told his boss, “what’s the point in saying ‘today,’ if the fish is fresh?” The boss said, “Okay, take off ‘today.’” The guy then says, “What’s the point in saying ‘fresh’? We’re down by the docks and all the fish is fresh.” The boss says, “Okay, take that down.” The guy then says, “Why write ‘fish’? People know you are selling fish, they can smell it.” And like this the guy gets out of doing the job. I don’t know if Dr. Carter’s point was that as physicists we can use logic to get out of doing work, or that it isn’t necessary to spend so much time doing what is unnecessary. Either way, I often re-tell that joke to make both points.

Dr. Carter was a once in a lifetime kind of teacher that Hollywood would clamor to make a movie about. His attitude towards life and way of doing physics continue to inspire me. I will miss him terribly and I only hope that I can continue to do things in my life and career that would make him proud.

- Adam Friedman ’04
A Life in Physics at Drew...

At the 1988 Physics Banquet

The First Sigma Pi Sigma Induction (1988)

Celebrating with Bill Clark and Joanna Tambakis (1988)

Carter at First (1988)

With John Ollom

Carter at Bat (1989)
A Life in Physics at Drew...

With Jim Supplee (Taco Party 1989)

Taco Party (1994)

With Pat Boeshaar (1996)

The Physics Department—1992 (Einstein is in good company)

With Alison Steele (2006)

Just Bugging Out at the Taco Party
A Life in Physics at Drew...

The Physics Picnic (1988)

With Alice Chu (1998)

With Dr. Peter Galison, Adam Friedman, and Christina Conzentino
A Life in Physics at Drew...

With Bill Hahn (1999)

With Adam Friedman (2004)

With RISE Fellows Jim McKenna and Arnie Demain (2007)

Faculty Yearbook 2006

With Laura Barclay (2007)

With Sara Fenstermacher
During spring break, I had the privilege of presenting an invited paper at a session of the Oxford University Round Table. The theme of the week-long conference was *Science and Religion: Is There Common Ground?* Although the gathering was organized by Oxford officials, all of the 49 participants were from the United States. Roughly half were science professors from colleges and universities, most of them biologists (I was the only physicist). The other half were theologians; one or two were professors of religious studies and the remainder were Christian clergymen. I was disappointed that there were no representatives of other religious sects — no Jews, Muslims, or adherents of Far Eastern religions.

The topics discussed included evolution, creationism, intelligent design, stem cell research, and ethical issues. My talk was entitled “Is There a Religion Gene?” I spoke about recent research suggesting that religious behavior could have arisen from evolution by natural selection, and that a correlation appears to exist between spirituality and a polymorphism of a particular gene. Admittedly, religious belief is also influenced by cultural transmission and shared environment; yet it appears to be far more a product of evolution than hitherto conceded by theologians.

People seemed interested in my talk and asked for copies of it. But, in general, the theologians adopted a defensive stance: “You scientists are trying to tell us what to believe and why we believe what we believe.” Worse still, there was a surprising number of Bible literalists in the group who knew little science and didn’t want to hear what science says about the world and its origins. In sum, the search for “common ground” got virtually nowhere.

I came away hoping that the negative views toward science expressed at the conference represented a biased sample of opinion, and feeling good about the open-mindedness of the students I have known at Drew.

Despite my disappointment in the Round Table discussions, my wife and I had a wonderful time getting to know Oxford and feeling a part of the University, if only for a week. We stayed in student quarters at Lincoln College, founded in 1427. The living accommodations were described as “modern”, which, we gathered, meant that they dated from the eighteenth century. We ate in a vaulted dining hall with candelabra on the table in the evening, and thought of Harry Potter.

The last day that we were there, I spoke to a ten-year old child at the Museum of Natural History. I asked him if he was studying science at school. He nodded enthusiastically and said, “We’re learning about adaptation”. God bless him.

- Ashley Carter
A Thermo Class with Dr. Carter…

Dr. Carter played a critical role in my decision to become a physicist, an influence for which I will always be grateful. His enthusiasm for the elegance of the subject material was contagious. His dedication to teaching was remarkable, and his warm and engaging demeanor personalized what could in lesser hands be a cold, unforgiving subject.

My first class with Dr. Carter was “Thermodynamics and Statistical Mechanics.” Although at first I found the topic intrinsically dry and arcane, with Dr. Carter it became a joy. It was fun to finally make sense of things that had seemed so esoteric on the surface. Dr. Carter had a passion, not just for the science, but for teaching it and sharing it with his students. This was 1986 and Dr. Carter was working on notes for what would become his textbook on the subject. On behalf of the many students who used them, I am very thankful for those insightful notes.

The experience of that class is one I will never forget, in part because I was the only student taking it that year! Because Dr. Carter was still working during the day then, it was just he and I for three hours one night a week down in the Physics Library in the Hall of Sciences. Where else but Drew could a student have the undivided attention of a physicist of Dr. Carter’s caliber for three hours per week? With many professors (although none that I ever had at Drew), that could have been a semester of dread. With Dr. Carter, I actually looked forward to showing him my problem sets and getting his insights.

That semester, Dr. Carter had surgery and was confined to his home for what must have been a month or more. No problem about the class, his wonderful wife would pick me up at the dorm and we would have class for three hours in his living room! That level of dedication would seem shocking from almost anyone, but Dr. Carter looked forward to it. He even shared dessert with me after class before Mrs. Carter drove me back to Drew. He was incredibly generous with his talents, his time, his patience, and even his food! (Thank you too, Eva, for sharing this wonderful man with me at what must have been a difficult time. And thanks again for the rides and the great desserts!)

In my graduating comments in the 1988 Drew yearbook I quoted Dr. Carter from his Thermodynamics notes: “How do you unscramble an egg? Feed it to a chicken.” For me, this summarized the puzzle solving that attracted me to the science of physics. It also recalls that for Dr. Carter, even something as profound as the laws of thermodynamics could be shared in a whimsical way that made it not only fun but memorable.

Of course, I have fond memories of Dr. Carter on the softball field at the Drew Physics picnics. It was obvious that he also loved the game and playing it brought him great satisfaction. Since baseball was a love he and I shared, at the time it made me think of him even more as a role model. I flattered myself to hope that I might someday follow in his footsteps to do what I loved and to love doing it.

I am a physicist at the Naval Research Laboratory in Washington DC now, and I know Dr. Carter would be happy not only that I am still doing physics, but also that I do it in service to our great nation. His service to America was just one more thing that I always admired about him. I still enjoy physics and hope to love it as long as he did. He set a great example in many ways.

In talking with other Drew physics alums, my experiences of Dr. Carter’s tremendous talents are unanimously shared. He will long be remembered fondly and with gratitude by his many students. I know he would be very proud of that.

- Christopher A. Kendziora ’88
Active Encouragement and Support…

As I allowed myself to relive some of the moments that I was blessed to have spent as one of Dr. Carter’s students, I was again struck by his genuine love for physics, its elegance, its power and its history. I was also reminded that his impact on my life was a product not only of his keen understanding of the subject and his talent for teaching, but also of his kind heart.

Many times as I worked on my senior project, I hesitantly entered his office to ask some question which I was sure was stupid and would insult his far superior intelligence. Each time he would immediately cause me to lower my defenses with his enthusiasm and gentle manner. Sometimes, for just a moment, he could make me forget that I was not his equal as he deftly lead me through a chain of equations, as if I had thought of the whole thing on my own. In that way, he allowed my confidence to grow along with my understanding.

I attribute my decision to become a high school physics teacher in large part to one such moment when he coaxed me to honestly explore what I would like to do with my life. The only acceptable answer in my mind was that I would get my PhD and become a physics professor. Anything else would constitute failure. When I admitted to him my dilemma and that I was fascinated by the idea of teaching physics to teenagers, he was quite excited and encouraging. His opinion really did matter to me. It was his reaction that day that helped me to eventually gain the courage to re-route my career path. In the sixteen years since I graduated, Dr. Carter and I have kept in touch from time to time. Each time he would close his beautifully penned letters with “Fondly” and I knew he meant it. A few years ago when I shared the news with him that my daughter was diagnosed with leukemia, he wrote an especially encouraging note to me as I helped her through years of chemotherapy. It is rare to meet a person of such intelligence and high standards who can also be a patient teacher and a kind friend.

- Sandy Sweller Williams '92

A Remarkable Heart and Mind…

I was a student of Ash Carter in the late 70’s. His students knew him then as Ashley, but his brilliance and enthusiasm never changed. The Japanese have an expression that translates roughly as “one’s strength is one’s weakness.” I have observed the wisdom of this paradox in many scientists and myself. Yet Ash was the exception that didn’t fit the rule. As a former student and later friend of Ash, I wish to add an additional lens to view this paradox in the light of Ash’s role as scientist, teacher, and mentor in the lives of so many.

Great teachers can endure students’ confusion with the obvious and encourage their exploration of the subtle. Ash fully possessed this ability, but the manner in which he approached the latter illuminated his essential character. Ash devised problem sets that are legendary among his students. Many problems could not be solved with simple substitution, nor would they yield to brute force. Rather, solutions required deep and subtle thought to plumb the many levels of analysis.

Ash’s superficial message was quite clear. Nature doesn’t reveal its secrets without struggle. At times we felt like Jacob wrestling with God. But at a deeper level, Ash was also helping us understand that ideas traverse from the infinitesimal to the infinite, Blake’s “world within a grain of sand.” These ideas transcend beauty and elegance to satisfy most definitions of an aesthetic. Ash taught us to turn our vision inwards, uniting intelligence of mind with aesthetics of the heart. And like Jacob, our efforts made us more human by granting us a glimmer of the Divine.

So I return to the opening paradox. I propose that Ash’s equally remarkable heart matched Ash’s remarkable mind. Consequently, I think Ash saw beauty in everything and radiated that passion to everyone he knew. Yes, he was a “Renaissance” and “Universal” man. I also believe Ash’s unity of heart and mind afforded him a clearer view of the Divine that made him more human than any other person I have ever met or am likely to meet. And I am forever changed because of him.

- Steve Dear '80
Opening Paths to More Than Physics…

Ash Carter exemplified for me the teacher, and what he gave to me goes far beyond theorems, rules, and definitions.

As a new student at Drew, I enrolled in Dr. Carter’s course in the history of modern physics. Although I was fairly sure my love of math and physics would lead me in that direction, I admit I was not sure that this class would offer me much more than the fulfillment of a breadth requirement—history, after all, had never before inspired me. I clearly underestimated the power of a really terrific teacher. That class was a whirlwind of 20th century thought and experiment, and it led to my deeper understanding and appreciation of not just physics, but of that liberal arts ideal of approaching knowledge from different perspectives. After this class, I did complete a degree in physics, but alongside that I explored other areas of the history and philosophy of science, only eventually coming to terms with my increasing interest in the history of science. (In this I give much credit to Dr. Carter for his patience, as he no doubt saw my intellectual transformation far before I did.) As a current graduate student in the history of science, I owe Dr. Carter in no small part for his role as teacher, advisor, and mentor in my academic progress.

Dr. Carter embodies the ideals of a teacher in that his lessons range from the practical to the abstract to the unabashedly philosophical. He taught me how to use operators, where the RISE Reading Room is, how to make a good overhead presentation outlining formulas. He taught me how to be proud of an eight-page solution to one of the problems on his problem set. He taught me just how satisfying it is to put the effort in to earn an A-minus in quantum after failing the first exam. Indeed, he taught me that failing that first exam isn’t indicative of my skills as a student, or even as a person as it sometimes seems, but that it is my response to that challenge that defines me. He taught me what a well-rounded person is; I will never forget the awe I felt the first time I saw his bookcase, loaded with physics texts, his own work, philosophy, poetry, and manuals on tennis. He taught me how important it is to proudly display pictures of family and friends in your office. He taught me how time-consuming graduate school applications are. He taught me not only how to think, but how I want to think.

I was deeply saddened to hear of Dr. Carter’s illness and passing last spring. I am sorry to have not had a chance to say goodbye. I hope on some level, Dr. Carter can see that as I spent that spring as a T.A. for a history of modern physics course, my teaching developed in part through his model, and that he understands how much he taught me. Thank you, Dr. Carter, you will be greatly missed.

- Emily Hamilton ’04

A Carter Proof…

Was Dr. Carter a great professor? The answer is…

Self-evident, apparent, straightforward, easily shown, clear, transparent, simple, follows directly, easy, readily-apparent, can be seen from inspection, trivial, and, of course, … OBVIOUS.

The “Proof” is left as an exercise to the reader, however I will offer one piece here:

In my sophomore year, I stopped by Dr. Carter’s office, on my way home for break, to get my Math/Phys grade. He apologetically told me he’d had to give me a B+ because, although he knew I’d worked hard, my scores were just too much lower than the cluster of students getting A’s. I smiled because I was fine with that. More important than grades was how much I learned from his class—he made difficult mathematics intriguing and his clear love of the subjects he taught made me want to understand them as he did—and the fact that he was concerned for my feelings as a fledgling physics student. Even as he challenged us with rigorous problem sets and take home exams, he made us believe we could rise to meet that challenge. (And one of my best friendships to this day was forged by the camaraderie of countless hours studying for his classes!) I will forever be thankful for my time at Drew and for knowing Dr. Carter. —QED

- Leith Dwyer Allen ’92

By Leith Allen
Lectures in Chalk Dust…

While the enduring image of Dr. Carter for most former students is probably fairly uniform (that being the benevolent-looking man with the bow tie), I suspect the enduring memories tend to be more varied. When I think of Dr. Carter, I remember his brisk pace at the chalkboard. While lectures often began with a concise verbal review of the previous lesson (something that occasionally approached haiku-like simplicity), the Dr. Carter experience did not begin in earnest until he turned his attention to the chalkboard. Once there, the man unleashed a hail of chalk and insights, pausing only occasionally to adjust his glasses or enlist the services of a new piece of chalk. As the lecture wore on, the eyeglass adjustments became more frequent, the end result being that his chalk-covered hands would transfer a portion of their dust to his nose and cheeks. By the conclusion of several lectures, Dr. Carter's face was so thoroughly covered in white chalk dust, he could have launched into Japanese kabuki theater with nary a pause. And, given Dr. Carter's prowess in so many other areas, I'm sure he would have performed kabuki theater beautifully as well.

Which brings us to the following question: can you take a man covered in chalk dust seriously? The answer, surprisingly enough, is yes. Because inextricably tied to the ad hoc white dust mask was Dr. Carter's enduring lesson: the physical world can be understood, but one must often meet Mother Nature more than halfway. If that happens to involve the obliteration of half a box of chalk in a 75-minute lecture, then that's the price one pays. And the twinkle in the eye of the benevolent-looking man with the bow tie suggested that it's not too steep a cost when the payoff is a richer understanding of the universe.

- Joe Kinast '01

Remembrances…

I am really sad. Dr. Carter was the professor whom I most appreciate from my days as a physics major in the mid 80's.

One day he came into our Thermodynamics & Statistical Mechanics class after an exam and he was none too pleased with our grades. He proceeded to tell us that A students may be recruited by top companies, B students may go on to be successful scientists, and C and D students may be lucky to become "salesclerks at Bloomingdales." That phrase has stuck. Ask anyone in that class and they will remember.

Often he would come into class (night class) after a day's work at Bell Labs, and with a big smile on his face tell us "I had a wonderful and interesting day at work today, unfortunately if I told you about it, I'd have to kill you." That is how class started.

In 1989 or 90 I was invited back to sit on a panel as a BA who went straight to work (rather than grad school) to be interviewed by current physics students. I told it like it was: don't expect loyalty from the company you work for, always keep your resume current, network, network, network, and if a better opportunity comes up, take it, etc. Dr. Carter pulled me aside afterwards and thanked me for not sugarcoating what the work-world was like to the "kids."

- Mark Soler '86

Ash was one of the true gentlemen I have had the pleasure of knowing. I can still remember when he cleaned my clock at tennis 37 years ago, when I had taken up the game and thought I was entitled to win simply because I was 18 years younger -- and he was go gentlemanly about the massacre.

- Wes Shanks (BTL Colleague)
More Remembrances...

What I will always remember about Dr. Carter, besides his invariably sunny disposition and his bowties, is the time he took to encourage me personally to continue studying physics after Drew. Taking me aside at the close of a difficult semester in quantum, he told me, “You think differently”, and explained that I should view that trait as a good thing. Those words of encouragement frequently sustained me in those critical first couple of years in graduate school and will not be forgotten.

- Matthew McMahon ’01

I would like to send my condolences on the death of Dr. Carter. I would have had great difficulty with my first year of graduate school in physical chemistry at Yale had I not taken mathematical physics and quantum mechanics with Dr. Carter at Drew. His patience and willingness to work through problems one-on-one at the time made a big impact, as did his happiness to learn of my progress whenever I visited campus post-graduation. I also appreciated his later directorship of RISE and its continuing support of the ResMed School which remains highly regarded in my current field of medicinal chemistry, where I now apply the principles of physical chemistry to the design of new drugs. My thoughts are with you all.

- Michelle Lamb ’91 (Chemistry)

Dr. Ashley Carter taught me a great deal during my four years at Drew. His ability was inspiring and enthusiasm infectious. His mathematical methods course was my first upper level physics course, and through it I began learning what it really means to do physics. It was both wonderful and terrifying, and certainly contributed to my decision to continue doing physics. His enthusiasm was evident in the fact that in the month he was diagnosed, he was in class teaching us perturbation theory. In fact, he ended one class by drawing his lungs on the board and explaining a recent procedure he had had. I am now a first year graduate student in physics, and it is evident to me that his courses prepared me for this better than any other. If I can start calling myself a physicist now, it's because he made me one. I miss him dearly.

- Varun Makhija ’08

The second time that I was ever on Drew's campus was Science Day and, upon hearing that I was interested in being a physics major, Dr. Carter sat down and talked with me for a little over an hour. I was amazed that a member of the faculty would take so much time out of his day to talk to a prospective student, and that he spoke with such genuine enthusiasm about Drew, liberal arts education, and physics in general. Dr. Carter made me realize that a physicist does not have to be a single-minded antisocial maniac; rather, a physicist is someone whose life is made richer by a passion for learning about the natural world.

- David Newby ’08
Physics faculty and alums celebrate the life of Ashley H. Carter in this memorial issue of The Dilated Times