Celebrating the Career of Dr. Robert L. Fenstermacher!

An Interview With Dr. Fenstermacher

By Michael Jokubaitis (‘10)

As Dr. Robert L. Fenstermacher’s (Dr. F’s) tenure in the Drew University Physics Department comes to an end, we had a chance to talk with him about his four decades at Drew and his plans for the future.

Why did you choose to come back to Drew after graduate school (i.e. was your ultimate goal to teach or did you have other plans to do work or research and considered teaching as a stop along the way?)

I think I’ve told this many times – probably. When I went to graduate school, we were not nearly as focused then about...
where we were going to end up. Being in grad school was fun by itself, and we had a good time during those years. I enjoyed the work; I did radio astronomy work, studying the sun at that time, and I wasn’t really thinking beyond that very much. But I got a phone call from Professor Ollom here at Drew asking if I would consider coming back to Drew to teach, since the department was being expanded from one faculty member to two. I had enjoyed Drew very much as an undergraduate and I had watched Professor Ollom and how much he had enjoyed being here. So, it seemed like a very nice place to come back to for a first job, as I tell people. And of course it was.

I liked teaching very much. I had some experience in graduate school teaching and it seemed to me that the teaching environment at Drew was very supportive and a good match for me. So I thought I would give it a try. I was an experimentalist, of course, and I enjoyed making things work. Fortunately, the niche here at Drew was really good for that and for me. There were labs to develop. All of our labs were open to me for playing and improving. I also had opportunities, of course, to continue research at Bell Laboratories and at the Jet Propulsion Laboratory, where I went three different times during summers, and where I spent one sabbatical. All of these options gave me the opportunity to satisfy the experimental itch that I felt I had and have, and yet I always felt that I wanted to come back to Drew and to continue teaching. Drew was always a wonderful place to live and raise a family; I enjoyed the community, particularly the liberal arts setting, where I could interact with people who were not scientists and gain their perspectives. Back then, my life was centered around and surrounded by the world of Drew.

So that’s how I got here. It seemed like a wonderful opportunity to me and I took it. I didn’t sit around trying to figure out my place in the world; it just came to me and I’m very glad it did. From my point of view it was the right choice and a very successful one.

What do you believe is your greatest accomplishment during your tenure at Drew and of what are you most proud?

This is really a big question, of course, and I think that I would like to talk about three things.

The first one that I think I’m very proud of and pleased with, is the building of the department. As I said, when I arrived here the department doubled in size to two and as of today we have five professors. Over those forty years a lot has changed at Drew, but I think that the physics department has continually become stronger during that time. We have provided a strong, traditional curriculum that includes popular general education courses and good experimental work. I think physics has become a very good citizen of the Drew community and I am very proud of that. I think we have raised the profile of physics on the campus and we have been raised up by our accomplishments.

Related to the development of the physics department are the creation and support of the astronomy program at Drew. I came to Drew as a radio astronomer and I didn’t know very much optical astronomy. But when I arrived, the department was ready to pursue that area of interest and Drew was willing to support such a development. So, I spent the next ten years establishing the observatory, including finding financing for it and getting it up and running. And that was an extremely rewarding and tremendously exciting process. Again, it was a time when we added visibility to the department by virtue of the observatory. People came to the observatory and very large astronomy courses developed – courses that would regularly have ninety to one hundred students in them every year. Many astronomy-related events took place at Drew or during the many field trips that the department would regularly take. I took students on eclipse expeditions, viewed comets (including Halley’s Comet), and photographed transits of the sun. A lot went on and the activity continues to this day. With the observatory that we have, students are even able to undertake small independent research projects.

So, building the astronomy program and making it a fixture of the physics program is something of which I am very proud. I think it has been and continues to be a benefit to Drew and of course to the students.

I guess the third thing that I wanted to mention was the Governor’s School. Again, this was an opportunity that came to me and I made the most of it. When the state, under Governor Kean, was looking to build Governor’s School establishments at three different locations: one in the arts, one in the sciences, and one in international relations. Drew was chosen for the sciences and I was asked by our president and dean at the time if I would like to develop that program. And so I did. I put the program together and it became a very successful program for over twenty five years now. It brought the excitement of science to the science division here during the summertime. This was before we had the Drew Summer Science Institute and before we had our own students doing research. It also was a little bit before there was as much expectation for faculty members to be doing research. So here was a program that brought a hundred of the very best science students in the state of New Jersey to Drew and to be involved with our faculty and our students. It led to interactions with almost the entire science faculty including ten or twelve Drew students, and we just had a great time. It was a high-energy, exciting program. Unfortunately, it has fallen on hard times in recent years with state budget cuts but it was a very wonderful program and a whole lot of fun. We have many, many alums of that program who still keep in touch and several, of course, came to be students in the sciences at Drew. I was and continue to be very proud of that program.

What do you think will be considered your legacy at Drew?

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This question is somewhat tied to the second question but I think I would make a slight distinction. I think, or I hope, that my legacy will be, very clearly, the students that I have had: not just the students who have gone through Drew’s physics program but also those who’ve gone through astronomy courses and “How Things Work” courses, and who’ve gone on department trips and the SPS events that I championed during those years. I think those experiences, I sincerely hope, will be the legacy. Of course, we have students who go out and do wonderfully successful things in the world. Historically, we send seventy-five percent of our students on to graduate school in physics or related fields. That is higher than any other school to which Drew is typically compared. I am not sure why, exactly, that is the case. I am not claiming that it is because of me, but it certainly makes me very proud. I think that this will be a legacy to me and to the department going forward for many years to come.

I didn’t say anything about the Society of Physics Students earlier but that certainly is one of the features of the department of which I am very pleased. I decided, early on, that it would be an integral part of our department, and I think that has been very helpful both to building the department, to the students, and maybe some sort of legacy along the way.

So, that is the sort of legacy that I think I will leave at Drew and I think that most Drew professors might say the same thing.

What are your plans for the future?

The future, of course, will be an adventure to look forward to. Certainly, I would like to do a little bit of teaching here at Drew. I would like to explore that area by teaching How Things Work one more time (next year), at least, and possibly the physics seminar in the spring. Next year really will be an attempt to see if that model works for me: whether I can do other things and teach one course at a time. It also might be a nice ramping-down from full-time teaching. Certainly those are courses that I enjoy teaching very much and would like to continue to work on a while longer.

Number two, I hope to continue to shepherd the science building project. Once again, we are venturing into the planning of a new science facility and this time it looks very promising. I am hopeful that I can continue to play a role in this project, especially since I have been a part of that campaign since its inception nearly fifteen years ago. I hope to bring a sense of history and continuity to the proceedings and planning that may be helpful to those efforts.

You know, it is funny. I started at Drew in 1968 when the current building was brand new. Its lifetime represents my teaching lifetime at Drew, so it would be incredibly exciting to be able to be part of building its successor – its improvement – or at least the next phase of its existence.

Lastly, I guess I would like to do a little bit of travel: visit Cape Cod. Anne and I have a home there and we may get to inhabit it – at some point. And certainly I want to continue tinkering, both here and at home. The department is open to my continuing help and I look forward to designing and building experiments and working in the observatory. As such, I plan to continue living in Madison for at least for the next few years. That means I can continue to play some small role here if it works for all of us.

We are grateful that Dr. F took the time to give us this interview but we are eternally grateful for the years of dedication that he has devoted to all of us – each and every one of his students. None of us would be who we are without his influence. We, indeed, are his legacy and it is our fervent hope that we can live up to his paradigm. There is no doubt – it was fortunate that Dr. F chose to teach at Drew and we are immeasurably richer because of it.

Save the Date!

May 1, 2010

The Drew community is invited to a symposium honoring Dr. Fenstermacher starting at 1:00 P.M. in the Hall of Sciences. Physics graduates and friends of the department will talk about their post-Drew endeavors and the impact that Dr. F had on their lives.

Following the symposium, Drew physics graduates are invited to an evening of celebration, honoring Dr. F’s career at Drew.

Please join us on this special day!
Thank You Dr. F!
Fellowship Update!

The physics department and the Drew University Development Office are pleased to announce that the Robert L. Fenstermacher Summer Fellowship has surpassed the $100,000 level and is continuing to grow!

Many thanks for getting us to this level! Contributions are ongoing, so please contact Dave Terdiman (dterdima@drew.edu) or Dave McGee (dmcgee@drew.edu) if you would like to help with this outstanding tribute to Dr. F.

From Faculty and Friends...

After more than four decades of teaching physics at Drew University, Bob Fenstermacher will retire following the spring 2010 semester. Not surprisingly, the face of physics at Drew- the courses, the labs, the students and their successes - are in large part due to Bob’s tireless efforts over the years to put science on the map at Drew and to make science an integral part of a liberal arts education. Since returning to Drew from his graduate work at Penn State, Bob has built the department into its present form, with 4 full time faculty, 2 assistants, and a consistent number of annual graduates that is at or above the median for all 4-year physics departments in the country. Bob built the Drew Observatory, was a founding director of the Governor’s School in the sciences, developed the popular How Things Work course, started this newsletter, and singlehandedly built most of the instructional labs for the introductory physics and advanced physics laboratories. He also worked tirelessly to create an atmosphere where undergraduate research could flourish, and was instrumental in bringing a new direction in biophysics to the curriculum.

These are some of the more visible accomplishments. There is however much more at the individual level, particularly in the lives of graduates as they’ve moved on from Drew to become professionals at every level: researchers, teachers, and engineers, to name just a few. These are the graduates who, when hearing of Bob’s retirement, put together a fellowship in his name that became almost fully endowed in just under a year. That’s quite an accomplishment, considering Drew graduates on average 3-5 physics majors per year.

While I am not a Drew graduate, I feel like one. Working alongside Bob for 10 years, I’ve benefited from his mentorship just as much as any Drew physics major and I can see why our graduates are so successful in their careers. There are many examples that illustrate Bob’s devotion to effective teaching and mentoring (too many to list here), but I’ll mention one in particular- the Advanced Physics Lab course. Bob and I have team-taught this course since 1999 and I continue to be amazed at how he built this course into what it is today. It is a course where students build experiments to, among other things, measure the speed of light, verify fundamental ideas about special relativity, and confirm the quantum structure of the atom. They build each experiment from the ground up, working from journal articles and designing the experiment from its basic components. It would have been far easier for Bob to just purchase pre-packaged experiments called, for example, “Speed of Light”, and then have students simply “get the number”. But that’s a tradeoff Bob would not accept. Bob always believed a Drew student should get the experience of doing science as it is done in practice. It does indeed make a better scientist.

Over the years, Bob has noted that there’s too much physics to do, and not enough time to do it. We’ve all seen what happens when there is the time: breaking wine glasses, dancing flames from a brightly glowing gas tube, and the occasional venture down the hallway in a homebuilt hovercraft. As Bob begins the next phase of his career, when perhaps there is indeed more time, he plans to continue teaching How Things Work. For those students lucky enough to be in future sections of this course, it will be an incredibly educational (and entertaining) experience to see all of those fun physics ideas Bob has had in mind over the years.

- Dr. David J. McGee

Dr. F's passion for science, science education, and Drew University has a big positive influence on me. I met Dr. F for the first time in one late February evening of last year, as a candidate for the new faculty position in the physics department. I was tired from having spent the whole day in the airports and in long bumpy plane rides. I was also anxious about the next day's interviews, but Dr. F's warm and inviting manners allowed me to quickly feel at home. Soon we were talking about our shared interests and the value of working together with the young minds within various areas of physics. One year later after that first meeting, he continues to share his insight and excitement about exploring physics and providing the best learning experiences for the students. He continues to innovate (have you seen his new "flaming tube" demo?) and keeps the Drew physics department a great place to be (especially for a new member like me). I feel lucky to have had some spatio-temporal overlaps with Dr. F in my life, and am looking forward to further close interactions with him. He shows me how fun and fulfilling a life at Drew can be. Thank you, Dr. F!

- Dr. Minjoon Kouh
There are enduring connections in the public consciousness: Babe Ruth and home runs; Vince Lombardi and coaching football; Neil Armstrong and spaceflight; Isaac Newton and classical mechanics; George Washington and the United States. Although famous, those examples don't really match the depth of Bob Fenstermacher's impact on Drew's Physics Department.

Bob lives the soundest and steadiest commitment that I have ever seen — of anyone to anything. In my twenty-two years at Drew I never once (right, not once) heard Bob mention that some project “took too long” or “was too much trouble” or “was too hard.” His devotion is unmatched.

When singing the praises of someone about to retire, it is customary to talk about how well they did, and how much they did. It is appropriate to leave out speculation as to whether someone else could also have done well. After all, many of us take pride in our teaching, but we know that other people could do it too; many of us take pride in our marriage, but we know … hey … never mind. Back to the point: In Bob’s case we can take the unusual step of making the bold but certain claim: If Bob were not here, the department would simply be less. There is no one who would bring the passion and tireless commitment that Bob has given us.

What Bob has accomplished at Drew is record breaking. Simply put, everything has expanded under Bob’s leadership — specifically, the faculty and curriculum (who we are and what we do) have expanded under Bob’s leadership. Yet, there is more to Bob’s track record than how much he has done. There’s also the strikingly broad range of the audience he can reach. Bob has been consistently effective with students ranging from high-school visitors and non-majors, up through the most advanced and technical courses we give, such as A Lab II. I have been stunned by how concise and effective he is when making a point to a beginner. And at the higher end of the curriculum, I’ve heard alums describe Bob’s lab skills as almost frightening; they marvel at his crisp aid: ‘pin six needs to be grounded’—shouted from around the corner, apparently without looking.

Bob helps faculty members too. He’s good at it. All the advice he has ever given me has been right on the money. But there’s more to it than that. He gives me advice when I ask, but sometimes gives me advice when I need it but don’t think to ask. But … there’s even more to it than that. He knows how to choose his moment and choose his words for maximum effect. That sounds like a teaching skill (and it is), but I swear … there’s more to it than that.

There’s no room or need for wavering here. We all know that Drew Physics is what it is because of Bob. Anyone who has really worked with him knows that. He knows we know that.

Thank you, Bob.

- Dr. James Supplee

In Tribute to a Remarkable Alum and a Distinguished Faculty Member

It isn’t often you run into a person who embodies both intelligence and wisdom. So, it has been a pleasure to know, and occasionally, to work with you across the past several years.

You have made it possible for a science-deprived clergyperson to gain a finger-hold on the esoterica of physics, due to the lucidity of the couple of lectures for “science dummies” (my phrase, not yours!) I have had the good fortune to hear you give. (Of course, you have been helped in my science education by the fact that I have a Drew undergrad son-in-law, Matt Eager, who has a PhD in the subject).

But, I have gotten to know you best and benefitted most from our relationship when we shared time together as members of the Presidential Search Committee which gave Drew our current president, Bob Weisbuch. I admire your quick wit and incisive insights in weighing such serious matters.

I regret that other obligations prohibit my attendance at the two events honoring you on the occasion of your retirement. However, it will be a pleasure for Judy and me to make a modest contribution to the Summer Research Fellowship to be named for you.

May God’s richest blessing continue to follow you, so your life may continue to benefit those who know you and look to you for everything from guidance to a rich relationship.

- Chick Straut
It’s hard to summarize my experience with Bob in a paragraph. He has been an influence on me in this brief time of almost three years. My fondest memory of Bob happened soon after I arrived at Drew. Bob invited my wife and me over to his home for dinner. I have had quite a few bosses in my life but none of them ever greeted me so warmly. I also remember that Bob cooks a mean steak so, if you can, try and get invited over.

I would like to finish with an open letter:

Dear Bob,

I know you are retiring, but this does not feel like goodbye. I have a feeling I will see you every once in awhile in A-Lab making a flame thrower that dances to music or working on a free space optical transmission of...... music (I see a pattern here- it must be the audiophile within you). I am very grateful for the number of physics demonstrations that you have put together for Physics 12. It makes my job a lot easier. Please hang around as we will all benefit from your guidance. And please hang around in case the shutter to the dome ever gets stuck again.

Thanks for taking a chance on me; I will try my best to keep up your long standing traditions.

- Dr. Robert Murawski

A Streak of Light on Two Wheels—Dr. Robert L. Fenstermacher and his Vespa
To Dr. F. With Many Thanks

When I first met you at the Governor’s School, I was only 17 and could not have imagined the course of my life or the influence you would have on it. Your insight into the workings of the physical world was immediately impressive but your gift for teaching physics and your commitment to teaching science in a liberal arts setting was something I grew to appreciate more each year I knew you as my undergraduate advisor. I hope the small subset of thanks below gives you insight into the effect your mentoring has had on me and the sincerity of my gratitude.

Thank you for making the Advanced Lab at Drew a quality experience. What I learned during those long afternoons has served me well through many stages of my life. As a graduate student at Stony Brook in the competitive field of laser cooling, I found that my experimental research skills learned under you put me at a great advantage. I was also able to find inspiration from a number of experiments I worked on in your labs to develop research projects for gifted high school students doing Westinghouse/Intel Research projects in the Stony Brook laser labs. Specifically, one of the students I mentored received national recognition for a research project involving laser speckle, the seed of which you planted in my mind in the labs there at Drew.

Thank you for showing me the power of enthusiastic and carefully-planned teaching. I had a bit of an epiphany in your E&M class one day when I realized that the example you were doing for us was specifically and beautifully selected to encompass many previous lessons as well as the latest concept. Although I chose a career introducing physics to high schoolers, I have often drawn inspiration from you as a teacher to help me carefully craft my examples or be creative with the cool toys and demos that I share with my students. I attribute the honor I received in being selected to Who’s Who Among America’s High School Teachers in large part to being able to follow your example and the truly inspired teaching I was able to experience in your classrooms.

Last, but certainly not least, thank you for striving to teach your students to be, first and foremost, critical thinkers and problem solvers. This has served me well in a most unlikely of circumstances. When my daughter was first diagnosed with leukemia several years ago, I did not expect the crucial role that I would need to play in helping to manage her care. With eight specialists, fifteen medicines in varying patterns, and ten emergency surgeries, her oncologist dubbed her experience the “Murphy’s Law” of childhood cancer. Managing a case like hers (no, the healthcare system does not provide for some medical professional to do this) is much like being in charge of a complicated physics experiment. With blood work/drug notebook in hand, there were many times that we, the parents, needed to analyze her “data”, discern patterns, and suggest ideas to her doctors in a system not made to deal with such a complicated case. We believe that she is with us today only because of our ability to contribute to her care as her personal problem solvers.

Thank you for giving so much to your students for so many years. I am so pleased that your influence will continue well into the future through the research fellowship that will bear your name.

- Sandy Sweller Williams C’92

From An Engineer...

A young West Indian man sits listening intently as the professor lectures about classical physics. The young man’s face has a look of confusion. He’s seen this all before but the units of measurement make no sense to him. What’s a ft-lb? Feet and inches?

That was my first memory of being in a physics class taught by Dr. "Bob" Fenstermacher. Growing up using nothing but the metric system those units were like an ancient language to me. But I needn't have worried. With Dr. "Bob’s" help and understanding I aced that course.

It’s been 20 years since I graduated from Drew but I still remember being in the lab and Dr. "Bob" challenging me to explain my lab results. Did I observe any results I did not expect? Were my assumptions correct? He always made me think.

I did not pursue a career in Physics (I chose the dark art of engineering) but I will never forget my classroom experiences with Dr. "Bob”.

Thank you for putting all of yourself into sharing your knowledge with us.

--Khürt Williams (C’90)
Dear Dr. Fenstermacher,

It was impossible for me as a younger man to fully comprehend or adequately thank you for your enormous contributions to making my Drew physics experience a positive one. It is due as much to your efforts as to those of any other teacher or circumstance that I am still doing physics today. It wasn't just the small classes and individual attention which I so fondly associate with Drew that had such an influence; it was also the personal touch outside of the classroom setting. Whether it was a picnic with a softball game, an outrageously cheesy science fiction movie screening, or welcoming us into your home for (of all things) a Christmas taco party, it was clear that you care about students as people. You even took your own time to drive us to conferences as far away as Baltimore (remember the gate in the parking garage cracking in half as it came down on the Drew van?). For over forty years you have humanized the study of physics and in my experience you have exemplified a true mentor, on many levels. For all of these things, I can't thank you enough.

Over two decades have passed in a flash since my days at Drew but my fondness for the place and my appreciation for all of your hard work in the physics department continue to grow. On this momentous occasion, I am proud to join all of your grateful students in honoring you today for your incredible dedication to building and maintaining a shining example of what a physics department can be. Your legacy will endure in the hearts and minds of the many students you fostered as well as in the Fellowship that will bear your name.

I wish you all the best in your future endeavors. May they continue to bring you the joy of learning that you have brought to so many for so long.

- Chris Kendziora (C’88)

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Dr. F is probably the reason that I was able to graduate. I would not have met my Science requirement without his dedication. Dr. F sat with me each morning before class, ensuring that I understood all of the Physics concepts being reviewed. Thank you!

- Alina Fayerman (C’07)

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The “Long Half-life” Award...

I still use a note card as a bookmark that was my award from Dr. Bob at the SPS picnic at the end of the 1986 school year - it was entitled the "Long Half-Life" Award. He drew a graph showing the number of students who started the year taking Modern Physics (3) and how it sloped (downwards) over time through the fall and spring semesters to the one person left (me) still attending class.

It was a funny award at the time (as most people at the picnic knew that I was the only one who went to that class every Tuesday and Thursday) and reminds me of Dr. Bob's sense of humor that was also a big part of the summer Governor's School programs.

Congrats, best of luck in retirement, and I look forward to the events of May 1!

- Forrest Shue (C’88)

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Although I am very sad to hear that Dr. F is (finally!) retiring, I have no doubt that he will still be active in the Drew community, still be open to being "Dr. F" to his former students and colleagues, and that most importantly he will have more time now to enjoy with his family and loved ones.

Over our years at Drew my fellow students and I spent many, many an experience with Dr. F - all of which had a positive influence on our lives and our careers. I will never forget driving to Baltimore and New York City; I will never forget the times we ended up in the observatory until some very small hour of the morning trying to perfect some adjustment in the equipment; I will never forget all the times he and his family so graciously hosted us at their home; and I most certainly will not forget all of the hard work and personal dedication that he and all of the Physics faculty so generously gave and continue to give their students.

I look forward to meeting up again and very much anticipate hearing about Dr. F's new track in life. I would not be where I am now without his guidance, advice and wisdom. See you in May!

- Brett A. Becker (C’03)
The Butterfly Effect...

Moral of the Story: Life is full of tiny circumstances that buffet our paths. But good people in the right place at the right time can make all the difference.

I like to tell the story of how I ended up majoring in physics because I couldn't speak French. The whole first week of French class we did "vowel sounds" and I just couldn't hear the difference between "correct" pronunciation and "incorrect." So I went to my advisor (an art history teacher) and, reviewing my transcripts, she suggested I try physics. Sure, why not? I enjoyed math, but had learned next to nothing in my high school physics class because we were allowed to use a formula book, and the teacher was uninspiring. This led me to Dr. Supplee. (Professor Starensier had suggested I take Physics 1.) As it was a week into the semester, I needed him to sign my transfer form. He seemed friendly, animated, and enthusiastic about physics, but he asked if I was sure I didn't want to take the calc-based Physics 11. I decide that, yes, I would since calculus had been perhaps my favorite class. So he walked me down the hall to Dr. Fenstermacher. Dr. F seemed a little calmer, but was happy enough to welcome me to his class. So you see, it was because I could not speak French, and a series of minor events, that I wound up in his class.

But sitting in Physics 11 does not guarantee you'll wind up a major. In fact, I struggled throughout the semester—feeling like physics did not come as naturally to me as it did to others, or that my background was weaker. By the end of the semester I had told my roommate to never let me take another physics class. And instead of taking Physics 12 in the spring, I took a variety of other courses to try to identify what I should major in. But over that semester and the summer that followed, I realized that although the physics course was not easy for me, it really was the most impressive course that I had taken. I found I really wanted to learn how the world worked and to be able to predict its events the way Dr. F could. (For example, I can still see him at the blackboard in HSC 244 as if it was yesterday presenting a problem to calculate how much rain would fall into a moving wagon in a given amount of time. His logic was flawless and I just wanted to be able to think like that.) His calm, straightforward, logical approach resonated strongly with me. I decided to major in physics. This meant I had to take Physics 12 (intro E&M) simultaneously with Electronics Lab. But somehow all of my memories of these are good. Dr. F kept an impish grin on his face as he taught about fields and circuits. And again I found myself just wanting to know what he knew. I mean, come on, who doesn't love creating Lissajous figures on the oscilloscopes?

I went on to get my Ph.D. in Physics. That path was also full of many small circumstances--and I wish more professors there were like Dr. F! These days, as I plan and execute my afterschool science clubs and interactive classroom demonstrations for elementary school children, I often think back to activities that Dr. F shared with us at Drew or to his joyful style of teaching to be inspired in how I present physics to my young audiences.

Back when we started *The Dilated Times*, one of our favorite things was to collect quotes—funny things said by professors or students in class or in study sessions. Well, I've never forgotten one of Dr. F's (from around 1990). We were in Electronics Lab and he was attempting to jot down some useful insight in response to a question. His pen wouldn't write, and he flashed his ubiquitous smile and said "Life's too short to use a pen without ink!" as he reached for another pen to go on with his answer. I've always kept these in mind as words to live by.

Thank you, Dr. F, for being a good influence at a key time in my life. You kept the department running efficiently for many, many years, and we wish you all the best in the years to come!

- Leith Dwyer Allen (C'92)
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dedication, I don’t know what is.

Of course, it wasn’t always just fun and games. My favorite class at Drew, in retrospect, was Advanced Physics Lab. Dr. F showed us the finer points of experimental physics; things like the arts of kludging (making something work with whatever you have available at hand, even if it isn’t pretty) and tinkering (if something’s broken, don’t whine-open it up and try to fix it). A deep appreciation for antiquated technology like Nixie tubes, as well as current innovations like the “Auto” button on a digital oscilloscope.

Dr F. taught us that being a physicist isn’t about knowing; it’s about doing. The value of someone with a physics degree is not that they know a particular set of facts, but rather that they can jump into a new situation and figure things out from the ground up.

Having been a teaching assistant for undergrads at another school for two years now, I can say that such skills are woefully lacking even in schools with much larger, research-oriented departments. I owe my education to Dr. F, for putting together a department that really gives students a practical education in physics.

It’s difficult to imagine that corner of the Hall of Sciences without classical music playing over a “hi-fi system”, punctuated by the occasional trumpet riff signifying a new email. Drew physics will live on, but any student of the department in Dr. F’s time knows that it will never be the same.

-Dave Newby (C’08)

From Current Students...

At the beginning of my junior year at Drew, Dr. F. approached me and asked if I would be willing to run a help session for his “How Things Work” class once a week. Thinking that I had had more physics than the course covered, I agreed and began doing sessions every week. There were never a lot of students who came but generally a few did and I did my best to help them with whatever they needed. Dr. F. also asked that I meet with him one morning during the week so that we could go over what the class was learning, so that I would be prepared to answer their questions and help with their homework. It was during these weekly meetings that I was quite surprised by how much I was learning. Every week his class had three hours of lecture to learn about a handful of new concepts, and how we use them every day without even knowing about them. For me to keep up, Dr. F. taught me all the same material he taught them, but in twenty minutes instead. I have never learned so much content so fast from any traditional class I have taken. Dr. F. has a way of explaining physics so that he can juggle theory with applications and put them all to work in a single thought. He gave me a review of every major concept from my first three semesters of physics. He taught me how dozens of everyday technologies work, from fluorescent lights to refrigerators to nuclear reactors. I learned a few new topics as well, things like thermodynamics that there aren’t enough time for in the regular physics curriculum until electives. Our twenty minute sessions started to stretch from the huge amount of content crammed into them. I had to start coming earlier because there was never enough time. Dr. F. has such a wealth of knowledge to share that he didn’t waste a minute. Any time I could give him, he could fill with teaching. After decades of teaching, Dr. F. has decided to never stop. Even as he retires, he continues to teach everyone he meets. There is more physics in the world than anyone suspects, let alone considers. Dr. F. helps his students to see, to know, and to understand physics. To him, everyone is a student with something to learn. Thank you, Dr. Fenstermacher.

- Aaron Loether (C’11)

To me, Dr. Fenstermacher's enthusiasm and fervor for teaching science marks him as the ideal teacher, proven by his influence outside of the classroom. From course advice to flaming standing waves, Dr. F makes science a way of life. His investments of time and hard work have made the Drew Physics Department into something unique.

- John T. Bone (C’12)

Since I first began taking physics classes, Dr. Fenstermacher has been a commanding presence. He has always had a way of making something seem easy, despite how difficult it may be. It still brings a smile to my face to remember going to Rutgers and watching presenters do demos they could not explain, only to have Dr. F be able to explain them all with ease. I only hope that I have opportunity to have senior seminar taught by such an interesting figure.

- William Menges (C’12)
I haven’t been around long enough to truly appreciate all the ways in which Dr. Fenstermacher has contributed to the Drew University Physics department. Still, my few short years here have been more than enough to convince me that Dr. F is as dedicated to our department as anyone could wish. From the sets of his personal notes that he distributes to his lecture students (and from which I personally derived great benefit in Physics 12), to the extra projects undertaken simply for the love of science and learning (including physics demonstrations such as the new Flame Tube and department trips such as the recent visit to Kutztown University), Dr. F always goes above and beyond in serving not just Drew physics, but all of Drew’s sciences, and the university as a whole.

A few weeks ago, I stayed late after my lab period had ended. Dr. F came into the lab with his hands full of gadgets, and I watched him connect various wires and components together into a contraption into which he then plugged his mp3 player. I saw a laser beam fire across the room into a photodetector, from which music began to emerge. Dr. F then explained to me how the voltage from the mp3 player, which would normally have powered a set of headphones, was being fed instead into the laser, whose intensity was changed by the addition of this extra voltage. As this voltage varied in frequency, the photodetector detected the frequency of the varying laser intensity, and then caused a connected speaker to produce the corresponding tone. In short, the music was being transmitted via laser light.

It was a fascinating device, and an equally interesting discussion about it ensued. And when I asked what the goal of building this device was, I was surprised by the answer. It wasn’t being set up for any class or scheduled demonstration; its creation was an end unto itself. It was just one more of a long series of clear indicators that Dr. F is a man with a genuine love for science, for understanding the world around us and sharing that understanding with others. That being the case, perhaps it should come as no surprise that he has devoted so much time and energy to providing invaluable support to science education here at Drew.

- Benjamin Chmielinski (C’10)

Oh Dr. F. Where should I start?

Should I discuss the time he accidentally sent a HeNe laser beam into my eyes during a class demonstration on fiber optics? Or should I talk about his constant lectures to the ’07 Electronics class about how we need to take our homework more seriously? What about when he randomly caught me on the path to talk about “why I should be a physics major” my freshman year? Maybe I should mention how he has listened to me worry and panic about not getting into graduate school, or having a future for the majority of my senior year. I could also talk about how he was responsible for putting together the Physics Seminar, which has probably been one of the most fun, interesting, and informative classes that I’ve ever taken.

Dr. F has been my advisor for the past four years and I am so glad for everything that he has done for me. I have taken four different classes with him and enjoyed every moment of them. I worked my *** off for him each time, but I wouldn’t want him to expect anything less from his students. He has always challenged me to do my best and to push myself further, both in and out of the classroom. With his support, I have done two REU’s, attended scientific conferences, and I am now heading to graduate school because of his consistent belief in my abilities.

Dr. F is an amazing physics professor, but more importantly I believe that he is an amazing teacher. He truly wants all of his students to do their best, and has no problem challenging them to do so. He also tries to get all of his students to go out and ask questions about the world around them, whether it is in “How Thing Work” with non-science majors, or in the Physics Seminar where you can’t pass if you don’t start to question the world around you. This is probably the most important lesson that Dr. F has taught me and I will forever be grateful…

…well for that and for sharing with Phys 12 students the sound that electrons make when you pull them out of your pocket.

- Melissa “Missy” N. Louie (C’10)
The life of a student is full of uncertainty and chance occurrences: if I make it in to this school or not; if I take and pass this course or not. The tendency can be to focus on such mundane details to the exclusion of everything else. It is not these things, however, that have the greatest influence on a student. It is the relationships that a student has with the people around them, and especially the relationship with teachers, that ultimately shape his or her character. If a student is fortunate, and this does not happen very often, he or she will have a teacher that truly changes his or her life. Such is the case with Dr. Fenstermacher and me.

I knew Dr. F before I even enrolled at Drew. As a wet-behind-the-ears prospective undergrad, I was trying to decide whether to come to Drew and whether to study physics. I was full of doubts and fears. And then, one day, I visited the department and met the professor with the impish smile and the infectious enthusiasm. He talked with me for well over an hour – a student whom he didn’t know and may never have seen again – and at the end of it I was hooked. I knew I wanted to do physics. If it was not for Dr. F, I would not have come to Drew nor would I be where I am today.

There are many stories I could tell about discharging capacitors, smoking AOM oscilloscope inputs, and the delicious fragrance of burning op-amps (ah, the marvelous world of electronics and A-lab) – enough to go on for an entire issue of this newsletter but I will limit myself to one. A few days ago, a wet-behind-the-ears prospective graduate student walked into Dr. F’s office with a world of questions and worry about what to do and where to go. An hour later, as had happened four years earlier, a much clearer-minded and not-as-wet student – full of the wisdom and experience of his advisor – walked out. It is because of that advisor that that student is ready to walk through the gates of Drew and out into the wide and wondrous world of physics and for that he will be eternally grateful.

I do not know what the future holds: as Dr. F would put it, it is a grand adventure into the unknown. I do know this, however: if I can be one-tenth the physicist, the masterful teacher, the sagacious mentor, and just the plain great guy that Dr. F is, I shall count my life a great success.

- Michael L. Jokubaitis (C'10)
Inside...
Faculty, Friends, Alumni, and Current Students Remember and Celebrate the Career of Dr. Robert L. Fenstermacher

Contributors…
Dr. David J. McGee, Dr. James Supplee, Dr. Robert Murawski, Dr. Minjoon Kouh, Michael Jokubaitis, Melissa “Missy” Louie, Ben Chmielinski, Aaron Loether, Bill Menges, John T. Bone, Melissa Hoffman, and many others...

Upcoming Events:

April 17, 2010:
Spring Saturday Admissions Open House. Welcome prospective physics majors by joining the physics department as we show our stuff with “phun” physics demos and tasty treats (who doesn’t love liquid-nitrogen-frozen marshmallows?).

May 1st, 2010:
Dr. Fenstermacher’s retirement party. Come celebrate the legacy and work of the man, the professor, and the friend who made the Drew Physics Department what it is today.

May 15th, 2010:
Commencement. Join us at the physics department table for fond farewells and a champagne toast following the ceremonies.

Don’t forget to visit the physics department website at:
http://depts.drew.edu/phys/