

8215 Norman Creek Trail
Bloomington, MN 55437
February 16, 2013

Dear Dr. Hoffman,

My name is Robert Davidson. I hope you remember me. I was in your math and computer classes at George Washington from 1966 – 1969. I was one of those who helped teach the computer class along with Larry Kauvar, Gary Spivak, and others.

I am writing to you because I think you might be interested in knowing the impact you have had on me. After leaving GW, I went to Washington University in St. Louis and then the University of Wisconsin where I earned a PhD in Chemical Engineering. I then worked for a few years at Kodak before moving to Minnesota to work for 3M. I have now been at 3M for over 31 years. During that time, in addition to doing chemical process R&D, I have taught classes within 3M about chemical engineering; how to work effectively with our Environmental, Health, and Safety professionals; new product development; and how to use math modeling to improve chemical process development. I have also been a long-time member of the 3M Visiting Wizards to introduce kids to the wonders of science and I have done demonstrations for more than 4000 students. I have worked with high school students to get them to think about careers in science and engineering, mentored students studying for the AP Chemistry Exam, and volunteered as an American Chemical Society Science Coach to provide guidance to High School Chemistry teachers. I owe my interest in teaching, and much of what I know about doing it, to your classes and the opportunity you gave me to teach.

This past week, I received the 3M Lifetime Educator Award for all the teaching I have done at 3M and in the community. The award was presented at a ceremony to honor all those at 3M who taught classes during 2012. In my acceptance speech, I acknowledged some of what I learned from you. I have included a copy of my speech and the two slides I used during my talk. I thank you for all you have done for me.

When I used the Internet to look for your address I read some of the information describing your career. I had no idea what a pioneer you were in the use of computers in education, and the unique opportunities you gave us as your students. I hope you are doing well, and realize how much you have done for so many. You are an excellent example of the sentiment I used to close my speech:

2 Teach Is
2 Touch Lives
4 Ever

Regards,



Robert Davidson

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The 3M Tech Forum Education Committee (TFEC) would like to congratulate the Nominees and Recipients of the **2012 Tech Forum Educator of the Year Awards**. These awards are presented to 3Mers who have demonstrated excellence in providing technical education at 3M. Its purpose is also to highlight education's importance to 3M's global technical community. These awards consist of an engraved statue, a small gift, and worldwide recognition and are given in 2 (two) categories: **Teacher of the Year**, and **Lifetime Education Achievement Award**.

SELECTION CRITERIA:

For both categories:

Teaching Excellence: Energizing and effective delivery of course content and the continued support of learning to other 3Mers beyond the classroom. Develops innovative teaching techniques; attracts broad audiences.

High Value Curriculum: Continuously improves course content that has high technical applicability and/or significant business relevance to the global 3M community.

Additionally for Lifetime Award:

Educational Leadership:

Demonstrates exceptional time and personal commitment to technical education. Acts as a role model, advocate, and internal technical expert to support professional technical education at 3M. Demonstrates a commitment to shepherding external technical information into 3M.

2012 Tech Forum Lifetime Education Achievement Award Recipient*:

Robert S Davidson - For consistent and outstanding leadership in educating the 3M technical community and the local community in the area of chemical processing and science. He has taught in areas of chemical process modeling, new product development, and chemical hazard reviews

Thank you and Congratulations,
Tech Forum Education Committee Chair 2013

Acceptance Speech for 3M Tech Forum Lifetime Educator Award

Bob Davidson

February 14, 2013

Thank you. It is a great honor for me to receive this award.

I am very fortunate to work for a company that values education so highly. I doubt that there are many companies besides 3M that give employees time to take classes and also encourage them to prepare and teach them inside the company as well as in the community through programs such as Visiting Wizards and TECH.

I have also been very fortunate to have had many excellent teachers. They have taught me much information, and also tips for teaching. Today, I am going to share some of the tips I have learned.

The first tip is to help students find connections within the material. In High School, one of my math teachers was Mr. Irwin Hoffman. He showed me that once students find connections within the material it is truly theirs. For example, we were all horrified when he said we would be expected to know all the trigonometric identities and use them on exams without notes. But through him we learned that there were relationships among them so they could be quickly derived when needed from a few basic definitions.

Mr. Hoffman also taught me that teachers and students learn together. They in fact have an obligation to share what they know and help one another learn the subject. The best example of this was when he decided to teach a computer programming class. Back in 1966, computers were still relatively new. He arranged for time on the mainframe computer at the University of Denver and started teaching the course. But he did not actually know anything about programming. So we all learned together, taking turns teaching what we had each learned by reading books and running programs.

The next tip is that to teach science, one needs to convey a physical sense of what is going on. At Washington University, I took a Mechanics course from Professor Gustav Mesmer. I can still picture him gesturing with his expressive hands, helping us feel the forces along a bar, the bending within a beam, and the rotation that comes from a couple.

In graduate school, I learned how to make presentations. When I was a TA for Professor Bob Bird at the University of Wisconsin, he taught me that to keep a person's interest, one should structure slides so they are in 2-minute bites. If less than 2 minutes is spent, people don't have time to absorb it. If one needs to spend more than 2 minutes on a single slide, attention will wander. So always aim for 2-minute bites.

Bob Bird also showed me that mathematics is a language to describe how the world works. He is a master at explaining how each term of a complex equation helps describe a physical phenomenon.

And so, I now share with you an equation given to me a number of years ago. It is based on simple arithmetic and describes how teachers affect the world.

$$\begin{array}{r} 2 \text{ teach is} \\ \underline{2} \text{ touch lives} \\ 4 \text{ ever} \end{array}$$

Always remember that when you teach it makes a difference.

Thank you.

Teaching Tips I have Learned

- Help students find connections
- Teachers and Students learn together
- Convey a physical sense
- Prepare presentations in 2- minute bites
- Mathematics is a language to describe how the world works

An Equation to Describe Teaching

2 Teach is

2 Touch Lives

**—
4 Ever**