Have a passion for teaching? Consider high school teaching

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GUEST EDITORIAL

Have a passion for teaching? Consider high school teaching

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> *"Teachers in the United States rate their lives better than all other occupation groups, trailing only physicians" (Gallup-Healthways Well-Being Index).*

When physics majors express a passion for teaching, often the discussion turns to college teaching. We are working to change that conversation to include middle and high school teaching as a challenging, satisfying, and rewarding career option that could be a life-long pursuit or a launching point into another career. Nearly half of physics majors express some interest in becoming a teacher; yet there is a critical shortage of high school physics teachers across the nation. Recent research has found that many of the reasons that deter people from the career are based on inaccurate information. Data show that high school physics teachers feel intellectually stimulated, report strong job satisfaction, are paid better than many college faculty, and find a range of hidden benefits including teachers can get a job anywhere in the US or abroad, have more flexible summers than typical college faculty, and receive additional pay for service activities.

Several data points suggest that high school physics teachers are happy on the whole. Teacher retention, job satisfaction and intellectual stimulation are high. The Department of Education conducted a large-scale longitudinal study of U.S. teachers and found that 78% of high school teachers are still in the classroom five years after they began teaching. Only health professions have stronger retention rates. The American Institute of Physics (AIP) survey of physics bachelor's degree recipients finds that those who are high school physics teachers have equivalent job satisfaction and intellectual stimulation as graduates who enter private sector STEM related careers for the most recent cohorts studied.

As part of our work we asked teachers to write down, "what provides you with day-to-day satisfaction?" We found that over half the comments were related to their students, they enjoy interacting with students, watching students interact with one another, and derive great satisfaction from witnessing student learning.

> *I remember I always thought I might get bored of the content since it was pretty "entry level physics." Turns out, teaching physics is different every year and the way in which I approach the content and how we as a class choose to apply that content (context, application to the world around them, etc.) keeps my brain working overtime!*

Further, nearly a fifth of the comments were related to their teaching schedule both daily and yearly. They also indicate that their colleagues make them happy each day as well as the continuing opportunities to learn more content and finally the freedom to choose what they teach and how they run their classroom. Note that these teachers are teaching in typical Colorado public school districts.

It seems particularly notable that teachers regularly report positive relationships with their colleagues. A recent American Federation of Teachers (AFT) survey found 95% of educators somewhat agreed or agreed with the statement, "I feel respected by my colleagues."

> *I would much rather have a hard job with people I enjoy doing it with, than an easy job with miserable coworkers.*

During interviews where we ask college faculty what they think about high school teaching as a career, we often hear concerns about classroom management, poor working conditions, state-mandated testing, lack of freedom to create their own materials, and difficult parents. On the AFT survey educators report that they feel respected by parents, administrators, and their students (84%–88% somewhat agree or agree); in contrast, only a small fraction feel respected by journalists and politicians (14%–41% somewhat agree or agree). This same survey found that over 90% of educators report having at least some control over their course content. Additionally, physics is typically not considered necessary for all graduates; therefore, state testing does not include much physics, if any at all.

> *I find I have much more freedom in what Physics I teach at the high school level as there is less pressure for students to understand that 'core' set of knowledge that is often seen in an entry level [college] physics class.*

With *Get the Facts Out*, a new NSF funded project to change the conversation around STEM teacher recruitment, one of the key Myths that we address is the perceived salary gap between teaching and other professions students may enter with the same degree. A recent study by the American Physical Society Panel on Public Affairs reports that college instructors and lecturers make less than middle and high school teachers. In addition, service activities, which are typically an uncompensated requirement of college faculty positions, are paid activities for high school teachers that add to base salary.

If a person chooses high school teaching, they are not giving up their identity as a scientist and are well poised to

pursue a range of other careers both within school districts and outside. We are regularly meeting individuals in a wide variety of careers who began as high school teachers. For example, experienced teachers are well situated to go to graduate school to pursue research, work with a teacher preparation program, enter the private sector, become a curriculum developer, work with a national society, or even become a politician. These careers can be pursued while still teaching or after leaving the classroom.

> *I really like the ability to still explore higher level physics while being a teacher, whether it is through college level teaching (evening labs or online classes) or summer opportunities like the Quarknet group. Having summers off allows for time to go explore and still be involved with industry level physics.*

We hope that we have made a convincing case here for physics students, graduate as well as undergraduate, who have an interest in teaching, to consider high school teaching among their career options. This career path allows a person to make a difference, help fill a critical shortage area, and to focus on teaching without the requirement to also pursue research.

If you are interested in investigating further how high school teaching might fit your career aspirations, you could: try talking with a high school physics teacher that you know; spend some time in a high school physics classroom; visit PhysTEC.org to identify supportive faculty at your college or university; or talk with an advisor or faculty member who specializes in physics teacher preparation. If you are an advisor to students and would like more information to share with them about pre-college teaching, there is a toolkit at GettheFactsOut.org.

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This guest editorial is the fourth in the series announced at the end of the editorial in the October 2017 issue (**85**(10), 729). The first of these guest editorials immediately follows that editorial. The second is at the start of the February 2018 issue (**86**(2), 85); the third is at the start of the October 2018 issue (**86**(10), 725).