

2006 HONOREE

## Patrick Welsh

D. W. Daniel High School, Central, SC  
High School Science Education • 11th and 12th Grade Physics



**Years Teaching:** 23

**Average Class Size:** 25

**Classes Taught Per Day:** 3

**School's % of ESL Students:** 1%

**School Type:** Public, Rural

**Type of Class:** Self-contained

"I believe that every high school student should take physics. A person's life is richer when they see that physics does much more than lay the foundation for engineering and technology. One is richer when one understands how physics is the basis for almost every facet of our experience. I also believe that a person is very unlikely to gain this appreciation unless they take a physics course. Many students who avoid taking physics because of anxiety or a fear of failing can be lured into the classroom. Once word gets out how exciting physics is and how with hard work success is not just possible, but likely, boys and girls from every socioeconomic and ethnic background will fill the classroom. My main objectives are to establish a working rapport with students, to establish a tone of excitement, and to create a learning environment where the students can expect to be involved in their own learning by seeing, doing, and thinking about physics. I try to maintain this atmosphere all year. There is naturally a good portion of guided practice and problem solving in the mix, but I believe the things that most of my students will remember, or for that matter will need to remember 30 years from now are the demonstrations and labs they saw or did. I also hope that they remember that physics is fun."

"I spend half the year teaching Newtonian mechanics, i.e., the study of motion. It is easy to use the experiences of students in teaching mechan-



ics. Almost all students are interested in sports. Newton's mechanics are all that is necessary to analyze all the motions associated with any sport, whether football, volleyball, billiards, baseball, or NASCAR. Our discussions inevitably include applications to sports. Even students who are not athletes or sports fans cannot resist the excitement of learning about free fall and constantly accelerated motion by shooting water balloons from the giant slingshot that I built. Student interest shapes my teaching."

"What makes Dr. Welsh exceptional is his passion for teaching, and physics is his medium. He has an ability to make complex ideas simple and convey them to the students, applying tough abstract concepts to physical things in extremely creative ways. As department chair of Mechanical Engineering at Clemson University, I see a lot of students from South Carolina and other states coming through our program. Dr. Welsh's students stand out year after year and for good reason. Dr. Welsh is able to impart to his students an excitement and understanding of the world around them. He is, in my opinion, the best physics teacher in the state of South Carolina."

— Dr. Imtiaz Haque,  
parent of former students

### OTHER HIGHLIGHTS:

Christa McAuliffe Memorial Award National Teacher of the Year, Aerospace Education Foundation (2005) • D.W. Daniel High School Teacher of the Year (2004, 2000, 1991)