Professional Engineering Seminar # 4: For Nanotechnology Project

Speaker: Mr. Grant Striemer, Mechanical Engineer, Procter and Gamble
Date: Monday, June 28th, 2010
Time: 9:00 am. -11:00 a.m.
Venue: University of Cincinnati, Baldwin Hall, room 757

Prepared by:
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Mr. Grant Striemer, a mechanical engineer, gave a short presentation titled "High School Outreach: Helping Future Scientists and Engineers Create Their Vision." Mr. Striemer currently works in a division at Procter and Gamble known as Smart Products that is a very innovative group and is currently focusing his research on sensors and biosensors. While he has a B.S. in Mechanical Engineering his focus while obtaining his Masters was in Polymer and Composites and he has a very well-rounded education in science and engineering. In addition to his role in the Smart Products group, he also works for the Huntington Learning Center, a group within P&G, which assists in ACT and standardized test preparation for high school students. He is very involved in the development of scientific minds among today's youth.

After a brief introduction, Mr. Striemer relayed background information about his research and employment before discussing the path, in particular that in high school that he took to reach where he is today. Mr. Striemer has worked on projects dealing with polymers and composites, color and appearance, specialized devices, and most recently Smart Products. After his background information, Mr. Striemer discusses his progression in science, from a youngster to a college student, gives teachers tips debunking scientist stereotypes, and talks about the future. At the conclusion of his presentation, the group took a field trip to the Advanced Materials Characterization Center with Dr. Doug Kohls and Kelly Cross where the teachers were given a tutorial on a Scanning Electron Microscope. During this short field trip the participants were able to see highly magnified images of hair that Mr. Striemer had developed hair care products for. Mr. Striemer was able to identify for the group images of polymers working to hold hair together and explained how this happens--the importance of the engineering that was present to make the product do what was desired.

Mr. Striemer's progression into his current field did not happen overnight. He reminisced in the 1980's when he first thought science was cool. He recalled time spent with his uncle and getting to tinker with various electrical engineering models and apparatus'. It was in the 1990's, when Mr. Striemer was in high school and began to look at his future when he thought science would be fun and began to see a vision of his career. His vision still pictured science as being cool, yet his career vision was still hypothetical as he still knew little of the scientific world as a career.

Mr. Striemer stressed the idea of having a vision in his presentation. He spoke of a vision being something students must see and must have for them to stay focused. He described high school students as having an abstract image of them doing something that interests them, even though they may not completely understand it. This image may come from a parent, teacher, movie, or television show. The origin of the vision matters less than the importance of the vision. This vision looks different for different students. For students who like science and know they want to pursue a career in a scientific or engineering field, the job of the teacher is easier; teachers must help keep this vision in place. However, for students who are undecided about science or maybe do not like science, the job of the teacher is to take science back and help those students see the potential and excitement in science. The picture on the right was taken during the question and answer portion – many teachers were very interested in the potential of a future visit to their classroom by Mr. Striemer.

While stressing the importance of students to have a vision in mind, Mr. Striemer discussed the importance of stereotypes and the presentation of science and engineering in the classroom. Mr. Striemer highlighted engineering, physics and chemistry, explaining how these subjects are unfortunately sometimes assumed to look and how they are taught in the classroom. He stressed hands-on activities and gave multiple examples of ideas for the classroom. Giving "Why" examples and stories go a long way with students and he stressed the need of their use. His last point was titled "Watch-outs" that occur when good intentions go wrong. He conveyed the consequences of discouraging students, especially with math. It happens too frequently that teachers discourage students from a particular path because it is believed the student will struggle with the math components. Mr. Striemer explained that he himself didn't like the math and struggled through some of it, but it did not stop him from becoming an engineer. Teachers should prepare students for college level science curriculum.

Mr. Striemer believes that the future of research and development, at least through the lens of P&G is a green initiative and the field will have unique degree combinations including Computer Science + Life Science, Chemical Engineering + Life Science, and Chemistry + Life Science. Teachers should keep this in mind as they continue to prepare students for college and aid them in their vision.

While to some extent Mr. Striemer's presentation may have seemed a little basic as he spoke about his background and the importance of vision for high school students, it acted as a good refresher for all teachers of the importance of their job. Debunking stereotypes and showing students the excitement in science can sometimes get lost in standards and test scores. The future of innovation, especially green technology, is in the hands of future students and teachers must be prepared to keep the vision alive for those students interested and those who have not yet seen their potential in science.