

ADOPT-A-PHYSICIST CLASS GROUPS

Class Name: Period 6

<p style="text-align: center;">Group 1</p> <p><i>Dr. Craig Wuest</i> Private / Government Funded Research Lab : Lawrence Livermore National Laboratory (LLNL)</p> <p>I have managed a number of programs focused on nuclear nonproliferation, counterproliferation, counterterrorism, and intelligence. I am currently the Program Leader for the Homeland-Defense Operational Planning System, which support critical infrastructure modeling for the State of California through the California National Guard.</p> <p>I would say that my career is not typical for someone with a high energy physics or nuclear physics education. In fact, I have been very fortunate to have been able to "change careers" several times during my years at LLNL. Being an employee of a multi-disciplinary national laboratory has allowed me to participate in a variety of very interesting and nationally significant science programs including programs in high energy physics, nuclear physics, laser and electro-optical science, high energy density physics, inertial confinement fusion, nuclear weapons, and national security R&D. My Ph.D. in high energy physics provided me with a great foundation on which to build my career. My experiences in building, participating in, and managing science collaborations has been very useful for responding to the dynamic and changing science R&D environment that U.S. researchers currently face.</p>	<ol style="list-style-type: none"> 1. 2. 3. 4. 5.
<p style="text-align: center;">Group 2</p> <p><i>Mark L Maiello</i> Wyeth Research (pharmaceuticals)</p> <p>Radiation Safety Officer for a pharmaceutical company. I run a program designed to control radioactive materials used in research to cure disease. The program is monitored by a regulating agency in New York so, I have 2 bosses: Wyeth and the State of New York! But, that is not so bad. If you run a good program, both the State and the company will be happy with you...My job includes working with engineers, researchers and doing things like calculations, teaching and doing air sampling for radioactive materials.</p> <p>This job is not really typical of physicists...Radiation Safety (Health Physics) is a branch of occupational safety. The job is all about protecting employees and the environment from the harmful effects of radioactivity and radiation. We are employed at nuclear reactors, research labs, universities, the military and get involved with nuclear energy and nuclear weapons policy.</p> <p>Physics gave me an excellent background in understanding how nature and technology work. The other science classes I took in college and graduate school (biology, chemistry, math, environmental health and nuclear engineering) were just as helpful, but physics was the subject that taught me how to solve problems, conduct experiments and apply mathematics to calculate results. The truth is, I can't live without physics!</p>	<ol style="list-style-type: none"> 1. 2. 3. 4. 5.

<p style="text-align: center;">Group 3</p> <p><i>Michael Gaidis</i> IBM T.J. Watson Research Center (IBM)</p> <p>I work as the lead integration engineer for MRAM, responsible for devising and implementing the back-end-of-line (BEOL) processes for MRAM adapted from 0.18 micron technology. The work is similar to that for fabricating semiconductor chips, but we are trying to extend the functionality of the chips to include fast, nonvolatile memory circuits.</p> <p>This work utilizes a broad understanding of all elements associated with creating the final product: circuit design and mask layout, all process engineering steps, interaction between various processes, inline test, failure analysis, and organizational and leadership skills to guide the team to success. I participate with a culturally-diverse team with backgrounds from over a dozen countries.</p> <p>It is typical work for someone with my education background. My education and experiences have given me a broad background in logical thinking and in understanding "the big picture." This is important in strategically defining the best way to perform the work that needs to be done. The fine details of my education (certain equations learned, etc.) have proven to be of secondary importance only -- I rely more on an ability to research and learn what needs to be known immediately for the project at hand. The education I received helps to point me in the right direction to find information I need, and to understand that information when I do study it.</p>	<ol style="list-style-type: none"> 1. 2. 3. 4. 5.
<p style="text-align: center;">Group 4</p> <p><i>Dr. Michael Kelsey</i> Physics research : High Energy and Particle Physics</p> <p>I work with post-docs and graduate students at SLAC doing research in B meson decays. We use computer software to scan the hundreds of millions of events recorded from the BaBar detector, filtering through the data to find a few hundred which "look like" the specific kinds of decays we want to study. We use more software to analyze those events to measure their properties in detail and extract information that can be compared with theoretical predictions.</p> <p>Besides this analytical work, I also contribute to the continuing operation of the BaBar detector. Mostly, I supervise my younger colleagues in monitoring the detector and the quality of the output data, in developing new software (or improving our current software) to take the raw information that is recorded and interpret it into "physics" information like particle trajectories, energies, and so on.</p> <p>All of the people on my experiment (and similar experiments) have Ph.D.s in physics and followed career paths rather like mine. However, many of my colleagues have also left this "academic" arena, and are working in private industry. Some work as engineers or programmers, but others are doing financial analysis or management consulting (and making an awful lot more money than I do!).</p> <p>I could not do the work I do now without the ~15 years of focussed science education I have under my belt. Modern science has been developing for four centuries, and it just takes a long time to go through and absorb all of that information.</p>	<ol style="list-style-type: none"> 1. 2. 3. 4. 5.

Group 5	
<p><i>Timothy Smith</i> University of Nebraska Medical Center (UNMC)</p> <p>I am a confocal microscopy manager at the University of Nebraska Medical Center in the college of medicine, department of pharmacology and experimental neuroscience. My job is split between providing imaging services for the department and conducting my own research on reduced mitochondrial transport velocity as a potential mechanism for Alzheimer's disease. As an imaging specialist, I provide frequent consultation to researchers without a physics back in experiment design and execution.</p> <p>For someone with my degree, a research technician/management job is fairly typical. Many people make a career out of research support while many other will continue on to acquire more advanced degrees like I intend to do. My experience as a physics student allowed me to easily find a job, even in the current economic climate, and I walked into my current position fully able to perform my required assignments. The interdisciplinary approach that I took in pursuing biophysics and a pre-med curriculum lets be comfortable working with scientists from all backgrounds while still being able to perform the specialized imaging tasks that I was hired to do.</p>	<p>1.</p> <p>2.</p> <p>3.</p> <p>4.</p> <p>5.</p>