

2010 Annual Report



President's Report

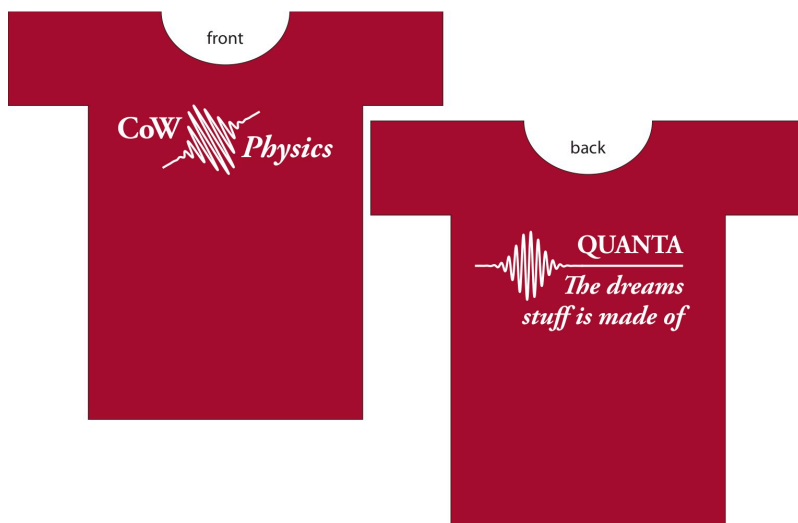
The 2009-2010 academic year has been strong for the Wooster Physics Club. We are proud to have built on much of the growth from the previous academic year to solidify new SPS events as annual traditions. The club sponsored many group events from an initial pizza dinner with liquid nitrogen ice cream to the final bowling showdown between the math and physics departments. We continued to expand as a chapter on the local level and become active participants at the regional level. We feel well connected with the campus and community at Wooster. Our community interactions extend from our flourishing elementary outreach program to our yearly Science Day event. We are proud of our accomplishments this year as an Outstanding SPS Chapter. The Wooster physics club is full of character, and its members are passionate ambassadors for science in and out of organized events. The outgoing officers would like to wish incoming officers the best of luck for continued success in the upcoming academic year.

- Heather Moore

Quanta / Dreams T-Shirt

Quantum physics reveals that subatomic entities – such as electrons and photons – sometime behave like waves and sometime behave like particles. Physicists often represent them as wave packets, like the squiggly lines in the T-shirt design. Indeed, the physical universe is not made of things but of quantum fields. For example, while a classical

electromagnetic field supports wave propagation, photons are quantized excitations (or bundles of energy and momentum) of the corresponding quantum field. Similarly, electrons can be understood as quantized excitations of a matter field. (That's why all electrons are identical!) Such abstract quanta are "the dreams stuff is made of".



SCOT SPIRIT DAY

Everyone agrees: It's not easy to be the most popular and exciting club on campus. Yet somehow, the Physics Club continues to draw large crowds to a small booth on the first Friday of every academic year. Officially entitled 'Scot Spirit Day,' veterans of the event silently acknowledge the supremacy of the club. Some students have even begun to call it "The day that the Physics Club shows all of their cool demos (and other clubs give out candy)."



Among their most popular demonstrations, and not void of symbolic undertones, the club invited incoming first years to shatter roses frozen in a vat of liquid nitrogen. A deeper understanding of human existence was provided through a ride on a bicycle gyroscope. In a lighter mood, exploding film canisters demonstrated the usefulness of plastic shields. All in all, the event inspired a plethora of unique personalities to join our club.

ELEMENTARY OUTREACH PROGRAM

The physics club is coordinates volunteers to visit local elementary schools in order to perform physics demonstrations. The goal is to engage elementary students in the scientific process by introducing them to interesting physical phenomena and inspiring college students. Elementary schools can schedule hour length demonstrations of their choice. The four options are: Electricity and Magnetism; Forces and Motion; Waves and Optics; and Air Pressure. Volunteers visit

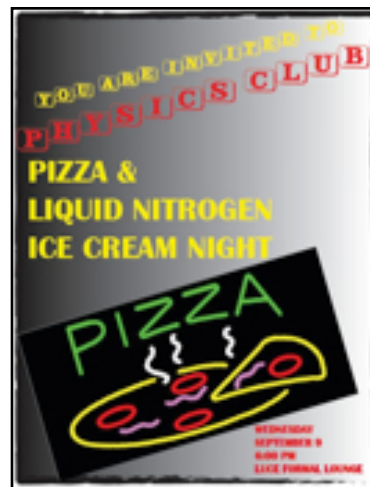
local elementary schools almost every Friday afternoon. Even so, the demand is so high that typically teachers will team up so that the volunteers are presenting to entire grade levels.

The physics club believes that participating in outreach is a great way to solidify a collegiate understanding of physics. Volunteers embrace the idea that you don't really understand something until you can explain it. For these reasons they take the presentations seriously and hold training sessions at the beginning of the academic year to encourage new volunteers and to feel more comfortable with the concepts that are discussed. Ultimately attending an outreach excursion is what keeps new volunteers hooked. With one trip it is clear how much the visiting college students can mean to the elementary students.

LUCE DINNER

As a discipline, Physics is plagued with some of the most deep and fundamental problems in the universe. For some physicists, enough is enough. As the kickoff event for the Physics Club, the Luce Dinner provides Wooster physicists and their families an opportunity to talk about these problems in an informal setting. Over pizza, pop, and a special ice cream dish, one by one,

physicists confess to their cravings for physics and try to understand why they are there. Incoming president, Larry Markley agrees: "The first step to finding a solution is realizing you have a problem." This year the event was a marked success: the Physics Club retained the majority of attendees.



STAR GAZING

This year physics students realized what quality telescopes are housed in the basement research lab, relegated to very infrequent use due to the cloudy Ohio skies. The physics club made it a goal to learn how to set up the equipment and properly star gaze. After two "cloud outs" the group picked a clear night to look at distant objects like Jupiter and Messier Object # 32. The group was extremely impressed by the computerized tracking and can't wait to hold more night sky events.

SUMMER RESEARCH SYMPOSIUM

Many of the Wooster physics students participate in summer research, at Wooster and at other research facilities. Each year the group looks forward to learning what kinds of interesting projects their peers have been involved with. This year was no different. Over pizza we were privileged to watch



five research presentations covering the topics of: 17R4 in water (Refractive Indices and DLS); Chondrules and Chondrites; Theoretical and Experimental one-way Coupling; The Slash Dot Problem; and a Study of Self-Organized Criticality. These research talks

demonstrate the kind of opportunities that exist within and outside the College of Wooster; students are always interested to learn what current research they could be involved in.

GREAT LAKES SCIENCE CENTER TRIP

Annually in the fall our chapter takes a group of students on a trip to either COSI in Columbus, Ohio or to the Great Lakes Science Center in Cleveland, Ohio. This year our chapter took a trip to the Great Lakes Science center. During our trip, we had the opportunity to explore many aspects of science, not just physics. Though, the Science Center certainly had a plethora of different exhibits dedicated to

various areas of physics. There were sections devoted to sound, electricity, chaotic systems, and light. This trip is designed to offer a chance for upper and lower classmen to bond and help create the type of environment we at the College of Wooster pride ourselves on. To top things off, the group goes to dinner after the trip to further provide opportunity for discussion and camaraderie.



GROVE CITY SPS ZONE MEETING

Ten Wooster students attended the SPS Zone Meeting held at Grove City College in Pennsylvania. Several colleges from three zones came together to enjoy two days of physics fun and interesting talks, including an impersonation of Robert Oppenheimer and General Groves about the atomic bomb, Physics Jeopardy, discussing the responsibilities of scientists in society in small groups, and astronomy observing using Grove City's observatory. Our club was invited to talk about our outreach program. We focused on demonstrating to the other clubs present what we actually do in the elementary classrooms because we feel like we have a system that works. We presented our air pressure demonstration, which was well regarded.

SCIENCE DAY

This year we had our second annual Science Day at the College of Wooster. The name itself implies that we dedicate this day not only to physics, but to many different sciences including biochemistry and molecular biology, geology, biology, neuroscience, chemistry, and, of course, physics. This event is open to the community and many people come from the surrounding area. It is a great opportunity to give young children an early interest in science by showing many riveting demonstrations of our

respected sciences at work. However, high school and college students become extremely involved in demonstrations too! Some of the exhibits include: touch tanks from the biology club, liquid nitrogen ice cream from the chemistry club, a volcano from the geology club, methane bubbles from the BMB club, hands-on experience from the neuroscience club and a glowing pickle from the physics club.



Science Day is important to the physics club because we feel that science education in the classroom should be supplemented by activities outside of the classroom and supported by the entire family. We therefore also hope to pique the interest of adults; ideally giving them a reason to support a child's interest in science outside the classroom. Science Day is becoming a part of the tradition of community involvement here at Wooster, and we are



excited for the event to grow in the many years to come.



TAYLOR BOWL

Every year in the spring semester, the two departments that reside in Taylor Hall (Math and Physics) have a bowling competition. The winner obtains the famous slide rule that is hung for a year in the winner's department. In most years, the losing team from the previous year is to challenge the opponent. However, this year the math department failed to do this, so we merely agreed on a date to bowl. The competition this year was fierce, with professors and students bowling for the large slide rule, but the results indicated that the math department was the winner. The overall turnout for the physics club was great and was an enjoyable event for both parties involved. The physics club plans to revive the tradition of making epic "challenges" next year when it comes time to dare the math team to rematch the physics team.



Heather Moore, President



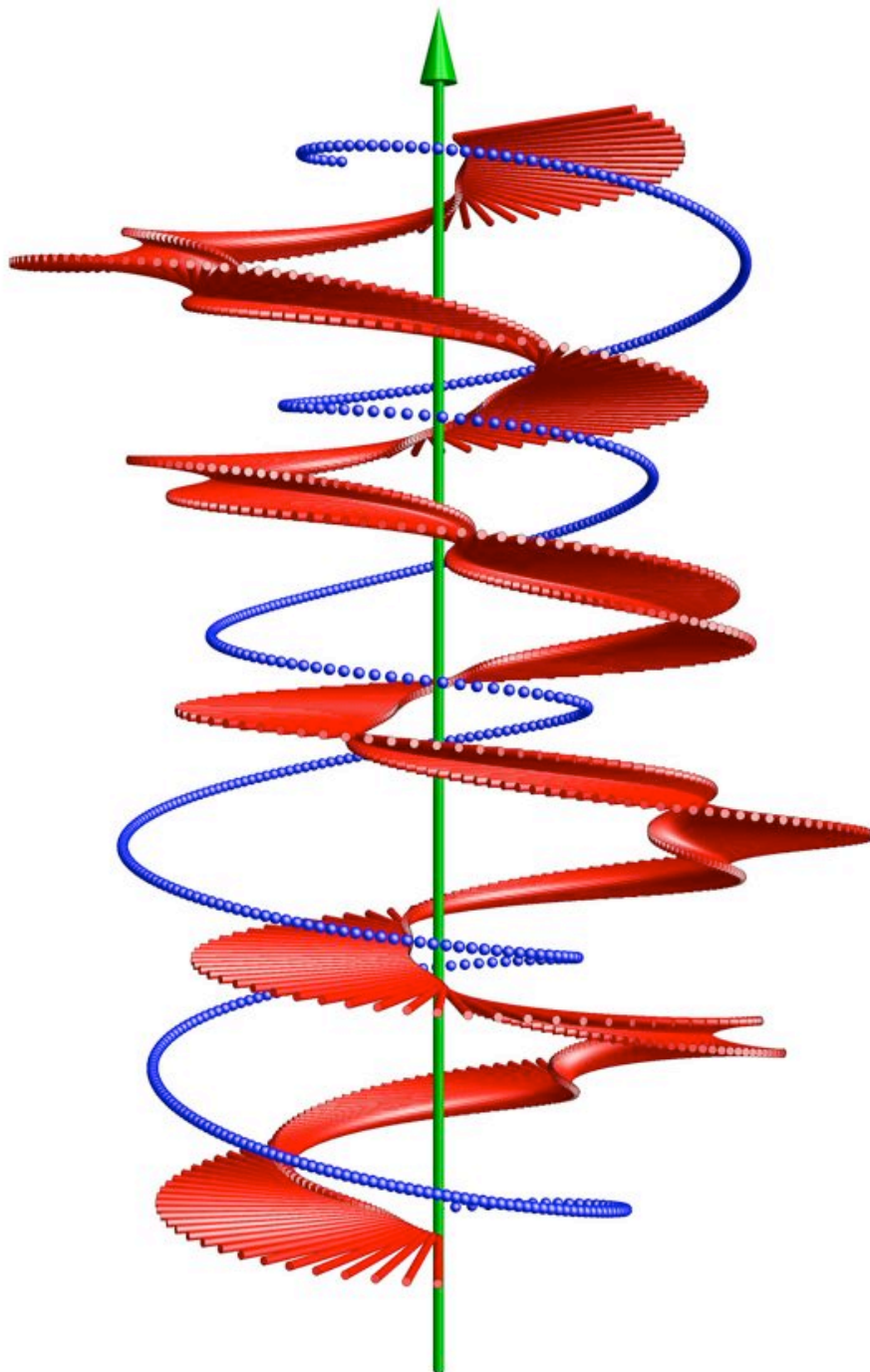
Alison Huff, Vice President



Larry Markley, Treasurer



R. Mike Winters, Secretary



Order & Chaos in the 3-Body Problem.