

Society of Physics Students— “THE NEWTONSTEIN ARTICLE”

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Saint Peter's College

So, you say what's next!!

Special points of interest:

- *Let's communicate with high school teachers.*
- *Science exhibition is possible event*
- *Internships are available for students, (international students should check for availability and requirements) - Deadlines are approaching.*
- *Community Service Needed*

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There are so many ideas flowing out there. Well, I just wanted to mention that after attending a conference at Rutgers University in Newark, there are many opportunities out there for students. For example, for those who are interested in doing research, Rutgers offers students with visa and citizenship the chance to experience the life of a scientific researcher. Finding these opportunities is easy, the application process is sometimes the hardest step. This meeting focuses on those research chances out there. Today, I will

mention important guidelines that one can take to be known in the field. It's important that any major either a physicist or mathematician, or whoever learn the basic steps that leads to a successful career.

The reason I want to mention this is because as a society, it's our job to expose these opportunities to the student body. So, the first step is to learn these things. The next one would be to visit these colleges and see what they have to offer to students.



I plan to have a science exhibit for setup for May

If there's something I've learned, it's that science is better learned from visual experimentation. So, I've been thinking of doing certain basic experiments among us and displaying them in a school exhibition. This would help all students to learn about the importance

of physics and how our club is promoting it. We can give those who attend a gift bag with a brochure that explains ways to conduct simple experiments out of everything items. At the exhibition, one or more of us can show students how to build a simple circuit, or do a small plasma.



COMMUNICATION with High School Teachers

One of our plans has been to bring 3 high school teachers to Saint Peters College to discuss with them our plans to improve Education in physics. I think that this is a successful way to get our point across to others. Teachers should be aware of what the students in college are doing to improve education in different areas of new jersey. Bringing 3 high schools to Saint Peters College will allow us to understand what high school students are being taught and how we can expose them to the physics part of there education. For example, the plan is to teach high school

students the importance of physics in our world. Physics, in general, is all around us, we use a switch to turn on a light-bulb or we use a remote. But, what most people don't think about, is how does the light bulb turn on, or how does the remote work. We now are living in a digital world, where technology is becoming more and more sophisticated. Like, televisions, it's soon going to be a requirement that all people switch to having LCD TV's in there homes. Cable companies feel that the picture quality is better and the pixels are faster projected on these screens than on the

old versions. This helps the company to not only control what's being displayed, but also to better the quality of viewing for millions of people worldwide. So, putting this out there, we have to do the same with physics. We are all college students, and it's our duty to teach others about the advances in the field. Who wouldn't thought that learning how to use a plasma is so important? Back then it wasn't as important, but now in 2008 it's kind of mandatory for students to be aware of what a plasma is used for and how it's used in television systems.

(Continued)- Important Guidelines to follow

- 1) We have to contact the high school teachers and in good time explain what the conference deals with.
- 2) Bring them to Saint Peters College and show them our facilities.
- 3) Promote the club, give a presentation to these educators illustrating the way the plan will be carried out
- 4) Put the Plan out there



Let's all get together and go to Princeton Labs

Another thing to focus our attention on, is trying to visit different colleges to see what they are doing to improve physics. Princeton Plasma Labs has open room for those who want to do research. So, to get a idea of what the university offers, we should pay them a visit. We can all decide to go during the weekend, and meet with the program manager. He

can give us a tour and explain all the questions we might have.

For those who want more information about this event and possible research opportunities at Princeton, you can contact the program manager at:



Mars Journey- "A LONG JOURNEY FOR MAN, BUT A NEW CHAPTER IN PHYSICS"

The most detailed information available about Mars has come from unpiloted spacecraft sent to the planet by the United States between 1964 and 1976. From this data, scientists have determined that the planet's atmosphere consists primarily of carbon dioxide, with small amounts of nitrogen, oxygen, water vapor, and other gases. Because the atmosphere is extremely thin, daily temperatures can vary as much as 100 Celsius degrees (190 Fahrenheit degrees). In general, surface temperatures are too

cold and surface pressures too low for water to exist in a liquid state on Mars. The planet resembles a cold, high-altitude desert.

The next project for NASA is to send humans to Mars, which would take 2 years to reach. Also, the mission would require great piloting because every positioning counts. Another point, is once it's reached the half-way mark, there is no turning back. It's something that most scientists feel is close to becoming a reality. Humans will soon touch the surface

of Mars.



Liberty Science Center- "Studying unique behaviors"

Last week, on Saturday Liberty Science Center held an event that took place live. The event was on the habits of animals, and how they have the ability to develop quick reactions to environmental factors. During the event, many questions were presented. One of them explained how fossils are being studied. Using a unique machine, one can go back in time and find out which animals have which characteristics. The reason I bring this up, is because the

focus on science today deals with finding ways to study fossils.

For example, scientists right now are at Ohio studying the behavior of a flying dinosaur. It's believed that birds came from an early ancestor of a flying dinosaur. So, they are creating realistic models. The point is to put these models in a high-powered wind vacuum. This will tell them how a dinosaur could fly.

With the discovery of a new baby Mammoth, there is research going on to see what made them disappear. Paleontologists rarely find such perfect specimens from the past as this baby mammoth, discovered frozen in an excavation site of northeastern Siberia in 1977. The sketch shows an artist's idea of what the mammoth looked like during its lifetime more than 10,000 years ago. Drawings are frequently based only on fossils because no other evidence exists.

Picture





**Society of Physics Students
Penn State Conference
April 12-13**

In April, we have a **Zone 3 conference** that will be taking place in Penn State. Three students will be attending,

Ronald M.

Samik A.

David J.

I plan on having a presentation setup, that will give details on what happened. Updates will be posted and emailed to members. Those who are interested in attending, please let me know before March 15.

So, what can you do with a Physics Major? Many things, like:

Acoustics– Propagation of sound

Astronomy– Properties of space; origin and evolution of galaxies, star, and planetary systems; origin and evolution of the universe. Includes astrophysics and cosmology.

Atomic Physics– Structure and properties of atoms.

Cryogenics– Properties and behavior of matter at extremely low temperatures.

Electromagnetism– Electric and magnetic force fields; behavior of electrically charged particles in electromagnetic fields; propagation of electromagnetic waves. Also known as electrodynamics.

Elementary Particle Physics– Properties of elementary particles such as elec-

trons, photons, etc. Also known as high energy physics.

Fluid Dynamics– Properties and behavior of moving fluids and gases.

Geophysics– Application of physics to the study of the earth. Includes atmospheric physics, meteorology, hydrology, oceanography, geomagnetism, seismology, and volcanology.

Mathematical Physics– Application of mathematical techniques to problems in Physics.

Mechanics– Forces, interactions, and motions of material objects.

Molecular Physics– Structure and properties of molecules.

Nuclear Physics– Structure, properties,

reactions, and evolution of atomic nuclei.

Optics– Propagation of light, electromagnetic waves.

Plasma Physics– Behavior of ionized (electrically charged) gases.

Quantum Physics– Quantum nature of matter, energy, and light. Behavior of systems composed of small numbers of elementary particles.

Solid State Physics– Physical properties of solid materials. Includes crystallography, semiconductors, superconductivity. Also known as condensed matter physics.

Statistical Mechanics– Application of statistical methods to model the behavior of systems composed of many particles.

Thermodynamics– Temperature and energy; heat flow; transformation of energy; phases of matter (solid, liquid, gas, plasma)