

Society of Physics Students- "THE NEWTONSTEIN FILES"



TOP NEWS- PRESIDENT'S VIEW

January 20, 2008

Volume 1, Issue 1

We have new officers, and this will lead to a better society. On the top of the news, we have to think about a community service project. We have to complete one by the end of this semester. But, anyways, I wanted to mention ideas that have been flowing around in my mind for some days now. My idea is entitled, "The High School experience". We all have been through high school, and would like to have a taste of how it must've been. Well, I want to bring that experience back to each and every one of you. My plan is to bring 3 physics high school teachers to Saint Peters College, and discuss our ideas to them about improving technology. The first step to improving technology is to bring the knowledge we learn from conducting ex-

periments into the classrooms. This doesn't have to be a big presentation, more or less, we will give them a tour of our club and what it offers. Our idea is to help these high school teachers to bring fun into the classrooms by doing physics. A step to learning physics is to communicate not only among our members, but also with the community. I feel that the quicker we get working with the community, the more people will become interested in what the club offers. Over the past years, I've meet 3 great teachers, who have a passion for teaching physics. They show students how a battery works, for example, and what it's used for. These are the people we should be helping, because as club leaders our job is to push forward and promote the

study of physics to the world. After working with numerous scientists, I've come to understand that physics deals with communication. An idea doesn't just come from midair, we have to open our minds, and visit the environments in which people do research. Only in these conditions will we better our understanding of physics. Although most of you may feel the project has flaws, like for example, how can we get the attention of the college community? We must first learn what the community is doing and what others are promoting in order to better ourselves and the society. So, by learning from different people, we can correct these flaws and make the club stand out.

Special points of interest:

- ✓ International Presentation to be huge turnout in March or Mid-April
- ✓ High School Teacher Conference possible Event
- ✓ Let's think about going to Six Flags
- ✓ Community Service needs to be completed
- ✓ Community Service needs to be completed

Inside this issue:

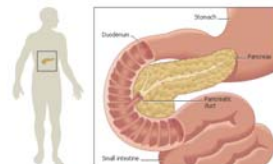
President's View	1
Quantum and Plasma Studies	2
Possible Events	2
Princeton Labs	3
Research Opportunities	3
Contact Information	4
Officers Named	4

Presentation at Stevens on Diet

Like, for example, I went to this presentation in Stevens about Calories and how diet is important. We have to understand that physics sometimes isn't what we think it to be. What I'm trying to say is that people use physics to study the foods we eat, the

digestion process, and how nature plays a key role in exercising. For this reason, going to these presentations opens our mind, and we start to think about what's really out there. I've learned that the opportunity to learn something new is always out

there, you just have to look in the right places.



The Quantum Journey

Quantum Physics is the description of the particles that make up matter and how they interact with each other and with energy. Quantum theory explains in principle how to calculate what will happen in any experiment involving physical or biological systems, and how to understand how our world works. The name “quantum theory” comes from the fact that the theory describes the matter and energy in the universe in terms of single indivisible units called quanta (singular quantum). Quantum theory is different from classical physics. Classical physics is an approximation of the set

of rules and equations in quantum theory. Classical physics accurately describes the behavior of matter and energy in the everyday universe. For example, classical physics explains the motion of a car accelerating or of a ball flying through the air. Quantum theory, on the other hand, can accurately describe the behavior of the universe on a much smaller scale, that of atoms and smaller particles. The rules of classical physics do not explain the behavior of matter and energy on this small scale. Quantum theory is more general than classical physics, and in principle, it could be

used to predict the behavior of any physical, chemical, or biological system.

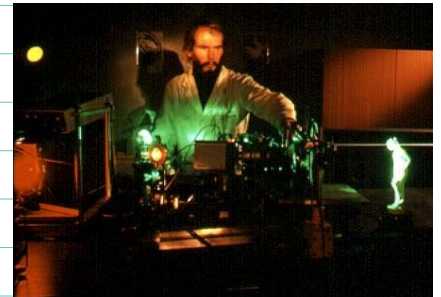
So, you ask me what’s important about Quantum Physics. Well, it’s the focus of most universities to find out how it works. The reason is that explaining the behavior of the everyday world with quantum theory is too complicated to be practical. So, another project that our society can focus on is having a talk that deals with these theories. It’s important to know what the world is about and how it works.

Research at UCLA Laboratories (In Quantum Studies)

Quantum theory not only specifies new rules for describing the universe but also introduces new ways of thinking about matter and energy. The tiny particles that quantum theory describes do not have defined locations, speeds, and paths like objects described by classical physics. Instead, quantum theory describes positions and other properties of particles in terms of the chances that the property will have a certain

value. For example, it allows scientists to calculate how likely it is that a particle will be in a certain position at a certain time. So, this means that Quantum theory enabled scientists to understand the conditions of the early universe, how the Sun shines, and how atoms and molecules determine the characteristics of the material that they make up. Without quantum theory, scientists could not have developed nuclear energy or

the electric circuits that provide the basis for computers. So, this is VERY IMPORTANT STUFF.



Pictures of the UCLA and Princeton Labs



Research at Princeton Laboratories (In Plasmas Studies)

Plasma physics is usually a gaseous state of matter in which a part or all of the atoms or molecules are dissociated to form ions. Plasmas consist of a mixture of neutral particles, positive ions (atoms or molecules that have lost one or more electrons), and negative electrons. A Plasma is a conductor of electricity, but a volume with dimensions greater than the so-called Debye length exhibits electrically neutral behavior. At a microscopic level, corresponding to distances shorter than the Debye length, the particles of a plasma do not exhibit collective behavior but instead react individually to a

disturbance, for example, an electric field.

On the earth, plasmas usually do not occur naturally except in the form of lightning bolts, which consist of narrow paths of air molecules of which approximately 20 percent are ionized, and in parts of flames. The free electrons in a metal can also be considered as a plasma. Most of the universe, however, consists of matter in the plasma state. The ionization is caused either by high temperatures, such as inside the sun and stars, or by radiation, such as the ionization of interstellar gases or,

closer to the earth, the upper layers of the atmosphere producing the aurora.

So, Princeton focuses on improving these advances. There top priority, like the society is to mention this to the younger generation in hopes of inspiring them to study plasmas. We want to try and help others understand how plasmas work so they at least have a start to appreciating what we use them for.

Look around you, PLASMAS ARE EVERYWHERE!!!

Possible Society of Physics Students Conference at Saint Peters College

We have to start getting together ideas on having different societies come to Saint Peters College to present group projects to the community. We all are interested in knowing what others are doing, and how they are improving the technology around us. So, there's no better way to do that then by bringing each society together and discussing these things among members. I think that each of us learns from others, and the

best discussions come from lunch breaks. I've witnessed that under pressure, people don't talk much about there projects, but over lunch they feel more confident to mention there ideas. As a society, getting or bringing forth an idea, can mean either two things. One thing is that we will learn things that nobody knew; sometimes it will better our organization. Another thing is that people will remember what we are trying to do

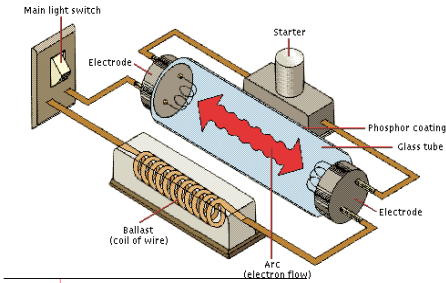
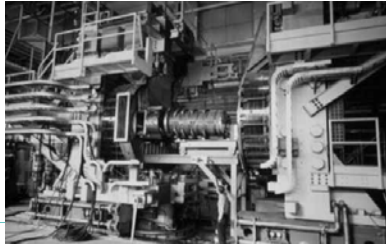
at Saint Peters College. Communication, as we will all see, will determine what type of club we will become. If we have a good communication with our members and others, we will grow into a strong club. So, having a conference is a way to show those who don't know we exist, that we are a club with many determined individuals and that's all we need.

Last, but not the least (Research Opportunities)

Students go to college to learn about the so many careers. But, what happens when you find the right career? Many students don't know what to do, and sometimes wait to the last year to be active and play a role in society. Well, my job as president is also to show the members what opportunities are out there. There are internships, training courses, and research in industry that will help

to give you experience which is important. Part of college is learning to play a role in society, and there's no better way to do that then by doing research with others at different institutes/colleges/ or companies. So, during some of the meetings, I will give lists of possible internship/research opportunities out there.





Here we see the components of a fluorescent lamp which forms a PLASMA

Have any Questions, don't hesitate to contact me:

My email is: djacome@spc.edu (David)

Or contact the secretary tmaldonado@spc.edu (Tony)

Or don't free comfortable talking to a student

Feel like talking to a professor Contact: joselopez@spc.edu (Dr. Lopez)

Or don't want to talk to Dr. Lopez, then contact: wzhu@spc.edu (Dr. Zhu)

This is a funny joke!!! But anyways, there are no excuses, you have a lot of people there for you.

Visit the school website at:

<http://www.spc.edu>

Finally, Officers Named (THE NEW ERA)

I'm glad to announce the new officers of the Society of Physics Students.

Meetings are on Wednesdays every week

Here are the officers:

Please **EMAIL ME** about your ideas and if you want to write a piece in the article for the next meeting:

So, **THE NEXT MEETING IS 1 week** from today on:

President: David J.

My contact information is on the top.

February 27, 2008

Vice-President: Samik A.

Treasurer: Ronald M.

Notes:

It's always in **pope 2 at 12:00 noon** (in case Tony (our secretary) sometimes forget to write in down on an email)

Secretary: Tony M.

Remember that we have to be thinking about a community service project. So, let's pick one that we all like. Starting next year, this will change, because we will make up our own community-service projects.

I just wanted to know about your ideas of the article, each meeting I will have a article really and we will discuss what's on it.