ASU College of Liberal Arts & Sciences
ARIZONA STATE UNIVERSITY

PHYSICS FLASH

News from the Department of Physics / Vol.1, No. 5

From the Chair…

A Season of Physics

As we come to the end of this semester, we take time to recognize the accomplishments of our student scholars at ASU Physics. Students taking their first course in physics have come to appreciate the power of applying the principles of physics to describe a wide range of phenomena. I often overhear students comparing notes on how they used different approaches to solve the same test problem. It is great to see how they appreciate the creativity and collective effort. While they often express concern about their math skills, our faculty speak glowingly about their students' creativity and tenacity in solving all new challenges.

As our students advance through the curriculum, they are able to solve problems that describe motion of celestial bodies as well as the quantum mechanics of sub atomic particles. Graduation is a time when our most accomplished students stop to appreciate the breadth and depth of what they've achieved.

While the foundations of physics have endured for decades, our graduate student scholars are building new knowledge in areas such as nanoscience, the physics of proteins and cells, and the interplay of particle physics and astrophysics.

The holidays are a great time to take a short break from physics, but I would conjecture that our scholars will still drift to setting up a mathematical analysis of their own motion skiing down a mountain or seek to understand everyday phenomena they might find in cooking for holiday visitors or even turning on some holiday lights. The more we learn of physics, the more we appreciate it around us.

We wish you a wonderful holiday with friends and family...and physics. Happy Holidays!

Robert J. Nemanich
Professor & Chair

Out with the old and in with the new

A busy semester comes to an end

December is a crazy time of exams, advising, and graduation lumped in with all the other day-to-day activities that make an academic department tick. Fall 2009 has been an eventful and productive semester and we took time to celebrate it's success with two events. First, a holiday party on December 9th that brought together faculty, staff, and students to share in the spirit of the season. On December 17th and 18th, two graduation events - commencement and convocation - recognized hard-working physics students who have now completed their programs. With the close of this semester, we congratulate our graduates and wish them well in their future endeavors. And we look forward to the hustle and bustle of the coming Spring semester. Happy Holidays!

TOP: New physics graduates Alex Martinsen (left) and Travis Nietz (right).

BOTTOM: Walking into convocation at Wells Fargo Arena—Nietz, Doug Knight (back left), Martinsen, Kelly O'Connor (back

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Winter Open House 2009

Good food, good people, good times! Thanks to all who made the ASU Physics Winter Open House such a success!

Physics Holiday Song Sheet

Little known versions of popular carols...for all your physics-y holiday gatherings and for the physicist in all of us!

Jingle Bells-a-la-Physics

Dashing through the H-wing
With textbooks in my pack
Trying to get through Fall
So I can stay on track

Classes and research
Overload my brain
When I think I'm almost through
I register for Spring!

OH!

Bio-, nano-,
Par-ti-cle
Physics ALL THE WAY!
Oh what fun it is to study
Physics every day!

HEY!

Bio-, nano-
Par-ti-cle
Physics ALL THE WAY!
Gee, I hope I make it through
And graduate some day!

Physics Staff are Comin' to Town!

Oh you better watch out!
You better not cry,
You better not pout,
I'm tellin' you why…

Physics staff are at their wits end!

They're working all day
To make the place great
Finding a way
To steer the ship straight

Physics staff are at their wits end!

They meet with all the students
They order all the stuff
They run the labs and server rooms
But by now they've had enough!

OH!

You better watch out!
You better not cry,
You better not pout,
I'm tellin' you why…

Physics staff are at their wits end!

(at least until after break!)

Hark the Sponsored Projects Sing

Hark the Sponsored Projects sing
How do I know what I'm spending?
SuperReports are mighty fine
When I actually have the time!

Grad tuition and E-R-E…
Should have got an accounting degree!
Hark the Sponsored Projects sing
How do I know what I'm spending?

Deck the Halls with Maxwell's Equations!

Deck the halls with Maxwell's equations

$$\oint_S \mathbf{E} \cdot \mathrm{d}\mathbf{A} = \frac{Q}{\varepsilon_0},$$

Tis the season for jubilation!

$$\oint_S \mathbf{B} \cdot \mathrm{d}\mathbf{A} = 0$$

Don we now our Maxwell-isms!

$$|\mathcal{E}| = \left|\frac{d\Phi_B}{dt}\right|,$$

Troll the ancient magnetism!

$$\oint_C \mathbf{B} \cdot \mathrm{d}\boldsymbol{\ell} = \mu_0 \iint_S \mathbf{J}_\mathrm{f} \cdot \mathrm{d}\mathbf{S}$$

!

(Note alternate Fa-la-las. I know...it's a stretch, but work with me people!)

Happy Holidays!

From all of us at ASU Physics