

PHYSICS FLASH

News from the Department of Physics / Vol.2, No. 4

ASU Physics
PO Box 871504
Tempe, AZ 85287
<http://physics.asu.edu>

In the news...

Congratulations to Rory Staunton whose [poster](#) 'Development of a Method for Quantitative Mechanical Nanotomography of Cells Embedded in 3D Matrixes' was selected as one of three outstanding posters from a group of 70 at the Physical Sciences-Oncology Center's Network Investigators meeting held in National Harbor, Maryland in April.



Rory is a graduate student working with ASU Physics professor [Robert Ros](#) to explore the behavior and mechanical properties of cells. In particular, Rory is part of [a consortium](#) studying distinctions between normal and cancerous cells in the hope of improving cancer treatment and diagnoses. [\(Read more\).](#)

Congratulations to ASU Physics Adjunct Professor Ondrej Krivanek on being elected Fellow of the Royal Society. Krivanek is co-founder and president of the Washington state-based Nion Company. Nion develops advanced scanning transmission electron microscopes and other electron-optical instruments.

The [Royal Society](#) recognized Krivanek for his "pioneering advances that have endowed electron microscopy with the ability to image and analyze matter atom-by-atom." His work continues to influence researchers all over the world. We congratulate Dr. Krivanek on this distinction.

Congratulations physics grads!

On May 12 and 13, ASU graduated more than 10,000 students - a record number for the university. To accommodate such a large group, the university held separate ceremonies for undergraduate and graduate students. Spring graduation totals have risen by 1000 students per year for the last five years, underscoring the increased demand for higher education.

This past academic year, ASU Physics awarded 22 bachelors, five masters, and seven doctoral degrees in physics. Among the graduates was Andrew Walker—the first graduate of the two-year old Professional Science Masters (PSM) in Nanoscience program. In addition, several in the ASU Physics community were



(Above) PSM graduate, Andrew Walker, with advisor, professor John Venables. (Below) ASU Physics undergrads are all smiles on their big day.

honored with scholarships or awards at the department's Annual Awards & Recognition Ceremony held on May 6th [\(complete list on Page 2\)](#). We congratulate all our students, faculty, and staff on their accomplishments this academic year!



ASU Physics Awards & Recognition Ceremony

Event highlights 2010 successes, graduates, alumni support

Part celebration, part ceremony, part sigh of relief—the ASU Physics Annual Awards & Recognition Ceremony held on May 6 was a time for friends and colleagues to gather, take a breath, and reflect on the accomplishments of the past academic year.

The event was emceed by physics chair Robert Nemanich and manager Margaret Stuart. Nemanich expressed his admiration for this year's physics graduates.

"These students have done it all. They have explored the fundamental forces of nature and the complex phenomena from the quantum limit to the extremes of relativity," Nemanich said.

"More than any group on campus these students know how to attack complex problems and they will carry these skills throughout their career."

Stuart introduced this year's guests of honor, Wally and Rosemary Stoelzel. Mr. Stoelzel graduated from ASU with master's degree in Natural Sciences in 1966 after receiving a National Science Foundation grant to study physics here. During his time at ASU, he work closely with then-chair Dr. Alan Wager and staff member

Glenna Curtis. The relationships left an indelible impression on him as he witnessed the remarkable dedication both Wager and Curtis had to the department and the training of science teachers.

In 2003 in their honor, Mr. Stoelzel created the Alan Wager Endowment which also honors Glenna Curtis with the eventual goal of establishing a professorship or chair in ASU Physics. Mr. Stoelzel also provides for two scholarships for ASU Physics students—the Stoelzel Scholarship and Fellowship—which recognize outstanding student achievement in physics.

In addition to the 2010 Stoelzel scholars, Stuart announced other scholarship and award recipients who came forward to be recognized by the 130+ faculty, staff, students, and family members in attendance. ([Photos on Page 4 & 5](#))

The event, scholarships, and awards are made possible through the support of the community and Friends of ASU Physics. We thank those who have generously contributed to the ASU Physics Scholarship & Fellowship fund and to the named scholarships and fellowships listed below.

2009–2010 ASU Physics Scholarship & Award Recipients

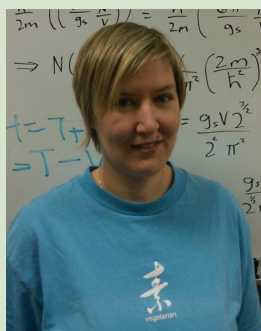
- ◆ The John and Richard Jacob Award for Undergraduate Research – **Murdock Hart** ◆
- ◆ Dean's Circle Scholarship – **Yuchen Du** ◆
- ◆ Richard G. Stoner Memorial Scholarship – **Jordan Swenson** ◆
- ◆ Vesto M. Slipher – **Matt Kolopanis** ◆
- ◆ John C. Wheatley Undergraduate Research Scholarship – **Shuchen Zhu** ◆
- ◆ Molecular Imaging Corporation Endowment Scholarship & Fellowship ◆
Nicholas Jungwirth and Adam De Graff
- ◆ Wally Stoelzel Physics Scholarship & Fellowship – **Allison Boley and Reid Juday** ◆
- ◆ Arek Dieterle Memorial Award – **Nathan Banyai** ◆
- ◆ ASU Physics Outstanding Honors Student Award – **John Vermaas** ◆
- ◆ ASU Physics Outstanding Undergraduate Award – **Madison Haynie** ◆
- ◆ ASU Physics Outstanding Graduate Assistant Award – **Samuel Tobler** ◆
- ◆ ASU Physics Outstanding Staff Award – **Jill Kolp and Iwonna Rzanek** ◆
- ◆ ASU Physics Outstanding Teaching Award – **Ricardo Alarcon and Robert Culbertson** ◆

Make A Difference with ASU Physics

Please consider supporting ASU Physics students, research, and programs.
For more information, visit [our website](#) or call 480.965.6794.

Student nabs three Spring 2010 honors

Congratulations to recent graduate Rebekah Theisen who closed out her undergraduate studies with three distinct honors! Rebekah was notified earlier this spring that she was awarded a NSF Graduate Research Fellowship. The fellowship provides three years of support



for graduate study in science, technology, engineering, or mathematics. Rebekah will begin graduate studies at ASU in the fall where she will focus on computational models of semiconductors, photovoltaics, and hybrid materials. ([Read more](#))

Not long after receiving word about the fellowship, the College of Liberal Arts & Sciences notified her that she was chosen to receive the 2010 CLAS Adult Re-Entry Award. The award recognizes a student who has had their education interrupted or postponed, and has successfully overcome complex challenges upon returning to college.

Rebekah had a 10-year lapse from college as she dealt with a autoimmune disorder that left her with epilepsy at the age of 25. But as soon as her health stabilized, she decided to return to school and finish a degree in the area that has intrigued her since childhood—physics. She graduated this spring from ASU Physics where in addition to her studies, she was a member and past president of the Society of Physics Students.

In addition, the ASU Alumni Association awarded her the Outstanding Graduate Award for the Natural Science division. Both the Adult Re-entry and Outstanding Graduate awards were present to Theisen at a ceremony on May 12. We wish Rebekah the best of luck as she continues her studies at ASU!

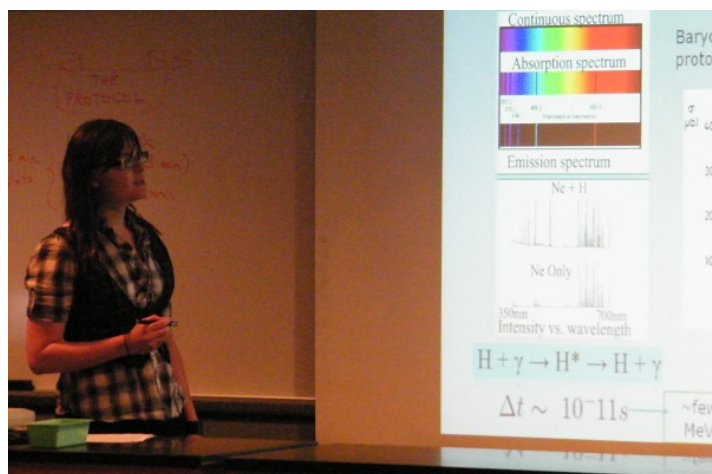
Research symposium builds presentation skills for undergrads

Now in its sixth year, the ASU Physics Undergraduate Research Symposium continues to be a great opportunity for students to present and discuss their research in front of a scientific audience. The 2010 symposium took place on April 30 and featured eleven undergraduates currently involved with research groups in the department. The event was organized by professor Barry Ritchie and academic advisor Jessica Pauls.

“Although some of the students are initially pretty nervous, they realize the value of the experience,” says Pauls. “Most of them intend to go on to graduate school where they know presenting is an expectation. The symposium is a relaxed, low-pressure environment for them to test the waters so to speak.”

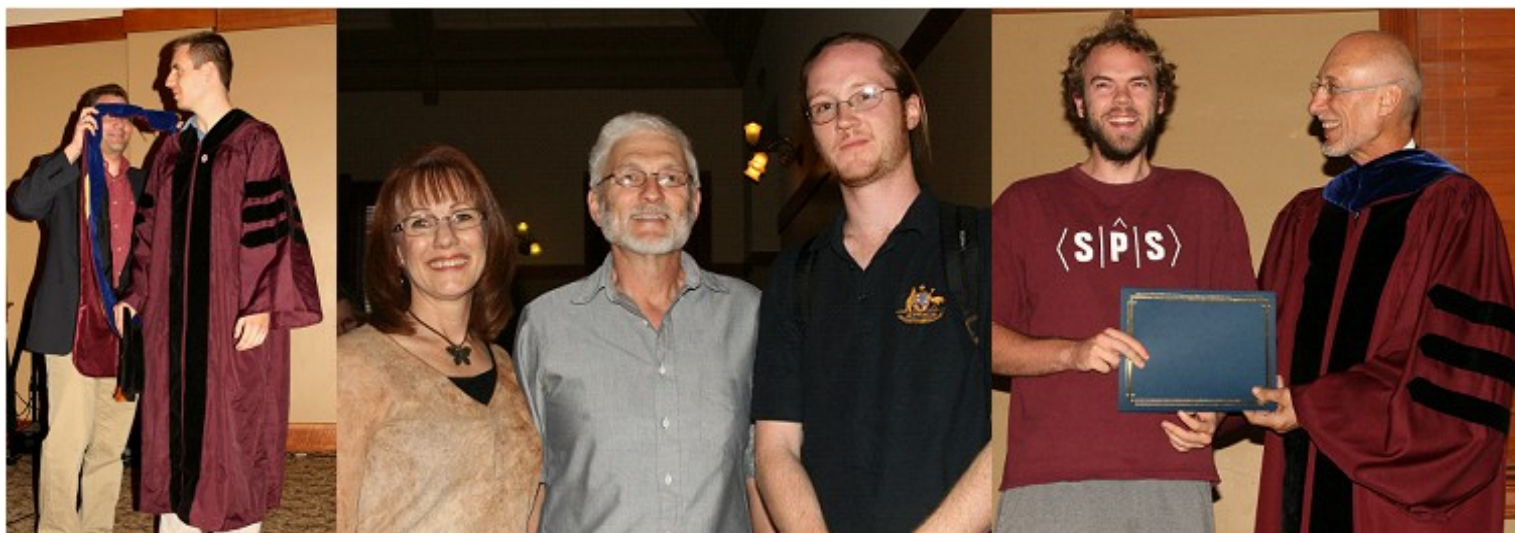
Congratulations to all of the 2010 presenters:

- **Nick Jungwirth**—*Sub surface morphology of Au/Si(111) islands*”
- **Michael Christiansen**—*Alternative Metal Catalysts for Growth of Nanowire Heterostructures*”
- **Martha Cassetti**—*Jefferson Lab Frozen Spin Target (FroST)*”
- **Ross Tucker**—*Coherent Bremsstrahlung*”
- **Devon Powell**—*Actuation of Pico-Liter Drops by Stick-Slip Motion*”
- **Sofia Benitez**—*Positive Ion X-ray emission Analysis (PIXE) of optical polycarbonates*”
- **Murdock Hart**—*Controlling hydro-affinity, & the scientific motivation for understanding hydro-affinity on Si/SiO₂ wafers for bonding and silicone & other polymeric medical implants for cataracts*”
- **David Sell**—*A model and mechanism for controlling hydro-affinity of surfaces - with applications to Inter-Ocular Implants for Cataracts and Vitro-retinal surgery*”
- **Kip Sheridan**—*Surface characterization of silicates and silicon-based crystals and polycrystals using Ion Beam Analysis (IBA) and liquid/solid contact angle measurements using the Young-Dupree analysis for Wafer Bonding Research*”
- **John Blanchard**—*Pitfalls and Progress in the NMR Characterization of Translational Dynamics in Chemically-Exchanging Systems: a Diffusion NMR Study of Protic Ionic Liquids*”
- **Lauren Ice**—*Model of the Electroproduction of Pions for Electron-proton and Positron-proton Scattering for the OLYMPUS Experiment*”



Martha Cassetti discusses one of her presentation slides

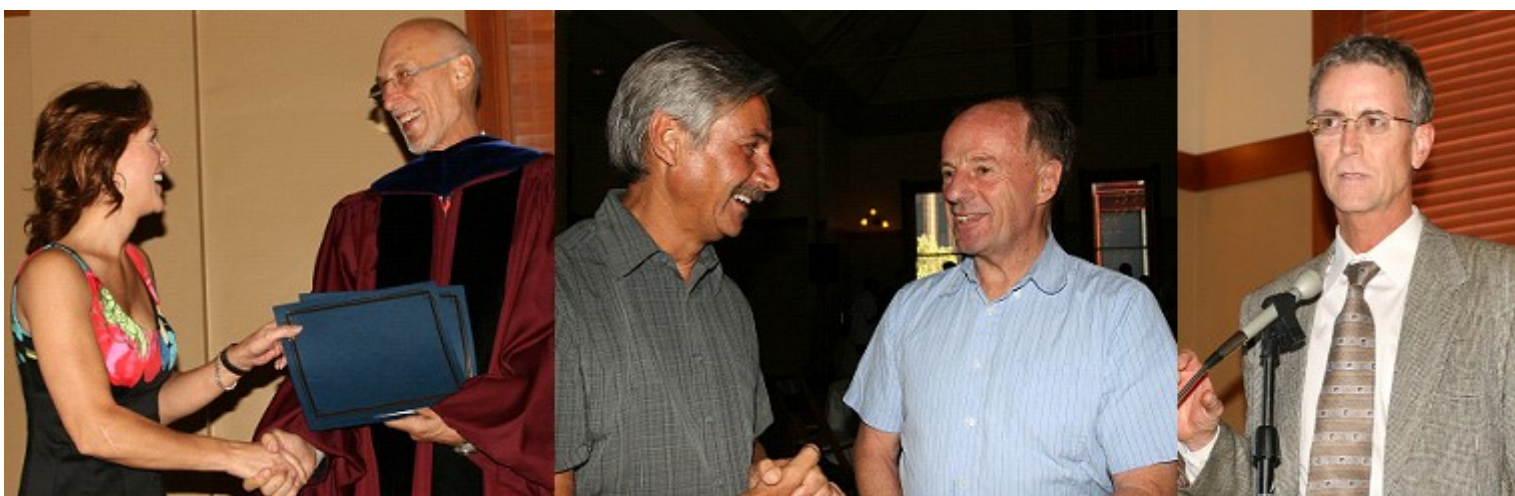
PHOTO GALLERY: 2010 Awards & Recognition Ceremony



(Left) PhD candidate Alexander Fuhrmann is hooded by professor Robert Ros. (Center) Vicki and Bob Dieterle with Arek Dieterle Memorial Award recipient Nathan Banyai. (Right) ASU Physics chair Robert Nemanich and Outstanding Honors Award recipient Josh Vermaas.

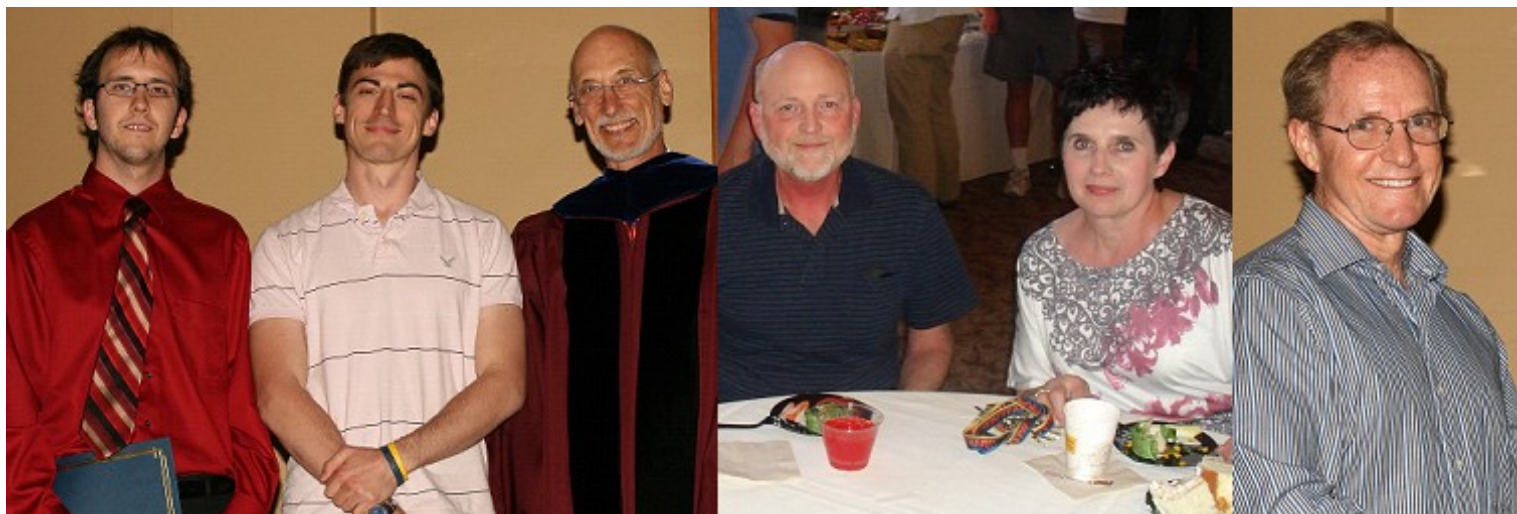


(Left) ASU Physics alumnus and supporter Wally Stoelzel congratulates physics students.. (Right) Faculty, staff, students, and guests enjoy refreshments prior to the ceremony.



(Left) Jill Kolp receives the Outstanding Staff Award from Robert Nemanich. (Center) Professor and Outstanding Teaching Award co-recipient Ricardo Alarcon chats with Regents' Professor Dave Smith. (Right) Dean of Natural Sciences Sid Bacon emphasizes the important role physics plays in advancing the university's research efforts.

PHOTO GALLERY: 2010 Awards & Recognition Ceremony (cont'd)



(Left) Molecular Imaging scholarship recipients Nicholas Jungwirth and Adam de Graff with Robert Nemanich. (Center) Staff member Wayne Easterling and Outstanding Staff Award co-recipient Iwonna Rzanek. (Right) Professor and co-recipient of the Outstanding Teaching Award—Robert Culbertson.



(Left) Graduating senior Lauren Ice with her mother. (Center) ASU Physics faculty and staff check out the refreshments.



(Left) Stoelzel Scholar Allison Boley with Robert Nemanich. (Center) Stoelzel Scholar Reid Juday with Wally Stoelzel. (Right) Matt Kolanis receives the Vesto M. Slipper award.