Paper/Work
LLNL Postdoc Association Newsletter
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Postdocs Learn about Lab Careers at the Martinelli Center

By Lance Simms

On November 29, 2011, roughly 100 postdocs from across the Lab joined together with 45 managers at the annual LLNL Postdoc career development event entitled "Building Your Career at the Lab." The event was hosted by the Institutional Postdoc Program Board at the Martinelli Center on Greenville Road in Livermore. Plenty of great food and drinks were put away by a hungry group of postdocs and their mentors to begin the event, and much cross-discipline conversation ensued. The main event was a series of discussion panels that informed us on a wide variety of topics: from the way the lab deals with an employee's salary to how to manage family life while working in the hard sciences.

Before hearing from the panels, we heard from the new director of LLNL, Parney Albright. Dr. Albright gave us his take on the actual mission of the lab. He stated that our goal should be to take on projects that have a real impact on the nation at large: things where we can press a red button and see concrete results. He also reinforced how important the postdoc community is to that vision.

Next up was the Global Security panel. They informed us of all the very cool things that go on in their division, from counter-terrorism to energy research. David Rakestraw emphasized how the Lab is a unique environment in the sense that a scientist can work across many disciplines and learn completely new things based upon which challenging problems are currently under

Postdocs Learn about Lab Careers at the Martinelli Center, continued

study. For example, he said that he now does biology although he originally received his Ph.D. in physical chemistry. Kim Budil gave a neat perspective on how she feels working at the Lab: she may not be the smartest person in the room, but that actually brings out the very best in her.

Next at bat was the Weapons and Complex Integration (WCI) panel, led by Paul Miller. They gave us a taste of the various things that one can do in WCI, ranging from computer simulations to material science. They probably tempted at least a few physicists in the room by saying that weapons analysis and simulation uses more sub-disciplines of physics than any other kind of problem that one could imagine.

After hearing from WCI, Jeff Atherton presented a detailed view of the National Ignition Facility and the ignition campaign. Jeff offered us some hope that ignition is not a pipedream. More obstacles remain, but there is nothing to suggest that it is out of reach. He also gave a few great pieces of advice, one of which was to take care of yourself and your family before anything else. Another was that there is no substitute for good people and talent. The Lab has to constantly bring in fresh minds to keep itself at the top.

Lastly, we got an overview of finances at the Lab from Vicki Bender. It was amazing to see how the postdocs came to life during her presentation. We learned that LLNL has the highest indirect costs of any national lab. People were concerned about this, as was evident by the large number of questions she received about this topic. She stated that the lab is looking into ways to drive these costs down. Her talk deserved the title "Finance 101," as she covered everything from the Continuing Resolution in Washington D.C. to how a postdoc is allowed to spend his or her time using the 25% postdoc account. (Editor's note: Vicki's slides are available from the Postdoc Association upon request.)

On the whole, the career development event proved to be a great learning experience. Miranda Sarachine, a postdoc who has been at LLNL for nearly two years, said that out of all the programs the panels talked about, she was aware of only about half before the event. It was also a good time for the postdocs to discuss career opportunities with the many mentors there, as well as give their opinions to the upper management. From what we heard, it seems clear that to compete with other institutions in the current economic state certain changes will probably have to be made, and we will have to work as hard as ever to keep ourselves at the forefront. But judging from the people in attendance, I, for one, remain convinced that LLNL will remain an exceptional place to do cutting edge science well into the future.

Postdoc Lunch at Sushi Zone on January 17th

We had 8 people in attendance. Thanks to Ryan Hunt, Tripp Floyd, Nathan Kugland, Chris Schroeder, Tanim Islam, Nick Be, Paul Martinez, and Charles Reid for joining in the food and conversation.

Our next lunch will take place in February. Hope to see you there!

Next Steps: Interviews with Former Postdocs

Where do you work now and how is that similar or different from what you did as a Post-Doc?

Ruth Tinnacher: I am now a project scientist in the Earth Science Division at Lawrence Berkeley National Laboratory (LBNL). Similarly to my post-doc at Livermore, I am still involved in research related to environmental geochemistry/radiochemistry. While I am dealing with new, somewhat different research questions, the type of work I am doing has not changed substantially.

Did you apply elsewhere? Why did you make this choice? At this point, I did not consider positions in academia or industry; however, I did apply to other research laboratories as well. I selected this position, because I believe that the Earth Science Division at LBNL provides an extremely good and dynamic research environment, especially in the form of a large number of highly respected experts in my field.

What did you enjoy the most and the least about being a postdoc at LLNL? What do you think are the differences between a postdoc at the lab versus at a University?
I believe I enjoyed the sense of community amongst LLNL postdocs the most. On the downside, as a foreign national from Austria, I had to deal with many administrative frustrations at LLNL, which ultimately affected my productivity and motivation. I believe that a lot of these problems for foreign nationals could be improved without a huge commitment of resources. I would be more than happy to provide a few suggestions to anybody who would be interested in making a change.

How far along in your PD were you when you decided what the next step in your career would be? I started to evaluate my options, both inside and outside of LLNL, fairly late, after over 2 years into my postdoc. With my LLNL postdoc, I had changed my research from experimental to modeling work, which required a steep and long learning curve. I felt that I needed to make sure that at least some of my LLNL research was published or under review before I started looking for jobs. However, I have learned in the meantime that the process of a job search is in itself very helpful to determine what type of position might be ideal.

Can you describe the application and interview process? How did you get your new job? What do you think your employer valued the most in your formation and experience?
I had previous contacts to LBNL researchers from my time as PhD student. Before my application to the job posting, I was able to discuss the position with LBNL scientists at a conference. The interviewing process itself was comparable to my postdoc interview at LLNL. I believe my broad research expertise and interests, as well as my creative, independent thinking were valued the most.

Any piece of advice for PDs at LLNL?
Here are a few: a) publish, publish, publish; b) go to conferences to meet people; c) inquire about positions, even when they don't seem to be the 'perfect fit'; d) don't get 'distracted' by programmatic work that might not be publishable, unless this is the professional direction you want to take in the long-term; e) have fun and take advantage of the many brilliant minds at LLNL.

Judges Needed for the Livermore Valley Science Odyssey

Help local K-12 kids by evaluating their science projects! February 29th – March 1st at Junction Ave. School. Contact Ms. Frankie Tate at Granada High School for more information or to volunteer:
ftate@lvjusd.k12.ca.us

Postdoc-Related Highlights from Notes to the Director

Lab team achieves breakthrough for radiation detection

LLNL researchers have developed the first plastic material capable of efficiently discriminating neutrons from gamma rays, something that was previously thought to be impossible. The work is described in a paper entitled "Plastic scintillators with efficient neutron/gamma pulse shape discrimination" that appears in the March 11 edition of the journal Nuclear Instruments and Methods in Physics Research A. The new technology could assist in detecting nuclear substances such as plutonium and uranium that might be used in improvised nuclear devices by terrorists and could help in detecting neutrons in major scientific projects. Key features of the material are its low cost, and straightforward synthesis. As a result, large detectors could be made, which could aid in the protection of ports, stadiums and other large facilities, though it is likely that it will first be used in smaller handheld detectors, because the new material is much cheaper than traditional neutron-detecting crystals and is free from the chemical hazards of liquid scintillators. The multi-disciplinary team responsible for this work included Natalia Zaitseva, Steve Payne, Nerine Cherepy, Leslie Carman, **Benjamin Rupert**, **H. Paul Martinez**, Andrew Glenn, **Iwona Pawelczak**, Sebastien Hamel, Keith Lewis, and UC Davis graduate student Michelle Faust. ABC news (San Francisco TV channel 7, KGO) ran a new item on the new material on January 11.

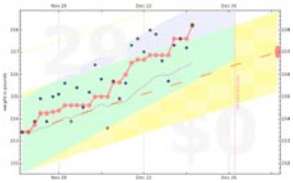
Penny Wozniakiewicz wins Marie Curie Fellowship

IGPP postdoc **Penny Wozniakiewicz** has been awarded a prestigious Marie Curie Fellowship under the International Incoming Fellowships (IIF) action of the European Commission on Research and Innovation. Penny will be leaving LLNL to conduct her research at the Natural History Museum in London. Her Fellowship project aims to provide new insights into the formation and evolution of the solar system by studying micrometeorites, specifically a new set of micrometeorites that she and IGPP researchers John Bradley and Hope Ishii recently collected in Kwajalein under NASA funding. Micrometeorites and larger meteorites are extraterrestrial dust and rocks that largely originate from comets and asteroids. Large planets like the Earth contain enough heat to recycle material through processes such as volcanism. In contrast, comets and asteroids have undergone little modification since they formed and are believed to contain primordial solar system materials. Micrometeorites and meteorites therefore preserve a record of the temperatures, pressures, and types and abundances of materials present in the early solar system. Although meteorites are much larger in size and attract more attention from researchers, micrometeorites constitute a far greater incoming mass of material and sample many more parent bodies. Nevertheless, much less research has been done on them because their small size has made isolating and analyzing them difficult. Micrometeorites therefore represent a significantly underexploited resource of extraterrestrial materials. Penny's project will use state of the art analytical instruments to study and compare previously unanalyzed micrometeorites with the aim of developing a new understanding of the conditions that existed during the early solar system.

Professional & Career Development

Akrasia and ways to fight it. This term from the ancient Greek means "the state of acting against one's better judgement," or in other words, "Not doing what you genuinely want to do." For example, you have a paper that you should really finish writing, but instead you spend hours cleaning out your email inbox. You're fully aware of the long-term reward to finishing the paper, but somehow it's hard to find the short-term motivation.

One solution: Beeminder is an online tool to bind yourself to make continuous progress on long-term goals. It's a powerful idea, and you can even bet real money to help force you stick to your goals. More info:
blog.beeminder.com/akrasia/
www.beeminder.com



Upcoming Events

Physics & Life Sciences Postdoc Research Seminar
Tuesday, February 7, 11 AM
B151 R1209 (Stevenson Room). Refreshments served.
• Amy Lazicki
• Lance Simms: "The Space-based Telescopes for Actionable Refinement of Ephemeris Pathfinder Mission"

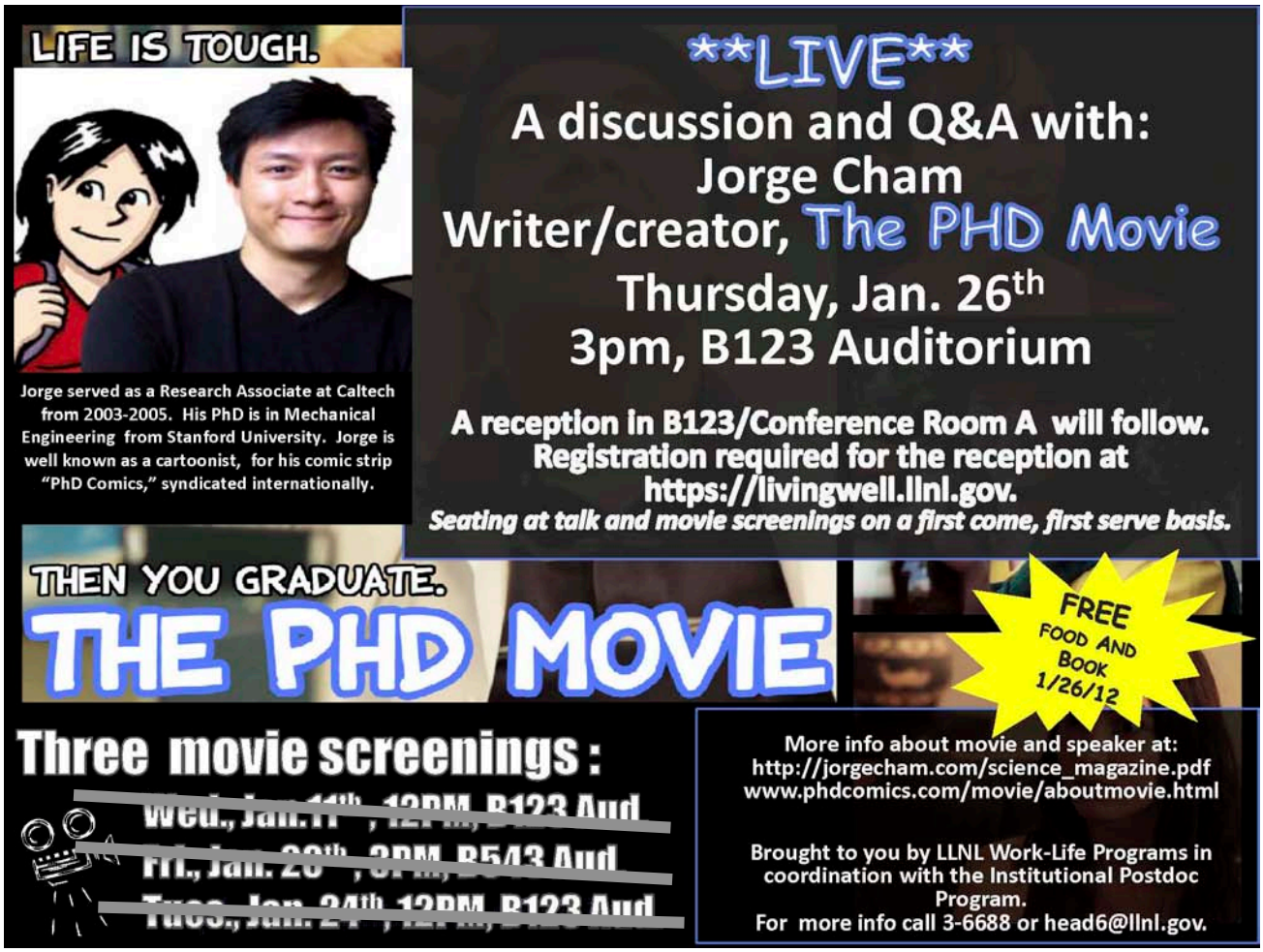
Ph.D. Comics: Jorge Cham Visit/Reception/Happy Hour
Jorge Cham live discussion **tomorrow**, Thursday, Jan. 26, 3 PM in B123; Reception afterwards, then Happy Hour with Jorge Cham, 5:30 PM at the Underdog Wine Bar in Livermore

In Other News…

Top 10 reasons why Darth Vader was an amazing project manager:
http://www.geekwire.com/2011/top-10-reasons-darth-vader-amazing-project-manager

#10: Vader prioritized brutally.

The Ph.D. Comics Movie Comes to LLNL!



Selected Recent Research Publications by LLNL Postdocs

Bold = LLNL Postdoc. *Broadcast your achievements! Make new connections & help show how we are doing collectively.*

Guidelines: 1) Peer-reviewed publications only, nothing in progress; 2) Your affiliation must be LLNL; 3) Note which authors are LLNL postdocs, and in what division & group; 4) Send full citation with all authors (no *et al*) and the title to Nathan (kugland1@llnl.gov).

Computing/CASC/Informatics Group: **M. Ndoye**, A. M. Barker, J.V. Krogmeier, D. M. Bullock, "A Recursive Multiscale Correlation-Averaging Algorithm for an Automated Distributed Road-Condition-Monitoring System," IEEE Transactions on Intelligent Transportation Systems. Volume 12, Issue 13, Pages: 795-808, (2011)

PLS/AEED/Program for Climate Model Diagnosis and Intercomparison: P Muscarella, **NP Barton**, B Lipphardt, D Veron, K Wong, and AJ Kirwan, 2011: Surface currents and winds at the Delaware Bay Mouth. Continental Shelf Research , 31 (12), 1282-1293.

PLS/AEED/Program for Climate Model Diagnosis and Intercomparison: **Zelinka, M. D.**, and D. L. Hartmann, "Climate Feedbacks and Their Implications for Poleward Energy Flux Changes in a Warming Climate," J. Climate, 25, 608–624 (2012). http://dx.doi.org/10.1175/JCLI-D-11-00096.1

PLS/AEED/Seismology: **J. Wang**, J. Schweitzer, F. Tilmann, R. S. White, and H. Soosalu, "Application of Multi-Channel Wiener Filter to regional event detection using NORSAR seismic array data," Bulletin Seismological Society of America. doi:10.1785/0120110003 101(6): 2887-2896 (2011)

PLS/Chemical Sciences Division: Natalia Zaitseva, **Benjamin L. Rupert**, Iwona **Paweł̷czak**, Andrew Glenn, **H. Paul Martinez**, Leslie Carman, Michelle Faust, Nerine Cherepy, Stephen Payne, "Plastic scintillators with efficient neutron/gamma pulse shape discrimination," Nuclear Instruments and Methods in Physics Research A, Volume 668, 11 March 2012, Pages 88–93

PLS/Chemical Sciences Division/Advanced Material Synthesis Group: Sung Ho Kim, **Tammy Y. Olson**, Joe H. Satcher Jr., T. Yong-Jin Han, "Hierarchical ZnO structures templated with amino acid based surfactants," Microporous and Mesoporous Materials 151 64–69 (2012)

PLS/Physics/High Energy Density Physics/Theory & Modeling Group: S. Johnston, **A. P. Sorini**, B. Moritz, T. P. Devereaux, and D. J. Scalapino, "Coincidence between energy gaps and Kohn anomalies in conventional superconductors," Phys. Rev. B 84, 174523 (2011)

PLS/Physics/X-ray Optics Group: M. Arik, S. Aune, K. Barth, A. Belov, S. Borghi, H. Bräuninger, G. Cantatore, J. M. Carmona, S. A. Cetin, J. I. Collar, T. Dafni, M. Davenport, C. Eleftheriadis, N. Elias, C. Ezer, G. Fanourakis, E. Ferrer-Ribas, P. Friedrich, J. Galán, J. A. García, A. Gardikiotis, E. N. Gazis, T. Geralis, I. Giomataris, S. Gninenko, H. Gómez, E. Gruber, T. Guthörl, R. Hartmann, F. Haug, M. D. Hasinoff, D. H. H. Hoffmann, F. J. Iguaz, I. G. Irastorza, J. Jacoby, K. Jakovčić, M. Karuza, K. Königsmann, R. Kotthaus, M. Krčmar, M. Kuster, B. Lakić, J. M. Laurent, A. Liolios, A. Ljubičić, V. Lozza, G. Lutz, G. Luzón, J. Morales, T. Niinikoski, A. Nordt, T. Papaevangelou, M. J. Pivovaroff, G. Raffelt, T. Rashba, H. Riege, A. Rodríguez, M. Rosu, **J. Ruz**, I. Savvidis, P. S. Silva, S. K. Solanki, L. Stewart, A. Tomás, M. Tsagri, K. van Bibber, T. Vafeiadis, J. A. Villar, **J. K. Vogel**, S. C. Yildiz, and K. Zioutas, "Search for Sub-eV Mass Solar Axions by the CERN Axion Solar Telescope with 3He Buffer Gas," PRL **107**, 261302 (2011)

Job Resources

careers.llnl.gov Official LLNL jobs site.

Psi-K Network www.psi-k.org
Electronic structure theory news, events, jobs

brightrecruits.com (from the Institute of Physics)
A range of opportunities in physics & engineering.

APS Careers in Physics www.aps.org/careers
Gateway to physics jobs and careers.

Naturejobs www.nature.com/naturejobs
Hot jobs & career guidance for scientists since 1999.

Science Careers sciencecareers.sciencemag.org
Jobs & advice from the journal Science and the American Association for the Advancement of Science.

www.postdocjobs.com
Hundreds of listings for postdocs, research associates, and other jobs that require a doctoral degree.

Meet the Postdoc Association Leadership Council

Past-president Eric Wang studies tokamak plasma physics and recommends involvement in the LLPA

Hey there, I'm Eric Wang. Currently, I am in my third year of my postdoc in the Fusion Energy Sciences Program, part of PLS. I spend my time on theory and simulation of magnetically confined plasmas (you can google tokamak or ITER if you're curious). The primary goal of studying magnetically confined plasmas is to produce steady state plasma pressures large enough to sustain fusion reactions which will both self heat the plasma and give excess energy suitable for the production of electricity. Specifically, I work on the linear stability and nonlinear saturation of plasma microinstabilites in tokamaks- the dominant source of heat and particle transport. If these instabilities could be controlled and the transport they cause reduced, we would be able to produce fusion power plants at significantly smaller size (and cost) than current projections. I would say the best part of working at Livermore is the access to expertise and knowledge in my group. Additionally, every postdoc that I have gotten to know is both talented and works on interesting, complex problems. (I'm sure this is true of all of you who I have not met.) Personally, I think the intellectually stimulating environment and variety of interesting projects in the lab are really one of the most attractive and under-appreciated aspects of being a lab employee.


Photo S&TR 6/2011

A year and a half ago, I was pleased to become the serving LLPA (LLNL Postdoc Association) president, taking duties over from the excellent infrastructure that has already been set up. It is my hope that LLNL postdocs see and understand that the LLPA provides access to career development opportunities and can address concerns about being a lab employee in addition to hosting fun social activities. After serving as president for a year, I am happy to see the continuation of the organization and creation of this newsletter! I consider the continuation of the LLPA, with new and increased membership, to be a wonderful resource for the Livermore postdoctoral community and encourage anyone interested in participating to be proactive in joining. In all honesty, it takes a lot less time than most everyone thinks it would and it is very rewarding.

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