Paper/Work

MAY 30, 2012
VOLUME 1, ISSUE 16

LAWRENCE LIVERMORE POSTDOC ASSOCIATION

POSTDOCS AND FRIENDS GO TO THE MOVIES!

By Lance Simms

The sign outside the Vine Movie Theater on Wednesday, April 11 said it all. "LLNL Post Docs Movie" was written in classic, black marquee lettering, foretelling of a fun night ahead.

Around 6:00 pm, postdocs, other LLNL employees, and friends began checking in at the lobby. Postdocs got in for free with a guest while everyone else had to pay $8, a fee that helped to cover the cost of renting out the theater and providing one alcoholic beverage.

Wait, alcohol you say? Yes, that's right. For those unfamiliar with the Vine, beer and wine are served at the concession stand and allowed in the theater. It might seem like a good way to make the laughter a little too loud and the crowd a little too raucous. But with us well-behaved LLNL folk, that isn't a problem.

After getting in, some people lined up at the bar to use their drink ticket while others chitchatted about postdoc life and the movie ahead. A surprising number of people had never seen "Dr. Strangelove" before, and there was an air of curiosity about what was in store. Those who had already seen it were talking about how much they loved it. Postdocs had voted for the movie a few weeks earlier and Dr. Strangelove was an overwhelming favorite.

The doors for the theater swung open at 6:40 and

POSTDOC MOVIE NIGHT, CONTINUED

people were lured in to the theater by the smell of hot dogs and pizza. For the healthy minded part of the crowd, there were also plenty of fresh vegetables. And for those who wanted some sweets there was chocolate and candy.

When everyone had grabbed some food and taken a seat, the showcase began. It started with an introduction to the movie from a long-time employee of the lab, Tommy Thomson. Tommy talked about the real-life history behind the movie and made some impressive quotes from Dr. Strangelove, bringing quite a few laughs from the people who had seen it already, along with a few puzzled, apprehensive looks from those who had not.

After that, it was time to sit back, relax, and enjoy the show. Judging from the amount of laughs coming from the crowd, people seemed to enjoy the classic film. Hopefully it won't be too long until the LLPA screens another one!

NEXT STEPS: INTERVIEWS WITH FORMER POSTDOCS

Interview conducted by David Alessi.

When was the end of your postdoc?

Xavier Mayali: January 13, 2012.

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

Same department and projects (PLS, Chemical Science). I work 75% of my time on an LDRD-ER for which I serve as PI. This project examines the degradation of marine particles by bacteria and measures carbon flux into and out of the particles, using various mass spectrometry techniques. The rest of my time is spent working on a DOE "Biological and Environmental Research" funded project that examines natural hydrogen-producing communities to try to understand the role of various microbial players in the cycles of carbon and nitrogen. I am more independent in terms of finding my funding and choosing collaborators, but otherwise I am doing the same kind of work.

Did you apply elsewhere? Why did you make this particular choice (Lab vs. academia vs. industry)?

I applied for a couple of jobs here and there. I have no interest in going to industry, and the resources available at LLNL make it easy to stay.

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?

Enjoyed the most: the salary!
Enjoyed the least: the bureaucracy!

The main difference between a postdoc at LLNL and at a university is that postdocs at a university are rarely hired at that university for a permanent position; at LLNL, that is the primary way to hire staff.

How far along your postdoc were you when you decided what the next step in your career would be?

Two and half years into my postdoc.

How did you get your new job?

Well, I guess some people along the management chain thought I was doing good work, and they submitted the required documents to push my conversion through.

Any piece of advice for postdocs at LLNL?

Be helpful and friendly to others even if there is no obvious immediate benefit. You never know how it might help you later.

CAREER RESOURCES

Upcoming events:

June 6: Careers in Intelligence and Policy, with Zachary Davis from Global Security. Details TBA, organized by the IPPB

June 14: 5th Annual Institutional Postdoctoral Poster Symposium. *Register to present by June 11 at:* https://symposium.llnl.gov/postdoc

The M Word, Marc Kuchner
Nature Materials, 22 March 2012

"In the halls of Versailles in the 1740s, you would show up with your experiment, and you would do some sort of demonstration — maybe it was a telescope. And you would have the king look through the telescope and go "ooh and aah", and then you would put out your hand and ask for money. And I think that's still the way scientists earn money today, except that we assemble a team and we write a formal grant proposal. That, in some way, is our product, that's how we get money to flow."
Marc Kuchner's blog:
http://marketingforscientists.com/

JOB LINKS

Official LLNL jobs site: careers.llnl.gov

Postdoc listings: www.postdocjobs.com
Academic jobs: www.academickeys.com

Computational modeling jobs: www.psi-k.org

APS Careers in Physics: www.aps.org/careers
Institute of Physics: brightrecruits.com

nature jobs.com
The premier science jobs recruitment website

Nature: www.naturejobs.com

Science Careers From the journal Science

Science and AAAS: sciencecareers.sciencemag.org

USAJOBS "WORKING FOR AMERICA"

Government jobs: www.usajobs.gov/

Industry jobs: www.monster.com
sfbay.craigslist.org/jjj/
www.linkedin.com/jobs

PANEL DISCUSSION: RECENTLY CONVERTED POSTDOCS

By Andre Schleife

On Tuesday, April 24th Annie Kersting invited the postdocs of the Physical and Life Sciences Directorate to attend a special seminar. Like every year, she managed to gather an interesting panel of former postdocs who recently got converted at the Lab. This year the panel consisted of Sean Ford (AEED), James Lewicki (currently at CSD and the only foreign national on the panel), Xavier Mayali (CSD), and Sonia Wharton (AEED).

After the panelists introduced themselves, the postdocs were invited to ask all the questions they had, yes, also the controversial ones! During this discussion the panel agreed that it is a good idea to enjoy the first year by focusing on the postdoc project and to push publications related to that topic. After the first year they suggested cranking up networking within the Lab and finding potential collaborators to broaden your horizons while, at the same time, putting a lot of effort into publishing scientific results. In addition, they suggested keeping potential previous collaborations with academia alive. Of course they did not suggest neglecting the postdoc project when doing so!

During the discussion a question came up about whether postdocs can be PI's for external money. The answer is that there is no Lab policy against that, however, some funding agencies exclude postdocs from being a PI. On a side note (from my German point of view), I want to point out that no "special" foreign-national-related questions were asked.

Fun facts: Sonia made the audience laugh when she admitted that she liked to efficiently meet people and get new ideas by attending random seminars. This way she got a good grasp of the breadth of the topics covered at LLNL and she connected with many new people. Sean triggered giggles throughout the audience when he admitted that he was happy about his deep connection to the Lab because he was "old" once he got his PhD.

I am sure that it is not just my personal impression that the quality of the science performed at LLNL is very high; some of the panelists can even still envision a later change into academia, if the right offer comes about. The fact that these ambitious individuals are pursuing a career at the lab clearly illustrates how competitive the research at LLNL really is!

POSTDOC HIGHLIGHTS: NOTES TO THE DIRECTOR

Atmospheric warming altering ocean salinity and the water cycle

Fundamental thermodynamics and climate models suggest that dry regions will become drier and wet regions will become wetter in response to global warming; however, efforts to detect this long-term response in the sparse dataset of surface rainfall and evaporation observations remain inconclusive. In a paper published in the April 27, 2012 edition of *Science*, LLNL's postdoc **Paul Durack**, with coauthors from the Commonwealth Scientific and Industrial Research Organisation (CSIRO) in Australia, show that there is clear evidence for a change in salinity of the world's oceans over the past 50 years. The authors attribute the change to shifts and acceleration in the global rainfall and evaporation cycle (the "hydrologic cycle") tied directly to climate change. The team compared observed ocean salinity changes with the relationships between salinity, rainfall and evaporation predicted by climate models. They found that ocean salinity patterns have an identifiable fingerprint of an intensifying global hydrologic cycle, and that the cycle is intensifying at a rate of 8 ± 5% per degree C of surface warming. This rate is twice the response projected by current-generation climate models and suggests that a substantial (16 to 24%) intensification of the global water cycle will occur in a future 2° to 3°C warmer world. This paper was the subject of a "News & Analysis" Commentary in *Science,* April 2012.

http://www.sciencemag.org/content/336/6080/455

Measurement of the Adiabatic Index in shock-compressed Beryllium

Beryllium is a candidate capsule ablator material in inertial confinement fusion (ICF) experiments. Knowledge of its thermodynamic and transport (thermal and electric conductivity) properties at extreme density, pressure, and temperature are thus of high interest for NIC experiments. A report by LLNL researchers and their collaborators on the first direct measurement of the adiabatic index (heat capacity ratio) through x-ray Thomson scattering from shock-compressed beryllium was published on April 25 in the online edition of *Physical Review Letters.* The report described a novel experimental technique in which x-ray photons probe the bulk properties of matter during the collision of two counter-propagating shocks. Studying the equation of state (EOS) of matter at extreme conditions is vital for ICF experiments in which matter is compressed up to 1,000 g/cm3. The researchers said the new technique has great potential for applications in material research, ICF, and laboratory astrophysics. The experiment was carried out at the OMEGA Laser at the University of Rochester's Laboratory for Laser Energetics. Lead author Carsten Fortmann was joined by LLNL colleagues Tilo Döppner, postdoc **Andrea Kritcher**, Nino Landen, and Siegfried Glenzer and collaborators from UCLA, SLAC National Accelerator Laboratory, and UC Berkeley.

http://prl.aps.org/abstract/PRL/v108/i17/e175006

LLNL Researchers Give Talks at CLEO: 2012

Mike Dunne gave an invited presentation at the 2012 Conference on Lasers and Electro-Optics (CLEO: 2012) held from May 6-11. Dunne's talk, "Recent Data from the National Ignition Facility," presented the latest results of the National Ignition Campaign and current designs for Laser Inertial Fusion Energy based on experience with NIF. Also presenting was Andy Bayramian, who gave a talk titled, "A Compact Line Replaceable Unit Laser Driver for Laser Inertial Fusion Energy," and postdoc **David Alessi**, whose talk described the temporal contrast and performance of oscillators to determine their feasibility for future ultra-high-contrast experiments on NIF's Advanced Radiographic Capability. Ed Moses was formally named a Fellow of the Optical Society of America during the conferences for "outstanding technical leadership of the construction, completion and use of the world's largest and most energetic laser system, the National Ignition Facility."

POSTDOC HIGHLIGHTS: NOTES TO THE DIRECTOR, CONTINUED

LLNL Researchers Discuss HED Laboratory Astrophysics

Most shock waves in astrophysics, such as those present in solar flares and supernova remnants, are "collisionless." Laboratory experiments at large laser facilities can achieve the conditions necessary for the formation of such shocks and provide a unique avenue for studying the nonlinear physics of shock waves. At the 9th International Conference on High Energy Density (HED) Laboratory Astrophysics (HEDLA 2012) held April 30 to May 3 at Florida State University, LLNL researchers and their collaborators reported on a series of experiments, planned at the OMEGA and OMEGA-EP lasers at the University of Rochester, designed to answer questions of relevance to collisionless shock physics such as the importance of electromagnetic filamentation instability in shock formation, the self-generation of magnetic fields in shock collisions, and the influence of external magnetic fields on shock formation. LLNL researchers participating in the presentation were Hye-Sook Park; postdocs **Nathan Kugland**, **Steven Ross**, and **Chris Plechaty**; Bruce Remington, Dimitri Ryutov, Peter Celliers, and Siegfried Glenzer.

NEW LOGO & LOOK FOR THE LLPA!

You might have noticed that the Postdoc Association has a new logo! The goal is to capture what we do in a simple visual form, to better communicate our purpose. Specifically, we are a network of postdocs helping each other figure out how the Lab works. This sense of community was expertly captured for us by graphic artist Julie Korhummel of the Public Affairs Office, who graciously spent her time designing this new logo. Additional input was provided by Nathan Kugland, Lance Simms, and the LLPA Council. An important feature of the new logo is that it's non-field specific, so it includes everyone from biologists to physicists and engineers.

—Nathan Kugland

LAWRENCE LIVERMORE
POSTDOC ASSOCIATION

SELECTED RECENT POSTDOC RESEARCH PUBLICATIONS

Bold = LLNL Postdoc. *Broadcast your achievements! Make new connections & help show how we are doing collectively.*
Guidelines: 1) Peer-reviewed publications (journal or conference) only, nothing in progress; 2) Your affiliation must be LLNL; 3) Prepare a standard-format citation with all authors (no *et al*), the full title, journal/proceedings info, and a link to the online abstract; 4) Note which authors are LLNL postdocs, and in what division & group; 5) Send all of this to Nathan (kugland1@llnl.gov).

PLS/AEED/Program for Climate Model Diagnosis and Intercomparison: Ellis, A. W. and **N. P. Barton**, "Characterizing the North Pacific Jet Stream for Understanding Historical Variability in the Western United States Winter Precipitation," Phys. Geogr. 33 (2). 105-128, 2012. http://dx.doi.org/10.2747/0272-3646.33.2.105

PLS/AEED/Climate Carbon Group and Energy Group: Joshuah Kane Stolaroff, **Subarna Bhattacharyya, Clara A. Smith**, William L. Bourcier, Philip J. Cameron-Smith, and Roger D. Aines, "A review of methane mitigation technologies with application to rapid release of methane from the Arctic," Environ. Sci. Technol. (accepted) 2012 http://dx.doi.org/10.1021/es204686w

WCI/AX Division: **J. L. Peterson**, R. Bell, J. Candy, W. Guttenfelder, G. W. Hammet, S. M. Kaye, B. LeBlanc, D. R. Mikkelsen, D. R. Smith, and H. Y. Yuh, "Suppressing electron turbulence and triggering internal transport barriers with reversed magnetic shear in the National Spherical Torus Experiment," Physics of Plasmas 19, 056120 (2012). http://pop.aip.org/resource/1/phpaen/v19/i5/p056120_s1

PLS/CMMD: **Nicholas P. Butch**, Jason R. Jeffries, and M. Brian Maple, Comment on "Details of Sample Dependence and Transport Properties of URu_2Si_2" J. Phys. Soc. Jpn. 81 (2012) 056001, 2012. http://jpsj.ipap.jp/link?JPSJ/81/056001/

PLS/CMMD: J. R. Jeffries, **N. P. Butch**, K. Kirshenbaum, S. R. Saha, G. Samudrala, S. T. Weir, Y. K. Vohra, and J. Paglione, "Suppression of magnetism and development of superconductivity within the collapsed tetragonal phase of $Ca_{0.67}Sr_{0.33}Fe_2As_2$ under pressure," Phys. Rev. B 85, 184501 (2012) http://link.aps.org/doi/10.1103/PhysRevB.85.184501

COMMENTS/SUGGESTIONS/PRAISE/COMPLAINTS?

Please send your feedback to the Editor (Nathan Kugland, kugland1@llnl.gov).

LLNL POSTDOC ASSOCIATION LEADERSHIP COUNCIL & TEAMS

President Nathan Kugland
Vice President Andre Schleife
Handbook Editor Mandoye Ndoye
Newsletter Team
David Alessi, Nick Be, David Martinez, Nathan Kugland
Web Team: Abhinav Bhatele, Charles Reid, Mandoye Ndoye
Social Events Team: Kirsten Howley, Andre Schleife
Career Development Team: Nick Be
Participating Councilmembers:
Lance Simms, Liam Stanton, Eric Wang, Heather Whitley
LLNL Postdoc Advisory Committee Staff Representatives
Kris Kulp, Christine Zachow