

The Restriction Digest

G.S.A. Newsletter

a publication of the
Graduate Student Association
Johns Hopkins University School of Medicine

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Commencement Speech

By Daniel Gorelick

Warning: this speech contains material on evolution. Evolution by natural selection is a theory, not a fact. This material should be approached with an open mind, studied carefully and critically considered.

If grade school textbooks were prevalent 350 years ago, they might have carried a similar warning about the then controversial theory that the earth orbits the sun. 250 years ago, textbooks might have admonished students to critically consider the controversial theory of gravity.

This evolutionary warning, appearing soon, perhaps, in a text book near you (unless you live in Cobb county, Georgia, where it has already appeared) implies that there is material which should be approached with a closed mind, studied carelessly, and favorably considered.

PhDs of 2005, welcome to the real world.

Apology

We here at the GSA newsletter wish to apologize to those readers who were offended by contributor Adele Foltinowicz's article in the March issue of *The Restriction Digest*. This article contained a review of the movie *The Sea Inside* in which the writer made a comment that some found upsetting.

In publishing this article, we hoped to amuse, not isolate members of our audience, and as such the reactions we received were both unforeseen and unfortunate. We regret any distress this article might have caused.

With that in mind, we would also like to take this opportunity to emphasize that we are a publication representing the student body, accepting submissions from students and publishing them without censorship except in extreme situations. We have always intended the newsletter to be an open forum where students can express themselves freely. Furthermore, the opinions of our student writers in no way reflect the views of the GSA or Johns Hopkins University.

We appreciate the readership of all students and faculty and gratefully accept any feedback. Letters to the editor (while unprecedented at *The Digest*) will be printed in unedited form with permission of the writer and anonymously if necessary.

Thank you for reading.

Sincerely,
The Editors of the Restriction Digest

Teacher of the Year

By Michael Rutlin

Dr. Rachel Green, the 2005 GSA Teacher of the Year, is straight from the Heartland, loves to dance and play bridge, and has no idea what she would do if she couldn't do science. Following are tidbits of our conversation on her journey thus far.

Let's start with background on how you've gotten to this point in your life in becoming the Teacher of the Year.

I'm from Cleveland, Ohio and went to the University of Michigan in Ann Arbor. I started out as an engineering major but that didn't last very long. I went to my first day of class for engineering and hated it because they told me where to write my name and what kind of pencil to use and that did not work for me. So I became a chemistry major. Eventually, I ended up working in a lab washing dishes and that's how I decided to become a scientist. I met the graduate students and liked what I saw...they finally let me touch pipettes the last summer I was there. I did Maxim-Gilbert sequencing for a whole summer and never got a gel that looked like anything useful.

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A world where a third of US teenagers think that Darwin's theory of evolution has not been well supported by evidence; where another third don't know enough about it to comment. Frankly I'm surprised that so many teenagers admit they don't know something.

I spend the last 5 years earning a PhD from Hopkins and while I'm gone the twin towers are destroyed, the Boston Red Sox win the World Series, and we twice elect a president who thinks "children ought to be exposed to different theories about how the world started" because "on the issue of evolution, the verdict is still out on how God created the Earth."

We are being unleashed into a world where educators and government officials are giving serious credence to the idea that features of the universe and of living things are best explained not by testable theories supported by evidence, but are best explained by un-testable theories, for which there is little evidence.

Some say that scientists have a duty to combat theories that are not based on credible proof, such as Intelligent Design. I think this point of view is too narrow. Instead of fighting a specific theory, we should increase the public's general scientific awareness. 450 years ago, the theory that the earth revolves around the sun was attacked. Today evolution by natural selection is under attack. Who knows what scientific theory will be illogically debased in the future? Perhaps a new religious sect will arise whose interpretation of the Bible will be at odds with the theory that genes are composed of DNA, or with the theory that ions enter and exit the cell via protein channels, or with any of a number of principles upon which we directly base our scientific research. We need to look past the current Creationist vogue and encourage the pub-

CONGRATULATIONS TO THE WINNERS OF THE 9TH ANNUAL GSA POSTER SESSION

Hopkins-PREP program:

- 1st - **Delia Silva** - "Growth Cone Guidance in the Hippocampus" - Alex Kolodkin's Lab
- 2nd - **Ileana Lorenzini** - "Enhancing Axon Regeneration through Peripheral Nerve Bridges via Multi-Inhibitor Blocking" - Ron Schnaar's Lab
- 3rd - **LaShon Ussin** - "Imidazole Restores Proteolytic Activity to a Mutant Cytomegalovirus" - Wade Gibson's Lab

1st/2nd Years:

- 1st - **Louis Dang** - "Notch3 in Forebrain Development and Cancer" - Nicholas Gaiano's Lab
- 2nd - **Lisa DiPilato** - "Fluorescent Indicators of cAMP: Resolving the Spatiotemporal Dynamics of cAMP Signaling" - Jin Zhang's Lab
- 3rd - **Saurabh Paliwal** - "Quantitative Characterization of the Pheromone Response and Gradient Sensing of Yeast Cells using a Novel Microfluidics-Based Approach" - Andre Levchenko's Lab

3rd/4th Years:

- 1st - **Curtis Chong** - "Identification of the anti-Angiogenic Effect of the Mycophenolic Acid and the anti-Malarial Effect of Astemizole" - Jun Liu's Lab
- 2nd (tied) - **Christa Brawley** - "Spermatogonial Dedifferentiation may be a Pre-Programmed Mechanism of Germline Stem Cell Repopulation in the Drosophila Testis" - Erika Matunis' Lab
- Kedar Narayan** - "Hydrogen Bond Formed between DR1B81His and the Peptide Main Chain is the Primary Target for DM Induced Peptide/MHC Complex Dissociation" - Scheherazade Sadegh-Nasseri's Lab
- Meenakshi Rao** - "Transmembrane Protein GDE2 Induces Motor Neuron Differentiation in vivo" - Shanthini Sockanathan's Lab

5th/above:

- 1st - **Chetan Bettgowda** - "Imaging Bacterial Infections with Radiolabel FIAU" - Bert Vogelstein's Lab
- 2nd - **Soo Hee Lee** - "Trypanosoma brucei uses a Microsomal Fatty Acid Elongation Pathway for de novo Fatty Acid Synthesis" - Paul England's Lab
- 3rd - **Chih-Ying Su** - "Phototransduction Mechanisms of Lizard Parietal-Eye Photoreceptor" King-Wai Yau's Lab

On behalf of the **School of Medicine Development & Alumni Relations Office and the Johns Hopkins Medical & Surgical Association**, we wish the 2005 graduates the best of luck!

Don't forget to keep your contact information current with us to ensure that you receive your free subscription to *Hopkins Medicine* magazine as well as updates on important news and information on future Biennial Meetings and Reunion Weekends.

If there is any way that our office can be a resource for you now or in the future, do not hesitate to contact us at 410-516-0776, 888-JHM-1336 (toll free), JHMalumni@jhmi.edu or One Charles Center, 100 North Charles Street, Suite 200, Baltimore, MD 21201.

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lic to think critically and carefully about all scientific matters.

That won't be easy. We may need to distill complex matters into their key essence. We should emphasize that we can't explain everything, and that good science unearths more questions than answers, and that theories change as new evidence is discovered. The onus on increasing scientific awareness is on us, not on the public. Scientific concepts like evolution, regenerative stem cells, and infectious prions are frequently in the news. The fact that science is so prevalent reflects—and enhances—the public's growing curiosity. We need to embrace this curiosity, and discuss science with friends, family and acquaintances. We need to answer their questions, not avoid them.

Unfortunately, this isn't something we were trained to do. Hopkins didn't offer a class on explaining somatic cell nuclear transfer to Grandma Mildred. But if we don't encourage scientific awareness, who will? Religious fundamentalists? Government officials?

There are organizations, such as the National Academies, that advise government officials on science policy, that hold forums and meetings to encourage scientific awareness among laypeople. These organizations, comprised of experienced scientists, are plotting grand strategies. Our careers, however, are just beginning. We don't need to take time away from our research to participate in science policy meetings, or appear on the news as scientific correspondents, or organize science awareness days. Going about our routine business, without taking much time away from our lab work, we have plenty of opportunities to discuss science with laypeople. In fact, we have an opportunity to increase scientific awareness today.

Friends and family in the audience, after these ceremonies are over, after you've welcomed your graduate back from the indeterminate length of time they've been away, ask them what they've been doing in the lab. Ask them for specifics. Keep pestering them until you are satisfied with their answer. There's no reason why you shouldn't understand what we do.

Today we evolve from a collection of students into a community of scientists. We now have a duty to share our enthusiasm with the public. Graduates, I wish you good luck.

SAP CORNER

The Self-Esteem Checkup **Deborah Hillard, Psy.D** **Student Assistance Program**

Most people's feelings and thoughts about themselves fluctuate somewhat based on their daily experiences. The grade you get on an exam, how your friends treat you, ups and downs in a romantic relationship-all can have a temporary impact on your wellbeing.

Your self-esteem, however, is something more fundamental than the normal "ups and downs" associated with situational changes. For people with good basic self-esteem, normal "ups and downs" may lead to temporary fluctuations in how they feel about themselves, but only to a limited extent. In contrast, for people with poor basic self-esteem, these "ups and downs" may make all the difference in the world.

People with poor self-esteem often rely on how they are doing in the present to determine how they feel about themselves. They need positive external experiences to counteract the negative feelings and thoughts that constantly plague them. Even then, the good feeling (from a good grade, etc.) can be temporary. In contrast, healthy self-esteem is based on our ability to assess ourselves accurately (know ourselves) and still be able to accept and to value ourselves unconditionally. This means being able to realistically acknowledge our strengths and limitations and at the same time accepting ourselves as worthy and worthwhile without conditions or reservations. What follows are some basic tips to help improve one's self-esteem:

- Decide that you want to change and accept that you can. Change begins the moment you decide. The changes may not come as quickly as you want, but with patience and persistence, it will come.

- Take inventory of your accomplishments. Look back over your life and list your accomplishments. Write down all you can think of, large and small accomplishments. You may be surprised to see that there are many more accomplishments than you thought there were.
- Raise your awareness of your "inner voice." Each of us has an inner voice we listen to. Listen to see whether yours is saying that you are a failure or a success. Write down something positive to say about yourself. Each time you hear your inner voice saying you are a failure, read your statement. Over time you will begin to change what your inner voice says.
- Praise yourself regularly. Negative self-talk accomplishes nothing. Focus on all the positive things you have in your life and affirm them. To increase your emotional prosperity, share what you have with others.
- Reward yourself for your accomplishments. Take pride in what you do and reward yourself for a job well done.
- Learn from your past. Look at what you may have learned from different setbacks in your life. Begin to use the word "setback" rather than failure. Find the lesson in each one.

Sometimes low self-esteem can feel so painful or difficult to overcome that the professional help of a therapist or counselor is needed. Talking to a counselor is a good way to learn more about your self-esteem issues and begin to improve your self-esteem. For more information about this topic or for assistance, please feel free to contact the Student Assistance Program (SAP) at (410) 955-1220 or visit our website at www.jhu.edu/sap.

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Were your mentors at Michigan supportive of your decision to go to grad school?

I would have to say that I lucked out. My view is that there's bias in the system and that, to maximize your chance of succeeding, you have to go to places like Hopkins, UCSF, Harvard, or MIT at some stage in your career. I didn't know that at the time and almost didn't go to Harvard, because I thought it wasn't my kind of place. It certainly wasn't the well thought-out plan that many of my friends seemed to have. They went to Harvard knowing "I want to work with Jon Beckwith studying secretion."

So it sounds as if things went quite well at Harvard?

Yes they did. What I tell people is that Harvard was really good for me. We worked in lab, hung out with friends, went dancing, and played bridge every Saturday night with my science pals.

For me, graduate school was great. I didn't have aspirations for money and was in no particular rush. My adviser (Jack Szostak) was great although he didn't pay much attention to me for quite a while. I think that's the risk of being in a big lab. One can get lost in the shuffle and then you can end up in trouble. As a scientist, Jack is phenomenal. He really approached problems like an engineer and was very successful. For example, in yeast he asked, "Can I make a linear vector that will be stable? It'll need a centromere, telomeres, and origins of replication." So he put these things together and it worked – that was the YAC. It's kind of what my graduate student experience was like. We were developing in vitro selection methods to isolate functional RNAs from very complex libraries of molecules. It was very engineering-oriented. And, it was a great lab filled with smart people – we had Dave Bartel, Jennifer Doudna, Jon Lorsch - all people who went on in the RNA field to do great stuff.

Was it a high stress environment?

The environment generally refers to your lab. Jack was always extremely supportive, but he didn't pay much attention to you if you were lacking data – so that was pressure, if you wish. Like many PI's he didn't have the time to see if my cloning had worked. Beyond that he was incredibly supportive. I really think the key is to pick a good adviser. Supportive, smart, interactive, these are things people should look for.

Do you feel that you take the same approach with your own lab?

It is not always a conscious thing. I'm amazed at how much I don't pay attention to the everyday details. I have no idea how they do their clonings for example. And yet I still get impatient when I think that it's taking too long for something to work.

After graduate school you then went on to do post doctoral work in the lab of Harry Noller at UC-Santa Cruz.

Yes, it was another excellent situation. I feel like I've been in the right place at the right time. I was in Harry's lab before the crystal structure of the ribosome was solved and it came out just as I was leaving. Harry is an amazing scientist – but a different style than Jack – and he was also extremely supportive. It was an exciting time to be in the ribosome field and there was good interest from outside the ribosome field in what we were doing. And, again, I overlapped there with fantastic people.

So when during these endeavors did you meet Brendan?

I actually ran the synthesizer in Jack's lab and Brendan rotated in Jack's lab and needed lots of oligos. Brendan had gone to Harvard to work in Jack's lab because of all the great things he had done in yeast ... but Jack was no longer taking people to work on yeast and Brendan was not convinced that RNA had much of a future! He eventually landed in Kevin Struhl's lab where he was able to work in yeast. We got married when we left Boston, I went to Santa Cruz and Brendan went to Stanford. We lived halfway between both cities in the beginning and then once the baby (Eric, now 9) was born we moved to Santa Cruz. This was in 1996 and I was in the 3rd year of my post doc.

Had you always considered landing a job in academics to be the grand prize or were you open to anything?

Again, I don't think I thought about this too carefully. I definitely wanted to do academics if I could. I liked the life, the intellectual excitement and the freedom to do what I wanted without worrying about profitability. The whole rigidity of the business world was not what I was looking for.

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Besides the graduate students, what made you and Brendan decide that Hopkins is where you wanted to be?

Well that was number one of course. There was something special that we sensed at Hopkins, a cohesive feel to the department. When we gave our job talks everybody showed up, asked questions and seemed genuinely interested. They had good party manners. Also I have family in Baltimore - my parents grew up here and I have a brother down the road. It's a great place for us to be with our family. It also became clear that as we traveled around the country that great science exists in many places and we could have been happy at any of them. In addition to the Baltimore family connections, Hopkins seemed to be the place where people balanced academics and family. You weren't going to be the anomaly here in trying to have both. One other thing that struck me was that whenever I ran into Hopkins students out in the scientific world, they couldn't stop talking about their wonderful experiences as a graduate student. Sometimes this perspective only emerges after one has left the place and sampled a new environment.

One thing that I like about graduate school at Hopkins is that there seems to be constant focus on getting us out of here in a timely manner.

For me 6 years at Harvard was not a problem. I was 22 when I started and in no rush. But if you've been a tech for 4 years then you might think about moving faster. That said, my view is that if you've worked your system to a point where it's ready to yield a number of things then to leave would not be my best advice. If you have done significant work in getting a system up and running and there are good obvious questions to ask, then stick with it longer to reap some of the benefits of your hard work.

Switching gears a little bit, what would you do if science were not an option?

You mean if it couldn't be science related?

Yes, anything but science.

A mother. I have to be honest there's an urge to stay home. Most certainly I wouldn't be a lawyer, I would just hate arguing all the time about stuff like that though it seems to be something

that many scientists go on to do. Like many of my friends, I certainly thought about being an MD for a while but I get too stressed out about sickness.

You mean germs?

No I just think that the responsibility of being a doctor is huge. At the end of the day it's people's lives and not just some bacteria.

Now that your lab has taken off do you feel obligated to your lab members insofar as getting them jobs?

Most definitely. And when I really sit and think about it I get panicky. I've had 2 students graduate with 3 more coming up and everyone's in good shape. I guess that what I would like is to help them meet their goals, whatever they might be.

What about postdocs in your lab who are looking for jobs?

It is stressful to think about my post docs looking for jobs in a few years. I know people at my stage that hesitate to take post docs because they don't want that responsibility. I have taken post-docs but I do worry; on the other hand, I have faith in the system; if you are smart and work hard on an important question, things generally work out.

That's fine but we still haven't really figured out something non-science related that you could do.

OK, I'll go to Washington and argue with people about evolution. That's an important issue that I get impassioned about. This stems from the fact that my mother was the nature lady in the town I grew up in and she would lecture schoolchildren about the origins of the hills and earth and stuff like that. On second thought I couldn't do this either, it would drive me crazy!

Since this is for the graduate students, my next question is, "What is your ideal graduate student?"

My ideal student is someone who is excited. There are lots of other jobs that pay better and have better hours than when you're a grad student so you'd better be doing it because you think it's fun and exciting. I want the student to

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be excited enough to be reading papers and sharing the ideas and getting new ideas and so on – that is my idea of how science is fun.

When I go into my lab, I want to talk science. I want my students to have ideas and argue with me. I'm not that smart so I want someone who will say, "No, if you do it this way, then this is going to happen." I'm not looking for someone who will nod his/her head and do what I say. I want a lab full of people that are as excited about science as I am.

How do you pull off the high-profile lab and swing having a family?

Well, you're often torn. My decision was "I'm going to have kids and do science on my terms. And kids come first." I think I've got a lot of great models around here – very senior and famous scientists who go home early to watch their kids play sports or do music. Also, though this may get me fired... we work pretty regular hours and very rarely work on weekends. What we decided against in the beginning was trying to figure out how the other could go in while one stayed home to get in a few extra hours. We just don't do that. If we have a grant or meeting coming up, then of course we compensate, but otherwise no. And, I don't go home and agonize all weekend that I'm not working—I'm not that conflicted.

What you'll find is that as you go through science that there is a contest to see how many hours you can put in. Some grad students may work until midnight but they generally arrive well after lunch. The one that works till midnight does not necessarily work any harder or more effectively than the one that works consistently from 9am-6pm – and they miss out on important interactions with the rest of the lab and department. I would say that my scientific models didn't necessarily put in the longest hours – they just seemed to work very effectively during the hours they were there. We used to joke that Jack would come in at 10:30, sit on the couch and read *Science*, and then go home at 4 – now this of course isn't true but hours logged weren't the basis for his success. I don't think it's hours...lots of hours is good if you can be productive for most of them – but the alternative model also works where you put in reasonable hours and are highly productive during all of them.

NIH and NCI Funding is Down. How Will It Affect Your Future?

By Ivan V. Litvinov (CMM Representative to the GSA)

In recent years, the current White House administration has completed the doubling of the NIH budget from \$13.7 billion to \$27.2 billion. As evident on our campus and other campuses nation-wide, this funding increase resulted in an increase in hiring of biomedical faculty, growth and creation of new graduate programs and construction of new research facilities, all eventually leading to an improved understanding and treatment of complex diseases like cancer, neurodegenerative and cardiovascular diseases. As a result of this boom in research, for cancer specifically, the survival rate has increased to nearly 64% with many cancers to now having a survival rate of better than 90%.

However, recent data indicates that the NIH funding is going to be significantly reduced and will not be able to sustain biomedical research at its current level. The above was one of the main issues discussed at the recent American Association for Cancer Research (AACR) meeting in Anaheim, CA. Scientists at the AACR are gravely concerned about the funding outlook for the future. In particular, according to the National Cancer Institute (NCI) Director, due to reduced funding in 2004, NCI was effectively operating with a budget that was \$2.7 million less than in 2003, while in 2005 NCI was effectively operating with a budget that was \$62 million less than in 2004! The above budget drop has reflected itself in lowering of the grant success rate. The NCI grant success rate has dropped from 33% (before the doubling) to 24% in 2004 and to 21% in 2005. Currently the payline to percentile grants in NCI is estimated to be only 16%! The decrease in funding also resulted in cutting of NCI staffing by 5% in 2005. The funding trends in other institutes of the NIH are similar that of the NCI.

Recently, the President George W. Bush Jr. has put forth his proposed budget for the 2006 fiscal year. The President Bush has requested only a 0.68% increase to an NIH budget. Considering that the current rate of inflation is 3.5%, the above funding increase is clearly inadequate not only to sustain growth, but to retain the achieved level of research. With this predicted 0.68% increase in NIH funding it is anticipated that there will be 402 fewer NIH grants funded in 2006. These changes will primarily affect the young investigators writing their first or second grant (meaning US in the near future). We will have the hardest time competing for the federal dollar for it is true that the “seasoned” investigators with an established research program will be more likely to be among the lucky 16% of funded grants.

Besides the poor career prognosis for young investigators, our nation will face a much greater problem if the NIH funding is not increased. Primarily, our ability to improve treatment and ultimately cure challenging diseases like cancer will be severely compromised. The above is clearly significant considering that aging of baby boomers will result in an increased number of cancer cases and other age-related maladies. Despite our recent advances, diseases like cancer remain a major national healthcare problem. It was estimated that 1,372,910 cancer cases were diagnosed in 2005, while 570,280 Americans died of cancer in 2005. Currently, AACR estimates that 1 out of every 2 men and 1 out of every 3 women will get cancer or die of cancer in their lifetime. It is also important to stress how much diseases like cancer are draining our economy. For instance, the direct and indirect cost of cancer in 2004 was estimated to be greater than \$189 billion dollars (current NCI budget is \$4.84 billion).

At this point we, the biomedical community, truly have the resources and the understanding to tackle these complex diseases and to eliminate death and suffering from these maladies. Hence, this is the critical time, when it is necessary to fund

the biomedical research despite the present and future budget deficits. I urge you to contact your senators and congressmen this month and demand to increased overall funding for the NIH for the 2006 fiscal year. The congress is expected to shake out the 2006 fiscal year budget by October 2005. A sample letter put forth by the AACR can be found on the Restriction Digest website (www.hopkinsmedicine.org/gsa/newsletter) in Microsoft Word Format, that one can modify (depending on the disease studied) and send to your congressmen and/or senators. **MOST IMPORTANTLY, TRUST US, SENATORS DO READ YOUR LETTERS!**

Upcoming Professional Development Events

The Professional Development Office is sponsoring two services this summer for grad students and postdocs in the School of Medicine, School of Public Health, and School of Nursing.

Biomedical Communications

This intensive five-day summer course focuses on four topics that are critical to your academic career: grant writing, writing a research paper, giving an oral presentation, and the communication skills you need to obtain a job. There is no cost for JHU graduate students and postdocs, but *registration is required*. You can obtain registration instructions by emailing jhmipdo@jhmi.edu.

Dates: July 11 – 15, 2005

Time: 8 AM – 12 PM

Place: Wood Basic Science Auditorium, Floor G

Resume Lunches

Our program coordinator, Geoffrey Witham, is now holding resume lunches on the second and fourth Thursdays of each month. Bring some food, bring a resume, and get feedback from Geoff and from your peers. There is no cost for JHU grad students and postdocs, but *registration is required*. To register, email Geoff the date you prefer, along with a copy of your resume/CV in Word or Acrobat format, at gwitham@jhmi.edu.

Dates: June 9, June 23, July 14, July 28, August 12, or August 26

Time: Noon – 1:00 PM (or so)

Place: 1830 E. Monument Street, Suite 2-303

Class of 2005 Masters of Arts The School of Medicine

**Karen Leigh Bucher, Alison Esther Burke, Harsha Kurpad, Leslie Ann Leonard, Gregory Lopez,
Christopher A. Rufo, Shahana Sarkar**

Class of 2005 Doctors of Philosophy The School of Medicine

**Onikepe Adetoun Adegbola, Heather Lynn Agler, Tudor Constantin Badea, Kelsie Maredith Bernot,
Chetan Bettegowda, Vikas Bhandawat, Nicholas Paul Bianchi, Christopher Leonard Brett, Corinne
Bright, Edward John Brignole III, Rebecca Jean Casaday, Kara Lynn Cerveney, Zhiying Chang, Daniel
Marc Cohen, Brian Scott Cornblatt, Christian d'Avignon-Aubut, Daniel Bruce Ennis, Jill Ann Fahrner,
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Gorelick, Darren Scott Gray, Nini Guo, Jeffrey Han, Ling-Yang Hao, Patrick Anthony Helm, Zhiyuan
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Allison Brooke Kavey, Tina Kiang, Tara Lynn Kieffer, Paul Moonwhan Kim, Edward Lukianos Isak Knapp,
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Annastasia Mudiwa Mhaka, Shawn Andrew Mikula, Daphne Lynn Monie, Craig Norman Morrell,
Stephanie Kane Mummert, Jason Charles Mussell, Akash Nanda, Hirsh Nanda, Emily L. Niemitz,
Mutsuo Nuriya, Kathryn Ann O'Donnell, Rebecca Courtney Osthus, Andrew Mark Page, Jason Paul
Pellettieri, Devrim Pesen, Brock Andrew Peters, Harith Rajagopalan, Radhika Chinthamani Reddy,
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Tan, Yvette Co Tanhehco, Francois Therrien, Van-Khue Thien Ton, Christopher Ernest Von Seggern,
Yinghong Wang, Soon-Boon Justin Wong, Tian Xue, Lin Lin Linda Yang, Chi Zhang, Haili Zhang,
Jiangyang Zhang, Ann Christine Zumwalt**

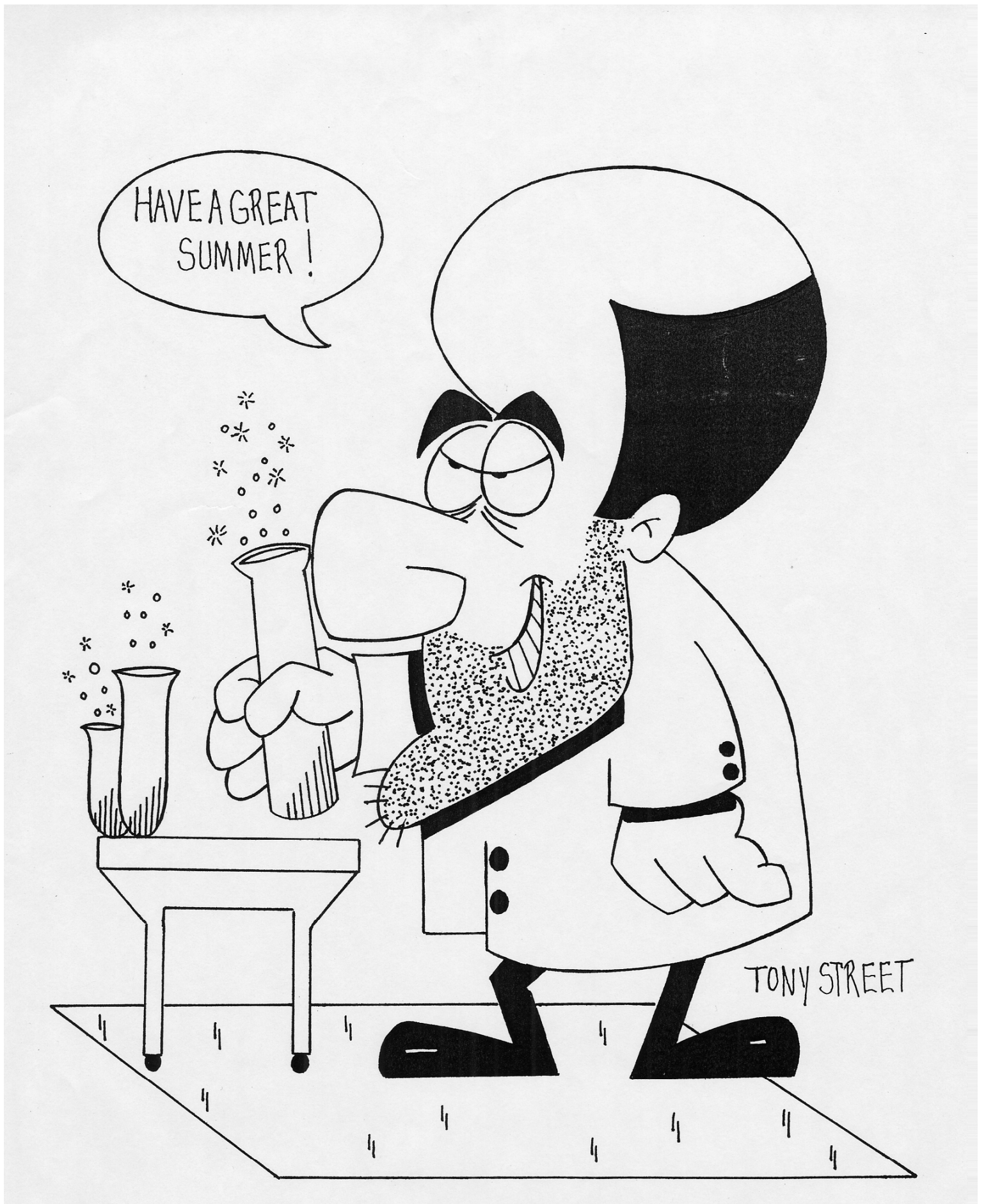


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**[http://www.hopkinsmedicine.org/gsa/
news.html](http://www.hopkinsmedicine.org/gsa/news.html)**

Next Deadline: August 15, 2005





The Restriction Digest

G.S.A. Newsletter

a publication of the
Graduate Student Association
Johns Hopkins University School of Medicine

Supplemental Volume

Number 1

June 2005

Every year, the GSA funds graduate students traveling to conferences. As part of the deal, the travel awardees are required to write about their experiences. Since so many awardees have submitted articles, the Restriction Digest is publishing them in this Supplementary Volume. Enjoy!

Travel Essay By Jason Organ

With funding from GSA, I was able to attend the 74th annual meeting of the American Association of Physical Anthropologists (AAPA). The meeting, occurring from April 6 to April 10, 2005, took place in Milwaukee, Wisconsin. Meeting in conjunction with the American Association of Anthropological Genetics, the American Dermatoglyphics Association, the Dental Anthropology Association, the Human Biology Association, the Paleoanthropology Society, the Paleopathology Association, and the Primate Biology and Behavior Interest Group, the AAPA meetings featured 651 podium/poster presentations with a total of nearly 1,250 authors participating.

In a session entitled Skeletal Biology III, I presented a poster entitled "Chewing biomechanics in *Sus scrofa*: how do mandibular cross-sectional properties and dental microwear compare along the tooth row?" co-authored with my two primary advisors, Drs. Chris Ruff and Mark Teaford, and with Dr. Richard Nisbett of Rice University. In that study, we examined bending strength properties of pig jaws in relation to the sizes of pits and scratches on those pigs' molars and

Travel Essay By Elizabeth Reichl

This past July, I went to a summer ASCB conference on cytokinesis. Cytokinesis is the process by which a mother cell divides to form two daughter cells. This was the first ASCB conference devoted entirely to cytokinesis. Cytokinesis has been an active area of research since the first microscopes were built and microscopic cells could be seen to divide. Remarkably, despite this long history, the fundamental mechanisms by which cells divide are still not well-understood.

The keynote speaker of the conference was Ray Rappaport. Dr. Rappaport has been a pioneer in the cytokinesis field since his first article was published in the *Journal of Experimental Zoology* in 1961. As noted by Thomas Pollard, Rappaport's studies established the fundamental rules for how the mitotic apparatus determines the position of the cleavage furrow (1). Remarkably, these insights were based on experiments that lacked many of the tools that are prerequisites for modern assays such as molecular biology, biochemistry, or even antibodies. Rappaport's main tools were an inverted microscope, a microforge, a centrifuge, micromanipulators, and his handmade observation chambers. This simple approach even extends today as Dr.

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premolars. The presentation was well attended and well received, and we are in the process of preparing it for publication.

As my research interests are heavily geared to bone-muscle interactions and their relations and responses to behavior, I was especially impressed with one particular symposium focusing on the anatomy, behavioral ecology, phylogeny, and conservation of callitrichine primates (Platyrrhini: marmosets and tamarins). In this symposium, featuring 13 posters, presentations ranged from a re-evaluation of callitrichine evolutionary history, to a comparative study of the kinematics of leaping in these animals, to an analysis of allometry and heterochrony in the evolution of skull shape, to an assessment of jaw-muscle fiber architecture in specialized tree-gouging marmosets. Making this symposium even more important was the fact that all of the research presented there was unpublished and up-to-date. During this symposium, I was able to interact with leading authorities in non-human primate bone and muscle histology, which eventually enabled to me to secure much of the material I will need for my future research. In all, this symposium was the highlight of my meeting.

Because this meeting was packed full of research presentations, there was very little time for exploring the city of Milwaukee. However, a group of us did find the time to visit the Mitchell Park Horticultural Conservatory, which is a complex of three "biodomes", each representing a different ecosystem with an array of plant life endemic to those ecosystems. One of the domes in particular, the Arid Dome, represents the deserts of Africa, Madagascar, North and South America, and houses one of the largest collections of cacti, succulents, and arid-land shrubs in the United States. All said, the trip to Milwaukee was an incredible experience, and the AAPA meetings this year were more beneficial for my particular research interests than they have in the past.

Rappaport's keynote speech was a "chalk-talk," given without the use of computer, much less powerpoint. One of the most striking aspects of the speech the demonstration of how simple hypotheses addressed by simple experiments can yield tremendous insight into how cells carryout intricate tasks.

The cytokinesis field (albeit from an insiders point-of-view) is one of the most varied, encompassing cell signaling, cell mechanics, and cell development. Indeed, a cell undergoing cytokinesis utilizes essentially all its machinery from membrane trafficking to nuclear transport (2,3). The meeting was especially valuable as it provided a "big-picture" view of the many different disciplines that are integral components of the cytokinesis field. Some of the major areas of study discussed at the meeting are microtubules, actin, and associated proteins. A call was made to standardize the protein nomenclature between species, which is a problem every graduate student faces. Another recurrent theme throughout the meeting was the need for more quantitative approaches in cytokinesis research. One of the reasons why cytokinesis is not better understood is because there is no available reconstitution system in order to analyze the role of each protein in the process.

The summer ASCB meeting at the University of Vermont was not all seminars and poster sessions for me. It also provided a time to meet the important figures in the field socially and to bond with the members of my lab. Lab members are somewhere at the intersection of coworkers, friends, and family. After braving the university's air-conditioning-free dormitories and enjoying the shopping and local brewery, we had formed stronger ties with one another. We came back from the meeting full of new ideas and questions as well as a greater respect for one another.

Travel Essay

By Sathya Ravichandran

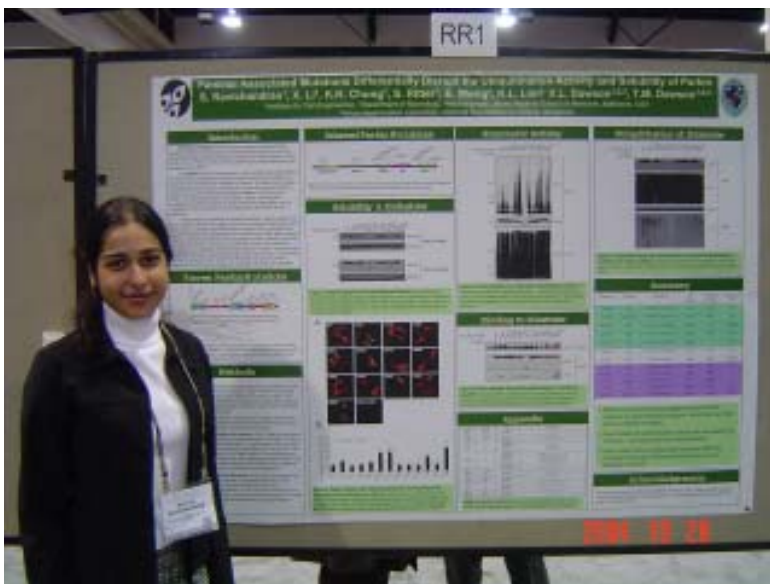
I attended the Society for Neuroscience conference from October 22 to 27 this year in San Diego. A fairly large conference, over 30,000 attendees from all over the world came together to share their work in neuroscience. An established tradition for several years now, a well-attended Neurobiology of Disease workshop was organized on October 21, with talks by eminent scientists – Dennis Selkoe, Virginia Lee, Richard Morimoto and Stuart Lipton – in the morning, followed by an afternoon discussion session on issues in the research of neurodegenerative diseases. While most data presented was already published, the workshop covered a vast range of subjects and was helpful in bringing the research in the field together. After a stimulating yet exhausting day in the workshop, Karen (fellow graduate student in my lab) and I decided to explore parts of the city and found ourselves walking in Old Town San Diego, with its unique festive ambience in the area, and the eclectic array of stores.

The highlights of the conference itself included an entertaining talk on fly genetics by veteran Seymour Benzer on Saturday, and a Presidential Symposium on neurodegeneration on Sunday, featuring talks on Parkinson's disease, Amyotrophic Lateral Sclerosis, and

Huntington's disease. Further, dedicated poster sessions and talks in my area of interest (Parkinson's Disease, and Parkin) kept me busy through Monday, including my own poster presentation. Most researchers in the field were excited about the discovery of most recent gene that had been published the day before the conference began. Further, some new and interesting data were shown linking some of the PD-associated genes in similar pathways, and also linking environmental stresses to these genes, thus suggesting a link between the sporadic and genetic forms of the disease. There was keen interest in the genetics of Parkinson's disease, since they give us a starting point to studying the pathways that are disrupted in the disease that lead to neurodegeneration. Several people stopped by my poster on the disrupted functions of selected parkin point mutants and it was exciting to meet with scientists, who I had only known so far by name and publication!

San Diego was a fun city – one evening, some friends and I took the ferry across to Coronado Island and saw the sun set on the beach – it was one of the most beautiful sights I had ever seen. Restaurants in the Old Town area and Gas Lamp Quarter are fantastic, while there is a mall with a food court for lunches at reasonable prices. On one of the evenings, our lab went out for dinner – it was a good bonding experience to hang out with post-docs and graduate students outside of the lab.

While there was a sufficient focus on my area of research, the size of the meeting made it difficult to cover all the sessions that I wanted to attend; further, there was such an overdose of information that after the third day at the conference, it felt like the talks were getting repetitive. Attending a meeting of such a large size is good to get a broad overview of neuroscience, but I think I'd like to attend a smaller meeting in the future to get more out of the conference itself.



Travel Essay

By Francois Therrien

The annual meeting of the Society of Vertebrate Paleontology was held October 15-18 in St. Paul, Minnesota. This meeting attracts a large crowd of scientists from all over the world (usually around 1,000 people) who congregate to discuss new findings, establish new collaborations, and renew friendships, all of the above occurring as much at talk and poster sessions as well as at the local bars. Such a meeting is the ideal occasion for graduate students to rub elbows with professionals, learn about research and work opportunities, and of course share joyful and painful research-related stories with a sympathetic audience.

During those four days of October, talk and poster sessions succeed one another into a maelstrom of PowerPoint presentations, pictures, graphs, and text. Presentations address various aspects of paleobiological research, from the most recent discoveries of mammal and dinosaur specimens made during digs in far away lands to computer models that aim at reconstructing the appearance and behavior of long extinct organisms. Talks begin at 8 am, which is far too early to be able to focus clearly (especially if you hung out late the night before), and can go on until 5:45 pm.

The first day of the meeting consists in a series of symposia on specific paleontological topics with invited speakers. Unless one of the symposia is of particular interest to you, the first day is generally spent catching up with friends you haven't seen since the previous meeting. To maximize your chances of meeting people of interest, a reception is held on the first night. The reception is usually held at the local museum of natural history, which allows you to visit the exhibits at the same time as you enjoy drinks and good company (which is the best way to appreciate those exhibits in the first place!).

The following three days of the meeting consists in the general talk and poster sessions, where presentations addressing related topics are grouped together. The results presented vary from preliminary reports of ongoing research to results that are currently in press or updates on papers that have been recently published. Generally, the content of at least one or two presentations will make the headlines of newspapers or news reports in the weeks following the meeting.

One (after-hour) event warrants your attendance at this meeting: the auction night. The auction night, held on the second-to-last night, is the most entertaining evening of the meeting. A silent auction is held where anything from long-sought reprints or books to t-shirts and toys, all donated either by society members or sponsors, are sold. The 2 hour-long silent auction culminates in the final 5 minutes where people compete and overbid one another for the object of their desire. Following the silent auction comes the long-awaited event of the evening, the live auction. This is the time when a few members of the society, after having ingested a decent amount of alcohol, climb on stage and proceed to sell great merchandise, such as extremely rare books or casts of specimens, and make fun of various people, including themselves. This is an event that cannot be missed.

Finally, a free banquet is held on the last night of the meeting, before everybody flies back home. Excellent food accompanied by flowing alcohol ensures that quite a few humorous stories will happen and will be the topic of gossip for several meetings to come. Good times, ah yes, good times...

Travel Essay

By Anne Marie Boustani

The Association of Medical Illustrators is an organization that provides services for medical illustrators in North America. Every year, the AMI hosts a conference in a designated city. This year's meeting was held in New Orleans, LA. As you can imagine, nobody really wants to pass up a chance to hang out in New Orleans, so the meeting was very well-attended. I'm not too good at estimating, but I'll guess 200 people were in attendance.

The AMI is an organization that serves to educate, enrich, and support its members, students and professionals alike. At the annual conference, there are usually several days of events. One of the most interesting is a techniques festival in which some of the most admired artists demonstrate techniques they use to create some of their trademark illustrations. One of those artists is Fred Harwin. He creates beautifully detailed illustrations of the anatomy of the eye. In fact, he was the subject of a short documentary film called the "Ocularist" that competed in the Sundance festival. In addition to artistic techniques, new technologies that are available on the market are introduced. For example, demonstrations of 3D animation programs and the "CINTIQ" tablet used for computer illustrations are just a few of the new modes of creating and designing medical illustrations.

One of the most helpful seminars for a new illustrator is one in which a panel of four established freelance illustrators share their business savvy. This session is quite helpful in allowing illustrators to get an idea of how other illustrators establish and maintain successful freelance businesses. These illustrators shared how they get clients and keep them, archive their illustrations, find accountants, and write contracts, etc. There are so many aspects to having a freelance business that this session is, in my opinion, one of the most practical and useful.

In general, medical illustrators don't shy away from fun, and there was a lot of it to be had in New Orleans. Whether it was leisurely walks along the Garden District or a romping good time at a Jazz Club off Bourbon St., medical illustrators did it with zest and enthusiasm. I have to say, though, that one of the best things about belonging to an organization like the AMI and attending these annual conferences, is that I can meet and become friends with other illustrators from all over the country. I feel a sense of camaraderie and friendship that energizes me when I get back to work. The people I met for the first time last year were like old friends this year, and I think those kinds of connections serve the field of medical illustration well. I feel like I can contact fellow illustrators and ask questions about anything from computer glitches to intellectual property laws, and that is important in a field that changes so often.

Travel Essay By Amy Chew

The annual meeting of the Society of Vertebrate Paleontology convened this year in St. Paul, MN, from Oct. 15-19. The conference was held in the Radisson Riverfront Hotel, overlooking the Mississippi river. We were lucky, enjoying beautiful weather in the few moments we could snatch from the conference to explore the city. The hotel was beautiful but the food was expensive, forcing many of the graduate students in attendance to try some of the surrounding restaurants. St. Paul is charming, dotted with statues of Peanuts cartoon characters (similar to the Baltimore fish), in celebration of the birthplace of Charles Schultz. Our hotel was right in the city's center, surrounded by beautiful churches, stately government buildings, and of course, the NPR broadcast center. Many of the more modern business buildings are joined by a complex trail of glassed-in walkways, presumably to protect pedestrians from harsh winter weather.

The conference began with talks in three special symposia on Wednesday at 8am, running until late in the afternoon. That evening, there was an opening reception in the Science Museum of Minnesota, a few blocks from the hotel. The intricate, interactive exhibits on basic physical concepts for children provided much entertainment for conference-goers as did the excellent natural history exhibits, featuring a few of the more well-known fossil creatures. Talks began in earnest Thursday and ran through until Saturday afternoon, with enormous poster sessions in the late afternoons of Thursday and Friday. I presented a poster on the evolutionary patterns of the earliest fossil horses, which my advisor and his colleagues and students have been collecting from the central Bighorn Basin in Wyoming for more than thirty years. Last minute printing problems (blame new technology at Kinkos!) forced me to present a poster nearly a squared foot smaller than I had planned. This unexpected size reduction led to very small text and figures, which was unfortunate as my sample included 16,363 specimens and I had a lot to say about them. But it wasn't as bad as I had thought and I had many people stop by my poster both during and after my scheduled session.

Friday evening, we headed back to the Science Museum for our society's annual auction. Both a silent and live auction of donated materials yearly raises thousands of dollars that will be dedicated to education outreach programs. The auction is well-known for the goofy costumes and pranks of the auctioneers, and this year was quite entertaining. The turnout was excellent and a lot of money was raised for the cause. On Saturday evening, the closing banquet was held in the Radisson's ballroom. The food was excellent with free bottles of wine at each table. The society gives out several annual prizes and awards at the banquet. Speeches by the recipients of this year's honors were short but gracious. There is always a lot of lively conversation and cheer at the annual banquet and for the last few years we have had some post-banquet dancing. This year was no exception, and the dancing lasted until 2am. Conference goers straggled back to their respective homes on Sunday tired and hung-over, but with many fond memories of this year's conference and inspired by excellent talks and conversation to renew and refine research efforts during the year to come.

Science, Sun & Fun By Ronald P. Jean

For a graduate student, summer is the ideal time for research: no teaching, no courses, just uninterrupted time for benchwork. Unfortunately, as happens more often than not, experiments go wrong, the long summer days are spent in lab, and the monotony of tasks all put you in the doldrums (actually, this happens all year long, but it's felt most poignantly in the summer). Knowing well beforehand that I had to break up the tedium of my summer research, I signed up to attend a conference in late June. What a good decision.

The American Society of Mechanical Engineers (ASME) Summer Bioengineering Conference was held at the Sonesta Key Biscayne Resort, just south of Miami. As one would expect, the topics were of a broad biomechanical nature, including tissue engineering, cardiovascular mechanics, bone mechanics, and bio-MEMS. The number of attendees was around a thousand, so grabbing a meal or getting around was not as difficult as it would be at larger conferences. Sessions consisted mainly of talks, with posters reserved for the undergraduate, masters, and Ph.D.-level competitions (though it was possible for students to get a talk). Most of the research presented at the podium sessions was either published or presented before, so if you're in an established research area and have been to another conference in the past few months, you'll see the same cast of characters. However, most of the big names in each of these biomechanics subfields show up, and given the generous breaks, you can talk to them to get some excellent feedback on your research. These leading scientists are also very approachable here, probably due to the relaxed, tropical atmosphere.

Activities near the conference were abundant. For those who just wanted to stay at the resort, there was a spa, pool, and tennis court, not to mention the expansive beachfront touching the sparkling turquoise waters of the Atlantic Ocean. With Miami only 10-15 minutes away, those who wanted to visit the many shops, restaurants, and clubs of that chic city could easily do so. Of course, the true gems of southern Florida are its natural attractions, and those nature lovers willing to travel a few hours were grandly rewarded. To the west of Key Biscayne is the expansive Everglades national park where visitors can see alligators, rare birds, unique plants, and – if you're lucky – the endangered Florida panther. Heading southwest from Key Biscayne, one arrives at the Florida Keys, renowned for their underwater reefs, great fishing, and locals' carefree attitude.

The bottom line is that this was a great conference! The meeting site was a great location with many things to do both in and around Key Biscayne. There were ample opportunities to have interesting discussions with leading researchers – about your research! The best thing for me, though, was returning to the lab and not regretting my week of absence. Not at all.

Travel Essay

Jennifer Dunston

This past summer I had the opportunity to travel to Chester, England for the first Nail Patella Syndrome (UK) conference. Nail Patella Syndrome (NPS) has an autosomal dominant pattern of inheritance and is typically characterized by nail dysplasia, absent/hypoplastic patellae, elbow dysplasia and exostoses of the ilia (iliac horns). Attending this meeting was an opportunity for me to give an educational talk on genetics and to collect patient data. Yet, I nearly didn't make it to Chester.

It all started the day before I was scheduled to leave. I stupidly left the headlights on in my car after parking in the Fallsway lot. When my car failed to start, I realized that I needed a jump-start. Luckily, I own a set of jumper cables and was able to find someone to help me start my car. Unfortunately, once the car was started, I couldn't get my hood to latch shut. After multiple attempts, I gave up and drove 25 miles home to Abingdon on the safety latch. My husband fixed the latch that evening and I didn't give it a second thought.

Since my plane to England didn't leave until the evening, I spent the morning running errands around town. When I took my luggage out to the car to go to the airport, I noticed that the hood had popped up again. I couldn't get it to close and didn't know what to do. I figured that I had made it home the previous day, so I should be able to make the 35 mile trip to the airport.

As I was driving down the highway, I noticed that the hood was violently shaking. It could have flown up at any moment. Luckily, I made it to the Whitemarsh exit and pulled into the Exxon station. The repairman assured me that I could not drive to the airport but he would be willing to repair my car and keep it for me until I returned from my trip. Thankfully, my husband was able to rescue me and drive me to the airport.

I just made my plane, so it wasn't a surprise when my luggage didn't make it all the way to England. You might think that the first thing on my agenda once I

arrived would be to check out the historical aspects of the town. Maybe I should have visited the Grosvenor Museum or gone on a walking tour of the Roman walls. Instead, I went shopping. In addition to being an old Roman town, Chester is known for its wonderful shops. I was able to spend the \$50 allotted by the airline and found a few good bargains including a pair of GAP jeans for 15 GBP.

My luggage did arrive the next day. By that point, it seemed like I had over packed for the trip, since I had only one more day left. At least I had something nice to wear for the conference, which was the reason that I was in Chester. The day of the conference, I gave my talk. I walked up to the front of the room, and introduced myself to the audience. Then, I proceeded to give information pertaining to the diagrams on my slides, which explained the process of turning genes on and converting DNA sequence to a protein machine. I also covered the topic of autosomal dominant inheritance. For the remainder of the day I took digital photographs of patient's hands. I enjoyed talking with the patients and am thankful for their participation in my research. Without the help of the NPS patients, my thesis research would not have been possible.

For information on Nail Patella Syndrome and the UK conference, check out the following web sites: www.nps.uk.org and http://www.geocities.com/nailpatella_syndrome_worldwide/nonprofit.html.



A good example of an individual with "severe" nail dysplasia (Often, only the thumb and index finger are affected). You can see changes such as short, narrow nails and nails divided by a cleft of skin. As usual, the severity of the dysplasia is symmetrical between the right and left hand.

Travel Essay

Tonya Penkrot

This year's meeting of the Society of Vertebrate Paleontology (SVP) was held at the Radisson Riverfront Hotel in St. Paul, Minnesota from Wednesday, October 15 to Saturday, October 18, 2003. I am a fourth-year Ph. D. student, and this was my third SVP meeting (the other two being Bozeman, Montana, in 2001, and Norman, Oklahoma, in 2002).

Except for the venue, of course, this year's SVP proceeded much like those of previous years: Most meeting participants arrived at the meeting on the Tuesday (October 14) before the conference actually began to socialize with colleagues in the bar. As in past years, the first day of the meeting (Wednesday, October 15) consisted of a day of various symposia. This year's topics included: "Evolutionary Transitions among Vertebrates" and the Preparators' Symposium in the morning, and "High-latitude Mesozoic and Cenozoic Vertebrates: Evolution, Paleoclimate, and Paleogeography" and "Biomineralization: Patterns, Processes, and Analysis of Modern and Fossil Vertebrate Skeletal Tissues" in the afternoon. The first social event of the meeting also occurs on the Wednesday evening—the welcome reception. This event was held at the Science Museum of Minnesota, and included service of some light food and multiple cash bars.

The first major difference between this year's SVP and those of previous years was the combining of the Romer Prize Session and the Plenary Session. The Plenary Session of talks, unopposed by any other session or event in the SVP schedule, typically takes place on the second morning of the conference (Thursday), and usually consists of presentations given by "established" names in the world of SVP. This year, however, the unopposed Plenary Session was instead also the Romer Prize Session—the session of talks given by recently-finished master's and doctoral students on their respective projects. Each year, the talk from the Romer session judged to be the best based upon scientific merit and presentation quality is awarded the Society's Romer Prize (named after vertebrate paleontology great Alfred S. Romer). Making the Romer Prize Session unopposed in the conference schedule worked well and

allowed meeting participants to more easily see talks presented by the society's best and brightest young researchers. The remainder of Thursday consisted of three concurrent talk sessions, the first poster session, and the student poster session.

A second difference between this year's SVP and those of previous years was aimed directly toward students. The student reprint exchange, at which undergraduate and graduate members of SVP were allowed to pick out recent reprints by more senior SVP members for free, took place on Thursday evening and was an unexpectedly huge success. The response from SVP student members was clearly greater than expected by those who arranged the event (judging by the size of the room in which it was held). At the same time as the reprint exchange, students could also take advantage of the roundtable forum, at which persons knowledgeable on particular topics (such as applying to graduate school or starting your own field project) could answer students' questions.

The Friday of the conference (October 17) consisted of three concurrent day-long sessions of talks, as well the second poster session. On that morning I gave my first talk at a professional meeting, entitled "Postcrania of early Eocene *Apheliscus* and *Haplomylus* (Mammalia: Condylarthra)," in which my collaborators (Shawn Zack, Ken Rose (Johns Hopkins University School of Medicine), and Jon Bloch (South Dakota School of Mines and Technology)) reported on postcranial evidence for the earliest known macroscelideans (elephant shrews) from the early Eocene of Wyoming, ~55 million years ago. I received quite a bit of feedback on my presentation both at the meeting and after my return to Baltimore. As always, the Friday evening of the conference ended with the annual SVP auction, which includes both a silent and a live auction.

Saturday, October 18, was the final day of the conference and consisted of day-long concurrent talk sessions and the Awards Banquet in the evening. This year's awards banquet was somewhat briefer than in past years, and there were a few technical difficulties involving PowerPoint, but otherwise the final evening of the conference was a pleasant occasion with plenty of socializing.

Travel Essay

By Megan Lindsay

Woods Hole, Massachusetts. It has been called a scientists' Mecca. It was also the site of the first Kinetoplastid Cell and Molecular Biology Conference. In previous years, Woods Hole has hosted the Molecular Parasitology meeting in September; however, in recent years this meeting has become increasingly focused on malaria research. For this reason, a smaller group of parasitologists, those that study the kinetoplastid species *Trypanosoma brucei*, *Trypanosoma cruzi*, and *Leishmania* species, decided to form their own meeting. The advantage of this was a much smaller group (about 200 participants) and since there weren't overlapping sessions, one could (theoretically) attend every talk. Eleven people, including my P.I. Paul Englund, attended this meeting, making us the largest group there to come from a single lab. Everyone had posters except for two senior graduate students who each gave 15 minute talks.

It was a great opportunity to meet people in the small, close-knit field of kinetoplastid biology. The talks and posters ranged from very basic science (such as the those from our lab discussing fatty acid synthesis and kinetoplast DNA replication) to translational research. Several groups were examining current drug therapies, as well as investigating new drug targets to help combat the devastating diseases caused by these organisms—African sleeping sickness, Chagas disease, and Leishmaniasis. I found these talks particularly interesting since they were so

different from my own work and reminded me of the impact of these organisms on human health, particularly in developing countries. Many of the more basic topics were fascinating as well, such as telomeric silencing and cell cycle regulation in trypanosomes.

Since it's a small, friendly field, there was a lot of unpublished data presented at this meeting, which was nice. However, there are a few labs that compete directly, which kept things interesting as some heated debate followed some of the more controversial talks.

My poster was on kDNA replication, a process studied by only a handful of labs. During my poster session, I didn't get a huge amount of traffic, but I did have a few in-depth, productive conversations. The people I talked to seemed genuinely interested in my work and offered good suggestions.

Woods Hole is a beautiful place, but I'm sure it's much more pleasant when it's warm. Yes, it's still winter in Massachusetts, but even still there's something very pleasant about being near the ocean. On our last full day, during our sole block of free time, a few of us took a walk to a nearby lighthouse, which was on a point of land surrounded on three sides by water. It was lovely.

I had a great time at this meeting. I especially enjoyed meeting people who I had previously known only as names on papers. In addition, since I'll be returning to Woods Hole in June for the Biology of Parasitism course, it gave me a chance to see the place where I'll be spending the summer. Meetings such as this, as well as the upcoming course at Woods Hole, will play a huge role in determining if I will remain in parasitology for my future career.



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