ANATOMY & NEUROBIOLOGY

BRAIN WAVES

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FIVE STEPS TO BECOME A SUCCESSFUL GRADUATE STUDENT

It is wonderful to be a student with the freedom and luxury of time to explore new ideas. However, the process of carrying out a research project can be a daunting challenge under even the best circumstances. While there is no absolute formula for success and any guidelines need to be adapted to one's talents and goals, there are five positive steps that will help any student succeed.

Read extensively: Often there are a dozen or fewer key papers that will help you in your specific research program. The problem is in finding these papers – and realizing their value. You will have to read extensively and diligently to identify the most seminal papers for your research. Attending seminars and reading review papers can help, but there is no substitute for going to the original sources.

Analyze critically: The best attitude is to be an eternal skeptic with an open mind. Be convinced only by solid data and reasoning. Use your own logic and reasoning to dissect out the important findings in any report. An ancient adage going back to at least the time of Confucius is that the beginning of wisdom is to know what is known and what is not. Realize that any "facts", including established dogma, are usually provisional truths. Delving deeper may reveal important new insights that overturn existing "wisdom".

Plan diligently: State the problem you are studying as clearly as possible and the hypotheses you wish to test. Think through the experiments. A rule of thumb is that a simple and straightforward experimental design is best. Make sure that your experiments are focused with clear end-points. Keep questioning your approach and adjust as necessary. Are you using the most relevant techniques? Have you considered possible pitfalls? Do you have alternate strategies in case your initial plans do not work?

Work smartly: Hard work is important to succeed, but it is even more important to work intelligently. Trying to sort out every variable in your study and fully cataloguing the universe surrounding your experimental question (e.g. evaluating all ion, nutrient and neurochemical fluctuations in the system you are running) may sound like a great study, but is impossibly ambitious. Again, as part of the planning process, carefully prioritize the experimental questions being asked. Then design simple, direct experiments to answer each question. Target your experiments to answer one question at a time.

Think creatively: Take time to think about the questions you are asking and the meaning of the data being generated. Do not lock yourself into circular thinking. Logic and reason are essential components of the scientific process, but do not underestimate the importance of intuition, chance and serendipity. Keep your mind and imagination open to fully appreciate what your experiments are telling you.

As a student, you are not only learning about science, but also the scientific process. As you progress, you will have the opportunity to generate new ideas and new scientific insights. The steps discussed here can help you in this journey. Last but certainly not least, I would like to have your comments on this list and any additions you believe would be helpful. We will publish your suggestions and comments in the next issue of the Department newsletter.

~ Dr. Don Gash

DON M. GASH, PH.D.
CHAIR, ANATOMY & NEUROBIOLOGY,
DIRECTOR MRISC

INSIDE THIS ISSUE:

SPECIAL POINTS OF INTEREST:

- The next Faculty Meeting is scheduled for Friday, December 15 at Noon in the Markey Cancer Center Boardroom.
- January's Faculty Meeting is scheduled for Friday, January 12 at Noon in MN 136.
- We need your nominations for Employee of the Quarter. See Page 6.

HOLIDAY PARTY 2006

Professional Announcements

Publications

de Leeuw, R., C.E. Davis, R. Albuquerque, C.R. Carlson, and **A.H. Andersen**. Brain activation during stimulation of the trigeminal nerve with noxious heat. Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology, December 2006, **102**(6):750-757.

Salvatore MF, **Ai Y**, Fischer B, Zhang AM, **Grondin RC**, **Zhang Z**, **Gerhardt GA**, **Gash DM**. Point source concentration of GDNF may explain failure of phase II clinical trial. Exp Neurol. 2006 Dec;202(2):497-505. Epub 2006 Sep 7.

Stanford JA, Salvatore MF, Joyce BM, Zhang H, **Gash DM**, **Gerhardt GA**. Bilateral effects of unilateral intrastriatal GDNF on locomotor-excited and nonlocomotor-related striatal neurons in aged F344 rats. Neurobiol Aging. 2007 Jan;28(1):156-65. Epub 2005 Nov 28.

Bruno JP, Gash C, Martin B, Zmarowski A, **Pomerleau F**, Burmeister J, **Huettl P**, **Gerhardt GA**. Second-by-second measurement of acetylcholine release in prefrontal cortex. Eur J Neurosci. 2006 Nov;24(10):2749-57.

Rockabrand E, Slepko N, Pantalone A, **Nukala VN**, Kazantsev A, Marsh JL, **Sullivan PG**, Steffan JS, Sensi SL, Thompson LM. The 1st 17 amino acids of Huntingtin modulate its sub-cellular localization, aggregation and effects on calcium homeostasis. Hum Mol Genet. 2006 Nov 29; [Epub]

Ding Q, Cecarini V, **Keller JN**. Interplay between protein synthesis and degradation in the CNS: physiological and pathological implications. Trends Neurosci. 2006 Nov 24; [Epub]

Sullivan, P.G., Davis, L.M., Rho, J.M. (2006). Oxidative Stress, the Ketogenic Diet and Epilepsy, Cell Science Reviews, (In Press).

Publications

Maalouf, M., **Sullivan, P.G.,** Davis, L.M., Kim, D.Y., Rho, J.M., (2006). Ketones Inhibit Mitochondrial Production of Reactive Oxygen Species following Glutamate Excitotoxicity by Increasing NADH Oxidation. Neuroscience, (In Press).

Pandya, J.D., Pauly, J.R., **Nukala, V.N.,** Sebastian, Day, K.M., A.H., Korde, A.M., Springer, J.E., Maragos, W.F., **Hall, E.D., Sullivan, P.G.** (2006). Mitochondrial Uncouplers as Possible Therapeutic Interventions following Traumatic Brain Injury. Journal of Neurotrauma, (In Press).

Hunter, R.L., Dragicevic, N., Day, K.M., **Choi, D.Y., Liu, M.,** Kim, H-C., **Cass, W.A., Sullivan, P.G., Bing, G.** (2006). Inflammation Induces Mitochondrial Dysfunction and Dopaminergic Neurodegeneration in the Nigrostriatal System. Journal of Neurochemistry, (In Press).

Smith MP, **Cass WA**. Oxidative stress and dopamine depletion in an intrastriatal 6-hydroxydopamine model of Parkinson's disease. Neuroscience. 2006 Nov 14; [Epub]

Smith MP, **Cass WA**. GDNF reduces oxidative stress in a 6-hydroxydopamine model of Parkinson's disease. Neurosci Lett. 2006 Nov 22; [Epub]

Bradshaw EL, Li XA, Guerin T, Everson WV, Wilson ME, **Bruce-Keller AJ**, Greenberg RN, Guo L, Ross SA, Smart EJ.Nucleoside reverse transcriptase inhibitors prevent HIV protease inhibitor-induced atherosclerosis by ubiquitination and degradation of protein kinase C. Am J Physiol Cell Physiol. 2006 Dec;291(6):C1271-8. Epub 2006 Jul 5.

Zhao TY, Adams MH, Zou SP, El-Hage N, Hauser KF, and **Knapp PE** (2007). Silencing the PTEN gene is protective against neuronal death induced by HIV-1 Tat. In Press, *J. Neurovirol.*.

Middleton LS, Crooks PA, Wedlund PJ, **Cass WA**, Dwoskin LP. Nornicotine inhibition of dopamine transporter function in striatum via nicotinic receptor activation. Synapse. 2006 Dec 4;61(3):157-165 [Epub]

Announcements

Dr. Pam Knapp was recently made an Associate Editor for *Neuroscience Letters*. (The Editor-in-Chief is Dr. Steve Waxman, Yale University). She will be handling all of the manuscripts concerning glial cell biology. So send in your manuscripts!!!

Presentations

On November 11, **Dr. Jennifer Brueckner**, **Dr. Pam Stein** and Dr. Mel Hawkins presented a continuing education course "Dissection Anatomy of Local Anesthesia". Dr. Hawkins is a dental anesthesiologist and international lecturer from Toronto, Canada. He has collaborated previously with Brueckner and Stein to provide continuing education courses in both the US and Canada. Dentists from several states and Canada attended the full day course hosted here at the College of Medicine.

Please congratulate our graduate students on passing their qualifying exams:

Sarah Martin qualified on Nov. 14th
Dong-Young Choi qualified on Nov. 16th
Aashish Joshi qualified on Nov. 28th
Lesley Gilmer qualified on Nov. 29th
You are well on the way to your PhD's!

On November 15th, **Jeremiah Gates** successfully defended his thesis. Congratulations, Dr. Gates!

Our greatest glory is not in never failing, but in rising up every time we fail.

~ Ralph Waldo Emerson ~

PRO-CARD NOTICE

To: Procurement Cardholders/Editors

From: UK Purchasing Division

Re: Procurement Card Reminders from Purchasing

Here are a few reminders in regards to using the procurement card for small dollar purchases:

1) **No equipment** ($2,000 and up on Category I and $1,000 and up for computers, Category II) shall be purchased on the procurement card.

2) OfficeMax is our **exclusive** vendor for office supplies, including toner cartridges (both new and remanufactured.) They are also contract vendors for computer peripherals/accessories and HON furniture. Our sales rep is Ken Lennon and his email is kenlennon@officemax.com. Please contact him if you cannot find what you need on the website or in the catalog.

3) We have various contracted vendors for all things computer. These vendors can be accessed through our ebuy website (http://www.uky.edu/Purchasing/ebuy/). We receive good discounts and free ground shipping. Our contracted vendors should **always** be consulted first before buying these items from outside vendors.

4) The procurement card can be used on computer items, if purchased from our contracted vendors, up to your $5,000 limit. Any brand items that are outside of our contracted vendors (Toshiba, Sanyo, etc.) or are over the $5,000 limit must be purchased through the SAP system with a quote being faxed to the Purchasing Division.

If there are any questions, please don't hesitate to call me.

Leslie Hanich
Procurement Card Coordinator
Purchasing Division
PH: 859-257-1024
Fax: 859-257-1951
email: lahani1@email.uky.edu

Departmental Birthdays

December

Peter Huettl ~ 12/2

Winston Lin ~ 12/2

Gary Ginn ~ 12/7

Dr. Brian MacPherson ~ 12/10

Christine Corbly ~ 12/19

January

Vidya Nukala ~ 1/3

Dr. Diane Snow ~ 1/3

Nature Pinnamaneni ~ 1/10

Dr. Marilyn Getchell ~ 1/11

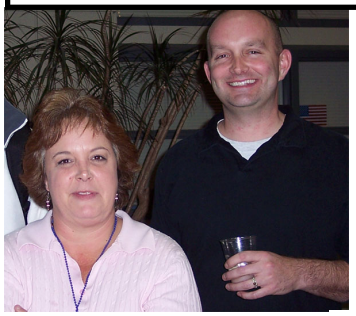
Dr. Wayne Cass ~ 1/12

Steve Smith ~ 1/15

Dr. Jennifer Brueckner ~ 1/27

Theresa Currier Thomas ~ 1/27

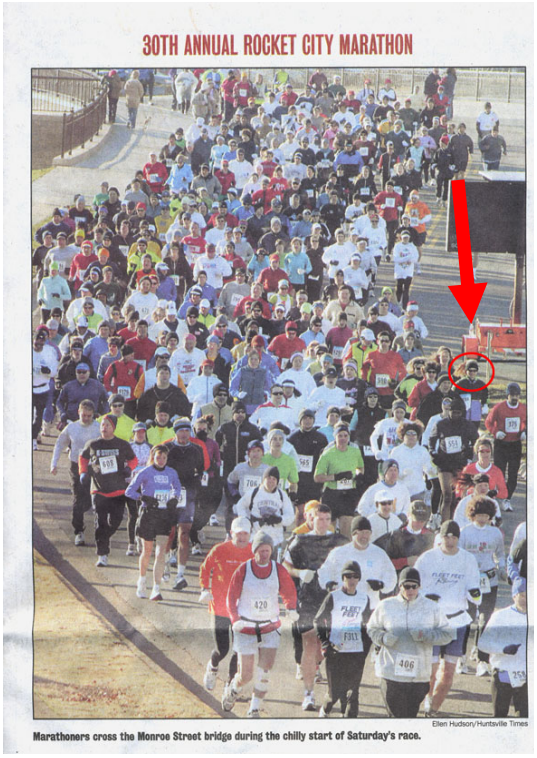
Comings and Goings



On Thursday, November 16 the department said goodbye to Dr. Doug Gould. We'll miss you, Doug!

Please welcome **Lisa Hitchcock** to the lab of Dr. Hans Büeler. Lisa is Dr. Büeler's first lab member at the University of Kentucky. Congratulations!

On Friday, December 8, **Avalon Sandoval**, Dr. Gash's administrative assistant, married Ben Redmon at the Kentucky Theater. We wish you the best, Avalon!



Dr. Diane Snow competed in her first marathon: Rocket City Marathon on Dec. 9, 2006 in Huntsville, Alabama. There were 1,132 starters and 950 people completed the race. The temperature was only 19 degrees at the start and got up to 35. After 4 1/2 hrs of running, but Dr. Snow finished standing and with energy to spare! (She is circled in red in the picture.) She is anxious to keep training for future races and hopes to qualify for the Boston within the next 2 years.

Employee of the Quarter

Nomination Form

The Quarterly Employee Awards are will be announced at the Departmental Bashes – May (for nominations submitted January through March); August (April through June); October (July through September) and December (October through December). The Employee of the Year Award will be selected from the winners throughout the year and will be announced annually at the Annual Holiday Potluck. **Due to Avalon Sandoval or Julie Quinn ASAP.**

When considering someone for the award, think of the individual who has made your job easier or assisted you in performing your job. To complete the nominations please complete the following questions. Use additional paper or the back of this if necessary.

Date: _____ Candidate: _____

Nominator: _____

Is this individual a regular full-time employee in the Department of Anatomy & Neurobiology? _____ Yes _____ No

1. What attributes or actions make this individual worthy of your nomination? Give examples.

2. How is this individual an asset to the Department of Anatomy & Neurobiology? Give examples.

3. How have you seen this individual contribute to the UK and/or greater community? Give examples.

4. With 1 = average and 5 = outstanding, please rank the nominee in the following areas:

Quality of work: 1 2 3 4 5

Attitude toward performing job duties: 1 2 3 4 5

Problem solving skills: 1 2 3 4 5

Willingness to help others: 1 2 3 4 5

Service to the department/university: 1 2 3 4 5

Submit to Avalon Sandoval in 305 Whitney-Hendrickson, 0098 Phone: 257-5036

ANATOMY & NEUROBIOLOGY

MN 225 Medical Sciences Building
Lexington, KY 40536-0298
Phone: 859-323-5155
Fax: 859-257-6700
http://www.mc.uky.edu/neurobiology/

Please send comments & submissions to Avalon Sandoval at asand1@email.uky.edu or call 859-257-5036.

The Next Deadline is January 22, 2006

Available Training

Training for the Labs

The University requires safety training classes to be completed before beginning certain types of work. The requirements apply to all individuals involved in the covered work, including faculty, staff, students, postdocs, visiting researchers and volunteers. To find out what classes you need to take, consult the Training Checklist.

NOTE: Anyone who works with chemicals in a laboratory **must** complete the following three classes: Chemical Hygiene Plan/Laboratory Safety, Hazardous Waste, and Fire Extinguisher Use.

Chemical Hygiene Plan/Lab Safety This class is available online.

Bloodborne Pathogens This class is available upon request and online.

Hazardous Waste This class is available online.

Initial Radiation Safety: Initial Radiation Safety (~ 15 minutes total) is offered every day at 1:30 pm at the Radiation Safety Office, 102 Animal Pathology Building (other times can be arranged). You must bring two completed forms with you: On-Site Radiation Safety Training Form and Radiation Worker Registration Form, both signed by your Authorized User or unit supervisor. If you have questions, contact Tracy Cayson at 323-6777.

Basic Radiation Safety

Jan 22	9a-12p	Rm. NURS214
Feb 23	1-4p	Rm. NURS214
Mar 22	9a-12p	Rm. NURS214

Advanced Radiation Safety is only available online.

Fire Extinguisher Use is available online.

NOTE: Online courses can only be taken using a UK computer.

Corporate Compliance Training is a **MANDATORAY** training for all individuals who receive a paycheck from the UK Medical Center. It is only offered from 3:00—3:30 p.m. during the UK Hospital Orientation. Ignoring this requirement can result in dismissal from employment at the University of Kentucky.

Preventing Sexual Harassment is also a **MANDATORY** training. This training can be done online at (http://training.newmedialearning.com/psh/ukentucky/index.htm). Remember to print your certificate when complete; sign it and turn it in to Dalene to be placed in your personnel file.

Ignoring these MANDATORY trainings can result in dismissal from employment at the University of Kentucky

Human Resources Development course offerings

http://hr.uky.edu/TandD/welcome.php

1-17 ~ Business Etiquette
1-19 ~ Teamwork in a Changing Workplace
1-23 ~ Communicating with Success
1-26 ~ Thinking Critically
1-31 ~ Leading Effective Teams
2-5 ~ Coaching Your Front-line Staff
2-9 ~ Facing the Challenge of Change
2-12 ~ 21 Indispensable Qualities of a Leader
2-19 ~ Communicating Across Cultures
2-20 ~ Gender Styles in Communication
2-21 ~ Resolving Workplace Conflict
2-23 ~ Basics of leadership
2-27 ~ Personality Differences
2-28 ~ Presenting Effectively Day 1
3-2 ~ Group Problem Solving
3-5 ~ Principles of Effective Writing
3-6 ~ Building a Climate of Trust
3-6 ~ Developing a Winning Image
3-7 ~ Presenting Effectively Day 2

All the world is a laboratory to the inquiring mind.

~Martin H. Fischer