

Publication of Neuroscience Students Neuroscience Graduate Students' Association, University of Alberta

Letter from the Editor

As the incoming editor of the Publication of Neuroscience Students (PoNS), I'd like to tell you a little bit about my goals for the newsletter.

Neuroscience is a broad area that involves numerous faculties: No less than 11 University departments are affiliated with the Centre. A peek at our website (www.neuroscience.ualberta.ca) reveals that we have faculty working in areas as diverse as spinal cord plasticity, speech, psychopathology, control of motor mechanisms, cognition, and mechanisms of drug action, to name just a few!

The great advantage this diversity gives us is a fantastic range of material - every department is working on something innovative and provocative. Hopefully we can highlight some of this diversity.

But, while an interdisciplinary focus is exciting, it can leave individuals feeling a bit limited, giving them the impression that they have little to bring to such a wide-ranging forum. Nothing could be further from the truth; your knowledge and views are important. So, my main goal as editor is to encourage input from all levels and areas of neuroscience. Please email me your suggestions and contributions at hannah@ualberta.ca. And thanks for taking the time to support and read this newsletter!
- Hannah Pazderka-Robinson

Spotlight: Carol Ann Johnson

By Hannah Pazderka-Robinson

As every new student in the Centre for Neuroscience quickly learns, there is one person to go to whenever you have a question or concern. That person is Carol Ann Johnson, the Administrative Officer for the Centre. We spoke to Carol Ann about her experiences at the Centre.

Carol Ann, thanks for agreeing to meet with us today. How long have you been with the Centre, and how did you initially get involved with them?

I was the first secretary for the Centre and have been here since 1986. At first it was the Division of Neuroscience with Dick Stein as Chair, and all we had was the seminar program... no Graduate program, no Honors program. In fact, the seminars were called "Bull and Beer" sessions, and they were held at the Power Plant!

At the time, it was a one-third position. I worked full-time, but only one third for Neuroscience. That's how small the group was at the time. Several years later, Toni Stringam was hired as the position changed to a half time position with Neuroscience and the Rehab. Neuroscience Group. My son had just been born and I didn't want to work full-time so an arrangement was made and Toni and I job-shared the position. It worked well for many years. In 1996, after a 2-year sabbatical, I returned to the position that had grown to full time. Toni retired in 1999 and it was decided that I would take on the position and "fly solo". There were many more graduate students and Honors students by this time.

The program started with a limited number of people who had similar interests. Our first graduate was in 1995 and in 9 years, we've had 37 graduates. That's amazing!

Dick Stein was director for about 10 years. Bill Dryden stepped up next and currently Keir Pearson is director. Keir is absolutely a wonderful boss. He and I work really well together and we don't waste any time. When we have meetings, he'll come in and say what he wants, and he often doesn't even need to finish his sentence and I'll say okay, and then go do it. I have a good idea of what he needs and what needs to be done. He is very understanding and well organized. He allows me to do my job without micro-managing which makes me secure in the

knowledge that he has confidence in my being able to do the job well.

What's the most rewarding part of your job?

I would have to say the students (although they can also be the *least* rewarding at times ... just kidding!). Every year we have a new batch of students, so I'm always renewed and refreshed by the changes. The students are always at different levels in their program so it keeps me busy.

The new students often need a lot of "hand-holding" in the first few months. They need simple things like directions to get to new places on campus, help with applications and adding courses. To see them become more independent is exciting too. Sometimes, especially with the students housed on the 5th floor of HMRC, I get a chance to become more involved with their lives since I see them on a more regular and informal basis.

I'm the kind of person who, at the end of day, likes to be able to point to a physical stack of things that I have accomplished. In this job, there is a huge amount of paperwork but that also is rewarding for me. I can see what I have done and feel that something is being accomplished. I am a very organized person... making lists and crossing things off as they are done. That's just how I function.

My family teases me about this. There is a Canadian folk group that we enjoy called the *Arrogant Worms*, who sing funny songs about Canada, like the fact that Canada's really BIG (our claim to fame). Or, that America has the eagle as their emblem and Asia has the tiger, but we have the beaver! Well, there's a song about the "Big Fat Road Manager" and that's me! (not the fat part though, I hope!). I'm the person who needs to get everything organized, to keep everything running. I do it at home and I do it here. That's why you get all those emails: 'When are you going to do your thesis?' 'We need to set up a committee meeting'. I like to keep a handle on things like that and it's not an annoying part of my job at all. (I hope it isn't to the students!).

So then, what's the most difficult or frustrating part?

I guess, not having enough money for students. We have a very limited budget. At the same time, there are always many ideas and things the

Centre would like to accomplish. The program is growing like crazy and our graduate program is larger than some departments on campus. However, the Centre doesn't receive any funding from the University. Our funding comes as an "allowance" from four different faculties in which we have members. We have over 40 graduate students, over 60 undergraduates and a viable seminar program. There is much potential here but we just don't have the funds. So... we are constantly having to scrimp and save.

We do turn away many good students because of a lack of funding for them. More than half of our students are funded by their supervisors. Even the granting agencies are giving fewer awards each year. That's the most difficult part.

Describe a typical day for you at the Centre.

Well since Barley has come into my life, it has been a little different. Barley is my trained assistance dog. He's a 3 year old, yellow lab and if you haven't met him yet... you need to stop by! I've had Barley since August of 2002, and my day is a little different since I also have to take care of his needs. He needs a certain amount of exercise every day so I am usually away from my desk during the lunch hour, even on very cold days. My cross-stitching projects have suffered but I'm getting more fresh air!

The first thing I now do is get him settled for the morning. The best way to describe Barley is that he's like a light switch ... when I need him he is switched on and when I am busy with my work and don't need his help, he's switched off! In fact, he's added a different dimension to my job. Barley allows me to have more energy for the day's work and when documents need to be delivered across campus, I don't have to rely on campus mail. The "Barley Express" has often been called into action and the job gets done!!.

I typically begin the day by answering emails, and there are *many* inquiries about the program. My workload is not reliant on others giving me assignments. The work is ongoing and there are different needs depending on the time of year. I'm a self-motivator and as projects arise, I just deal with them. There is always bookkeeping, paying bills, keeping tabs on students' progress, setting up

meetings for the three committees of the Centre (i.e. Executive, Planning and Graduate Committees), answering inquiries about the program, compiling files for graduate applications and keeping track of supporting documents as they arrive. Once applications are completed they are circulated to various members in search of a supervisor and those must be tracked. We receive applications for membership in the Centre from faculty members and those applications are circulated for comment. With all of the changes to our program, the website needs to be kept up-to-date and, although we have a webmaster, it's my job to send updates to him. Of course, there are projects that are related to the courses that we offer... student registration, handouts to supervisors and students, tracking students' progress in our lab rotation courses, handing in grades at the end of each term. And then there is always seminar attendance...

So, you can see, there is never a lack of things to do. About 80% of my time is spent on the computer. Also, students come in with questions. The beginning of the term is always the busiest; students need to register for courses and it is not just the graduate program. With the Honors undergraduate program, handouts for the courses need to be updated and distributed. If a new course is to be added there is paperwork for that as well.

Sounds like a lot, eh? But I have grown with the job as well and so many of these things are automatic to me now. In most departments on campus, there is a secretary in charge of the graduate program, someone else who does the bookkeeping, someone else for administrative work, and so on. In the Centre for Neuroscience, there is just me! We also receive calls from people who have just heard something on the radio or TV about some new drug or procedure and, although it's not necessarily related to neuroscience, they need direction to find the answer they are seeking. It's all part of the job.

That's where it comes down to having a good boss. Keir comes by the office about 2 or 3 times a week and we try to have a more formal meeting with the graduate coordinator about once every two weeks. I have some control of my own day and can plan to do what I think is important for that day without always consulting someone else. Keir allows

me that option and he's confident that the work will get done.

You've had a unique opportunity to watch Neuroscience grow at the U of A. In the past few years, what kind of changes have you noticed?

Certainly the size of our group and the number of students has increased. Interest in the program has also increased which is evident by the number of inquiries we receive. I keep an Excel file list of all the inquiries and they are literally worldwide ... China, Europe, Africa, and of course the U.S. and Canada, too. The area seems to be a "hot topic" at the moment. The number of professors that we have in our Centre now has increased as well. We now have over 60 faculty members in Neuroscience.

What I'd like to see is that we have a more defined space dedicated to neuroscience on campus. Right now, the Centre for Neuroscience is my desk, sitting in an office with another desk! That doesn't offer a promising profile to the public, but again, it's a money issue. Just looking at the program itself and how big it is, it would be nice if we could have our own seminar room and a place where faculty and students could meet. Our students are spread all over campus and don't always have an opportunity to meet informally. If we had a central place where they could identify that "this is the Neuroscience Centre", students could come and have informal meetings.

Where do you see the Centre in 10 years?

Well, I see the program continuing to grow. There has to be a cap I suppose; we can't continue to grow indefinitely, if only because of resources. I don't think we've peaked yet, but we will end up plateauing somewhat, because of the number of students we'll be able to take on. New buildings are going up on campus ... there's still the hope we might get in one of those!

People on the Planning and the Executive Committees always do a good job of trying to promote the Centre. Now we have the Alberta Neuroscience Meeting which meets once a year and brings together neuroscientists from Edmonton, Calgary and Lethbridge. So, it continues to grow.

Any advice on grad student “burn out”?

I think there are a number of things that a person can do. I know that students get very focused on their own research and what they are doing and want to accomplish. With any career, you need to have other interests. It gives you perspective. One needs to do more than just research. Many students think, “I need to come to the lab 8 days a week”, but I think you need to make time to pursue other interests in order to be more productive in the lab.

It’s always good to get a different perspective. We have a Graduate Coordinator and a Director who are available for discussions about things that may arise in the labs. They have a great deal of experience and it is often good to have a meeting and discuss issues with someone to get a new perspective.

Get a dog! I already have two graduate students who have gotten a dog after talking with me. Dogs are a great outlet... they need exercise and so do you! And if any of you are considering a dog come and talk to me first. I have lots of information for you... about breeds and what would fit your lifestyle. Dogs and folk music...

You’ve also had the opportunity to interact with a lot of professors. Any advice you’d give students who are thinking about a career as a prof?

I think new professors have a tendency to take on more than they physically can handle at first. It’s often difficult for a young professor to say “no” to new projects and demands on their time. The best advice I can give is don’t spread your talents too thin. It’s not a good idea to get too overworked too quickly. Take things slowly and play to your assets.

Also new professors don’t always have to do everything on their own. That’s why support staff are here. So the professors can go and do the things they are trained to do. I’m not a neuroscientist... I couldn’t slice a spine; but I can set up a meeting. I can complete the appropriate forms needed by the University. Don’t try to do it all on your own. There are people available who are qualified to help.

Describe the Centre to a new student; any advice you would give to undergraduates considering applying?

I think of our group as very friendly and open. The students do other things together besides science.

The graduate and undergraduate students have an executive committee and they plan social events, play on various campus sports teams, have parties, go on picnics. There is a Neuro-hike and Neuro-ski event each year which combines science and other events. So, I see our group as very friendly and inclusive. Maybe this happens because we are still a relatively small group.

Are there any opportunities that students miss?

We make a real effort to inform new students that are entering our program. One of our current graduate students developed a “Getting Started” memo, which tells students some of the important things they need to know right away (i.e. where to get a One-Card, who to contact about registering for classes and, if they have problems, to please come and see me!).

I think students are very tuned in to opportunities like funding. They are the most motivated to find out because it is their life! But, we can help in those ways as well. There are opportunities through FGSR for students to volunteer their time for short-term projects in the public schools. I pass on this information to the students as well and try to keep them as informed as possible.

Any common mistakes among new students?

Well... sometimes they don’t come to *me!* (laughs). If students have a question, they need to see me or send a quick email. It saves all that floundering around! There are always lots of changes in procedures on campus. Students have a tendency to rely on each other for information but often that information is a year old already. New students especially have lots of questions but also feel that they don’t want to bother anyone. But, that’s part of my job - to answer questions and get students off to a good start so that they concentrate on the important things... like classes and research.

The beginning of any term is a very busy time but they should feel comfortable to come and ask questions. If I don’t know the answer, I probably know where to find out. Remember, I’ve been here a very l-o-n-g time!

Besides, it is a great way for me to get to know them, too. I can attach a face to the name that perhaps I have only known through emails. Letting

me help will save the student time, grief and possible pain ...and they can come and see Barley too!

Speaking of Barley, can you tell us anything in terms of the protocol around him

Barley is a very mellow service dog. He knows his job and he does it well. Sometimes students come in and some are missing *their* dog, or they are great dog lovers and want to interact with him. Often I will let people pet him and talk to him. I think he provides good therapy. Students who are having a difficult time about a certain issue will come to talk it over with me and they get to pet Barley. He's not really a "pet therapy" dog but it's nice to offer an extra service! However, the golden rule is: Don't pet or speak to a service dog without permission from the "human". In simple terms, it distracts the dog from his job and unfortunately, if he breaks a command, *he's* the one that receives the physical correction.

If we are in a meeting and Barley is present, try asking, "How's your *dog* today?". Don't use his name. You can say "Hi doggy," but when he hears his name, he is expecting a command and it will distract him from what I am asking him to do.

Basically, if you really need to pet him, ask me first. Most often, in the office, he can get up and say hi, but he needs to hear that it's okay from me.

So, the protocol is... you can talk to me 24 hours a day about him but if he is wearing his harness, he's still on duty and should not be spoken to or touched.

So tell me a bit more about your family.

I have a daughter, Emily, who will be 20 in March. She just finished her first semester at the U of A in the Faculty of Arts (Psychology). She took a year off from high school and is doing very well here ... All A's her first term! Our son Daniel is 16 and in Grade 11 at Strathcona High School. He's having a great year as well.

My husband is a faculty member in the School of Business on campus and is currently the Chair of Marketing, Business, Economics and Law.

We moved to a high rise condo near the Legislature Building about two years ago. I had polio when I was only 6 months old and now use a wheelchair fulltime. Moving to the condo was a

decision we made to help me conserve energy. Everything is level and accessible. We have underground parking and elevators and are only a block from the LRT. I'm just a minute and 45 seconds from campus by the train! Except for the winter months, Barley pulls me home across the High Level Bridge and we have done the 13 blocks in only 10 minutes... with energy left to play ball in the park!

Anything you'd like to add?

I just hope the students are comfortable to come and talk and if there's something someone needs - if it is on a personal note, or they just need a listening ear for an idea - we can always find a quiet corner. I do care about the students. I want them to be happy and successful, and I'm always interested in what they're up to when they do leave. So send an email! It's always nice to keep in touch. Hopefully that's the kind of feeling that they have in Neuroscience, and I hope they benefit from that. Some place they can feel welcomed.

Oh, yes... and they can always bring chocolate. As long as it's *good* chocolate: Lindt, Godiva, Purdy's, Laura Secord

What about Bernard Callebaut...?

(Laughs) Well, Callebaut goes without saying!

Speaking of Chocolate...

**Treat yourself and support the NGSA!
Full size chocolate bars are on sale for
\$1.00 in Carol Ann's office (room 513,
Heritage Medical Research Centre). If no
secretary is available, you can take your
chocolate bar and leave your looney in
the envelope provided (that's right, the
honor system). Proceeds go towards
events sponsored by the NGSA.**

***And remember, chocolate stimulates the
release of PEA, just like love...***

Annual Canadian Physiological Society

By Aiko Kido

From January 28 to February 1st 2004, the Canadian Physiological Society held its annual winter meeting at Silver Star Ski Resort, outside Vernon B.C. The CPS meeting has a long history. The first meeting was organized by Dr. Hugh McLennan (University of British Columbia) and Dr. Vivian Abraham (Queen's University) more than 30 years ago. This year, in addition to a strong diabetes/metabolism program, there was a special symposium to honour Dr. Richard B. Stein, and that seemed to add more presentations from neuroscience and motor control research from all over the world. Since topics in the meeting were diverse, no particular academic topics will be reported here.

After 3 days of meeting, student awards were presented to the following students:

- Rebecca Lam (Physiology, University of Alberta),
- Alison Oates (University of Waterloo)
- Marie Andree Imbeault (Université Laval)

While at Silver Star, we had so much fresh snow, and many of us enjoyed skiing or snow boarding. Every year the CPS hosts the downhill and cross-country ski races during the meeting. Unfortunately, the downhill race was cancelled due to weather condition (snow storm!). However, the cross-country ski race was held as usual. Here are the winners of this year's cross-country ski race:

Male: Place Standings

- 1st: Dr. Dave Bennett (University of Alberta)
- 2nd: Phil Harvey (Ph.D. student, University of Alberta)
- 3rd: Dr. R. B. Stein (University of Alberta)

Female: Place Standings

- 1st: Janka Hegedus (Ph.D. student, University of Alberta)
- 2nd: Dr. Penny Moody-Corbett (Memorial University)
- 3rd: Aiko Kido (Ph.D. student, University of Alberta)

Dr. Bennet and Phil Harvey were well-known great skiers. Dr. Stein has never missed receiving a

medal for this competition since this event commenced more than 30 years ago. Female #1 was Janka Hegedus, former NGSA president. She accidentally missed the goal line (since she did not know the location of the goal) and finished in 2nd. However, Dr. Moody-Corbett recognized Janka's excellent performance and speed, and Janka officially became the winner of the race.

As all of us know, Dr. R. B. Stein is the one who started Neuroscience at University of Alberta with Dr. Richard Smith. Centre for Neuroscience nowadays consists of more than 50 faculty members as well as many graduate students and postdoctoral fellows, and it is still growing. Could you imagine that 35 years ago there were only two faculty members in Neuroscience?

Dr. Stein completed his BSc (in physics) at Massachusetts Institute of Technology, and M.A., D. Phil (in physiology) at Oxford University, and then worked as a postdoctoral fellow at Exeter College, Oxford University. In 1968 he came to University of Alberta as an associate professor, and since 1971 he has been a professor in physiology. According to the review by professor Doug Stuart, his refereed articles total over 250, his number of review articles and book chapters is over 80, and his total number of his trainees (graduate students and post doctoral fellows) is more than 50. At the R. B. S. symposium there were a huge variety of research topics, beyond just neurons or muscles, implying a wide range of Dr. Stein's research interests. It was quite an experience to sit in the same room with authorities in motor control and listen to their talks and discussions.

The highlights of the RBS symposium were summarized at the banquet by Dr. E. Paul Zehr, a Ph.D. student of Dr. Stein from 1993 to 1997, currently an assistant professor at University of Victoria (BC). Dr. Zehr announced the Best of the Double S (Suzan Stein) awards for those who were unforgettable in many ways:

Best "theory into practice"... for face plant on slippery surface after listening to a talk about stopping on slippery surface - Dr. Jacques Duysens (University of Nijmegen, the Netherlands)

Best finish of a talk interrupted by power black out - Sarah Thomas (MSc student, University

of Alberta). She did not stop speaking even in a sudden black out, and finished her talk without the last few slides.

Best “timely control of a session” - Dr. Jayne Garland (University of Western Ontario). Dr. Garland, who was a chair of Friday morning sessions managed to end the morning presentations without a second of delay.

Best attempt to give talk while asking questions or giving “comments” - Dr. Manuel Hulliger (University of Calgary)... I suppose this is a well-known fact...?

Best talk focused on hallucinogens...that was funny but also kind of scary... - “getting high on DOI”, Phil Harvey (Ph.D. student, University of Alberta).

Best talk with the most infectious excitement...the kind that would make anybody want to be a scientist... - Dr. Keir Pearson (University of Alberta). Yes, IT’S HIM.

Best commercial plug... - Dr. Jack Jhamandas for Air Canada (University of Alberta). Who knew his great sense of humor? None of us were sure how many times Dr. Jhamandas repeated “AC 187” during his presentation.

Overall, it was a great meeting. There were great opportunities of meeting many students and professors from other universities and having great times with different people beyond department or laboratory. Besides those fun moments, there were some words we will not forget:

“It has been so good to have Dick just across the hallway...” said Dr. Bennet.

“U of A is such a great place to study neuroscience. I still remember the first day I went to the seminar, and found Dick, Kier, Arthur and so many other people I had only known their names. I was so excited to see and sit with them in the same room,” said Dr. Misiasizek.

I know exactly what they meant, and probably many of us have felt the same. I also imagine that one day some of us may become one of those great people.

Graduate Student Research Days 2004

The NGSa is proud to announce that this year’s graduate student research days will be held in the Bernard Snell Hall. While an exact date has not been confirmed, it will be set sometime in early November, following the 2004 Society for Neuroscience meeting held in San Diego from October 23-27. Stay tuned for more information!

A Word from the NGSa Treasury

In 2003, the NGSa ended the year in the black with a balance of \$149.62, thanks to the generosity of the Centre for Neuroscience. Currently, the new NGSa executive is fundraising for new initiatives. Our social coordinator David Hayes is organizing a visiting professor luncheon program and other social activities aimed at promoting student-professor interactions. We will also be organizing a formal orientation for new graduate students. In addition to these new initiatives, the NGSa executive is planning the Annual Neuroscience Research Day.

In order to fund these programs, our new president Melissa Kelly is spearheading our current fundraising drive. We are currently seeking contributions from Centre for Neuroscience Faculty Members. We would like to thank those members who have already given to our fundraising drive and look forward to meeting with Centre for Neuroscience members whom we have yet to contact. Without your generosity, the NGSa would not be able to fulfill its mission of enhancing the educational experience of graduate students.

In addition to seeking donations from Centre members, we are also seeking funds from other sources. Rhiannon Noble has initiated a chocolate bar sale. Chocolates are being sold for \$1.00/bar in 513 HMRC. On the first day, \$10 worth of chocolate was sold. James Chin is working with other executive members to apply for approximately \$4400 worth of grants. These sources of income should be sufficient to meet NGSa operating expenses for 2004.

Meet the NGSA

We'd like to take this opportunity to introduce you to the new NGSA members, and some of our valuable volunteers! (*Editor's note: this section is for your information only. By "meet", we in no way offer or imply a date with any NGSA member. Past or present. Or Tad Hamilton either.*)

<p>Name: Melissa Kelly NGSA Position: President Area of Study: Stroke Interests/Hobbies: Science? NGSA Goals: Unite the students!! Favorite Quote: "The brain, and the brain alone, is the source of our pleasures, joys, laughter, and amusement, as well as our sorrow, pain, grief, and tears. It is especially the organ we use to think and learn, see and hear, to distinguish the ugly from the beautiful, the bad from the good, and the pleasant from the unpleasant." - Hippocrates</p>	<p style="text-align: center;"><i>We would like to thank all professors who made generous contributions to the NGSA!</i></p>
<p>Name: James Chin NGSA Position: Co-treasurer Area of Study: Cellular Mechanisms of Alzheimer's Disease Interests and Hobbies: Running, reading NGSA Goals: Find funding for NGSA activities. Favorite Quote: "The only place that hard work comes before success is the dictionary."</p>	<p>Name: Rhiannon Noble NGSA Position: Co-Treasurer Area of Study: Developmental Biology Interests and Hobbies: Synchronized skating, trying to learn Japanese NGSA Goals: Find sustainable fundraising strategies; help the organization to grow and find ways to fund new projects that would improve the NGSA and graduate life at U of A.</p>
<p>Name: Trevor Hamilton NGSA Position: Sports Coordinator Area of study: NPY and the Hippocampus Interests/Hobbies: Mountains NGSA Goals: Release of endorphins</p>	<p>Name: Robin Clugston NGSA Position: Assistant, Sports Area of Study: Embryological Origins of the Diaphragm Interests and Hobbies: I will try anything once NGSA Goals: To unite the neuroscience grad students! Favorite Quote: "If I have seen further it is by standing on the shoulders of Giants"- Sir Isaac Newton. As scientists conducting pioneering research we do this everyday and in every reference we cite.</p>

<p>Name: Jan Kowalczewski NGSA Position: Webmaster Area of Study: Neuroscience :) Interests and Hobbies: Fast cars, blond bombshells. NGSA Goals: To take it up a notch Favorite Quote: "Hell would be if God were to show me things I could have accomplished if only I had believed in myself". -Bas Rutten, aka El Guapo</p>	<p>Name: Sergiy Yakovenko NGSA Position: Organizer of II and III NGSA Research Day events, former webmaster Area of Study: Systems Physiology, Motor Control Interests and Hobbies: Chess, running, matlating NGSA Goals: Live long and prosper... Who am I kidding... Free pizza and beer! Favorite Quote: "Are rats comrades?" - George Orwell</p>
<p>Name: Dave Hayes NGSA Position: Social Director Area of Study: Serotonin and Behavioural Reward Interests and Hobbies: Music. Art. Philosophy. Science. mmm..... NGSA Goals: to bring good times to the masses. And to be more punctual...</p>	<p>Name: David McVea Position: OR Visit Co-ordinator Area of Study: Motor Control; Expected and Unexpected Disturbances Effects on Locomotion. Interests and Hobbies: Classical guitar, cycling NGSA Goals: To help students get an understanding of how our research is applied in treating patients and to see another aspect of neuroscience. Favorite Quote: "To move things is all mankind can do... Whether whispering, or felling a forest." - Sherrington.</p>
<p>Name: Mark Ballermann NGSA Position: Corbett Hall Representative Area of Study: Reticulospinal Plasticity following Spinal Cord Injury. Interests and Hobbies: Soccer, weightlifting, skiing, cycling, fixing cars, fixing computers NGSA Goals: To be the best Corbett Hall rep I can be! Favorite Quote: "Achtung - Alles Lookunpeepers: Das Internet is nicht fuer gefingerclickend und giffengrabben. Ist easy dropenpacket der Routers und overloaden der Backbone mit der spammen und der me-tooen. Ist nicht fuer gewerken bei die Dummkopfen. Die mausklicken Sightseeren keepen das Bandwidth-spewen Hands in die Pockets muss; relaxen und watchen das cursorblinken."</p>	<p>Name: Jennie Z. Young (yes, JZ Young....And, no, I haven't heard that one before...) NGSA Position: Med Sci Bldg Representative; PoNs editorial board Area of Study: Hippocampal Synaptic Plasticity, Learning and Memory Interests and Hobbies: music (3 instruments), sports (mainly hockey and soccer) NGSA Goals: I hope the NGSA will encourage active participation from all grad students, and foster interdisciplinary exchanges across the diverse fields in neuroscience research. Favorite Quote: "God is a comedian playing to an audience too afraid to laugh." - Voltaire</p>
<p>Name: Aiko Kido NGSA Position: Volunteer; Contributor, PoNS Area of Study: Rehabilitation Neuroscience (especially in locomotion) Interests and Hobbies: sports (ball games), X-country skiing, hiking, camping NGSA Goals: It would be great if NGSA could make all neuroscience students in different areas connected. Favorite Quote: "Is that your max?" - basketball team captain</p>	<p>Name: Hannah Pazderka-Robinson NGSA Position: Editor in Chief, PoNS Area of Study: Cognitive Neuroscience of Addictive Behaviour Interests and Hobbies: weightlifting, painting, bellydancing, running, writing, silversmithing... I'm just all about hobbies ;) NGSA Goals: To encourage and support participation and diversity in the newsletter. Favorite Quote: "Damn it Smithers, this isn't rocket science - it's brain surgery!" - Mr. Burns</p>



The neural correlate of ignorance: an fMRI study

21.8

Kai M. Schreiber

Dept. of Physiology, University of Toronto

INTRODUCTION

In 1796, Gall described the cerebral organs that he believed were responsible for certain character traits. Since then we have acquired detailed knowledge of the parts of the brain engaged in many cognitive functions through neural Imaging studies.

But so far no one has attempted to locate the cortical seat of ignorance. Ignorance is arguably the most pervasive mental attribute, and the one that makes us truly human. Unfortunately it is difficult to measure using common imaging techniques, since the sophisticated machinery tend to saturate the ignorance system even before any stimuli are presented. Here, I use **functional mechanic resonance imaging**, a technique developed specifically for this study, to locate the seat of ignorance in the human cortex. But what evidence is there for a well defined neural ignorance system at all?

Table 1.

	CRAP	SICC	U-LOON	BULL	FOOL	IDIAT-Q
Cinema Random Activity Profile (CRAP)	1.0	0.86	0.76	0.82	0.74	0.68
Shouting Into Cellphone While Commuting (SICC)	0.86	1.0	0.88	0.85	0.66	0.70
Using "Like" or Other Noises (U-LOON)	0.76	0.88	1.0	0.72	0.66	0.87
Bellowing Use of Laughter Likert Scale (BULL)	0.82	0.85	0.72	1.0	0.91	0.81
Flouting of Other Lifestyles (FOOL)	0.74	0.66	0.66	0.91	1.0	0.60
"I did it always thus" – Quotient (IDIAT-Q)	0.68	0.70	0.87	0.81	0.60	1.0

fMRI on the Go – Try it Yourself!

The great advantage of the fMRI method as described in the main text is its flexibility. It could even be used at the bedside with clinical patients. To elicit an fMRI signal from yourself, read the following lines out loud while hitting yourself on the forehead with the open palm. If you feel dizziness or anger, you have successfully stimulated your ignorance circuits. Congratulations.

"GENERAL IGNORANCE", OBJECTIVELY DETERMINED AND MEASURED

While comparing the scores of random Joe Shmoes on a set of personality measures I had devised over the last few hours, I noticed strong positive correlations between some of them. I discarded the non-correlated ones and came up with Table I.

Experts tell me that the positive correlations of these measures must mean that there is some underlying general principle behind them, effected by some physical body. Since I do not like the behaviours expressed by high scores on the measures listed in Table 1, I call this underlying general principle GENERAL IGNORANCE (GI), not be confused with other neurologically interesting generals, such as Patton, MacArthur or Rommel. General Ignorance has nothing in common with these gentlemen.

This double worship,

*Where one part does disdain with cause, the other
Insult without all reason, where gentry, title, wisdom,
Cannot conclude but by the yea and no
Of general ignorance, - it must omit
Real necessities, and give way the while
To unstable slightness: purpose so barr'd, it follows
Nothing is done to purpose.*

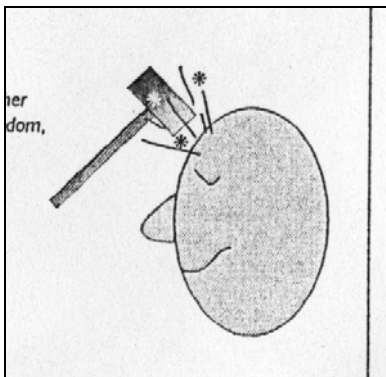
William Shakespeare, Coriolanus

FUNCTIONAL MECHANIC RESONANCE IMAGING

To overcome the aforementioned problems in imaging ignorance, I employed the following strategy. First, the subject was seated with a friend in the university cafeteria. During that first stage the conversation of the subject was recorded from a neighbouring table using an HB pencil and letter sized blank paper (80g/m²). The subject then was brought into the experimental room.

For the fMRI experiment, the subject was seated comfortably and either her original conversation (baseline) or lines from a Shakespeare play (signal) were read to her. It can be assumed that the subject was non-ignorant regarding her own previous utterances, whereas the Shakespeare quote had a high probability of eliciting an Ignorance signal. This was confirmed by the subject's self-report.

While the subject was listening, her head was mechanically stimulated with short pulses delivered using a reflex hammer. The locus of stimulation on the skull was varied systematically between trials. The subject's response (verbal, body movement, threats) to each of these pulses was recorded quantitatively on a scale ranging from one to ten. A stronger response in the signal condition indicates a greater excitability of the ignorance system at this skull location. Figure 1 shows the typical result from the subject.



RESULTS

Figure 1 clearly shows that during perception of stimuli selective for the ignorance system, ignorance was most strongly enhanced by mechanical resonance stimulation over the frontal cortex. Therefore I conclude that the frontal lobe is the seat of general Ignorance.

It is interesting to compare GI across groups. Since the ignorance system is located in the tissue of the frontal lobe, its design must be specified in the genome. This could help explain certain phenomena of decision making in politics and economy, which are a mystery otherwise. I have made up preliminary evidence, showing that bureaucrats are relatively more ignorant than Buddhist monks are. If this result will hold, we would have to drop all efforts to educate bureaucrats, since the effort is futile. We should concentrate on Buddhism instead.

fMRI has proven to be a powerful new experimental technique, allowing the visualization of human cortical processing in vivo. While its temporal and spatial resolution both appear improvable, the simplicity and affordability of the equipment are clear advantages.

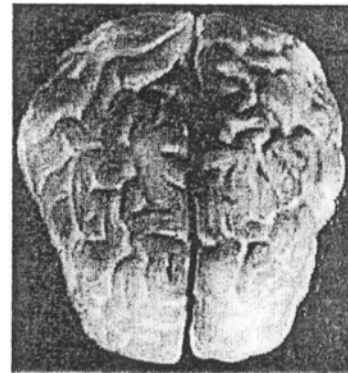


Figure 1: Activation of cortical areas due to mechanic stimulation of the skull. This Image was created by overlaying two-dimensional gaussian patches cantered on the locus of stimulation. The amplitude of the gaussians reflects the difference in strength of response between the signal and the baseline condition in each location

Editor's note: The NGSa takes no responsibility for the impudent grad student who cites this poster in their dissertation...

Get in the Action!

By Trevor Hamilton, Sports Director:

I understand that most of us are here to get data, write up papers, and get them published. But why not relieve some stress and play some sports? Its not just muscle heads attempting to sell you the newest bulk up formula. The "truth" is in high impact journals. Exercise has been shown to increase phenylethylamine levels, which is known to have antidepressant effects¹, increase dopamine levels and regulate brain function², and promote repair from brain injury³. Does anyone remember Hal Johnson and Joanne McLeod? It's all about participation!



Sunshine Mountain - Banff, Alberta

Ski/Snowboard Trip

I would like to personally take the time to request that anyone who feels tingles in their spine while riding through waist deep champagne powder keep on reading...

The NGSa is hoping to organize at least one trip to the mountains. With over 15 people, most ski hills and hotels charge group rates that are substantially less than usual. At the moment the plan is to ski Fernie in mid-March. For more information please email thamilton@pmcol.ualberta.ca.

All are welcome to attend!

Red Eye Tournament

The red eye tournament begins on March 26th at 10 PM and ends on March 27th at 7 AM. During this time a variety of activities will take place that will indeed leave the contestants with red eyes. Last year the teams competed in an obstacle course, volleyball, soccer, ultimate, wheelchair basketball, sled hockey, and inner-tube water polo. It will be all fun and games on the neuroscience graduate students team that have yet to be named. If you are interested in joining in on the fun please email Trevor at thamilton@pmcol.ualberta.ca.

If you are interested in any other sports or activities and would like to make a team, let me know and I will do my best to organize something.

1. Szabo A, Billett E, Turner J. *Br J Sports Med* 2001. Oct;35(5):342-347.

2. Smith AD, Zigmond MJ. Can the brain be protected through exercise? Lessons from an animal model of parkinsonism. *Exp Neurol*. 2003 Nov;184(1):31-9. Review.

3. Sutoo D, Akiyama K. Regulation of brain function by exercise. *Neurobiol Dis*. 2003 Jun;13(1):1-14. Review.

Have Lunch with a Visiting Expert!

The NGSa hopes to host a number of lunches with visiting professors in 2004 (pending interest/time constraints). These have been tentatively set for the following dates:

- Feb 24 - Dr. Mindy Levin (University of Montréal)
- Mar 11 - Dr. Henry Szechtman (McMaster)
- Mar 25 - Dr. Ken Lukowiak (Univeristy of Calgary)
- Mar 25 - Dr. Norman Haughly (Johns Hopkins)
- April 1 - Dr. Victor Rafuse (Dalhousie)
- April 5 - Dr. Doug Allan (Harvard)
- June 10 - Dr. Barbara Woodside (Concordia)

Contact Carol Ann for more information regarding any of these lectures.

Lunches will be held immediately following the Thursday afternoon lecture sessions, unless otherwise indicated. Please e-mail social director Dave Hayes for more information or to reserve your spot: dhayes@ualberta.ca



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