A Message from Our Outgoing MSTP Co-President

by Lisa Sudmeier

Thanks for allowing me to serve as the MSTP Executive Board Co-president for the past two years. I was fortunate to team up first with Farsh and then Ted and a great group of committee chairs. This past year was an especially exciting year for the MSTP with the launching of Medicine 902, largely thanks to the hard work of Jon Stefely and Chelsea Hanewall. Also new this year was the Women in Academia panel, organized by Laura Felley, which was a great success. Additionally, we have our communications chairs, Sumit Kar and Brittany Young, to thank for the MSTP recruiting videos that debuted this year and the new MSTP blog. Kim Krautkramer and Layla Barkal planned a wonderful symposium and post-dinner panel in addition to the great seminar series. Adam Bailey and Laura Felley maintained and updated the MSTP Handbook and Guidebook, which are both available on the website. Erin Theisen and Brett Morris planed successful interview weekends and streamlined signup, saving Paul a lot of pleading emails. Kelli Pointer is in the process of getting us involved in science-oriented outreach activities, and Andy Voter was a swell liaison to the medical school. Thanks to everyone for their contributions to the program. In my retirement, I plan to practice croquet with Paul Cook.

Welcome to next year’s MSTP Exec Board:
- Co-presidents: Ted Griggs and Brett Morris
- Curriculum: Kim Krautkramer
- Seminar: Sumit Kar and Ray Zhang
- Advising: Brittany Young and Kelli Pointer
- Communications: Laura Felley
- Social: Erin Theisen and Kristen McCabe
- Outreach: Anna Barker and Natalie Guerrero
- Med School Liaison: Peter Carlson

Check out Page 6 for more photos from this year’s Annual MSTP Symposium and Spring Picnic!

Left: Kim Krautkramer presents her poster to current and prospective MSTP students at the 2014 MSTP Symposium.

On Wisconsin!
**Scientific Review: Aadhavi Srindharan’s recent publication “Effect of age and calorie restriction on corpus callosal integrity in rhesus macaques: A fiber tractography study”**

by Laura Felley

In her recent publication in Neuroscience Letters, fourth-year medical student Aadhavi highlights some surprising findings from her study on aging in rhesus macaques. Even if you haven’t read this paper, you may be familiar with her research group. The "Dietary Restriction and Aging Study" at the Wisconsin National Primate Research Center received significant media attention upon reporting that extreme calorie restriction appeared to both protect against age-related diseases and prolong a healthy lifespan.

Currently, it is believed that this effect may be secondary to anti-oxidative and anti-inflammatory mechanisms that begin to act when an organism experiences prolonged calorie restriction. Given the nature of this proposed pathway, it is reasonable to believe that the brain’s white matter (composed mostly of glial cells and myelinated axons) would be protected by caloric restriction. White matter is characterized by high metabolic activity, which tends to generate damaging free radicals. Given this information, Aadhavi’s group chose to investigate the effect of both age and caloric restriction on the integrity of the corpus callosum, a large bundle of fibers beneath the cortex that facilitates inter-hemispheric communication.

The corpus callosum was chosen as it is both the largest and most well-studied collection of white matter in the brain. Two points—the corpus callosum genu and splenium—were studied in particular, as these areas have previously been shown to manifest age-related decreases in fractional anisotropy, a measure that reflects tissue integrity in white matter. In addition, the genu and splenium have different compositions: the genu contains interhemispheric prefrontal fibers while the splenium contains fibers from the posterior parietal, occipital, and medial temporal regions. Furthermore, the difference in location in and of itself was hypothesized to reflect differences in fractional anisotropy: in humans, anterior white matter is more vulnerable to age-related fractional anisotropy reduction compared with the posterior white matter.

Of particular interest is the method used in this study, a 3D visualization technique called fiber tractography, which uses data collected using diffusion tensor imaging. Developed in the 1980s, this method remains tremendously important in the field of neuroscience to study major fiber bundles in normal development and aging and in disease states. Diffusion tensor imaging is a specific type of MRI sequence that is sensitive to molecular diffusion. In intact white matter containing tightly-packed axons, water diffusion is highly uneven and directional such that it is most favored along the plane parallel to the orientation of the fibers and is lowest perpendicular to the orientation of the fibers. With aging (and disease), water diffusion occurs more freely in all directions with the degradation and disruption of the cytoarchitecture of white matter. The degree of directionality in water diffusion can thus be used to detect relatively minute changes in the structural integrity of white matter.

The group found that the anatomic differences and age-related changes seen in the macaques were equivalent to those seen in humans, validating the use of rhesus macaques as a model organism for aging. The same position effect on fractional anisotropy was seen, with the more posterior splenium showing a greater value than the anterior genu. Furthermore, both regions showed a decrease in mean fractional anisotropy with age, indicating a decline in the integrity of the white matter.

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Tell us about the conference you attended recently.

March 26-29, 2014, I attended an event at the Monona Terrace called the White Privilege Conference. Hold on, it probably doesn’t mean what you think it means.

Privilege is when someone receives unearned overt or covert benefits from a perceived trait or attribute. It could be something positive (such as higher lifetime earnings for men), or it could be the lack of something negative (heterosexuals are generally not harassed on the basis of their sexual orientation). Privilege can arise from race, gender, religion, sexual orientation, physical ability, economic class, and many other parts of human identity where one type of trait is seen as the norm, valued, and included, while alternative traits are viewed as “the other”, discounted, and disfavored. An individual cannot opt out of their privilege(s); they are inherent in the society in which we live. Privilege is often imperceptible to those who have it. An excellent introduction to privilege, through a lens of gender and race, was written by Peggy McIntosh, Associate Director of the Wellesley College Center for Research on Women, called “Unpacking the Invisible Knapsack.”

I believe that although the UW-Madison and School of Medicine and Public Health are dedicated to promoting diversity and equality, and work very hard to provide leadership and create a just environment, students of color on this campus still encounter acts of racial bias and prejudice. Take for instance these three examples:

• The “I, too, am UW-Madison” tumblr, a collection of photos and testimonials from students calling attention to their experiences with assumptions, insensitive comments, and microaggressions.
• A national study of how professors respond to email inquiries from prospective students, showing very large disparities in response rates to the emails from female and/or minority students. More surprisingly, there was no benefit when women reached out to female faculty, nor when black students contacted black faculty.
• The April 2014 AAMC pilot survey of personal well-being among medical students, that found significantly higher stress levels amongst females, students of color, and LGBT students.

From the conference website, “The WPC is a conference that examines challenging concepts of privilege and oppression and offers solutions and team building strategies to work toward a more equitable world...WPC is a conference designed to examine issues of privilege beyond skin color. WPC is open to everyone and invites diverse perspectives to provide a comprehensive look at issues of privilege including: race, gender, sexuality, class, disability, etc. — the ways we all experience some form of privilege, and how we’re all affected by that privilege.”

This was the 15th annual WPC and the first time Madison has hosted. I previously attended as a senior in college (2009, Memphis, TN) as a part of my minor in social justice through the University of Minnesota School of Social Work. It was an incredible learning experience then as a young adult, and

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New Pubs!

Wow, the UW MSTP certainly seems to have had a prolific semester. Here are all the publications our current students have contributed to since the last newsletter. Good job, everyone!

Adam Bailey:


Anna Barker:

Eric Bultman:


Tim Chang:


Shawn Jackson:

Jeff Jensen:

Ben Krasy:

Bornali Kundu:

Josh LaRocque:

Rachel Lanhart:

David Manthey:
2014 Jan 23. [Epub ahead of print] PMID: 24450586


Snapshots from the 2014 Annual UW MSTP Symposium and Spring Picnic

Above: MSTP Students pose for a photo with MSTP Guru Deane Mosher and Keynote Speaker Michael Yaffe. Right: Rene Roy with daughter Tilda, perhaps the cutest Symposium attendee.

Left: Brett Morris, Erin Theisen, Mark Robitaille, Ryan Denu, Sara Berman, and Chris Gelbmann enjoying snacks and the return of spring sunshine at the Annual Spring Picnic. Right: Anna Mirer with son Max as he prepares to devour some MSTP Picnic hot dogs.
Cook's Corner

Do you have any personal recommendations for the best beverages in Madison?

I am still a member of my "church", the Brasserie V on Monroe Street, but I haven't been in attendance as much recently. However, that does not mean that I have lost reverence for Belgian beers. Number one on my list is St. Bernandus Apt 12. It is rich, smooth, with a hint of sweetness and full of complex flavors. Some feel this is a winter brew, but it can be enjoyed throughout the year. It has a very high alcohol content, over 10%, so one needs to keep that in mind when thinking about how good another one may taste! There are so many other Belgians available at church, give them a try!

If the Paul Cook were a beverage, similar to the John Daly or the Arnold Palmer, how would it be made?

Regarding a drink that I would give my name to, I think I will propose something I have never tried, but the ingredients of which are some of my favorites. Let's start with sake, Japanese rice wine, and add a little minced ginger root before topping it off with pear juice. Both the sake and pear juice are sweet, so adding lemon juice to cut that would be a good idea, but I don't want to lose the ginger flavor. You can put another favorite fruit of mine in for some color, a cherry. Maraschino cherries are not that great, anybody have other cherry suggestions? I'll give it a try and tell you what I think.

Relocation Notice: We are happy to announce that Paul and Chelsea's offices have relocated back to the newly renovated MD Admissions/Student Services Suite on the second floor of the HSLC. Their Super Official Office numbers are as follows.

Chelsea can be found in HSLC 2132
Paul's can be found in HSLC 2133

All current, former, future, hopeful, and hypothetical MSTP students are welcome to drop by with cookies to visit Paul and Chelsea in their new digs any time.

2014 MSTP Match Results!

Chris Brown: Internal Med, Weill Cornell Medical College
Eric Bultman: Diagnostic Radiology, Stanford University
Tim Chang: Neurology, UCLA
John Floberg: Radiation Oncology, Washington University in St. Louis
David Manthei: Pathology, University of Michigan
Kevin McCool: Ob & Gyn, UW - Madison
Chloe McCoy: Emergency Med, University of South Carolina
Michael Palte: Pathology, Brigham & Women's Hospital-Boston
Rene Roy: Pediatrics, University of Colorado - Denver
Aadhavi Sridharan: Internal Med, University of Chicago
Richard Yang: Pathology, UW - Madison
Chel Chat
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because my career aspirations were largely shaped by my experiences in the social justice minor, and it was amazingly fulfilling to continue to learn and apply those experiences to my work with the MSTP.

I attended many workshops and keynote talks, including:

Abolishing Academic Profiling: White Privilege and White Supremacy in Our Schools:
Discussed how schools fuel white supremacy and class inequality, and strategies for changing academic communities and classroom climates to become inclusive, non-hierarchical spaces.

Beyond Kumbaya: Promoting Privilege Discussions on College Campuses:
Addressed the progress and obstacles faced by activists and communities on campus, offered ideas about how to create institutional change and start meaningful, productive dialogue that moves beyond diversity celebration and towards real conversations about privilege and oppression.

Birth of a White Nation – Jaqueline Battalora:
Historical analysis of when, how, where and why the term “white” became codified into U.S. law, and how the label affected policy from the time of our country’s origin to present.

Racing to Justice: Moving beyond white hierarchy and supremacy to build a fair and inclusive identify and society – John Powell:
An exploration of race from an economic, political and self-making level and discuss how to build healthy, just relationships and communities.

A Critical Dialogue Poverty, Race And Education:
What does this mean For Education Degree Programs in Institutions of Higher Learning: A discussion with teachers and community educators about strategically and intentionally shifting the paradigm of racial and economic inequality in education, through analysis of theory and teacher preparation and practice.

I think my participation in this conference enables me to better support MSTP students and help make our program be even more inclusive and compassionate. We are already making our own strides towards social justice, including the recent Women in Academia panel discussion for female students and faculty, and I hope to continue and expand these conversations with you all to address many different forms of privilege and bias in academics and medicine.

License Plates Are Back!

Image submitted by Olga Ponomareva.