Welcome Letter from the Director

by Robin Lorenz, MD, PhD

I first want to say a big UAB MSTP welcome to all of the applicants we are interviewing this year. Please use your time at UAB to get to know our MSTP family and to explore how UAB and the city of Birmingham can fit in with your future training plans. We will be interviewing 44 applicants this year, and we have had 251 applications to date. Our current interviewees include students from 18 different states.

Our program currently has 35 students in their graduate years and these students are spread out through the various UAB Graduate Programs.

Southeastern Medical Scientist Symposium 2013

by Muhan Hu

The annual Southeastern Medical Scientist Symposium (SEMSS) hosted at UAB this year was a great success, with over 120 registered participants representing more than ten universities! At the meeting, students in medical, graduate, MSTP, and undergraduate programs from UAB, Vanderbilt, Emory, Georgia Regents University, and many more, had the opportunity to mingle and present their research during the two day conference.

The meeting also hosted three keynote speakers:

Dr. David Allison, a distinguished obesity researcher from UAB, talked about the myths and presumptions surrounding obesity: Did you know that there is no solid data proving that eating breakfast every morning aids in weight loss? Or that sexual intercourse doesn't actually burn as many calories as the media claim? Or that you will believe these “facts” to be true if you repeatedly hear about them in your environment? In the end, take all claims you hear with a grain of salt until you've researched it yourself.

Dr. Bert Shapiro, the National MSTP Director Emeritus, presented a lighthearted talk about the history of the Medical Scientist...
What NOT to look for when choosing an MSTP

by Mark Pepin

As future physician scientists, the decision of which MD/PhD program to select is significant, to say the least. Not only are the next 7-8 years hanging in the balance, our career possibilities are largely affected by this one choice. Although the thought of interviews and admissions are seemingly far behind, I think it is useful to reflect on how we chose UAB; doing so not only helps those also considering this school, but it also serves as a reminder of why we are doing this. Most of what follows is a description of what not to focus on, in order to avoid the disappointing burn-out halfway through the PhD.

“Will the MD/PhD be worth it if I go into a high-paying specialty since I’ll end up making money faster?”

If anyone is seriously asking this question, then the MD/PhD is definitely not for them. The MD/PhD program is intense and long, so finances should really only be considered complementary. i.e. “Can I live on the stipend for the duration of the program?” Another question that should be avoided, at least in the decision-making process, is, “How prestigious is the school,” since everyone and their grandmother recognize the Ivy leagues. However, it is more important for our career to consider both the medical and research communities that are present. At UAB, the wide breadth of research opportunities juxtaposes the diverse medical environment so closely that many labs are located in the same building as a related medical facility. One can imagine the possibilities…

While on the topic of the school, the medical school should have some level of credibility. This certainly can be an important point when looking for residency positions. According to US News Report, UAB ranked top 10 in primary care and 3 other medical specialties landed the top 20. While we are on the subject, the Biomedical Sciences program (i.e. most of our PhD’s) ranked top 35 in the nation overall, but was top 20 in terms of funding per investigator (this is good for grad students).

The last, and arguably most difficult, point of the “Do Not’s” is as follows: do not choose a school for a particular faculty member. Understandably, this is a generalization, and several students have found good homes from the very start. However, 2 years of medical school can reveal a lot of interesting science, most of which we had no idea was so cool. So, choose a school with a wide array of excellent scientists. Again, at UAB there are countless established faculty who have proven their worth in the global arena; in addition, there are many new scientists who are working hard to make a name for themselves (which is my personal preference of PI’s).

In closing, what criteria should be emphasized? The single-most important criteria, the one which determines success in all other areas, is finding the right community. Dr. Robin Lorenz has an uncanny ability to find people that “fit” not just the program, but their peers as well. This does not mean that everyone gets along always, but it allows us to have the most close-knit group of geniuses I’ve seen anywhere I interviewed. This infrastructure of community is not just an appendage at the UAB MSTP, but it is the central governor. Find a place where you thrive.

It’s Official! New MSTP Blog Revealed

by Elizabeth Ma

In case you have been living under a rock, or have somehow otherwise managed to not access either our MSTP website, facebook, or other social media, the MSTP Communications Committee would like to announce that we now have our very own blog! You can visit us at unabridgedmstp.wordpress.com. Hopefully the name makes sense to you… if not, maybe this will help: UnABridgedMSTP.

The goal of our blog is to give you a glimpse of our lives as MSTP’s here at UAB - the trials, tribulations, and tears, but also the wonders, fascinations, and intrigue that is the world of science and medicine. You’ll read about our adjustment to Birmingham and medical school, our lives in the lab, and the various events, conferences, and research that we are interested in. And hopefully, you’ll be able to learn something along the way as well.

Currently, the blog writers consist of the members of the Communications Committee, but submissions are more than welcome. If interested, please direct all your inquiries, comments, and/or blog post submissions to uabmstpcomm@gmail.com.
Travis Hull’s work in the lab of Drs. James George and Anupam Agarwal is focused on exploring the potential therapeutic properties of heme oxygenase-1 (HO-1). This enzyme’s natural function is the conversion of pro-oxidant heme groups released from dying cells into biliverdin, iron, and carbon dioxide. These byproducts of heme metabolism possess powerful anti-inflammatory, anti-oxidant, and anti-apoptotic properties, and thus HO-1 activity could be harnessed to minimize cardiomyocyte damage following acute ischemic injury or acute cardiac toxicity. In a recent study published in Laboratory Investigation, Travis built on this theory by demonstrating HO-1 overexpression to be protective in a cre-recombinase mediated model of acute cardiac toxicity. Travis now hopes to advance these findings in the more clinically relevant doxorubicin-induced model of cardiac toxicity. If successful, his work will build on 40 years of evidence, which indicates that drugs that stimulate HO-1 activity could be promising therapies for improving patient outcomes following acute MI and heart transplant. Outside of the lab Travis serves as the president of the APSA chapter at UAB and enjoys spending time with his wife and two children.

Dr. Jyothi Rengarajan, a distinguished infectious diseases researcher, presented the last keynote, talking about the little bug known as *Mycobacterium tuberculosis*. Did you know that this bacterium was found on a mummy dating back to 600 B.C.? Or that of the people who come in contact with the bug, only 10% actually develop active disease while others could be latent carriers or are completely immune?

Of course, the meeting was also interspersed with three very useful breakout sessions:

The grant writing sessions gave useful tips for preparing the training grant and compiling the whole package. One session was a mock study session whereby students got a glimpse into the process of grant reviews once they clicked the submit button. Generally, find a good mentor who is willing to spend time to make your application be the best that it can be, try to get a publication or two before applying, tell your MSTP program and your mentor early in advance if you’re looking to submit a grant, and make sure to start early!  

**continued on page 8**
MSTP Homeowners: A Birmingham Case Series

Compiled by Alexander Bray

Analyzing Time of Purchase: When Do Most MSTP Students Buy Their Homes?

- While the exact timing may differ, most students buy their homes fairly early
- Almost half (~47%) of students purchase a home during their first summer rotation
- Only approximately 10% of individuals purchase after the end of MS-2

When do MSTP Students Buy their Homes?

![Graph showing the percentage of current homeowners by time of purchase.]

- 50% buy before MS-1
- 15% buy in MS-1
- 10% buy in Summer after MS-1
- 25% buy in MS-2
- 5% buy in GS-1

“I don’t recommend buying anything before the end of MS1 because you want a year to figure out where in Birmingham you like and what areas you want to be in.”

“As soon as I got the acceptance letter I pretty much decided that I was going to purchase a house, since in my mind it made the most sense financially being here for 8 years.”

“I entered the MSTP after completing my first 2 years of medical school and as soon as I found out I had been accepted into the program I started looking for a house to buy.”

Cost of Home Ownership: Few Can Compete with the Magic City

- Few cities can compare with Birmingham when it comes to affordable homes
- 65% of homes are bought for $150,000 or lower

How much are MSTP Students Paying for Homes?

- 59% pay 50-100K
- 35% pay 100-150K
- 6% pay 150-200K

“One of the nice things about Birmingham is definitely cost of living.”

“I’m pretty much living in what I consider my dream home for this point in my life, and I was able to afford it because it’s here in Birmingham. I don’t think I would be in this situation at another program.”

“When I purchased my house, it was the same price for a mortgage (includes the actual house payment, taxes, and insurance monthly) as it was to rent so it made a lot of sense.”
Most UAB MSTP homeowners expected to buy a home upon being admitted

16% of current owners arrived at UAB with no expectations about buying a home

“I expected it would be cheaper than Maryland (5th most expensive state).”

“No – I had zero expectations. I thought it would be a good investment of money, so I went for it and am happy how it has turned out so far.”

Top 10 Factors MSTP Students Take Into Consideration when Buying a Home
1. Location and proximity to UAB
2. Cost
3. Maintenance required (or lack thereof)
4. Resale potential
5. Floor plan/layout
6. Size
7. Condition/age of building
8. Yard size
9. Safety of neighborhood
10. View

The Home Search: or How I Learned to Stop Worrying and Love Real Estate Agents

“We found the condo on our own, but we bought it using a real estate agent. This was our first home purchase and it made a big difference in our level of comfort and confidence in negotiating with the seller. I would definitely recommend using an agent at least to buy, if not to find the house or condo.”

“Using an agent I feel is a must as it gives you access to more properties and you don’t have to contact the seller for each one, the agent takes care of it. I also liked using an agent because they coordinated all the visits. Makes it easy, especially as a med student.”

“I used a real estate agent recommended by a former MSTP student. They were great and even rented me a car and let me stay at their place when I had to fly in to review the plans.”

Approximately 70% of MSTP students employed real estate agents in some fashion

Online listings such as MLS, Zillow, and RealtySouth were also widely used

How Did MSTP Students Find Their Homes?
- 52% Real Estate Agent Alone
- 16% Agent + Online Listings
- 16% Online Listing
- 16% Neither
The graduate programs our students are currently in include:

<table>
<thead>
<tr>
<th>Graduate Theme/Program</th>
<th>Number of MSTP students</th>
</tr>
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<tbody>
<tr>
<td>Neuroscience/Neurobiology</td>
<td>13</td>
</tr>
<tr>
<td>Immunology</td>
<td>5</td>
</tr>
<tr>
<td>Cancer Biology</td>
<td>5</td>
</tr>
<tr>
<td>Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>Biochemistry and Molecular Genetics</td>
<td>2</td>
</tr>
<tr>
<td>Cell, Molecular, and Developmental Biology</td>
<td>2</td>
</tr>
<tr>
<td>Biomedical Engineering</td>
<td>2</td>
</tr>
<tr>
<td>Pathobiology and Molecular Medicine</td>
<td>1</td>
</tr>
<tr>
<td>Nutrition Sciences</td>
<td>1</td>
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<tr>
<td>Public Health (Health Care Organization and Policy)</td>
<td>1</td>
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</tbody>
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Some statistics about our current students include:

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<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Average MCAT</td>
<td>34</td>
</tr>
<tr>
<td>Average GPA</td>
<td>3.75</td>
</tr>
<tr>
<td>% students (2009-2014) with publications prior to matriculation</td>
<td>63%</td>
</tr>
<tr>
<td>Geographic distribution of students:</td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>13%</td>
</tr>
<tr>
<td>Central</td>
<td>20%</td>
</tr>
<tr>
<td>South</td>
<td>43%</td>
</tr>
<tr>
<td>West</td>
<td>23%</td>
</tr>
</tbody>
</table>

Some details on our outcomes include:

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Time to Degree (last 5 years)</td>
<td>7.6 years</td>
</tr>
<tr>
<td>Average number 1st author publications</td>
<td>2.0</td>
</tr>
<tr>
<td>Average number total publications</td>
<td>4.6</td>
</tr>
<tr>
<td>Average impact factor for all 1st author publications over the past 5 years (73 total publications)</td>
<td>5.24</td>
</tr>
</tbody>
</table>

Postgraduate residency choices (102 alumni):

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Medicine</td>
<td>27.5%</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>13.7%</td>
</tr>
<tr>
<td>Pathology</td>
<td>9.8%</td>
</tr>
<tr>
<td>Neurology</td>
<td>9.8%</td>
</tr>
<tr>
<td>Surgery</td>
<td>7.8%</td>
</tr>
<tr>
<td>Dermatology</td>
<td>7.8%</td>
</tr>
</tbody>
</table>

I also want to say congrats to Travis Hull, Stephanie, Brosius, Carson Moseley, and Brian Warmus for receiving individual fellowship awards this year (AHA or NIH F30/F31). In addition, please join me in welcoming Dr. William Geisler (new Clinical Associate MSTP Director) and Jacquie Bennett (new Program Coordinator) to our MSTP family.

Finally, my heartfelt appreciation goes out to all of the MSTP students who have been giving their time and energy to making this a great MSTP. There are many more than I can easily list, but special thanks goes to the students who organized the fantastic SEMSS 2013 (Zach, Jarrod, Katie, Mika, Muhan, Jenn S., Elizabeth, and Anna Joy), to those who have put their efforts into the new UAB APSA chapter (Travis, Jenn, Alice, Stephanie, and Alex D.), to the leaders of the Griffin Society (Katie, Heather, Stephanie, and Alice), to the organizers of our fantastic retreat (Jeff, Jon, and the rest of the Events committee), and to the students who have contributed to our new blog, UnABridged (Elizabeth, Tim, Alex B., Lindsay S., Mark, and Muhan). Your efforts help to make our MSTP a fantastic program and I am looking forward to our next year together.

-Robin Lorenz, MD, PhD
Assistant Dean for Physician-Scientist Education
MSTP Director
University of Alabama at Birmingham
“EAB is about building relationships; it’s about fostering trust and creating hope.” These words from Marielle Baldwin, the former president of Equal Access Birmingham (EAB), describe the foundation on which EAB was built - to reach out to the underserved population of Birmingham and give them the opportunity to have access to a service that many of us take for granted.

EAB began with several students volunteering at a nearby clinic, M-Power. As that ministry expanded further, the students decided to take on the monumental task of starting their own, student-run clinic. The clinic would take place in the Church of the Reconciler on Sunday afternoons, a time that was donated for the use of the clinic. The organization itself is managed by the students with at least one physician present to help instruct students as they interact with the patients and also to provide a final diagnosis. Since the start, the clinic has served faithfully every Sunday afternoon, and it has also continued to maintain its presence in the M-Power clinic offered every Wednesday.

As mentioned, EAB manages two clinics in addition to the many other services that it provides, both the EAB clinic at the Church of the Reconciler and M-Power through M-Power ministries. Although both of these clinics are serviced by EAB, they have very different goals. The EAB clinic at the Church of the Reconciler is a longitudinal care clinic that allows patients to make appointments and have follow-ups; however, the M-Power clinic is an acute-care clinic that only allows patients to come for a visit up to three times a year. Yet, although the method is different, each of the clinics treats patients that would otherwise be unable to receive healthcare.

However, in addition to the clinics, EAB provides multiple other services as well. The first of these is health screenings that are offered free to the community. EAB offers these screenings once every month and provides many health services during them, including a basic fitness exam and social services to help individuals find a way to receive health care outside of the screening. These services extend further to health education of the community on topics such as tobacco use, hypertension, and the most emphasized one, diabetes.

Recently, they have added the service of doing HIV testing to their roster. This means that students that have been trained can administer HIV tests during any of the screenings. This service is simply a furtherance of EAB’s commitment to reach the underserved community with services that will be of the most benefit to them.

So what does EAB mean for an MSTP student? For the first two years of medical college, the meaning is no different than that of any other medical student; it is a way to give back to the community in a meaningful way, and at the same time hone the clinical skills that have been taught in medical school. The skill sets that are learned in the Introduction to Clinical Medicine (ICM) course are given an immediate, real-world application when a volunteer is given the task of taking a history and maybe even a physical without the aid or presence of anyone else in the room but the patient. Learning by doing truly is the best method. After the encounter, the volunteer will present the case to the current physician on staff and then see the patient together. This again presents a great learning opportunity; however, true reward is reaped when seeing the continued on next page
patient’s joy from that care that they have received.

As graduate students in the third through sixth years, the same rule applies, but now it is an opportunity to keep up the clinical skills that were learned in ICM. As graduates, it goes without saying that exposure to a clinical setting is not easy without specifically seeking out opportunities. EAB is an excellent way to maintain those skills while not committing a large amount of time outside of the lab.

Finally, as third and fourth year medical students, it presents an opportunity to begin giving back some of the skills that have been learned. Many of these volunteers actually serve in the role of coaching younger students in many of the techniques that they themselves learned early on. EAB is a great opportunity for an MSTP to be involved in.

Getting involved in EAB is as easy as volunteering for an open volunteer spot on either Sunday with the EAB clinic or on Wednesday with M-Power. It is a small time commitment of only four or five hours. Additionally there are opportunities to work at any of the available screenings that are offered each month.

Lastly, another way to get involved is through joining a committee. These positions are opened each year near the beginning of school year and offer a way to become more involved in EAB as whole. Currently, there are six committees that play an integral role in the success of the organization, and each one offers something different so that almost anyone can find one that will suit their interests.

Another set of breakout sessions focused on the life of aspiring physician scientists. The sessions allowed students to share ideas for community service, learn practical networking skills needed in the inherently social and collaborative careers of science and medicine, and understand the importance of keeping a balanced life during their rigorous training. General tips: the training years of a physician scientist are tough, but don’t forget to maintain balance and keep doing the things that make you who you are. After a tough day or week, go do some community service, dance, hang out with friends, or whatever else that is an important part of your happiness. Find a good support system, whether it’s in your school or among your friends, and don’t hesitate to use it.

Of course, because of the nature of the MSTP program, another important aspect is transitioning back to clinical years, finding research residencies, and understanding the way in which publishing is and will be changing in the years to come. Main points: find opportunities to do clinical volunteer work during your research years, seek out shadowing opportunities, look for residencies, such as ABIM programs, that have built in, protected, research time while you complete your residency, and keep in mind that when your generation of MD/PhDs become PIs, the landscape of publishing will be very different from that of today.

Lastly, due to the number of undergraduates who attended the SEMSS meeting, this year’s breakout sessions also included a special session of the undergraduates who aspire to become physician scientists. The undergraduates were able to talk to a panel of directors who...
ANNOUNCEMENTS

It’s an auspicious day for marriage!

Congratulations to the two lovely couples who tied the knot on August 17, 2013!

Morgan Locy joins hands with Marissa Snyder in Defiance, Ohio.

After a whirlwind international marriage ceremony and honeymoon, Anna Joy Graves and Nathaniel Rogers celebrated a wedding ceremony with their Birmingham friends at the Greystone Church of the Highlands.

SEMSS, continued

are on the MSTP admissions committees of various schools and a panel of students who shared their application experience.

Overall, SEMSS 2013 was a great success! The meeting was great at feeding students not only research, but also useful tips for becoming successful, happy physician scientists.

It’s a Girl!

Please join us in welcoming Ana René Berry, born on October 30, 2013 to Christy and Ryan Berry! (on right)


Medical Student Research Day Awards 2013

Long Term Oral Presentation:
Catherine Poholek

Poster Presentations:
Group A
Winner: Avinash Honasoge
Runner Up: Stephanie Brosius

Group C
Winner: Brian Warmus
Runner Up: David Figge

Group E
Winner: Jennifer Stanley

Group J:
Winner: Emily Blosser

Group K
Winner: Morgan Locy
Runner Up: Muhan Hu

Group N
Winner: Alice Weaver

Group P
Winner: Travis Hull

The Vulcan Letter

Managing and Layout Editor
Elizabeth Ma

Layout Editors
Lindsay Stoyka
Randy Seay

Contributors
Alexander Bray
Muhan Hu
Timothy Kennell Jr.
Robin Lorenz, MD, PhD
Mark Pepin
Best of Birmingham - A Personal Perspective

by Lindsay Stoyka

Best Tourist Site
Vulcan Park and Museum

Vulcan statue, one of Birmingham most memorable sites, overlooks the city and is the world’s largest cast iron statue. Originally built in 1904, the statue has overlooked Birmingham since the 1930s. Vulcan Museum gives an interactive history of the city’s history, but few experiences compare to standing at the top of the statue and looking out over the entirety of Birmingham city. (Note: Recreating Mufasa and Simba’s “Everything the light touches” conversation from The Lion King is optional, but encouraged.)

Best Running Trail
Shades Creek Greenway (“Lakeshore Trail”)

This decision is admittedly biased, based on location. However, this 2.5 mile trail is well populated, paved, and (generally) flat. It has parking at both ends of the trail and is surrounded by scenic wilderness, though it is near Lakeshore Parkway. The trail runs from Brookwood Boulevard (near Highway 31) to Greensprings Highway/Columbiana Road. It is well-populated enough to avoid feeling isolated, but is rarely overrun with visitors. Mile markers are spray painted on the pavement to help determine how far you have left.

Best Popsicles: Steel City Pops

Steel City Pops transforms popsicles from a childhood summer snack grabbed once the ice cream runs out to a crave-able gourmet treat. Founded in the Birmingham area, Steel City Pops makes 100% natural popsicles, with flavors ranging from fruity to creamy. In addition to traditional flavors such as strawberry, lemonade, and chocolate, the company surprises your taste buds with concoctions such as orange mint green tea, ginger wasabi, and pumpkin.

Best Coffee Shop
O’Henry’s Coffeeshop

Also founded in the Birmingham area, O’Henry’s Coffeeshop is a double threat to competitors – it boasts truly great coffee and also a perfect environment to relax (or, to be more accurate, study). O’Henry’s serves coffee brewed at their sister company, O’Henry’s Coffee Roasting Company. A popular venue for medical students, it provides an excellent location for study sessions while supporting the ever-growing caffeine addiction.

Best Shopping Mall Experience
The Summit

The Summit is an outdoor mall located at the intersection of Highway 280 and I-459. It boasts an impressive range of shops, though the winning factor here is the experience itself. The Summit has beautiful scenery and generally has a great aesthetic.

Best Late Night Food
Al’s Deli and Grill

Legend has it that Al’s hasn’t been closed in 14 years. Not even for holidays. Though not necessarily a Christmas dinner locale, Al’s is a Southside Birmingham staple, open late and always brimming with a variety of Birmingham residents. Crowd favorite, “loaded bakers,” is a potato grown to gigantic proportions and filled with every form of delicious food imaginable. Visit for a true Birmingham experience.

And if you’re looking for a specific cuisine to wake your tastebuds, check out the following:

Best Chinese Food: Red Pearl
This is real authentic chinese food – it even has it’s own Asian market attached to it!

Best Italian: Gian Marcos
You won’t even find such quality food in Rome – it’s a small place that really uses the freshest ingredients.

Best Sandwiches: Mama Goldberg’s
You can’t beat their hot sandwiches

Best Mexican: Sabor
Did someone say cheap margaritas?

Best Barbeque: Saw’s
You can’t beat their pulled pork sandwiches
Upcoming Events in Birmingham

12/3/13 City of Birmingham Annual Christmas Tree Lighting at Linn Park
12/5/13 Open House and World AIDS Day Event at Birmingham AIDS Outreach
12/6/13 An Intimate Evening with Yo-Yo Ma at UAB’s Alys Stephens Performing Arts Center
12/17/13 Wacky Tacky Christmas Light Tour, leaving from Avondale Brewing Company
12/20/13 “Mythbusters Behind the Myths” at the Birmingham Jefferson Convention Complex (BJCC) Concert Hall
Winter Wonderland Holiday Exhibit at the McWane Science Center 11/20/13-1/5/14
Pepper Place Saturday (Farmer’s) Market 4/3/13-12/14/13
Santa Special at the Heart of Dixie Railroad at the Heart of Dixie Railroad Museum 11/30/13-12/21/13