Letter from the President

Dear MUSC Postdocs,

I am excited that we have new faces representing our postdoc community. I encourage you to read the short bios from each of the new Postdoctoral Association (PDA) Committee Members. We each hope to make great strides in unifying the MUSC postdoctoral community and achieving each of our individual goals.

In this issue we have included a number of helpful articles. First, in conjunction with it being tax season, Drs. Krug, Ferland and Saxena have written pieces to help postdocs understand their tax responsibilities. Additionally, for an on-going Q & A segment, I have put together a compilation of responses from junior faculty covering their experiences of finding and starting their own research labs.

In February we held our Annual Town Hall, which brought up a few new concerns that we plan to address in the coming months. Of course long-standing concerns on inequality in pay and leave were heard and we continue to work with the PAAC on these critical issues. Several of the new topics were: 1) confusion for non-MUSC employee fellows (T32 or non-NIH grant-funded postdocs) with regards to taxes, orientation, pay, badge/email access renewal, benefits; 2) postdoc negotiation abilities (see the postdoc section of the faculty handbook); 3) initiating an MUSC ‘craigslist’; and 4) the postdoc mentoring initiative by the NIH which includes curriculum and evaluation. As always, contact someone from the PDA with any postdoc concerns or ideas for future seminars or articles. We are here to assist in any way possible. Have a wonderfully successful spring.

Kind regards,

Michelle H. Nelson, Ph.D.

“We each hope to make great strides in unifying the MUSC postdoc community and achieving each of our individual goals.”

- Michelle H. Nelson, Ph.D.
2015 PDA President

In This Issue

- Meet the “PDA Bunch”
- Taxes! Taxes! Taxes!
- The Faculty Handbook
- Q & A: Pathway to Professorship
- Alternative Funding
- Science in the News

Your 2015 PDA Committee Members
Meet the “PDA Bunch”!

PDA elections are held annually. On July 2014, a solicitation for officer and chair candidates went out to the entire MUSC postdoc community, followed by the actual election in October (anonymous via RedCap). Please meet your elected 2015 PDA Committee Members! Get to know their faces, PDA goals and a fun fact about each of them! These are your postdoc advocates – say hi and reach out to them!

**PRESIDENT: Michelle H. Nelson, Ph.D.**

PDA GOALS: To empower postdocs to take responsibility for their own careers, enhance the mentoring of postdocs and to address prior concerns such as inequality in pay, lack of time off, and postdoc term-limits.

FUN FACT: I won the ugly Christmas sweater contest with an outstanding ‘tree’ skirt, red turtleneck, polka-dot stockings, and a very gaudy Christmas-themed necklace.

**VICE PRESIDENT: Mauhamad Baarine, Ph.D.**

PDA GOALS: To provide postdocs with tools to better define their professional relationship with their mentors, such as defining a structure for advancing a research plan between postdocs and PIs. This would improve research quality and promote professional advancement for postdocs and PIs alike. By working together, we can provide the ideas needed to form a road map that will help us postdocs during our stay at MUSC and also in our professional future.

FUN FACT: When I was kid, after soccer, my second hobby was hunting frogs!

**TREASURER & SECRETARY: Sverre Aune, Ph.D.**

PDA GOALS: As Treasurer, my goal is to generate an official PDA budget for acceptance by the Dean of Medicine; this has not been done before. As Secretary, I strive to accurately record our meeting discussions, so that our PDA Media Chair can post them to the newly re-launched PDA website.

FUN FACT: For some reason, I have several plastic owls sitting above my fireplace.

**INTERNATIONAL AFFAIRS CHAIR: Nishant Saxena, Ph.D.**

PDA GOALS: To design a program for new international postdocs that will help them settle into a new city/country with ease. Practical questions will be addressed, such as how to rent an apartment, commute to MUSC, get a driver’s license, file taxes on J1 visa, etc.

FUN FACT: When I first landed at the Chicago International Airport, I bought a burger from a vendor and she told me 699. I was so surprised that a burger can cost $699! After asking the vendor several times to confirm that it is $699, she understood that I was confused and then clearly said 6 dollars & 99 cents. I took that as a sign of relief!

Continued on page 3
CAREER DEVELOPMENT & ADVOCACY CHAIR: Chantelle L. Ferland, Ph.D.

PDA GOALS: To increase the awareness and opportunities for MUSC postdocs who are interested in pursuing non-traditional careers in STEM. While the postdoc experience is an important step in the career development of any Ph.D., not all of us will go on to have our own lab in a R01-intensive university. It’s important for us to know what other options are out there that might peak the interests of our scientifically trained minds and how to pursue them. I hope to be able to bring some of those options to light for MUSC postdocs.

FUN FACT: Outside of the lab, I am an active triathlete. I have competed and placed in several national championship races and raced Ironman events all over the U.S. and internationally.

MENTORING COMMITTEE CO-CHAIR: Jennifer Bestman, Ph.D.

PDA GOALS: We postdocs are trained to be experts in our scientific disciplines, but typically we have meager training on the best ways to teach and mentor students. I would like to develop a workshop where the participants can explore and discuss the best practices and approaches to mentoring in the biomedical sciences. Clearly, good mentorship is important for inspiring our mentees do their best work, but mentorship is also a critical factor that influences whether students continue or leave careers in biomedical research, something I think should concern all of us in academia.

FUN FACT: For the last year, I have been experimenting with lacto-fermentation of all sorts of things in my kitchen and forcing people to eat them. So far, I have paralyzed no one.

MENTORING COMMITTEE CO-CHAIR: Torry Dennis, Ph.D.

PDA GOALS: To gather and disseminate resources for issues in mentoring. This includes both being mentored as a postdoc as well as providing information on the best practices for mentoring junior scientists. As we become better mentors ourselves, we not only improve the quality of training for current and future mentees, but we also understand how to better approach current relationships with our mentors and advisors.

FUN FACT: I seriously considered going to school to be a jazz guitarist.

MEDIA, WEBSITE & OUTREACH CHAIR: Sabina Wang, Ph.D.

PDA GOALS: To modernize the MUSC PDA website, add regular updates and make it more informative and user-friendly. ‘Grant Writing Resources’ and ‘Funding Opportunities’ sections will also be included in the website. Please email me for website suggestions! For outreach, we hope to establish English as a Second Language programs with local institutions for international postdocs and their families.

FUN FACT: I am a volunteer volleyball coach for several community girls’ teams in the Charleston area.
“What’s up with taxes on my fellowship or training grant stipend (e.g., NRSA T32/F32)?”

Ed Krug, Ph.D.

Let me start out this column with saying that the following is not official tax advice—you need to talk to the IRS or go to your friendly CPA for that. What I have to say is, however, an accumulation of information that I believe is reliable.

Fellowships/training grants are subject to income tax
The first BIG question is whether or not a stipend from a fellowship or training grant is subject to income tax. In all of my efforts to find evidence to the contrary, the answer that keeps coming up is: “yes,” you need to pay both federal and state income tax.

How to pay federal and state income taxes
The second BIG question is how to pay your federal and state income tax obligations. Since stipend disbursements do not go through MUSC payroll, estimated taxes are not withheld. It is your responsibility to submit quarterly payments directly to the federal and state revenue offices. You can find the relevant instructions and forms at the Federal IRS and SC Department of Revenue websites listed in the Tax Resources section on page 5.

Estimated taxes for 2015 are paid quarterly - April 15, June 15, and September 15 of 2015, with a final submission on January 15, 2016. When you eventually file your tax return (i.e., 1040) you use the total amount of estimated taxes you paid to calculate any refund or additional payment due. I do not suggest waiting to make one humongous payment when you file (vs. quarterly payments) as you might be liable for a penalty.

Continued on page 5
Your departmental business manager can help
One peculiarity of being a stipend-supported postdoc is that you will NOT receive any official document from MUSC stating the total amount of stipend received in the past year. I DO suggest that you contact your departmental business manager and request a letter indicating the duration of your stipend-funded appointment as well as the total amount – DO NOT include it with your tax return – keep this for your records, just in case of an [ugh] audit in the future.

Reporting the total received stipend amount
The third BIG question is where to indicate the total amount of stipend received. You can find a plethora of information about taxes on scholarships and fellowships in IRS Publication 970 Tax Benefits for Education (see Tax Resources section). Instructions on where to include the stipend amount on the particular version of 1040 you use can be found in the section “Reporting Scholarships and Fellowship Grants.”

Other potential confusions
Finally, there are a couple of other potential confusions about postdoctoral stipends that might come up if you use a tax service. One is that they may ask if you are “self-employed.” The answer is that NRSA postdocs are considered a “non-employee” according to NIH and the IRS (see Tax Resources section). Bottom line is that you do not pay FICA and Medicare taxes – “good” in that you have about $3000 extra cash per year – “bad” in that you are not contributing to your Social Security account. I suggest stashing this extra cash away in an IRA or some such mechanism.

The above information pertains to the vast majority of MUSC postdocs receiving stipend support – those on an NRSA T32 or individual NRSA F32 or similar mechanism.

Other stipend or direct pay postdoc funding
Be aware that other stipend or direct pay funding may have different conditions peculiar to their awards that could constitute a “work” relationship. The National PDA website has a good collection of resources that can help point you in the right direction (see Tax Resources section).
Navigating Tax Time on a T32

Chantelle L. Ferland, Ph.D.

While the loom of April 15th can be daunting for anyone who isn’t a CPA, for T32 Fellowship recipients and other “Non-employee” postdocs this can be especially difficult. That’s because postdoctoral fellows, unlike traditional postdoctoral scholars, are not subject to automatic federal tax withholding from their stipend and don’t receive a W-2 or 1099-MISC from MUSC each year. They are, however, still subject to the IRS requirement that income tax be paid on a regular basis throughout the tax year. This can be an extremely confusing process to navigate especially for a new fellow. While I am in no way an experienced tax professional, I am a third year T32 Fellow, and this article hopes to serve as a rough guide to getting you started in this process.

The IRS requires postdocs receiving a taxable fellowship stipend to pay estimated taxes throughout the year (quarterly) to avoid paying a penalty. Estimating your federal taxes is easier than it sounds. IRS Form 1040ES (http://www.irs.gov/pub/irs-pdf/f1040es.pdf) is a fillable online form for estimating your federal taxes for 2015. The form also provides you with payment vouchers and the required due dates, so that there is no confusion as to when you should be making your payments. You’ll need your annual stipend amount in order to fill out this form. The best way to get this information is to contact your department business administrator who can provide you with your annual stipend amount. Alternatively, you can simply do the math using your direct deposit statements.

Postdoctoral fellows file their tax return just like every other tax paying citizen with the one exception that you won’t get a W-2 or any other formal income statement from MUSC. However, you still need to file your taxes. Once you’ve made your estimated quarterly tax payments, you should report that information on your tax form as well as report your total fellowship income. For specific information on where to report your fellowship stipend based on the tax form you fill out (i.e. which line on the 1040, 1040 EZ, etc.), refer to IRS publication 970 “Tax Benefits for Education,” which has a specific section on reporting scholarships and fellowships (see the Tax Resources section on page 5).

Again, I am not a tax professional. If you are still confused about how to report your income and file your tax return, you should take the appropriate steps to seek the help of a qualified tax professional. Other useful resources that you can go to for more information include the National Postdoctoral Association’s website (www.nationalpostdoc.org), IRS.gov, as well as Dr. Krug (Associate Dean for Postdoctoral Affairs) in the College of Graduate Studies here at MUSC.
INTERNATIONAL POSTDOC AFFAIRS

Taxation for J-1 Visa Holders

Nishant Saxena, Ph.D.

Foreign nationals new to the US always have many questions in their minds while filing the tax return. It is a complicated process and somewhat difficult to understand. With this aim, I thought to write a short article for new MUSC international postdocs on J-1 status. This article is from my personal experience and understanding. I hope it will be helpful for the MUSC postdoc community.

The first years of a J-1 are complicated!

For the first two calendar years, the status of a J-1 visa holder is "non-resident alien," so I would recommend the person filing taxes to do it through a qualified tax filing agent. Tax returns can be complicated, involving factors like whether countries are tax exempted, and new postdocs may not be familiar with these details.

Electronic returns are two times faster

Typically it is quick to get the tax return if you file electronically (3 weeks), but if you are filing a paper return it will take longer (6 weeks). Once you file your return, it may take up to 24 hours (for electronic return) and may take up to 4 weeks (for paper return) to show on the IRS online system. To check the status of your refund you may visit: http://www.irs.gov/Refunds.

Online resources are available

There are websites from which one can file the tax return online like www.taxact.com, www.turbotax.com, www.intuit.com, www.taxslayer.com, www.hrblock.com, www.efile.com, etc., but many agencies are available in Charleston. Also, if you want to visit the agent for filing return, Pinnacle One is very close to MUSC. The address of Pinnacle One is 216 Spring St. #C, Charleston, SC 29403. You can also call and make an appointment before visiting them at (843) 722-3222.

For more J-1 specific tax information, download the article entitled "U.S. taxation of J-1 exchange visitors" by Paula N. Singer from Thomson Reuters. This article gives a detailed description of the U.S. tax rules, exceptions for J-1 exchange visitors, income tax treaty exceptions etc. The link for the above article is: https://tax.thomsonreuters.com/wp-content/pdf/nra-tax/US_Taxation_of_J-1_Exchange_WP.pdf.
Whether you have decided to pursue a traditional academic career or are still uncertain, part of good due diligence in researching career options is to be familiar with your institution’s Faculty Handbook. With a quick skim, you can begin to understand the university structure as well as the “hoops” a faculty member is required to jump through to obtain tenure. Although every institution will have its nuances, most Faculty Handbooks cover similar topics and are freely available to view online.

The MUSC Faculty Handbook (128 pages) covers topics as broad as ‘Faculty Appointment, Promotion and Tenure Policies’ to ‘Faculty Start-Up Ventures Policies and Guidelines’. The most updated version of the handbook can be found at: http://academicdepartments.musc.edu/faculty_senate/handbook/2011_Faculty_Handbook%20modified%202014_04_02.pdf

Unfortunately, this handbook does not contain a section that explicitly outlines a faculty member’s responsibility in training postdocs. Thus, in terms of looking for a reference regarding postdoc negotiation, other postdoc specific resources may be more appropriate. Ultimately, Dr. Krug is the best person to consult. The sections where the MUSC Faculty Handbook does address postdocs are listed below:

⇒ Page 54/128: 10.04.4.7 “Students” means full-time and part-time students of all levels including those in training, such as post doctoral fellows and residents.

⇒ Page 38/128: FACULTY DUTIES AND RESPONSIBILITIES
  [The faculty] has the responsibility for determining the entrance requirements, determining requirements for promotion and dismissal of students...

⇒ Page 51/128: RESPONSIBLE CONDUCT OF RESEARCH-AUTHORSHIP
  Special care must be taken to clarify authorship with entry level professional persons such as graduate students, postdoctoral fellows and trainees, preferably before the work has begun.

⇒ Page 109/128: As a public, educational institution, MUSC engages its students and post-doctoral trainees in research-related activities as part of their educational and training experience.

The Postdoc Handbook
http://academicdepartments.musc.edu/grad/post_doc_resources/curr_postdocs/handbook.htm

Postdoc Parental Leave
http://academicdepartments.musc.edu/grad/post_doc_resources/curr_postdocs/parental_leave.htm

PDA Bylaws

Responsible Conduct of Research & Career Development
http://academicdepartments.musc.edu/grad/post_doc_resources/curr_postdocs/resp_conduct.htm

NIH 2015 Postdoc Stipend Guidelines
Q & A: Pathway to Professorship
Michelle H. Nelson, Ph.D.

In this ongoing series, three new MUSC faculty members answer questions regarding the process of acquiring a faculty position. Here is what Yi Benny Yang, Ph.D. (BY), Chrystal M. Paulos, Ph.D. (CP) and Thomas Naselaris, Ph.D. (TN) had to say:

The Job Hunt

Q: When should postdocs start looking and applying for positions?
BY: After publishing a decent paper.
CP: Once you have obtained a nice research portfolio and, ideally, after you have published a high impact manuscript. Perhaps most importantly, you have a vision for how you want to build your lab and the critical questions you are uniquely able to address with your experience.
TN: As soon as you have a compelling story to tell and some solid papers to back it up.

Q: What mechanisms did you use to look for job openings? Postings or by word of mouth?
BY: NatureJobs and ScienceCareers.
CP: Postings and word of mouth – both are important – NETWORK!!!

Q: How did you prepare for your chalk talk?
BY: You may have a lot of thoughts, but try to talk about two specific directions or projects that you believe will interest people.
CP: I practiced mine in front of my friends, my cat, etc. I practiced it many times and I also asked neighboring labs to be my audience that were in a different field altogether. If they understood me, than I felt more confident. Alas, you just have to get out there and interview and be OK to fall on your face too. Every NO is closer to a yes.
TN: Talked aloud (and alone) in front of a whiteboard for a few hours.

Q: How did personal networks play into you getting interviews and hired?
BY: If you have very famous collaborators, their recommendation letters will certainly help.
CP: It helped a lot! It’s good to know the world in general.

Continued on page 10
Q: How did personal networks play into you getting interviews and hired?

TN: They didn’t play any obvious role. It’s mostly about your pubs. Pedigree also seems important: if your boss is famous, the search committee may look a bit closer at your application.

Q: What were you not expecting during the interview? Or what did you think wasn’t that important to worry about but you should have?

CP: Each place you interview is different and some people will really value what you can bring to the table and others will really hate it. I should have been more confident. I tried to prepare for every person I interviewed with by reading all his or her papers. Most of the time they just wanted to hear about me and how I would build. So, of course I would have still read the scope of their work but not have approached it like homework the way I had done.

TN: Most of the faculty where you are interviewing will treat you like a guest in their home, even as they are criticizing your work. Occasionally you will encounter some real cranks who are blatantly hostile. Smile and be polite when this happens and don’t let it psych you out.

Q: What were you most worried about during the interview process, but shouldn’t have been?

CP: My chalk talks were very stressful to me. But overall they went well.

TN: Nothing. Just give a good talk and be friendly and you’ll be fine.

Q: What was your top quality that got you hired?

CP: Cell therapy rocks and I’m in that field.

TN: Gave an engaging and entertaining talk with a strong narrative. Was friendly/relaxed. These things are more important than demonstrating how smart you are.

Q: Did you have funding during the interview process? What type?

BY: None.

CP: None! I would have had more offers if I had, I think.

TN: None.

Q: How long did the interview process take?

CP: In total, 1 year until I got the job.

TN: Each interview took two days. I was doing interviews fairly regularly for about 6 months. This is likely to be a rather intense period of your life.

Q: What are your recommendations for negotiating? Did you ask for anything unique?

BY: I wanted several special and expensive equipment for growing anaerobic bacteria, which I would have even bought using my own startup. I asked whether the department could get them for me. Fortunately, I was able to persuade.

CP: Ask for more money and make sure they deliver on promises. Be careful how you word what you ask for and get the agreement in writing.

TN: Ask other faculty what they wish they’d gotten in their negotiations. Get as much as you can without coming across as an a-hole. I asked for a lengthy deferment of start date because I’d just had a baby. I was met halfway on that.

Q: What were your criteria for ultimately saying yes to MUSC?

BY: A balance between work and life. MUSC offered me a good opportunity to start my own research. And my family and I really love Charleston.

CP: There were other investigators at MUSC that worked of T cell biology and cancer immunity. The program was being built and I felt that would be an unique opportunity. They offered me the position.

Continued on page 11
Q: What were your criteria for ultimately saying yes to MUSC?

TN: Excellent facilities, friendly people, an excellent chair who is invested in mentoring, some excellent senior and junior faculty, substantial startup package, 10 min drive to the beach.

After Getting Hired

Q: What is the composition of your lab and how did you decide to start it out that way?

BY: Currently, just me and 1 Ph.D. student. And I am seeking to hire a postdoc.

CP: 1 tech and 2 postdocs. I was advised to start a critical mass.

TN: 1 postdoc, 1 grad student, 2 undergrads, 1 lab manager. When you start you may not have a ton of choice. My only strategy is to take the smartest people that are available. I think that's what most people do.

Q: When did you apply for your first grant and what was the mechanism?

BY: Started to apply for R01 and a couple of institutional grants within several months after I started my lab.

CP: 6 months into my job, I applied for a Concern Foundation (Conquer Cancer Now) grant.

TN: I applied for a Searle award before arriving. I applied for an R01 six months after arriving.

Q: What type of mentoring team should you get into place?

CP: Get three people from within the university to mentor you, but do not stop there. The world is full of good mentors and you can never have to many.

TN: At any good department you will be able to get freely and happily given guidance from anyone who's been there longer than you. I've benefited from talking to a lot of different people.

Q: Did you inherit or purchase large equipment? Did you negotiate for something specific?

CP: I negotiated and inherited equipment.

TN: I negotiated and inherited equipment.

Q: How long did it take to write your first R01?

CP: Two years, thanks to help from my postdoc (Michelle H. Nelson) and my husband (Richard Himes).

TN: Six months. It was funded a year later. Tip: it's not a bad strategy, once you have your job offer but are still a postdoc, to hold off publishing your current project so you can use it as a basis for your grant (if your PI is cool with it). This little maneuver can save you a lot of tenure clock time. You may even want to ask for a deferred start date so you can start writing your grant before you even arrive. Funding/tenure clock starts on day one. Very soon you will begin to hear it ticking.

Additional Comments

CP: Do what you want with your life, no matter what it is, and do not let anyone tell you cannot do something. Also be comfortable with change and discomfort. Pain is good and makes you grow.

TN: Be open to accepting interviews from departments you may not have heard of. I am extremely happy I did. Tip: make sure you ask each and every faculty you interview with to tell you about their own research, even if it has nothing to do with yours. Some people consider failure to do this a majorly offensive faux pas. ■
Alternative Funding: Crowdfunding for Science
Vitria Adisetiyo, Ph.D.

These days, it's common knowledge that funding for scientific research is harder to come by. In fact, NIH and NSF budget cuts are generally considered the norm, allowing less than 15% of applications to get funded. Some argue that these high stakes have discouraged innovative and risky ideas—some of the most important ingredients to problem solving. Moreover, even grant mechanisms designed for high-risk high-reward ideas, such as the R21, need preliminary data to be competitive even when it's not officially required. This begs the question, “What is an early-career scientist to do?” One answer may be to get creative with funding sources. At MUSC, a non-profit organization called Donors Cure™ has been established to address this need. I sat down with Tara Eckenrode Sokolowski, Ph.D., the Managing Director, to learn more about this alternative funding mechanism and how postdocs and faculty can use this resource to help launch their research.

What is Donors Cure?
Donors Cure™ is the first non-profit crowdfunding platform to support biomedical research. It enables researchers to post projects on the Donors Cure™ website, allowing individual public donors to browse through and pick projects they want to fund, giving as little or as much as they like. The idea is strength in numbers. Donors can then track the progress of the investigator and project online.

What kinds of projects are posted?
Donors Cure™ wants to fund small pilot projects, with a budget of $1K – 15K ($7K is the “sweet spot”). The strategy should be to break down a big project into smaller projects and get those funded in stages since only one project can be posted per PI at a time (for a maximum 6 months). You keep the funds only if your project reaches the full requested amount. If your project does not get fully funded, the donor will have the option to give the funds to another project or to Donors Cure™. However, you can repackage your project and repost it.

Who can apply to post projects?
Researchers from US universities and institutions are allowed to apply as long as there is a supervisor, PI or department that can endorse the applicant (e.g., have resources to manage the funds). However, no written endorsement statement is required. Faculty, staff scientists, postdocs, grad students/undergrads are eligible.

For more info and application materials, visit: http://www.donorscure.org.

Application

Part I: Public Facing Portion
This is posted on the website and should be written for non-scientists.

1. Project Summary
“Background/Intro” - What you plan to do and why?

2. Project Goals
“Specific Aims” - What exactly are you doing, why should donors care? Why is it important clinically, scientifically or professionally?

3. Budget
Line-item budget justification.

Part II: Internal Portion
This is kept internally and used to vet the project & researcher.

1. Detailed Project Description (2-3 pages).
Describes scientific rationale and logistics for study (e.g., plans for IACUC or IRB submission).

Tara E. Sokolowski, Ph.D.  
Managing Director of Donors Cure  
tsokolowski@donorscure.org
**Bookworm: Recommended Book**

Vitria Adisetiyo, Ph.D.

Take a break from your manuscript readings and pick up “Mindset” by Stanford University psychologist Carol S. Dweck, Ph.D.

I know what you’re thinking, “Really? A self-help book?” Yes, and at times you will roll your eyes mid-sentence, but the take-home message is worth some of the cheese that comes with this territory.

Based on decades of research on achievement and success, Dr. Dweck highlights the importance of our mindset—specifically one that focuses on growth.

As postdocs, we sometimes struggle with feeling discouraged. This quick read reminds us that we are in control of our mindset, which is a key to resilience and success.

---

**The Science Behind the Marijuana Munchies**

Peter J. Vento, Ph.D.

Decades of research and hordes of college freshmen have asked the burning question of just why it is that taking marijuana leads to an insatiable form of hunger known as the munchies.

“...drug-treated mice...gorge on three to four times their normal food intake, mimicking a person’s desire to eat an entire pizza after taking marijuana.”

While earlier studies demonstrated changes in taste and smell mediated by the cannabinoid receptor 1 (CB1), the receptor subtype responsible for the psychoactive properties of marijuana, a recent report in *Nature* suggests that activation of brain CB1Rs may be driving pot users to reach for the snacks. Research conducted in the lab of Dr. Tamas Horvath at Yale University School of Medicine, demonstrated that mice treated with a synthetic marijuana analogue displayed increased activity in a subset of neurons in the hypothalamus containing pro-opiomelanocortin (POMC). Interestingly, activation of hypothalamic POMC neurons is normally associated with increased satiety and reductions in food intake; however, exposure to the marijuana analogue caused these neurons to flip and begin producing a different metabolite of POMC. Surprisingly, this altered metabolism of POMC caused these cells to release a natural pain killer, called β-endorphin, which led drug-treated mice to gorge on three to four times their normal food intake, mimicking a person’s desire to eat an entire pizza after taking marijuana. Dr. Horvath recently told *USA Today* that it’s as if “you’re driving down a hill and you brake, brake, brake, and all of a sudden the brake becomes the accelerator.” Koch et al. (2014) went on to show that the effect of the marijuana analogue on food intake could be enhanced by stimulating POMC neurons, and blocked by either silencing these neurons or administrating the opioid antagonist naloxone. While pot users are unlikely to begin naloxone treatment to curb their munchies, this previously unrecognized mechanism of marijuana action has helped shed new light into why and how we feel hungry and may reveal novel approaches to treating obesity and pain disorders.
Get Your Social On...

The South Carolina Stingrays hockey team will be playing its last home game of the regular season. In conjunction with the Stingrays, the MUSC PDA has organized a Postdoc Social Night, which features discounted tickets and a visit from Cool Ray, the Stingrays mascot! We hope the MUSC postdocs, faculty, students and their families can come out and support our local hockey team!

**MUSC Postdoc Social Night**

**WHAT:** PDA Night with the Stingrays!

**WHEN:** April 11, 2015 @ 7:05pm

**WHERE:** North Charleston Coliseum

5001 Coliseum Dr.

North Charleston, SC 29418

**COST:** $10 per person (Purchase deadline April 8)

Buy tickets at: [https://www.groupmatics.co/group?code=PDA0411](https://www.groupmatics.co/group?code=PDA0411)

---

**EVENTS CALENDAR**

### APRIL

- **4:** Marion Square Farmer’s Market Opens
- **4-12:** Family Circle Cup Tennis Tournament
- **11:** MUSC Postdoc Social Night with the Stingrays
- **15:** Tax Deadline & TEDx Charleston, Charleston Music Hall
- **17 & 24:** MUSC Retreat on Responsible Conduct of Research & Career Development
- **18:** Crawfish for Cancer, Palmetto Brewery

### MAY

- **1:** MUSC Career Development Series - Dr. Anita Bechtholt, NIAAA Program Director
- **1-9:** North Charleston Arts Festival
- **20:** MUSC Research Resource Fair, Library
- **22:** Comedian Kevin Hart N. Charleston Coliseum
- **25:** Billie Holiday Jazz, Charleston Music Hall
- **28:** MUSC Cell & Molecular Imaging Core Workshop, DD512

### JUNE

- **1-7:** Spoleto & Piccolo Spoleto Festivals
- **11:** Band *Built to Spill*, The Music Farm
- **15:** Comedian Marc Maron, Char. Music Hall
- **22:** Cell & Molecular Imaging Core Workshop
- **23:** Cell & Molecular Imaging Core Workshop
- **26:** MUSC Cell & Molecular Imaging Core Workshop