FUTURE FACULTY FOCUS

Virginia Commonwealth University Graduate School

About the program

The program offers access to resources and activities in the Academic Learning Transformation Lab and service-learning experiences through the Division of Community Engagement while providing networking opportunities with students and faculty from a wide range of disciplines, as well as discipline-specific areas of study.

Since most courses are one or two credits, students are able to easily add them into their academic program schedules. For students who complete all course requirements, the capstone course is an internship/externship experience during which the student is mentored by a senior faculty member.

PFF courses may be taken individually or as part of the Preparing Future Faculty in the Professions certification module, which places special emphasis on preparing faculty for positions in professional schools.

“I have come to believe that a great teacher is a great artist and that there are as few as there are any other great artists. It might even be the greatest of the arts since the medium is the human mind and spirit.”

John Steinbeck

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Why Teaching Makes You Smarter

The art of teaching is the art of assisting discovery.

Mark van Doren

Last fall, I taught for the Science Honors Program (SHP) at Columbia University. SHP is a highly selective Saturday morning program for high school students who have a strong interest in science and math, and students must take a rigorous, three-hour examination to be accepted. SHP distinguishes itself from other programs by requiring instructors to teach without homework or grades. After teaching an Applied Neuroscience course for 32 incredible students, I came away with one conclusion: the best way to learn is to teach. In this post, I will discuss how learning by teaching has been studied by scientists and implemented by educators.

The “Protégé Effect”

As Annie Murphy Paul observes in Time Magazine, we’ve long known that the best way to understand a concept is to explain it to someone else. The Roman philosopher Seneca said, “While we teach, we learn.” In a pair of studies published in Science and Intelligence, researchers illustrate the benefits of younger students teaching others. The Intelligence paper found that first-born children are more likely to be intelligent than their later-born siblings. They attribute this effect to elder siblings teaching their younger siblings. The Science paper provides evidence that the relation between birth order and IQ score is dependent on the social rank in the family and not birth order. In this way, children with a higher social rank develop a better understanding of their work by showing others the ropes. This concept was dubbed the “protégé effect.”

Innovative Education

Realizing the benefits of the protégé effect, educators have established new programs where students can teach young students. For example, the University of Pennsylvania has developed a cascading mentoring program for computer science. In this program,

Other educators are using a virtual pupil to help students learn by teaching. One example is Betty’s Brain, a virtual character built by engineers and computer scientists at Vanderbilt University. Betty learns, tries, and makes mistakes like a real-life student, and she’s given hundreds of middle school students the opportunity to “teach” her environmental science. In a study published by the Journal of Science Education and Technology, researchers concluded that students who taught the character in Betty’s Brain spent more time studying course content and learned the material more thoroughly than their peers. With a virtual pupil, middle school teachers found that their students were more motivated to learn the material and identify gaps in their own understanding.

Emotional Intelligence

Learning by teaching is effective because of emotional intelligence. As Paul states in a Time article, the emotions elicited by teaching help make it such a powerful vehicle for learning:

Student tutors feel chagrin when their virtual pupils fail; when the characters succeed, they feel what one expert calls by the Yiddish term nachas. Don’t know that word? I had to learn it myself: “Pride and satisfaction that is derived from someone else’s accomplishment.”

I can attest to how emotions accelerate learning as a teacher. Professor Jeremy Dodd, the director of the Science Honors Program at Columbia University, took a chance by hiring someone as young and inexperienced as I was in teaching. As aspiring scientists, my co-teacher and I were motivated to foster excitement about scientific research. We succeeded in doing so by hosting guest lectures and visiting laboratories in person. Our students had the rare chance to try augmented and virtual reality (AR/VR) set-ups and experience a brain computer interface (BCI) firsthand. Their motivation inspired me to prepare well for each subsequent class. Moreover, it reinforced my passion for neuroscience research.

Tips for Getting Involved

There are many teaching opportunities available for early career researchers. Here are three recommendations I have:

1. Learning Unlimited

Learning Unlimited provides a national support structure for independent, college-student-led educational programs aimed at middle and high school students. As an undergraduate at Columbia University, my peers and I founded a Splash program where high school students take classes taught by undergraduates for one day. Splash currently runs at MIT, at Stanford University, and many more!

2. Girls Who Code

Girls Who Code is a national non-profit organization dedicated to closing the gender gap in technology. There are 10,000 students across 42 states that participate in free summer programs and after-school clubs by Girls Who Code.
3. Graduate Teaching Assistantships

Fellow PLOS ECR blogger Emma Whittington discusses the benefits of graduate teaching assistantships in this post.

Conclusion

As I reflect on 2016, I believe that teaching Applied Neuroscience for SHP was my greatest accomplishment that year. I had the chance to design a curriculum from scratch with my co-teacher, and the freedom to teach topics we love and invite speakers we admire. Through teaching, I've learned that the protégé effect is an effective and powerful force. So if you want to learn better and faster—consider teaching the subject.

This article was retrieved from blogs.plos.org/thestudentblog/2017/01/27/why-teaching-makes-you-smarter/

Faculty Position Announcements

University of Richmond
Visiting Faculty Position in Biology

The Department of Biology at the University of Richmond seeks to fill two full-time visiting faculty positions (non-tenure track) for the 2018-19 academic year, beginning August 2018 and ending May 2019. Both positions have the possibility of renewal for a second year. We are looking for broadly trained biologists with expertise in cellular/molecular biology, ecology/evolution, and/or interdisciplinary training spanning both concept areas. Applicants should demonstrate a strong commitment to high quality undergraduate education and an interest in teaching at a primarily undergraduate institution (PUI).

The position entails teaching four units per term, including introductory level courses with lab (where each count as a unit) and upper level electives in the candidate’s area of expertise. Research space and access to equipment may be made available based on synergy with existing faculty research programs. Applicants must have a Ph.D. in hand by August 20, 2018.

Applicants should apply online at http://jobs.richmond.edu and upload a cover letter; a statement that addresses their teaching experiences and their vision for being a teacher-scholar at a PUI; a current curriculum vitae; and the names of three references who can address teaching effectiveness and potential. References will be contacted once a short-list of candidates is made. Review of applications will begin immediately and qualified applicants will be considered until the position is filled. Questions concerning the position and application process should be directed to Dr. Omar Quintero (oquinter@richmond.edu).

The University of Richmond is committed to developing a diverse workforce and student body and to being an inclusive community. We strongly encourage applicants address how they envision contributing to these goals in their application materials. We are especially interested in recruiting individuals who have interest or experience in broadening access and inclusivity in STEM disciplines (Integrated Inclusive Science) which aligns with the University’s strategic plan (https://strategicplan.richmond.edu/). For more information on the department, see http://biology.richmond.edu/.

The Department of Biology is housed in the Gottwald center for the Sciences, which also houses the Departments of Chemistry and Physics and had an extensive renovation/expansion of laboratory and teaching facilities completed in 2005. Approximately 50 biology majors graduate each year, many of whom go on to attend top graduate and medical schools. Members of the Department of Biology have access to two University-owned field sites that are approximately 15 and 45 minutes away from campus.

References


Duha Bakhshwin is a PhD candidate in the pharmacotherapy program. She is a teacher assistant in Saudi Arabia and will be teaching pharmacology and doing research in clinical pharmacology.

1. What does the PFF Program mean to you?

My bachelor's degree was in medicine and surgery and currently I am PhD candidate, and those programs and degrees were scientific based and had nothing to do with teaching. I needed something to teach me how to teach, and how to be a good faculty member and a mentor. Since I have a position in Saudi Arabia as a faculty member, I wanted to know more of what to expect about being a faculty member.

2. How did you experience in the PFF program enhance your understanding of what it means to be faculty and impact your plans for a career in academia?

It has made me more prepared and it made me knowledgable what is going to happen; besides it has made me understand the differences between USA and Saudi Arabia in being a faculty member.

3. Tell us about your internship experience and the impact the project and mentoring relationship had on you?

During my internship, I had multiple meetings and ongoing emails with my mentor to organize the course content for the nursing and gerontology students.

This was a great experience for me, and I believe that it will benefit me in my future teaching career. This experience made me see the difference between teaching a lecture and giving a seminar. I had to diligently prepare, ask, read, and explore materials that I had to teach. Preparing for a lecture, revising the slides with my mentor, and editing them was not an easy task because I had to know my audience to better address my lecture. The few slides we see from our teachers took hours of reading and preparation. My research focus is polypharmacy (multiple medications) in older adults and this experience was very beneficial for me in both my current research and my future career.

I had the opportunity to help Dr. Slattum in redesigning some of the course materials and assignments. I attended the class lectures and activities, and I presented some lectures with my mentor. In addition, I assisted my mentor with the final project and evaluating the students’ work.

This experience was different from my previous experience in Saudi Arabia in many ways. For example, here I had the chance to create some of the materials and lectures to the student. While in Saudi Arabia I only delivered some previously prepared lectures, and I was only presenting them. Another unique experience I had during my internship was the opportunity to write exam questions and help with grading them. However, on the other hand, one of the best feelings I have experienced when I taught back in Saudi, was when a student of mine informed me that she decided to teach pharmacology. The student informed me that my teaching inspired her, and it contributed a lot in forming her decision. Lastly, it is important to mention that, now, that student is a colleague.

I have been able to obtain the following objectives:

- I developed teaching skills and I am more comfortable lecturing graduate students.
- I practiced active learning by using case scenarios and patients’ assessments and medication review.
- I gained mentoring skills.
- I developed my own personal website and e-portfolio

4. What advice would you give to students currently enrolled in the PFF program?

It was a great course, try to enjoy and maximize your experience. Ask more questions and learn more about the things you want to know.