

Q&A

Meet the author: Troy McEachron

Troy McEachron, corresponding author of the technology review article “Applicability of spatial transcriptional profiling to cancer research,” discusses his motivation for becoming a scientist and pursuing pediatric cancer research, the challenges he faces as a Black scientist, and strategies for writing a review article.

In their review article in this issue of *Molecular Cell*, Bassiouni et al. discuss the emerging field of spatial transcriptional profiling—from the available profiling platforms to the applications in cancer research.

Tell us a little about yourself. Where are you from?

I was born in Brooklyn, NY and lived there for a little while but was primarily raised in the suburb of Valley Stream, NY.

What motivated you to become a scientist?

I’ve always liked asking questions. As a child, I always needed to know how things worked. I would always take apart any toy I had in attempt to figure out how it worked and then try (usually unsuccessfully) to put it back together. That curiosity continued to develop and mature over time to the point where the idea of being a scientist made a lot of sense to me. I just needed to figure out what kind of scientist I wanted to be!

Is there anyone in particular who helped guide you on your path?

Outside of my faith in the Lord and my family, the two people who have invested in my professional path the most, to whom I can say I owe a great deal of gratitude, are Marion Kelly (Mayo Clinic-Scottsdale) and John Carpten (University of Southern California). Marion Kelly took an interest in me while I was a sophomore at Arizona State University and still continues to serve as both a mentor and a friend to this day. John Carpten took a chance on me when he responded to an unsolicited email from a newly minted post-doc who was looking for advice. From that moment on, John has served as my mentor, friend, PI, Department Chair, and one of my biggest supporters and has really helped me develop into an



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independent scientist. Over the last several years, their support and accountability have been unwavering.

Tell us about any barriers you faced in pursuing science as a career.

To be both brief and transparent, my biggest barrier was (and still is) the concept of identity. As a Black male scientist, I have gone through the vast majority of my academic and research career in the absence of peers who look like me, with a few notable exceptions. Dealing with spoken and unspoken biases and attitudes regarding race in science and academia throughout the journey can, at times, become isolating. More often than not, I am one of a few, if not the only person of color at professional gatherings, and it is during these moments where

“imposter syndrome” becomes a very real thing, at least for me. Thankfully, as I reflect on the journey thus far and evaluate my trajectory, this feeling is being replaced with a sense of determination, resiliency, and perseverance. Currently, there is a massive amount of attention being brought to issues of racial inequity that have led to numerous initiatives having been set forth by the various stakeholders in the biomedical research enterprise, and I am excited to see the results of such efforts in eliminating some of these barriers that I have faced. That said, these feelings, comments, and experiences are my own, and I do not intend to speak for, or serve as a proxy for, the entirety of the Black experience in science as this is a conversation deserving of input from underrepresented minority trainees, staff, and investigators that span the spectrum of biomedical research.

Where is the lab based currently?

In January 2021, my lab moved to the Pediatric Oncology Branch at the National Cancer Institute in Bethesda, MD. Prior to this, my lab was in the Department of Translational Genomics at the Keck School of Medicine of the University of Southern California since being established in 2016.

Tell us about the research in your lab. What drew you to this area of research?

My laboratory is interested in understanding the tumor microenvironment of pediatric solid tumors to identify tumor- and/or tissue-specific vulnerabilities that can serve as actionable targets for further clinical development. During a dissertation committee meeting, one my committee members challenged me with the following question: “Why don’t children get breast cancer?” That question really sparked an interest in me to

understand the differences between pediatric and adult malignancies and drew me into pediatric cancer research. As for the microenvironment, I've had a fascination with the host response to malignancy ever since first being introduced to this concept early in graduate school.

What kind of environment do you look to foster in the lab?

My goal is to ensure that the science that we do is meaningful and that it will positively impact the patients that we are here to serve while also expanding our knowledge base regarding pediatric cancers. This is a goal that I take very seriously, and it serves as the overall motivating theme of the laboratory. Over time, I have learned that, while hard work, creative thinking, accountability, and productivity are important aspects of the laboratory, it is also

incredibly important to truly enjoy the work.

What do you look for when you hire students and post docs?

I look for trainees who are motivated to succeed, who are inquisitive, who want to learn, and who are humbled by the science. They have to be able to understand how the work that they are doing fits into the bigger picture.

Do you have any tips for writing a review article?

Create a good outline that makes sense to you as the writer, then have peers look it over to ensure that the information flow is logical as a reader. Once its written and edited, give the draft to a trusted peer (or trainee) who is not terribly familiar with the subject matter and ask them if the information was clearly presented and if

they were able to learn anything from the article.

Which conferences do you love to go to?

I prefer Gordon Conferences and Cold Spring Harbor meetings over larger annual meetings because they are small and you really have the opportunity to meet other colleagues in the field and establish relationships.

What are the most important recent advances in the field?

I think that the unprecedented increase in the development and widespread adoption of sensitive yet robust “-omic” technologies, especially single-cell sequencing and spatially resolved methods has truly pushed the boundaries of the questions that we can ask and allows us to better appreciate the amazing complexities of diseased tissues.

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