Getting to Know Dakota Cintron, PhD, EdM, Ms

by Ellicott C. Matthay, PhD

As the inaugural Postdoctoral Scholar of the E4A Method Lab, I have had the extraordinary opportunity over the past two years to work with the E4A team on several fascinating projects addressing methodological challenges faced by researchers seeking to build evidence on what works to improve population health and reduce health disparities. It is with excitement and nostalgia that I now pass on this role to my capable successor, Dakota Cintron. Like me, Dakota is passionate about research methods as a lynchpin to building better evidence on social interventions. I sat down with Dakota to learn more about his background, interests, and hopes for the coming years of the E4A Methods Lab. What follows is the full transcript, a briefer introduction to Dakota is available in the E4A Methods Blog.

Dr. Cintron double majored in Economics and Public Health at Rutgers University. Afterward, he completed a Master of Science in Applied Statistics and a Masters of Education in Evaluation and Measurement at Teachers College. He obtained his PhD in Research Methodology, Measurement, and Evaluation at the University of Connecticut, with a focus on learning research methods to promote sound, rigorous, valid research that allows us to make the inferences that can get those resources to people that need them the most.

Dr. Cintron's research focuses on the application, development, and assessment of quantitative methods in the social and behavioral sciences. His areas of research interest include topics such as item response theory, latent variable and structural equation modeling, longitudinal data analysis, hierarchical linear modeling, and causal inference.

Ellicott: Dakota, can you share a little about where you're from, any influential aspects of your upbringing or education?

Dakota: I grew up in Wheeling, West Virginia – a relatively rural place in the northern panhandle of West Virginia, near Pittsburgh. As a high school student, I took classes on health sciences, and I was involved in health science programs, so I had a broad interest in health care and health care services reasonably early in my education. I'll never forget one program that I was part of called the Health Sciences & Technology Academy (HSTA). The program offered experiential learning opportunities like visiting a cadaver lab, practicing sutures on a mold of a hand, and wiring circuit boards. The program made me interested in science and health and motivated me to go to school to be a doctor.

I went to Rutgers University in New Jersey, and that was a great experience. I went in as a biology major and started taking classes to prepare for medical school. However, I took an amazing class about health policy, how health policy is made, and how research is done to influence policy. This class profoundly moved me because we learned about social policies, such as WIC, food stamps, and it was particularly interesting to me because the impact of these social benefits were tangible

to me. I had had experience with those terms, I knew what a lot of those things meant for families – and that was pretty fascinating to me, learning about them and learning that people were doing research in service of keeping those policies alive for those families that needed them. That shaped my thinking about what I wanted to do in the field of health care. I realized then that I could study public health and policy, and I switched my major to public health and started taking more classes in public health, public policy, and epidemiology.

When I started for public health degree, I took my first statistics class, and I knew then I wanted to do research. I applied to a summer research internship with a program for underrepresented groups called Project L/EARN. As part of Project L/EARN at Rutgers University, I took classes on research methods and statistics, and I put together a research paper. I did my research paper with Dr. Jane Miller on whether a medical home reduced the time burden for parents caring for children with special health care needs. We found evidence that there was. That was my first foray into really doing hard research, learning about research methodology and statistical computing software like SPSS, and validity concerns in research. What I thought at this point was, if we are going to have policies that support the people in need of support, we need really good evidence that is solid and rigorous. Jane pushed my thinking a lot about the logic around research methods, and I started taking more research methods and mathematics classes.

I continued to be fascinated by the things I was learning – that people were putting numbers to social phenomenon and what the government was doing about it. As I thought about that more, I started to get interested in economics as well. I started to learn about how do we deal with scarce resources and thinking about this problem in terms of public health and getting scare resources to the people that needed them. I'd also become very interested in education, particularly as a way to help youth develop across the lifespan because I knew that there were many different policies and things that could be done in public health to help people – from mothers or children. I felt education was the route for me because I thought hopefully we could reduce some of the disparities that exist in later life if you kind of get in on the ground with young children.

I ended up going to the Teachers College program at Columbia University to study human development with a focus on research methodology and applied statistics. Then I went to do my PhD at the University of Connecticut, where I received a health policy research fellowship with the Health Policy Research Scholars (HPRS) program, and I've been doing that for the last four years. The focus of my research at UConn was on research methodology, measurement, and evaluation.

Is there anything you would like to say about your non-academic interests or hobbies?

I enjoy outdoor activities – biking, hiking, white water rafting, kayaking, and camping. I've been camping a couple of times this summer. The last time I went camping, we had a run-in with a bobcat, which was pretty interesting. Swimming, the lake, beach, river, creek – whatever it is, I'll swim in it, as long as it's not too dirty and I know it's not polluted. I love to swim. I also really like to drive as well. One of the first times I went to California, I was impressed by the highways because it's almost like they realized all the mistakes they made on the East Coast and made driving amazing on the West Coast. Driving down the Pacific Coast Highway – just amazing. So just going out for a drive somewhere is always really nice too.

Do you have overarching career goals that you could describe?

My overarching career goal is to continue promoting the reduction of health inequalities and disparities through research and advocacy. I'm willing to let things play out to see where that makes the most sense. But in general, that's what I hope for. I think the existence of those health disparities and inequalities are really problematic and so raising more awareness about it is important to me. So some of the research I've been doing has been about racism and promoting the health of Black men because, as a group, Black men face some of the most considerable health inequalities, Black women as well. But there's a need to get Black men into college and pursuing higher degrees of education because of educations related effects with their health and well-being. So that's one thing that I'm interested in.

Professionally I'm not sure where things are going to end up. I was excited about taking this postdoc because I had been focusing on methods a lot, and I was starting to feel like maybe I was becoming too "methody" and drifting away from my real passion around public health and issues of health inequalities and disparities. So this felt like an opportunity to pause and get re-immersed into societal issues and possible solutions. So, I am trying to move into doing more of a mix of methodological and applied research. E4A seems like a great place to settle into a role balancing methodologic and applied research and start doing that work. It is a big switch for me to go from research methodology and measurement to epidemiology and biostatistics, but I think that there are so many parallels that the transition, while there will be some learning curves, will work out well.

As someone who is also interested in methods work and public health, striking the right balance between advancing the methods and not getting lost in the technical details and continuously remembering what is it that actually matters for public health and what's actually going to change public health and population health – striking that balance is really hard – so what you just said really resonated with me and I think resonates with a lot of the E4A team and the work that we do.

What drew you the E4A methods lab? It sounds like you already answered that question. Is there anything else you want to add?

One of the things that really excited me about being at E4A and the Methods Lab was that you are thinking about causality and also cognizant of graphical models and thinking of those, as well to and trying to promote thinking around that. Coming out of my PhD, I was also thinking about graphical models in a more theoretical way, not just about causality. When I had gone through the rigmarole of doing the graphical model research, a lot of it kept coming back to causality. In the social sciences, it's clear that this is a real problem and I think that Judea Pearl's framework is pretty interesting as a way to promote that potentially.

I think it's exciting to be part of an initiative pushing for health and well-being in many different domains. When I was looking at the E4A website, I noticed there are many different areas E4A is focusing on – from firearms, for instance, to environmental justice – so it's extensive-ranging, and I think that that's great. It strikes me as a place where I can think about methods and think about how much we need to think about them, but also do applied research. So, I can think not just

about methods to think about methods research, but I can also think about what are the critical methodological challenges that exist for people moving forward to help promote health and well-being. That's really fascinating, and I'm looking forward to doing more of that thinking and getting in that space where we're thinking about trying to solve those problems.

At E4A, we think methods are really important and we want to deliver rigorous and actionable evidence on what social program and policies are going to improve population health and reduce health disparities. In your own words, could you describe why you think methods are important and why you've chosen to focus on methods?

I believe it's imperative to match your methods with your data and your research questions, kind of like statistical conclusion validity. And while that's important, the breadth of available methods offers a way to think about problems creatively. For me, I'm always concerned about reliability and validity, but we're moving into a world where there's a lot of data and there's a lot of ways of looking at things. Maybe linear regression won't be the best method to solve this or that, maybe it will. While methods give us ways of looking at those problems, it's also important to get the question right.

You're saying you really care about, is it getting the right answer to the question and that with all the data that's out there in the world, it's easy to use it in a non-rigorous way and that's misleading?

I wouldn't say the right answer, though, because I think that's an elusive idea that there's a right answer. There is always someone that will tell you there is probably a better way to look at the data or think about that. For me, methods are a common touchstone between a lot of different disciplines. It's a place where we can share value about the research we want to do. You can bring a bunch of people into a room, and some people will know about the data and have a lot of questions, but they don't necessarily know how to answer the research questions. So thinking methodologically and thinking about research methods gets you in the space of looking at data and thinking, how can I best put this together to help look at a question, maybe not answer it, but better gain insight from that question?

I find it fascinating how methods are developed, and there are' methods for different types of data, so it's a big field and there is' a lot of research there. I love looking at that big box of puzzle pieces and then putting them together to help people solve the questions that they care about. No one is going to accept research as reliable or rigorous unless there is a good grounding in methodology, and the right methodology is applied to answer this question. You can look at the methods section of a research paper and see right away what kind of rigor the research has and the level of thought the research team put into doing the research.

The other part of methods is the' fascinating work being done about how we link data and methods, especially in this data-rich world that we're moving into. I'm excited to think about how to blend different data sources and ask questions that were previously not askable because of the lack of data. If you can develop some creative method, you can also promote different types of questions to be asked. I think there's a lot of exciting work in methodology.

What are you most looking forward to in your work with the E4A team and the methods lab? For example, what do you hope to learn or what are you excited to work on, anything in particular? Or just something you're excited about?

One of the biggest things I'm excited about is learning how the research proposals come in and go out, this idea of promoting work. To me, it's fascinating to see the decision-making process in action. I think that is one of the most exciting things because I will get to see what people are putting forth in terms of rigor, quality, and creativity and see how people are trying to address some of the problems that society faces today. It's exciting to be in the room thinking about methods and thinking about if the proposed research is rigorous, and how to move rigorous research forward. I'm looking forward to learning more about that. There is always going to be an opportunity to move research forward yourself, do research, move methodology forward, but at E4A I'll have the opportunity to think about how to allocate a scarce amount of resources when making funding decisions. There is a set, scarce amount of resources, and we need to be judicious about getting those resources to people doing the work that is going to create action and create movable results that are going to have an impact on people's lives. So that's exciting. I think E4A is a unique postdoc position because it offers that insight and offers that ability to sit at a table where you're able to make decisions that influence practice and potential policy, so that's really important, and I'm really excited about that.

I think there a very few postdocs where you get to be on the inside of the grant decision-making process, both to see the wide-range of research that researchers are proposing as solutions to social problems and also how the E4A team evaluates them. What are the sticking points of that research, what are the potential sources of problems? Getting exposure to that is really fascinating, it was one of the things that attracted me to this postdoc too.

It's also interesting because the reviewers are a group of researchers who are stakeholders in the research community, and that is a really big difference between big institutions where there may not always be a blending of voices that are so stakeholder laden. Even in the first meeting, I noticed a pull between the level of rigor and the implications of the findings being important. Whereas, in a bigger institution, a project that doesn't meet the threshold of rigor may be tossed out without additional consideration. So there's a benefit of having a group of researchers as reviewers because they may see the value in the research that people are doing that bureaucrats may not.

The E4A Methods Lab was developed to address common methods questions or challenges in Culture of Health research. Our goals are to strengthen the research of E4A grantees and the larger community of population health researchers, to help prospective grantees recognize compelling research opportunities, and to stimulate cross-disciplinary conversation and appreciation across the community of population health researchers. We welcome suggestions for new topics for briefs or training areas.

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