

## CTE | Career & Technical Education RESEARCH NETWORK



Katherine Hughes



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# A Q&A WITH THE CAREER AND TECHNICAL EDUCATION RESEARCH NETWORK

## Preface

Nearly 12 million secondary and postsecondary students in the United States were enrolled in career and technical education (CTE) in 2016–17, according to data collected by the U.S. Department of Education's Office of Career, Technical and Adult Education (2019). This CTE programming represents a huge federal investment of more than \$1.2 billion, on top of substantial state investments ("State allocations," n.d.). As interest and investments in CTE rise, however, the research is failing to keep pace.

The Career and Technical Education Research Network, a new five-year initiative from the Institute of Education Sciences (IES) at the U.S. Department of Education, seeks to remedy that problem by expanding the evidence base on the impact of CTE programs on student outcomes. In this Q&A, the network's directors, Katherine Hughes, Ph.D., a principal researcher with the American Institutes for Research, and Shaun Dougherty, Ed.D., associate professor at the Peabody College of Education & Human Development

at Vanderbilt University, discussed the goals of the network and how they hope it will contribute to the field. James Bartlett, Ph.D., senior research associate with the Belk Center for Community College Leadership and Research and associate professor of community college leadership at North Carolina State University, guided the conversation.

**James Bartlett: Kathy and Shaun, before we get into the CTE Research Network, tell me how each of you became interested in CTE research.**

**Katherine Hughes:** After graduate school, I began working at a research institute at Columbia University that had funding to study work-based learning. There was great enthusiasm at the time about employers partnering with schools to make education more relevant, and about all the kinds of learning that could be done outside of the classroom. I observed a number of high school and community college students at their internships and came away from that project with a new realization of how work-based learning

could transform young people's sense of their own capabilities. That was both moving and exciting.

**Shaun Dougherty:** I started as a math teacher for students who attended our local technical center for part of their school day. Then, in my role as an assistant principal, I served as a liaison to the technical center and became more familiar with the program design. I found it remarkable how engaged the students were, particularly those for whom the comprehensive high school experience seemed to be disengaging. I also liaised with the special education department and found it impressive how large a share of our students with disabilities participated in CTE — many as part of their formal transition plan. After I became a professor and began working on research in a university setting, these experiences contributed to my curiosity about the potential of CTE for addressing issues of equity of outcomes, both educational and economic.

**Bartlett: Can you describe the goals of this new national research network?**

**Hughes:** The network's primary goal is to increase the amount of rigorous research on the effectiveness of CTE programs. In addition, we hope to enlist and train more researchers in this work, in hopes they will devote their careers to the CTE field.

**Bartlett: Who are the other partners in the CTE Research Network?**

**Hughes:** In addition to the American Institutes for Research and Vanderbilt University, the Association for Career and Technical Education (ACTE) and JFF (formerly Jobs for the Future) are partners in the network. ACTE has a strong role in this work; its extensive connections with practitioners across the nation are highly valuable in terms of communicating CTE research to the broad field. JFF brings a deep knowledge of the education and workforce systems, and a commitment to improving economic opportunity for all. And we have four par-

ticipating research teams undertaking large-scale CTE studies.

### CTE Research Network Studies

Assessing the Implementation, Impact & Variation of CTE Innovation: NYC as a Lab for Rigorous CTE Research

James Kemple, New York University

The Causal Impact of Attending a Career-Technical High School on Student Achievement, High School Graduation, and College Enrollment

Shaun Dougherty, Vanderbilt University

The Evaluation of Career and College Promise

Julie Edmunds, SERVE Center at University of North Carolina Greensboro

P-TECH 9-14 Schools: An Impact, Implementation and Cost Study  
Crystal Byndloss, MDRC

**Bartlett: Is the CTE Research Network focused on trying to evaluate a particular type of CTE program?**

**Hughes:** We're focused on rigorous research to measure the effectiveness of the range of CTE programs in secondary and postsecondary settings. We're not limited to any particular type of career area, structure or delivery mode. But, since the network's priority is research that can show a causal link between a CTE program and its effects on students, there are certain program elements we look for that make this effort more feasible. For example, programs that receive more applicants than they have spaces available can be good candidates for an evaluation because admission based on lottery or random assignment can approximate a randomized controlled trial.

**Bartlett: Why is this type of research so important to the CTE field and a priority with the network?**

**Dougherty:** For years, CTE research has mainly consisted of descriptive studies, many of which were somewhat small in scale and could not determine whether CTE participation, or particular elements of the experience, actually caused differences in later student outcomes. By emphasizing a high level of rigor and highlighting opportunities to do this work in CTE, we hope to spur more research that can capitalize on the power of research designs that support causal inference.

In most CTE research, we have to compare students who might have similar characteristics — race, gender, free-lunch eligibility, town of residence, GPA and so on — but who differ in CTE participation. In these cases, we worry a lot about the factors that we can't observe, those that might cause students to make different decisions about participating in CTE. The potential existence of these factors means that any difference in outcomes cannot be considered cause-and-effect, because there is a chance that these other aspects may have influenced the outcomes. Research designs that instead use random assignment, or an approximation of random assignment, equally distribute the unobservable characteristics between groups, which reduces or eliminates bias.

**Bartlett: Why a research network? Why not a research center? Or project?**

**Dougherty:** IES uses the research network model to move a field forward by bringing together teams to improve coordination among their projects, address common challenges to the work, share findings, and build new knowledge together. The CTE network research teams are distinctive in that they are all conducting causal studies of CTE programs — studies that will tell us if participation in CTE causes students to have different outcomes than if they had not participated.

A research center relies on a relatively small, static pool of staff and researchers, and on the success of that particular center in identifying and leveraging opportunities for funding and high-quality research. The network allows us to convene and work alongside researchers with varied skill sets, studies and research designs, and with access to different programs and data. This arrangement can more quickly and comprehensively enhance our understanding of how CTE — and different programs, models, and contexts — impacts students' educational, social and economic outcomes.

**Bartlett: It sounds like there is a focus on high-quality research to provide evidence on how CTE impacts student outcomes. Are there plans to disseminate these findings beyond other researchers? If so, how will the network share this work with practitioners?**

**Hughes:** Absolutely! We don't just wish to expand the available evidence on CTE programs. It is also our mission to increase the understanding and use of CTE research by policymakers and practitioners. We want the research findings to contribute to policy and program decisions that will improve students' education and career outcomes — that will improve their prospects for their lives.

We'll be posting blogs, making presentations at meetings and conferences, developing fact sheets, and creating interesting infographics to share research findings in ways that anyone can understand and use. We hope to spur a dialogue between practitioners and researchers to better understand the need of folks in the field for data and research to inform their decisions about program implementation.

Given some of the challenges of conducting research in education, it can be hard to provide the answers that practitioners are looking for, though. For example, it takes time to follow students from high school through postsecondary programs and into the labor market

to answer a question and determine whether completion of a certain CTE program of study will yield a living salary.

**Bartlett: You mentioned recruiting and training more CTE researchers, and I agree that this is critical for the field. For example, the CTE Postsecondary Research Program at North Carolina State University, sponsored by the ECMC Foundation, is charged with developing the next generation of postsecondary CTE researchers. The program currently provides intensive professional development to a group of 16 postdoctoral and graduate student researchers, supporting their participation in two training institutes, webinars on research methods, and a mentoring program.**

**How will the CTE Research Network help to develop the pipeline of new CTE researchers? What professional development activities will be offered?**

**Dougherty:** As part of the CTE Research Network, we wish to expand the pool of researchers doing high-quality research related to CTE. For example, I will support postdoctoral students to orient recent Ph.D.s interested in education research and causal inference, helping them to hone their skills and understand the relevant dimensions of CTE in policy and practice so they can expand their research focus to include CTE. I will also be training doctoral students at Vanderbilt in a similar manner, including them in my own ongoing work.

Beyond my personal direct training role, the CTE Research Network is also developing a multi-day training that will take place at least once per year for several years. This event will present researchers with a crash course in how to apply research methods that support causal inference (randomized experiments and regression discontinuity designs specifically) to CTE-specific datasets and policy contexts. Portions of the content will be used to develop online training modules for non-researchers who are interested in, and would benefit from, a better understanding of measures, data sources and causal methods.

**Bartlett: The CTE Research Network has asked for submissions of programs that would be open to evaluation. Can you share why this is important to the field?**

**Hughes:** This was an open call to find practitioners who are both interested in learning about the effectiveness of their program's efforts and whose program structure and context can support high-quality research. We hope that identifying such programs publicly will help increase the number of high-quality CTE studies.

**Bartlett: One of the biggest challenges as a researcher can be to get individuals excited about participating in research. Why should the field see an urgency in participating, and how can practitioners help us understand CTE better to improve student success?**

**Hughes:** Practitioners have an opportunity to inform the content of research questions by engaging in this process. Researchers need to hear the questions that practitioners want answers to. A CTE state director recently shared these questions with me: Should students have more or less work-based learning? Which form of work-based learning has the best return, in terms of the balance between resources needed and value of the experience? What is the best mix of hands-on and classroom learning? The more that this type of dialogue takes place between researchers and practitioners, the more we can collaborate on studies that are the most useful to the field and that have the greatest impact on policy as well.

**Dougherty:** I would add that researchers are also highly dependent on datasets and research sites to conduct their work. By more explicitly inviting practitioners and policymakers to inform the structure of research, we are optimistic that researchers' needs for data and research sites will be merged with, and serve the need for, evidence of program quality and impact among the practice community.

Engaged scholarship is also becoming increasingly valued in the academic com-

munity, particularly among researchers in professional schools, such as education, social work and public policy. This increased value and emphasis on applied work that can impact practice should create conditions where researchers are more interested and have incentives to partner with practitioners. By establishing some specific examples, we hope that we will build confidence in the value of these partnerships and create a pool of teams who have a reputation for being open to doing this work and being able to do it well. ■

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## REFERENCES

- U.S. Department of Education, Office of Career, Technical, and Adult Education. (n.d.). Perkins Data Explorer: CTE participant enrollment. Retrieved from <https://perkins.ed.gov/pims/DataExplorer/CTE-Participant>.
- U.S. Department of Education, Office of Career, Technical, and Adult Education, Division of Academic and Technical Education. (n.d.). State allocations. Retrieved from <https://cte.ed.gov/grants/state-allocations>.

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## EXPLORE MORE

Learn more about the CTE Research Network at <https://ctereseearchnetwork.org>.

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