CBEAR | THE CENTER FOR Behavioral & Experimental Agri-Environmental Research

# Advancing Undergraduate Education Through Economic Experiments

Summarizing 17 years of undergraduate research assistants in experimental economics: Lessons learned and paths forward

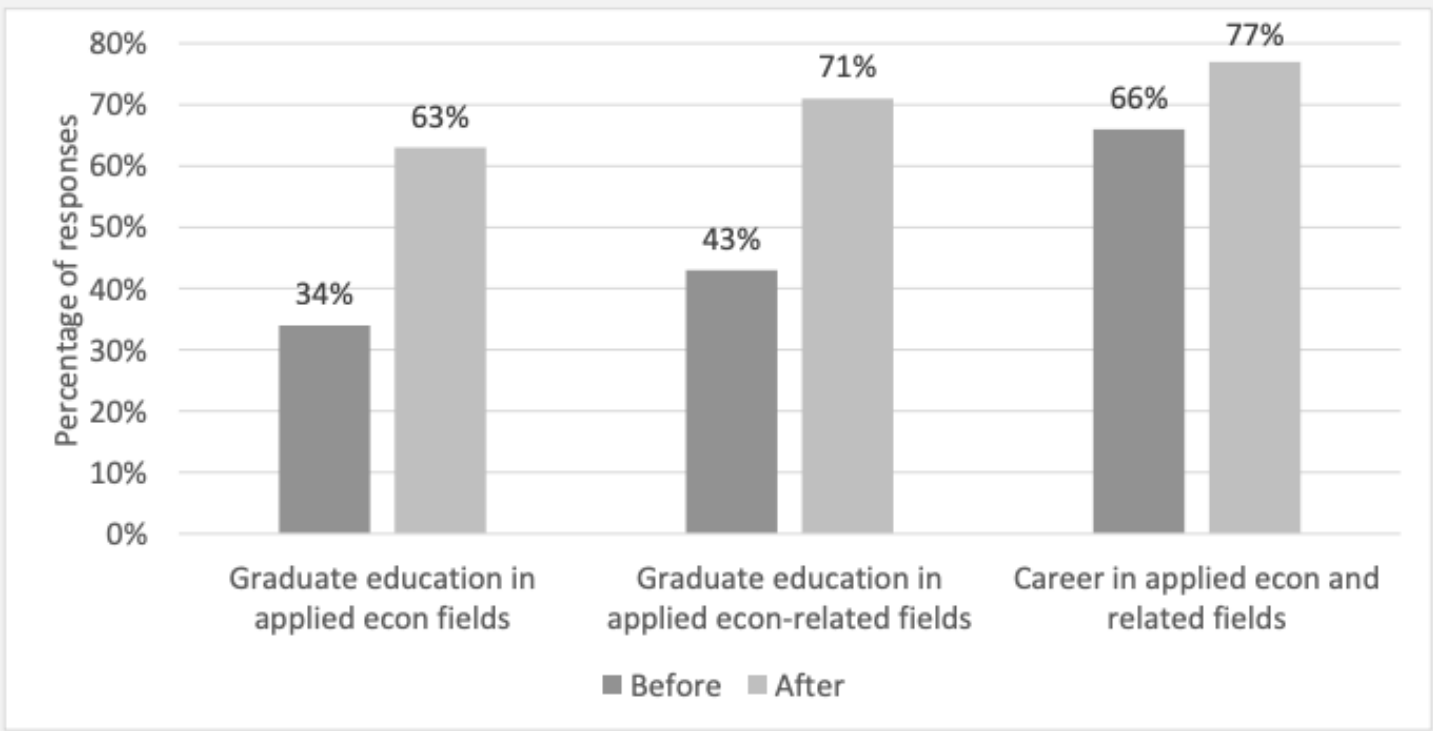


**Fig 1. Tracking student response to pursue graduate education before and after working with CEAE**

Note: Percentages indicate whether students were "somewhat likely" or "very likely" to pursue a graduate degree in Applied Economics

## Background

Since its inception in 2007, the University of Delaware's Center for Experimental and Applied Economics (CEAE) has worked with more than 70 undergraduate research assistants. This brief examines the benefits of undergraduate research through three lenses: undergraduates, senior researchers, and the field of applied economics. These insights are informed by the results of targeted interviews, a survey of over 70 CEAE former undergraduate research assistants, and commentary by former and current CEAE directors.

Experimental economics represents a rare opportunity for students with minimal research/economic background to meaningfully contribute to research. We encourage experimental economics research labs to view and invest in undergraduate research as a mutually beneficial experience in which students gain skills and experience, senior researchers receive quality support at low costs, and the field of applied economics grows and diversifies.

## The Undergraduate Perspective

Perhaps the most intuitive benefits of undergraduate research are enjoyed by the undergraduate research assistants themselves. Of the former CEAE undergraduate research assistants who responded to the survey (n=35, ~48% response rate), 91% reported satisfaction with their time in CEAE. This satisfaction is likely related to the large number of skills respondents reported gaining due to their assistantships. Naturally, respondents gained many academic skills. For example, a large majority of respondents reported that their time with CEAE improved their understanding of the research process (100%), their ability to explain scientific concepts (77%), and their ability to analyze data (63%). However, respondents also reported developing beneficial life skills regardless of career path. Respondents highlighted improved decision-making (94%), problem-solving (91%), critical thinking (89%), and time management (83%).

Gained skills can be reinforced and diversified through a layered mentorship program and ample opportunities to present work. Layered mentorship is unique, as it provides undergraduates with a mentor and more experienced students to guide their assigned mentee(s). This allows undergraduates to grow their leadership and "people skills" in a low-stakes, supervised environment. Additionally, experience suggests that undergraduates have few opportunities to present their work. Allowing undergraduates to develop and deliver posters/presentations enables them to foster skills that may not be practiced as often in the lab or classroom (e.g., describing the research question and process in simple terms).

## The Senior Researcher Perspective

While undergraduate research assistants may never produce output equal to that of an experienced researcher, their work can still be of high quality. Experience has shown that top-tier undergraduate research assistants frequently perform on par with many graduate students, staff, and even postdocs. These contributions are not limited to a single phase of the research process either. Survey respondents reported working on a wide variety of tasks, ranging from data collection to experiment design to accounting of participant payments and other expenses.

A group of quality undergraduate research assistants trained in various tasks can be a shrewd investment for research labs, as even well-paid undergraduates are much cheaper than graduate students, staff, and post-doctoral researchers. These savings can be further grown through strong talent acquisition, particularly among first- and second-year undergraduates. Hiring undergraduates earlier in their academic program allows skill development over time through learning by doing and shadowing others. It can also result in undergraduates with multiple years of research experience, which in turn increases the quality of contributions. For younger undergraduates who may not be ready but show potential, CEAE has found success developing talent in a short-term unpaid volunteer position, which is then followed by a more substantial paid position once the undergraduate demonstrates their capabilities and commitment to the role.

## Implications for Applied Economics

Applied economics undergraduate students are not often exposed to research in the classroom. Therefore, engaging undergraduates in hands-on research experiences can open their eyes to a whole new field they may wish to explore. One interviewee described such an occurrence when they began working with CEAE, saying that "the field of economics was much broader than what I envisioned." Without their research assistantships, many of the CEAE undergraduates may have never learned that there was more to economics than supply and demand (particularly among undergraduates with non-economic majors).

In addition to increasing awareness, survey results showed that, on average, research experience made undergraduates more likely to pursue a degree/career in applied economics (See Fig. 1). This increase in interest was particularly pronounced among undergraduates who had a low interest in applied economics before their time with CEAE. These results suggest that engaging undergraduates, particularly those with limited economic backgrounds, will result in the long-term growth of the field.

## Key Takeaways and Recommendations

1. Engaging in experimental economics increases undergraduates' likelihood of pursuing a degree/career in applied economics. Supporting undergraduate research is beneficial for the field as a whole, particularly if the undergraduates recruited are of diverse backgrounds, academic programs, and even institutions.

2. Senior researchers can receive substantial assistance from advanced undergraduate research assistants. Quality contributions will likely be more frequent if pay is above-market, undergraduates are hired in their early years, and a volunteer talent pool is created to develop students who are interested in research but may not be quite ready for a paid position.

3. Undergraduate researchers gain key skills that prepare them for life after college, regardless of career path. These skills can be reinforced through a layered mentoring program and ample opportunities to present work to various audiences.

## More Information

This paper can be read in full in the Applied Economics Teaching Resources (AETR) Journal.

Nelson-Poteet, C., L. Xie, K.D. Messer, and L.H. Palm-Forster. 2024. "Dare to Experiment: The Synergistic Relationship Between Undergraduate Research and Experimental Economics." Applied Economics Teaching Resources 6.

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