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# **Proceedings of the Annual Meeting of the Cognitive Science Society**

### **Title**

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### **Permalink**

<https://escholarship.org/uc/item/63z1x0wt>

### **Journal**

Proceedings of the Annual Meeting of the Cognitive Science Society, 46(0)

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### **Publication Date**

2024

Peer reviewed

# Getting Funding to do Cognitive Science and Education Research

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**Keywords:** Education; Multidisciplinarity; Knowledge Diffusion; Research Funding

## Cognition and Education

In the study of interdisciplinarity, the relationship between Educational Research and Cognitive Science is an unusual one. Unlike, say, Biology and Mathematics, the fields have for decades addressed what are often the same scientific questions at the same level of explanation. That they exist as separate disciplines is as much a matter of the history or sociology of science as of content – both are, for the most part, social, behavioral, and cognitive sciences. But, pointedly, they have often pursued their shared questions within different theoretical frameworks, focusing on different factors, in different contexts, with different methodological and analytic tools, and even arriving at different conclusions, all played out in strikingly separate literatures (McNamara, 2006; Solomon, Youtie, Carley, & Porter, 2019). And therein lie challenges facing Cognitive Scientists with insights about learning and thinking who want to do research that has implications for educational practice and policy, and to get funding to do that research in the first place.

There have long been calls to bring these literatures and communities into more systematic contact (Bruer, 1993; Chipman, 2010; National Research Council, 1977, 2000) and the turn of the last century proved to be something of a watershed moment as US federal funding agencies created three efforts to support precisely this kind of contact. In 1998, the US National Science Foundation (NSF) began the Science of Learning Program – now called the EDU Core

Research (ECR) program – in the Directorate for STEM Education (EDU), and in 2003 it launched the Science of Learning Centers program, now called the Science of Learning and Augmented Intelligence (SL-AI) Program in the Directorate for Social, Behavioral, and Economic Sciences (SBE). In 2002, the US Department of Education launched the Cognition and Student Learning (CASL) program at the Institute of Education Science (IES). Happily, these programs are still funding research in this intellectual space. And still inviting Cognitive Scientists to apply.

## Multidisciplinary Funding

In this session, representatives from IES, NSF, UNESCO, and the European Research Council (ERC) will discuss intellectual, sociological, and practical issues that arise in doing research in Cognitive Science, Education, and at their intersection. Some of these issues are due generally to the multidisciplinary nature of the work (Cummings & Kiesler, 2005), but others are specific to education. The mobilization of research knowledge and human capital for translation to practice and policy remains a significant challenge that each of these agencies seeks to address. The speakers will highlight relevant initiatives and point to similarities and differences in the grant review processes between programs, providing tips for successful grant writing along the way. They will discuss where their programs are placed in relation to one another in the funding landscape and along the continuum from the most basic to the most applied research – and the extent that such a distinction is meaningful. They will also contrast their funding emphases and the implications

those emphases have for the kinds of projects that can be engaged.

## Presentations

### Cognitive Research on STEM Education at NSF

The first presenter, a Cognitive Scientist in EDU, will discuss funding opportunities for Cognitive Science research in the education directorate. EDU funds projects that range from basic research on learning to more applied research and instructional materials development in formal schooling or informal contexts. Assumptions about knowledge diffusion and translation are made explicit.

### Behavioral and Cognitive Sciences at NSF

The second presenters, a Cognitive Scientist and a Neurobiologist in SBE, will describe programs that fund basic disciplinary research in cognitive neuroscience, cognitive, developmental, and social psychology, and emerging, cross-cutting opportunities such as Science of Learning and Augmented Intelligence. The programs described tend to be based in subfields and specific literatures, with implications for education more distant. Projects address questions at anywhere between a molecular and a social level and using a variety of methodologies.

### The Intersection of Cognitive Science and Education at IES

The third presenter, an Educational Psychologist at IES, will discuss support from IES over two decades for collaborations between cognitive science and education that have yielded important insights about how to improve education and about our understanding of human cognition. She will share lessons learned, challenges, and opportunities for future research.

### UNESCO and Applying of the Science of Learning to Education Policy and Practice

The fourth presenter is an Education Specialist at UNESCO and was formerly at OECD, organizations that do not directly fund research, but convene meetings and synthesize findings for the purpose of informing practice and policy. She will discuss initiatives designed to address the challenges in synthesizing and applying research to practice and policy.

### Cognitive Science and Neuroscience at the ERC

The final presenter is a Scientific Project Adviser in the field of Neuroscience at the ERC, an organization of the European Commission. The ERC supports investigator-driven frontier research and awards long-term grants to individual researchers from anywhere in the world to carry out their work in a European host organization. The ERC supports researchers at different stages of their careers and funds research in all fields of neuroscience and cognitive science.

## Discussion with Audience

The members of the panel will expand on the issues touched upon during their presentations while opening the discussion to the audience. They will be available after the session so that attendees can ask questions about their own research. It is hoped that attendees will come away with a better sense of what kinds of projects are most appropriate for which funders and how better to design projects and craft proposals. International collaborations are encouraged.

## Acknowledgments

This material is based upon work supported while Solomon, Tuller, and Lim were serving at the US National Science Foundation. Any opinion, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the US National Science Foundation.

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