Chancellor's Award for Excellence in STEM Education

Developing skills to persist and succeed in STEM: Comparing self-directedness, learning, curiosity, and persistence in more- and less-structured Science Discovery Camps

Submitted by Jane Barker, doctoral student Department of Psychology and Neuroscience
Faculty Advisor: Dr. Yuko Munakata, Department of Psychology and Neuroscience

Introduction and Project Overview

The proposed research tests the effectiveness of an intervention designed to increase self-directedness in children in informal STEM learning environments. We have conducted an initial study at CU, which shows that the more time children spend in less-structured activities

children's participation. (Children > 7 years will be asked for their assent.) Testing time will be conducted during one 20-minute session on the first day of camp, and one 25-minute session on the last day of camp.

To manipulate the degree of structure within less-structured and more-structured camps, we will implement curricular changes that vary in whether the instructor or students take primary responsibility for structuring the learning

To maximize our ability to detect effects of our manipulation, pre- and post- measures will be administered, and the session instructor (CU graduate students from the College of Engineering & Applied Science and the School of Education who will remain blind to hypotheses) will be held

2nd Wave Data Collection						

References

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3. Kong X, Dabney KP, Tai RH. The Association Between Science Summer Camps and Career

15. Miller MR, Müller U, Giesbrecht GF, Carpendale JI, Kerns K a. The contribution of executive function and social understanding to preschoolers' letter and math skills. *Cogn Dev*. 2013;28(4):331-

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Budget Justification

Personnel

Psychology and Neuroscience GRA, 50% Summer 2015, 25% Fall 2015: This funding will provide support for all phases of the planned work, including development of structured and less-structured camp curricula, piloting of measures, overseeing data collection and coding, analyzing data, and preparing a written report of findings CU Science Discovery. Full stipend funding will allow me to devote the research time required to achieve the aims of this collaborative project within the project period; I would otherwise need to take on a half-time teaching positions that would require a substantial time commitment.

Budget

PROPOSED BUDGET DETAILS

Salary, Wages, and Fringe Benefits
(Base salary = 47,759)

Graduate Research Assistant (pre-comps)					
50%	2.75	months (Summer 2015)	*1.4*		5,472
25%	4.50	months (Fall 2015)		*1.1*	4,477
Total GRA Salary (no fringe)					**$9,949**