

SYNGAP RESEARCH FUND

Collaboration. Transparency. Urgency.

1270 Lincoln Avenue, Palo Alto, California, 94301, USA

PD# 10080972

Grant Award Agreement

Last Name, First, Middle ("Awardee" or "Principal Investigator"): Heller, Elizabeth A

Institution Name ("Institution"): Trustees of the University of Pennsylvania

Project Title ("Research Project"): SYNGAP1 Epigenetic Regulation

Award Type: Lab support for Postdoctoral Fellowship

Award Period From: 1/1/2021 To: 12/31/2022

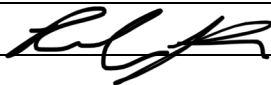
Award Total: \$130,000

Effective Date: 10/15/2020

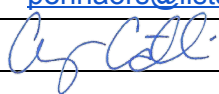
SRF Signing Officer:

Position Title :	Managing Director
Name :	J. Michael Graglia
Phone Number :	650-441-4191
E-mail :	mike@syngapresearchfund.org
Signature and Date:	


SRF Fiscal Officer:

Position Title :	Treasurer
Name :	Rebecca Kohlhepp
Phone Number :	410-861-3848
E-mail :	rebecca@syngapresearchfund.org
Signature and Date:	

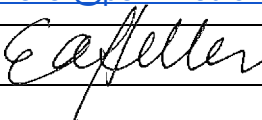
Grantee Signing Officer:

Position Title :	Associate Director
Name :	Amy Camilleri, CRA
Phone Number :	215-898-7293
E-mail :	pennaors@lists.upenn.edu
Signature and Date:	 11/20/2020

Grantee Fiscal Officer:

Position Title :	Associate Director
Name :	James Clavin
Phone Number :	215-573-6704
E-mail :	clavin@upenn.edu
Signature and Date:	

Principal Investigator:

Institution Name :	Trustees of the University of Pennsylvania
Position Title :	Assistant Professor
Name :	Elizabeth A. Heller, PhD
Phone Number :	215-573-7038
E-mail :	eheller@pennmedicine.upenn.edu
Signature and Date:	

Milestones:

AIM 1: Characterize the cell-type specific epigenetic landscape of Syngap1

Results are a comprehensive profile of the murine SynGAP1 promoter and enhancer regions as well as a mapping to respective human brain regions.

- By the end of Year 1, submit results for striatal neurons.
- By the end of Year 2, submit results for cortical and hippocampal neurons.

AIM 2: Apply epigenetic editing to test the direct function of epigenetic modifications at Syngap1.

Results are an analysis of specific epigenetic editing approaches, applied to specific targets on specific cell types, at various stages of development.

- By the end of Year 1, submit results of application of dCas9-p300 and dCas9-SET2 in striatal neurons.
- By the end of Year 2, submit results of application of additional epigenetic tools in cortical and hippocampal neurons and extend analysis to various stages of development.

AIM 3: Identify regulators of SynGAP1 mRNA and protein expression as putative therapeutic targets.

Results are an analysis of brain region specific protein and mRNA expression and splicing of SynGAP1 at various stages of development. Using immunoprecipitated SynGAP1 protein, results will yield analysis of interacting partners and posttranslational modifications.

- By the end of Year 1, submit results of experiments analyzing SynGAP1 regulators. Begin experiments with immunoprecipitated SynGAP1 protein.
- By the end of Year 2, submit results of experiments with immunoprecipitated SynGAP1 protein.

Terms and Conditions

Attached.

Grant Award Agreement Terms and Conditions

Award: The Award will be made to the Institution. The Institution is responsible for disbursing funds to the Awardee (typically the Principal Investigator). In accepting the Award from SynGAP Research Fund, the Awardee and the Institution assume the obligation to expend the Award exclusively for the purposes as set forth in the Research Project application submitted and pursuant to the milestones and reporting obligations described herein.

The Award Period starts and ends on the dates set out above, and has been approved at the level of funding indicated below:

Year 1: Start Date: 1/1/2021, End Date: 12/31/2021, Total: \$65,000

Year 2: Start Date: 1/1/2022, End Date: 12/31/2022, Total: \$65,000

The Award has been approved for this duration; however, it may be increased and/or extended based on available funds and approval by the Board of Directors.

No-Cost Extension: The Research Project shall be carried out in accordance with the milestones described herein. In the event that these milestones are not met, SRF and the Institution may mutually agree to extend the Award Period, provided work towards completion of the milestones continues without additional expense to SRF.

Payment: Payment will be disbursed in two payments. The first payment will be made promptly upon the execution of this Grant Award Agreement. The second payment will be made on September 1, 2021, provided that applicable targets, milestones, and reporting deliverables as described herein are met.

Publications: SynGAP Research Fund must be acknowledged as a source of funds in any publication dealing with the work carried out as part of the Research Project.

Recognition and Terminology: If the Award type is in support of a postdoctoral fellowship, the recipient must be recognized as a "SynGAP Research Fund Fellow" or "SRF Fellow" in any materials referencing the fellowship.

Reporting: Reporting must occur every 6 months during the course of the Award Period. Reports should include:

1. Progress made towards the expected milestones and any significant accomplishments
2. Any setbacks or challenges to the project
3. Any significant staffing or other changes that may impact the outcome or long-term potential of the project
4. An accounting of how award funds are being used, if requested by SRF

Miscellaneous: This Grant Award Agreement is binding on and shall inure to the benefit of the Institution, its successors and assigns, and upon SynGAP Research Fund's representatives, successors and assigns. This Grant Award Agreement is executed in and shall be governed by the laws of the Commonwealth of Pennsylvania. This Grant Award Agreement may be amended at any time by written agreement signed by each party. Awardee and Institution are responsible for all currency conversion fees