



CPM EDUCATIONAL PROGRAM / an educational 501(c)(3) nonprofit

Empowering mathematics students and teachers through exemplary curriculum, professional development, and leadership

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## CPM Educational Program Research Awards for Mathematics Education

Request for Proposals for Funding

Details and Submission Guidelines

**PROPOSALS DUE: JAN 28, 2019 at 11:59pm PST**

**DECISION ANNOUNCED: MAY 2019**

**TYPES AND AMOUNT OF AWARDS:**

CPM Dissertation Fellowship Award, 1 year, \$30,000 fixed stipend

Exploratory Research Grant, 1 year up to \$50,000

Extensive Research Grant, 2-3 years, up to \$250,000

*CPM's mission is to empower mathematics students and teachers through exemplary curriculum, professional development, and leadership. We recognize and foster teacher expertise and leadership in mathematics education. We engage all students in learning mathematics through problem solving, reasoning, and communication.*

*CPM envisions a world where mathematics is viewed as intriguing and useful, and is appreciated by all; where powerful mathematical thinking is an essential, universal, and desirable trait; and where people are empowered by mathematical problem-solving and reasoning to solve the world's problems.*

### OVERVIEW

CPM Educational Program (“CPM”, [www.cpm.org/about-cpm](http://www.cpm.org/about-cpm)) is a California nonprofit 501(c)(3) corporation dedicated to improving grades 6-12 mathematics curriculum and instruction. Therefore, one of the goals of CPM is to support the research of the potential outcomes and effects (construed broadly) of a problem-based curriculum and intensive professional development. To this end, CPM offers award opportunities to fund educational research that will contribute to the understanding of how to improve mathematics teaching and learning in grades 6-12 in the United States. These awards support research on a variety of areas, both within and across mathematics classrooms, that builds theory, develops methodological tools, and establishes knowledge about curriculum materials, teaching, and learning.

## TYPES OF RESEARCH

In order to advance the field's understanding of teaching, learning, and professional development in relation to secondary mathematics, CPM will consider proposals that examine mathematics curriculum materials, teaching, and learning through an analysis that includes CPM curriculum materials, professional development, coaching, and/or classroom implementation. However, the proposed study does not need to focus centrally on CPM or be a study solely about CPM. For example, studies that develop an analytic framework through the analysis of several textbooks can include CPM curriculum materials. Alternatively, an analysis of the potential positive or negative effects of collaborative group roles on student mathematical contributions could study the implementation of group roles in a CPM classroom. While proposed projects need not focus centrally or solely on CPM, the proposals should include a sound rationale for the inclusion of CPM in the study in order to be considered for funding. CPM hopes that by researching questions within CPM classrooms, professional development, and/or curriculum materials, new research can reveal important mechanisms that enable or constrain content-rich mathematical environments and that can improve mathematics teaching, learning, and professional development broadly.

Research proposals to compare curricula or measure CPM's effectiveness will not be considered. For example, a research question such as, *Do students persevere more in problem solving in CPM classrooms compared to other classrooms?*, will not be considered for funding. Instead, the CPM program encourages research proposals that consider important educational questions that can inform curriculum designers, professional development, and mathematics teacher education broadly. Possible areas of research may include (but are not limited to), *In what ways can curriculum support or inhibit student productive mathematical discourse during small group work? How does the adoption and implementation of a multi-year curriculum (such as all at once vs. incrementally across multiple years) affect the quality of implementation, if at all? How can written materials support equitable mathematics learning in diverse classrooms?* In addition, because of the paucity of video available on problem-based mathematics classrooms at middle- and high-school levels, studies that can increase the number of video cases usable in teacher education nationally are also encouraged (e.g., showing collaborative teams or mathematical discussions), although not required.

Research about textbook content alone can focus on student and/or teacher versions of CPM curriculum and should involve the most recent version of the textbook materials. Note that CPM textbook materials can be included in the proposed budget as needed, or an ebook license can be provided free of charge for awardees. If the proposed research focuses on classroom data, then any version of CPM *Connections* or *Core Connections* textbook materials (including Integrated and non-Integrated versions) is allowed. Proposal authors who are not yet familiar with CPM are strongly encouraged to contact [research@cpm.org](mailto:research@cpm.org) to access relevant information regarding CPM curriculum materials, professional development, coaching, and/or classroom implementation.

All funded research proposals will (a) be consistent with the mission and support the vision of CPM (described above), (b) offer strategic insight into ways to improve mathematics teaching and learning at the secondary level (i.e., grades 6-12), and (c) demonstrate the potential to lead to

publishable results to support the broader mathematics education research field. In addition, it is encouraged that proposed projects enable the sharing of data beyond the funding date in order to offer the broader research field the possibility of follow-up studies by graduate students and other research teams as permitted by the project's Institutional Review Board (IRB).

This research award program supports three types of project:

1. **CPM Dissertation Fellowship Awards** (1 year, \$30,000 fixed stipend), for doctoral students in mathematics education (or a related field), who are in the candidate phase of their program and are working on their dissertations. Applicants for the CPM Dissertation Fellowship Award do not need to be US citizens, but they must be doctoral candidates enrolled at a US university.
2. **Exploratory Research Grants** (1 year, up to \$50,000): Applicants must be educational researchers with doctoral degrees in mathematics education (or a related field) employed by either a university or research organization.
3. **Extensive Research Grants** (2-3 years, up to \$250,000): Applicants must be educational researchers with doctoral degrees in mathematics education (or a related field) employed by either a university or research organization.

Please note that as a nonprofit organization, CPM is governed by its Board of Directors and can only accept budgets that include a maximum of 10% in indirect costs. Budgetary limits for Exploratory and Extensive Research Grants are inclusive of indirect costs.

Questions about this request for proposals can be sent to [research@cpm.org](mailto:research@cpm.org).

## APPLICANT REQUIREMENTS

Proposed research must come from a single Research Institution in the United States and must have a single Principal Investigator (PI) and can have up to two co-PIs. Note that the Research Institution can contract with other research institutions (for example, if one of the co-PIs works at a different institution). However, CPM will communicate with and fund the primary institution as the institute responsible for the study.

All Principal Investigators and co-PIs on projects funded by CPM must:

- Have a doctoral degree in mathematics education (or closely related field) OR, in the case of a CPM Dissertation Fellowship Award, be a doctoral candidate with an approved dissertation proposal, as evidenced by a letter of support from the student's dissertation chair or director.
- Have the potential to conduct research on human subjects and be associated with an institution with an Institutional Review Board (IRB).
- Receive IRB approval prior to starting the research project, if awarded funding, and prior to funding must furnish CPM evidence that IRB certification has been received if the research involves human subjects.

- Be enrolled at a US university, in the case of CPM Dissertation Fellowship Awards. However, applicants for the CPM Dissertation Fellowship Award do not need to be US citizens.

## **PROPOSAL REQUIREMENTS**

Applications should be submitted in pdf form to [research@cpm.org](mailto:research@cpm.org) by the deadline. Late proposals will not be accepted.

Proposal narratives are limited to 8 pages (single-spaced in a legible font) and must contain the following sections **in this order**:

- Introduction: Overall description of the purposes of the research with a description of the educational problem that the study seeks to address.
- Theoretical framework
- Research question(s)
- Description of methods: A clear description of the research methods, including specific details about the data collection and analysis. It should be clear how any CPM curriculum, professional development, and/or teaching and learning is involved. In addition, there should be a sound rationale for including CPM components in the study.
- An outline of the planned research timeline.
- A clear plan for dissemination of research and the sharing of data beyond the study.

In addition, proposals must include the following elements (beyond the narrative page limit):

- A one-page title page with project title; requested amount; names and institutional affiliations of PI, and any co-PIs, with contact information including phone numbers and emails; institution of research; start and end dates; and a brief summary of the proposed study limited to 200 words. This cover page should also clearly indicate which type of award is being proposed, a CPM Dissertation Fellowship Award, an Exploratory Research Grant, or an Extensive Research Grant.
- References for citations within the narrative.
- In the case of a CPM Dissertation Fellowship Award, a letter of recommendation from the dissertation chair or director with contact information. The letter should describe the applicant's achievements and qualifications as they relate to the dissertation study and confirm that the applicant is in the candidate stage of their doctoral program.
- For Exploratory and Extensive Research Grants, a budget table and budget justification, including course buyout information (must be warranted by study design), participant honorariums (note that CPM expects the time and participation of any teachers to be respected and compensated appropriately), and any relevant and necessary equipment or supplies. This budget should also include funding for travel to and from the annual CPM teacher conference (held in San Francisco) for at least part of the research team in order to present emerging findings in a manner appropriate for a teacher audience.

- Biographical outline (1 page for each investigator, including the PI and any co-PIs), including education, a list of relevant publications, and information about teaching experience that supports this research. Also include information on current and previous grants and a paragraph on broad research interests. For CPM Dissertation Fellowship Awards, a biographical outline of the dissertation chair or director must also be submitted.

Proposals may also include up to 5 pages total of appendices (beyond the narrative page limit) that provide supplementary tools or protocols pertaining to the proposed project, such as sample data collection instruments, tables of instructional materials, sample modified tasks, technical specifications, etc. Appendices may not be used to extend the space needed for the required elements of the proposal narrative (e.g., do not use appendices to extend the text related to theoretical framework, research questions, etc.).

Finally, proposals must:

- Be submitted as a single pdf document via email to [research@cpm.org](mailto:research@cpm.org) with pages in this order: Title page, Proposal narrative, References, Letter of support (in the case of a CPM Dissertation Fellowship Award), Budget table and justification (in the case of an Exploratory Grant), Biographical outline(s), and Appendices.
- Include a list of which CPM textbook(s) will be included in the study, if applicable, with title and year of publication. List should indicate whether teacher and/or student versions will be used.
- Indicate whether permission for the study by schools or districts has already been granted. While pre-approval is not a requirement, proposals must indicate what progress has been made toward identifying and securing permission from participant schools and districts.

### **ADDITIONAL AWARD CONDITIONS**

- Each study is expected to send one or more representatives (preferably a PI or co-PI and graduate students) to the annual CPM teacher conference (typically in February) to lead a session about the research study and related research ideas that are of benefit for teachers and teacher leaders. For Exploratory and Extensive Research Grants, this travel should be budgeted as part of the grant proposal. For Dissertation Fellowship Awards it is assumed that the expenses associated with traveling to and attending the CPM teacher conference are covered by the stipend.
- For Exploratory and Extensive Research Grants, budgeted expenses must be clearly linked to research goals. Eligible expenses for travel to conferences (beyond the CPM annual conference) are limited to research conferences at which the proposed research results are presented. Total travel budget (beyond the CPM annual conference) is limited to \$2000 per year.
- For Dissertation Fellowship Awards, the doctoral candidate must maintain full-time university enrollment and good academic standing during the year of the fellowship.

Because the CPM dissertation fellowship is intended to alleviate the need for significant other employment during the year of the fellowship, the doctoral candidate is expected to commit to full-time work on the dissertation and limit the performance of additional paid work during this time.

- For all three types of awards, awardees are expected to agree not to accept any other grant, fellowship, or award that provides duplicate benefits supporting the same aspect of the proposed research project.
- Indirect costs are limited to 10% of the entire budget and are included in the overall budgetary limits.
- For all research funded by CPM, the PI needs to file reports of progress at three times per year during the period of funding: November 15, March 15, and July 15. Progress reports should be 1-2 pages (single spaced in a legible font) and include information about project status, dilemmas encountered, any dissemination activities, and emerging research findings. Reports should be sent via email to [research@cpm.org](mailto:research@cpm.org).