



NATIONAL COUNCIL OF
TEACHERS OF MATHEMATICS

November 10, 2017

Ms. Jennifer Bell-Ellwanger
U.S. Department of Education
400 Maryland Avenue SW, Room 6W231
Washington, DC 20202

Comments submitted via www.regulations.gov

RE: Docket ID: ED-2017-OS-0078

Dear Ms. Bell-Ellwanger:

The National Council of Teachers of Mathematics (NCTM) and its 60,000 members thank you and Secretary DeVos for the opportunity to comment on the Secretary's Proposed Supplemental Priorities and Definitions for Discretionary Grant Programs (Docket ID: ED-2017-OS-0078). Since it was founded in 1920, NCTM has supported and advocated for the highest-quality mathematics teaching and learning for each and every student.

The Department's 11 proposed priorities cover many issues in public K-12 education. Arguably, NCTM members are affected by each and every one of them. The following suggestions focus on those about which we feel particularly strongly.

Proposed Priority 6—Promoting Science, Technology, Engineering, and Math (STEM) Education, With a Particular Focus on Computer Science.

As the "M" in STEM, NCTM supports investments in mathematics, which is the subject that is fundamental to the S, the T and the E, as well as computer science and all other STEM subjects. As such, we are concerned that the additional and "particular" focus on computer science in the proposed priority could potentially draw even more resources and attention away from the foundational importance of mathematics. In recent years, we have seen the unintended consequences of a nationwide effort to allow computer science courses to replace mathematics courses in the accumulation of high school graduation credits. These include allowing students to "skip" courses that impart fundamental skills, creating breaks in the ordering of courses that are based on long-established prerequisites and having students enter two- or four-year programs unprepared to for postsecondary-level mathematics courses. **Ideally, we would like the priority to focus on the promotion of "STEM education," without the subjective elevation of computer science or any other subjects.**



The background of proposed priority 6 asserts, “We must expand the capacity of our elementary and secondary schools to provide all students, including girls, students of color, and others historically underrepresented in STEM fields, with engaging and meaningful opportunities, both in and outside the classroom, to develop knowledge and competencies in these subjects.” NCTM strongly agrees, but questions why sub-priority 6(d) includes expanding access for traditionally underrepresented students, such as racial or ethnic minorities, women, or students in communities served by rural local educational agencies but sub-priority 6(e) does not mention expanding access to STEM coursework for those same categories of students. NCTM also strongly contends that both sub-priorities should include the consideration of socioeconomic factors in the competitive award process. The emphasis on rural areas, without a similar emphasis on persistently disadvantaged urban areas is disconcerting. **The insertion of socioeconomic factors in preference in awards would level the playing field between two geographic areas that struggle to meet the needs of admittedly different populations, but ones that face similar challenges in delivering high-quality instruction to the students they serve.**

Sub-priority (i) in Priority 6 would arguably insert an element in awards that is about school choice and not STEM education. “Utilizing technology to provide access to educational choice” conflates the use of technology to deliver education with learning STEM subjects and skills. **This sub-priority is misplaced; it belongs in Priority 1, not Priority 6.**

NCTM is concerned that Proposed Priority 6 does not address the importance of exposure to mathematics in early childhood education. Countless studies have shown that a student’s success in mathematics has a direct correlation to early exposure to numbers and simple mathematics. Given that success in mathematics is fundamental to successful learning and achievement in STEM subjects and fields, **NCTM would like to see early childhood STEM learning inserted as a sub-priority in Priority 6.**

Proposed Priority 4—Fostering Knowledge and Promoting the Development of Skills that Prepare Students to be Informed, Thoughtful, and Productive Individuals and Citizens.

Teachers of mathematics have known since almost the birth of the subject that the skills and knowledge acquired through its study are important to navigating life successfully. That importance is clear in Priority 4. **NCTM is particularly encouraged by the inclusion of “financial literacy” in this priority**, given that the ability to navigate personal finances, lending and borrowing, and the responsibility of a being an informed participant in our public institutions require financial literacy. Financial literacy builds on numeracy, estimation, fractions, percentages, and algebra—all skills taught by mathematics teachers.



Proposed Priority 8—Promoting Effective Instruction in Classrooms and Schools.

Our classroom teacher members wholeheartedly endorse efforts to promote effective instruction in classrooms and schools. Sub-priority (a) focuses on “Developing new career pathways for effective educators to assume leadership roles with the option to maintain instructional responsibilities and direct interaction with students.” While we encourage the recruitment and retention of effective educators, we are concerned that STEM professionals, including those skilled in mathematics, are sometimes surprisingly ineffective in front of 30 or more young, diverse learners. **We strongly suggest that ED ensure that federal investments require and support appropriate training and preparation for all teachers—including those who are coming to the profession from other successful careers.**

Finally, NCTM would like to voice a concern that arguably applies to all 11 priorities and all programs at the agency. There has been much said in education policy debates at all levels about the importance of ensuring that all schools have similarly effective teachers. The obvious concern is that wealthier school districts are able to recruit and retain better teachers. Of course, NCTM shares this concern. However, we are also concerned about the variable quality of teachers within individual schools. That is, some students are disadvantaged by the teacher in front of them and would be better served by the one in the next classroom. **NCTM requests that the structure of grant programs acknowledge this disparity and attempt to address it.**

A strong pre-K-12 mathematics education for all students is undeniably important to our nation’s economic stability, future national security, and workforce productivity. An economically competitive society recognizes the importance of mathematics learning and depends on citizens who are mathematically literate. NCTM believes that teachers and what they do in the classroom are at the heart of making this vision a reality. NCTM supports investing in teachers at every stage of their development and looks forward to working with you and your colleagues at the Department as you develop these priorities and the resulting grant competitions. If you have any questions about these comments, please do not hesitate to contact NCTM Associate Executive Director Dave Barnes (dbarnes@nctm.org, [703] 620-9840 ext.2101).

Thank you for your attention to these views.

Sincerely,

A handwritten signature in black ink that reads "Matt Larson". The signature is fluid and cursive, with a long horizontal stroke at the end.

Matt Larson
President