

The Journal of Mathematics and Science:

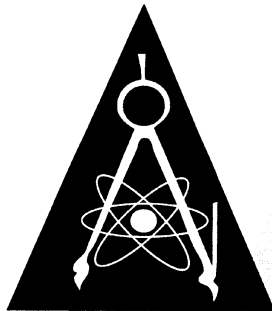
COLLABORATIVE EXPLORATIONS

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SPECIAL ISSUE

Charlottesville Conference, March 1999

Preparing Virginia's K-8 Teachers in Math and Science



Virginia Mathematics and Science Coalition

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**Coordinating Editor
for this Special Issue**

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Editor's Note

This special issue of *The Journal of Mathematics and Science: Collaborative Explorations* is devoted to the proceedings of a Virginia statewide conference hosted by the University of Virginia in Charlottesville on March 5-6, 1999. The Conference was conducted by the Virginia Mathematics and Science Coalition and the National Science Foundation-supported Virginia Collaborative for Excellence in the Preparation of Teachers, with additional support provided by: the University of Virginia's Provost, Schools of Education, Engineering, and Arts and Sciences, and Center for Science, Mathematics, and Engineering Education; the Virginia Department of Education; and the Appalachian Educational Laboratory.

The conference was entitled *Preparing Virginia's K-8 Teachers in Math and Science* and was directed by Stephen Thornton, Professor of Physics, University of Virginia, who also serves as coordinating editor of this special issue. Other members of the Organizing Committee include Jerry Benson, Mike Bentley, Bob Boggess, Thelma Dalmás, Daria Giffen, Bill Haver, Julius Sigler, Donna Sterling, Curt Wall, and Grant Woodwell.

The Conference was conducted in response to major increases in the mathematics and science portion of the licensure requirements for prospective elementary and middle school teachers that have been adopted by the Virginia Board of Education. The new licensure requirements will become effective for institutions of higher education on July 1, 2000.

The current requirements for prospective elementary school teachers specify only that future teachers complete a bachelors degree in an Arts and Science discipline. Under these requirements, a number of Virginia colleges and universities have approved teacher preparation programs requiring as few as a total of six credit hours (or less) in mathematics and science. The new expectations are much greater. Patty Pitts, Director of Teacher Education and Licensure of the Virginia Department of Education, opened the conference by summarizing the new requirements for the attendees. In the abstract to her talk she stated that under the new requirements to take effect on July 1, 2000:

“Individuals seeking licensure through the alternative route to licensure in

Early/Primary Education PreK-3 must complete 9 semester hours in mathematics and 9 semester hours in science. The Elementary PreK-6 endorsement via the alternative route requires individuals to complete 12 semester hours in mathematics and 12 semester hours in science. The licensure regulations, which are aligned with the Virginia Standards of Learning, set forth the specific competencies in mathematics and science that must be incorporated in approved programs preparing teachers to teach in early/primary and elementary education.”

The current requirements for the middle school endorsement are even weaker. Under the current requirements, teachers may obtain a middle school endorsement by completing the equivalent of a minor in two of the following disciplines: mathematics, science, English, and social science. Then based upon this certification, *they are fully certified to teach any area*. Hence, many individuals are currently teaching mathematics and/or science full time in middle schools based upon their academic minors in English and social science. The new requirements remove this option. As Ms. Pitts stated, under the new requirements:

“Individuals seeking licensure in Middle Education 6-8 must complete at least two areas of concentration in the core areas of mathematics, science, English, and social science. *The areas of concentration will be noted on the license, and teachers will be restricted to teaching in their areas of concentration* (emphasis added). The alternative route requires 21 semester hours in each area of concentration, and institutions of higher education preparing teachers to teach middle education must incorporate in their approved programs the competencies set forth in the licensure regulations. Content in mathematics must include algebra, geometry, probability and statistics, and applications of mathematics. Science preparation must include biology, chemistry, physics, and earth and space science.”

The Conference was attended by teams of science, mathematics, and education faculty from almost every college and university in Virginia that offers teacher preparation programs, and faculty from 15 community colleges (225 participants in all). Virginia’s colleges and universities face a major challenge in meeting the new licensure requirements for future elementary teachers and preparing sufficient numbers of middle school mathematics and science teachers who satisfy the new requirements. However, as reported at the conference and in the following proceedings, much has already been accomplished.