

**Minnesota Department of Education
Integration Revenue Replacement Task Force
State Office Building, Room 10
January 10, 2012**

Testimony

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Science, and Children’s Engineering*

Gretchen Peel

*Principal - Weaver Lake Elementary: A Science, Math & Technology School
2012 Science and Math Principal of the Year - Minnesota Elementary School Principals’
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Liesl Chatman

*Director of Professional Development - Science Museum of Minnesota
2011 White House Champion of Change*

INTRODUCTION

I am Kimberly Rasch, President of Magnet Schools of Minnesota. The mission of Magnet Schools of Minnesota is to promote goals of desegregation, equity, and excellence, through the expansion and improvement of magnet schools. Magnet schools are public schools that provide school choice in an integrated learning environment. Magnet school themes actively engage and motivate students. These themes include Fine Arts, Science, Technology, Engineering, Mathematics (S.T.E.M.), International Baccalaureate (I.B.), World Studies, Environmental Science, Career and Technical, Montessori, and World Languages. Magnet schools provide 21st century readiness needed for students to interact and compete in a global economy. Communication, collaboration, critical thinking, problem solving, creativity, and innovative skills and strategies are the foundation of magnet schools in Minnesota.

Integration revenue is used by magnet schools to provide access to opportunity by creating communities of choice. In the State of Minnesota school districts are using integration funding to provide transportation to support in the desegregation of schools. Magnet school programs in our state are eligible for additional federal grant funds. Magnet schools are also seen as an effective “turnaround” strategy for improving educational outcomes.

Gretchen Peel Introduction:

Gretchen Peel is the principal of a successful magnet school, Weaver Lake Elementary: A Science, Math & Technology School in the Osseo School District and Northwest Suburban Integration School District. She has recently been named the 2012 Science

and Math Principal of the Year by the Minnesota Elementary School Principals' Association and the Science Museum of Minnesota.

Gretchen Peel's Testimony:

I am Gretchen Peel, Principal at Weaver Lake Elementary, a K- 6 magnet school in the Osseo School District with a science, technology, engineering, and math (STEM) focus. Osseo is the fifth largest school district in MN and serves the third highest number of students of color in the state. Osseo is a member of the Northwest Suburban Integration School District collaborative-and the 783 students at Weaver Lake are from 7 of the 8 member districts and 6 other districts. Weaver Lake serves students from 13 school districts.

As a magnet school, we are supported through integration revenue. Our goals include increasing student achievement and providing an integrated learning environment with a focus in a STEM theme. We are successful. Families are voluntarily choosing for their children to attend Weaver Lake. This school year we had 137 open seats and 580 applicants. We have maintained an integrated learning environment. Fifty-six percent of our students are white; 44% are students of color. Our students are demonstrating academic achievement. Our students achieved Adequate Yearly Progress (AYP) in 2011 on the MCA tests with 83% proficient in reading and 71% proficient in math. Weaver Lake provides an engaging standards-based thematic STEM curriculum. We have received five national awards for our magnet program and have shared our magnet curriculum with educators from twenty schools and districts from Minnesota and other states.

Integration revenue is critical to our magnet program. Transportation funding enables families from across the eight district collaborative to choose our school. Students would not be able to attend without the provided transportation. Integration revenue provides the resources to sustain our magnet program through staff development, equipment, materials, specialized staff, and thematic curriculum. It allows our students to achieve while engaged in inquiry and project based learning, incorporating academic standards with a STEM focus in an integrated learning environment.

Our parents have shared that attending our school has enabled their children to meet people of all different cultures as well as learning with a STEM focus. A parent said, "I feel that as she goes forward, this will be an incredible asset to her." The use of integration revenue at Weaver Lake truly supports Minnesota students thriving in an environment that will prepare them to live and work in a competitive global world.

Liesl Chatman's Introduction:

Liesl Chatman is Director of Professional Development at the Science Museum of Minnesota. She has been the Principal Investigator on over \$13 million dollars in competitive grants from the National Science Foundation, the National Institutes of Health, the Howard Hughes Medical Institute, and various other private and public

funding sources. She is the lead author on Girls in Science: A Framework for Action, which won the 2009 Distinguished Achievement Award in Professional Development–Education Equity from the Association of Educational Publishers. Liesl is also Green Belt in Six Sigma, a disciplined, data-driven approach to process improvement. This past December, she was honored at the White House as a White House Champion of Change for her efforts to recruit and retain women and girls in science, technology, engineering, and math (STEM).

Liesl Chatman's Testimony:

So often, teacher preparation and professional development programs separate access and equity from disciplines, especially from math and science because math and science are thought to be pure and objective. This is not true; math and science are done by humans and therefore imbed the values and beliefs and attitudes of the humans who do math and science. Because there is limited diversity in the humans who do math and science, the values, beliefs, and attitudes in these fields can be at odds with how people from non-western science traditions understand and communicate their understanding about the natural world. How we understand these issues influences our teaching and who has access to learning. It is with these underpinnings that we approach STEM professional development.

Socially and culturally constructed aspects of our identity—race, ethnicity, class, language, gender, orientation, spiritual beliefs—are intersected. They interact on multiple and often simultaneous levels, leading to systematic social inequality. Oppression resulting from racism, sexism, homophobia, and other forms of bigotry are interrelated, reflecting the ‘intersection’ of multiple forms of discrimination. A central tenet of the work of the Teacher Professional Development Group at the Science Museum of Minnesota is that not only are these axes of identity intersected with each other—they are intersected with the Nature of STEM, STEM pedagogy, and leadership.

Using this approach, we have worked intensively with a significant majority of the STEM Magnet Schools and done district-wide professional development focused on achievement gap issues in STEM. I would like to briefly highlight the outcomes of this work. You’ve heard from Gretchen; Weaver Lake was the first magnet school we worked with in 2004. Most recently, we have provided over 90 hours of professional development over three years for each teacher at Cedar Park STEM Magnet and for Glacier Hills Arts and Science Magnet, both of which are in District 196 (Apple Valley – Rosemont – Eagan). We also provided 30 hours of professional development to approximately 90% of the elementary teachers in Richfield Public Schools and another 30 hours of professional development to a subset of teacher leaders.

There is growing evidence that this work is resulting in overall increased achievement in science, and increased achievement in science.

- Cedar Park went from 23% proficient in Science in 2008 to 58% in 2011, doubling the number of students who meet or exceed the science standards. External evaluators cite the Science Museum’s professional

development as key in increasing the rigor of STEM teaching at Cedar Park.

- Glacier Hills went from 33% proficient in Science in 2008 to 73% in 2011, a jump of 40%. External evaluators cite the Science Museum's professional development as key in increasing the cultural relevance of STEM teaching at Glacier Hills.
- In one year, Richfield 5th graders went from 16% proficient to 31% proficient in 2011 nearly doubling the number of students who meet or exceed the science standards in one year
- In all of these groups, many of the No Child Left Behind targets for subgroups were met.

I'd like to conclude with comments pertinent to the questions before this Task Force.

With respect to racially integrated schools and students' educational outcomes, integrated schools coupled with focused, intensive professional development contributes to the educational outcomes I've described. The number of students of color is increasing dramatically in Minnesota. STEM is an essential literacy for the 21st century, and being able to work with a diversity of people is an essential skill for the workplace, so this is about the future of our state.

The successful work and outcomes that I have described has been possible through integration funds. Without integration funds and astute flexibility in how they are invested, schools and districts will have a difficult to impossible time funding professional development.

Focused, effective professional development is a powerful response to Minnesota's school desegregation rule. Unless we learn how to integrate content (e.g. math and science) content teaching with access and equity, our achievement within disciplines for at-risk students doesn't change in the accelerated ways I have described. Teachers need strategic and profound professional development support to do this.

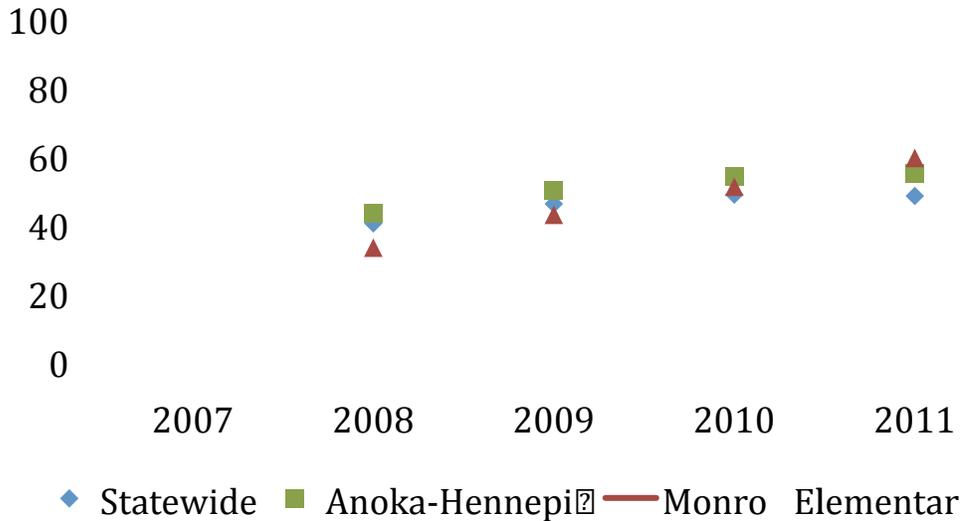
Kimberly Rasch Testimony:

In addition to my role as President of Magnet Schools of Minnesota, I am currently a Curriculum Integration Coordinator at Monroe Elementary School for Mathematics, Science, and Children's Engineering in the Anoka-Hennepin School District and Northwest Suburban Integration School District. Monroe Elementary was nationally recognized in 2011 as Magnet School of Excellence and successfully made Adequate Yearly Progress in 2011. Monroe Elementary is currently in the fifth year of their magnet program.

On the Science Minnesota Comprehensive Assessment (MCA) the scores for Monroe Elementary went from 33% proficient, eight percent below statewide proficiency in 2008 to 59% proficient, eleven percent above statewide proficiency. Monroe Elementary is now also 5% above the district average.

Monroe Elementary

Science Minnesota Comprehensive Assessment



Science MCA: Shows percent proficient

	2007	2008	2009	2010	2011
Statewide		40.4	46.1	48.8	48.4
Anoka-Hennepin		43.4	50.1	54.1	54.9
Monroe Elementary		33.3	42.9	51.1	59.5

Source: Minnesota Department of Education Data Center

<https://education.state.mn.us/MDEAnalytics/Reports.jsp>

The Math and Reading MCA scores reflect above statewide and district proficiency as well. The commitment to student achievement was strengthened with integration funding that established the magnet program at Monroe Elementary. Integration funding was instrumental in being able to provide professional development that improved teacher understanding and delivery of state standards along with culturally responsive instructional practices to actively engaged all students in their learning. Integration funding also supports many other engaging opportunities for Monroe families designed to increase family and community involvement. Through parent choice our family involvement has increased by developing engaging family opportunities like the Monroe Engineering Carnival, S.T.E.M. Fair, and Arts and Engineering Night. In a recent parent survey conducted by our district Monroe Elementary had an overwhelming parent support, approximately 94% parent satisfaction, one of the top schools in the district.

Magnet Schools of Minnesota believes that integration revenue is extremely valuable to magnet schools throughout the State of Minnesota. If integration funding is lost than magnet schools will cease to exist. Magnet schools provide school choice and access to

opportunities to valuable programs that would otherwise be challenging to implement. As you have seen and heard today, magnet schools positively impact educational outcomes, student and family engagement, and provide access and opportunity.

Magnet Schools of Minnesota recommends:

- Maintaining integration revenue as categorical funding.
- Magnet schools are critical and acceptable use of integration revenue.
- Incentivize districts to achieve racial and socio economic integration while holding programs accountable.
- Integration revenue for transportation funding or reimbursement.
- Re-establish a magnet school grant at the state level.