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BRIDGING GAPS & BALANCING ACTS **THE ROLE OF LOCAL SCHOOL BOARDS IN MATH, SCIENCE & TECHNOLOGY EDUCATION**

**A Qualitative Research Report on the Kansas City Region
Prepared by Public Agenda**

Introduction

For over two centuries, local school boards have provided community oversight of the nation's school systems and worked to ensure that all students receive the education they'll need for success in life. While school boards work to provide high quality educational opportunities to all students, they must do so without micromanaging and encroaching on the territory that belongs to professional educators. This balancing act signals the unique position that school boards necessarily occupy: they must serve as a flexible bridge between the community and the schools by transmitting the values and interests of the community to the school district, while simultaneously articulating the vision of the district to the community in an inclusive and accessible way.

At the start of the twenty-first century, school boards confront a complex educational landscape in which longstanding challenges are colliding with new pressures. Making sure that *all* students have access to a high-quality education continues to be a challenge for many districts, particularly in urban and rural areas, while the recent flood of alarming reports decrying American students' dismal lack of interest and achievement in the vital subjects of math and science continues unabated. According to these reports, American high school students perform well below their international counterparts in math and science achievement and far too few Americans graduate from high school with the preparation in math and science required to enter many of the career paths that are critical to maintaining the nation's economic competitiveness. For example, a recent report from the U.S. Department of Labor warns that 60 percent of the coming jobs will require math, science and technology skills that are currently possessed by only 20 percent of the workforce.

As advances in technology continue to transform our nation's economy, math, science and technology (MST) education now plays an unprecedented role in shaping the economic opportunities young people will have (or *not* have) after high school. This is a new kind of challenge, one that local school boards certainly have a role in addressing. But what is this role exactly, and what do local school boards need to know and do in order to fulfill their longstanding leadership responsibilities to the educational vitality of the communities they serve? And how do school board members themselves view these questions?

The research summarized in this report has been conducted in support of AAAS' and NSBA's joint project to address the needs and priorities of local school boards in the Kansas City region—and also nationally—around issues relating to MST education. With life sciences and advanced manufacturing as up-and-coming economic growth areas, the Kansas City region is in many ways representative of the larger national economy. As with many cities and regions across the nation, local leaders and experts are emphasizing the extent to which even traditional jobs, such as construction and manufacturing, require workers to have a stronger background in MST than ever before. As a result, more voices are joining the chorus urging schools and communities to do a better job of igniting and nurturing student interest in these subjects in the early grades, encouraging students to take more and higher levels of MST in middle and high school, and refashioning curriculum and teaching methods to align with the new economic realities.

To help inform the AAAS/NSBA effort, we conducted nearly fifty interviews with school board members, superintendents and principals in the Kansas City region.¹ In the course of these interviews, a wide range of viewpoints and concerns were expressed by board members and professional educators alike about the role of school boards. Despite such diversity of perspective,

¹ More details about our research methodology may be found in Appendix 1

a number of clear themes emerged that provide important insight into the needs and priorities facing school board members when it comes to improving MST education and outcomes for all students. Significantly, many of those themes echo findings from related research we have conducted in the Kansas City region over the last few of years around public attitudes toward MST education, and we draw on this prior research from time to time to shed light on the public context in which school boards do their work.

While we elaborate on our findings in the pages below, a few key points are briefly highlighted here.

- ***Helping Communities Bridge the “Urgency Gap.”*** Understanding the contours of public opinion, and the gaps between leaders/experts and the public around MST can be very useful for school boards. Specifically, local school boards have a vital role to play in helping to bridge what we call the “urgency gap” around MST education.
- ***Educational Leaders, not Experts.*** Virtually all school board members we spoke with expressed deep concern about being asked to be educational experts, yet there was general agreement that boards nonetheless play a vital educational leadership role in communities. This educational leadership role falls into two distinct but overlapping categories: teaching-and-learning leadership, and community leadership.
- ***Teaching-and-Learning Leadership.*** When it comes to leading efforts to improve educational achievement in the schools, it can be especially helpful to disentangle the disciplines by looking at math, science and technology individually rather than treating them as a single problem. For example, the needs and priorities boards have when it comes to mathematics are often very different from those around science. In turn, technology education poses a novel challenge, especially given its uniquely uncertain status with respect to state and national standards.
- ***Community Leadership.*** When it comes to community leadership, boards need help to involve the community more effectively (in both articulating the educational vision to the community and engaging the community as partners in both fine-tuning and pursuing this vision). The importance of community engagement is two-fold:
 - Boards need more effective public engagement strategies in order to help promote better results in MST education for all students. This is largely a matter of learning to communicate more effectively about the role of MST in constraining or proliferating economic opportunities for young people and pursuing appropriate partnerships to help expand such opportunities.
 - More effective public engagement strategies and practices can help prevent serious conflicts concerning controversial issues around MST education (evolution, stem cell research, etc) from arising, while at the same time, they allow districts to deal with such issues more effectively should they arise.
 - Differences in district size and urbanicity play an important role in shaping the challenges boards face in engaging their communities around issues of MST achievement. Appreciating these differences and developing engagement strategies to meet the unique needs of different districts is vital for success.

First things First: Understanding the Public's Starting Point

The “Urgency Gap”

The key findings from our national “Reality Check” survey on public attitudes toward math and science pointed to a gap between the views of experts and the public that our subsequent qualitative research in the Kansas City region confirmed.² In our report, “Opportunity Knocks: Closing the Gaps between Leaders and the Public on Math, Science and Technology Education” we point to what we call an “urgency gap” between the views of experts/leaders on the one hand and parents/students on the other.³

Across the board, leaders and experts we spoke with in the Kansas City region say that MST is more important than ever before for success in the new economy, and that too few students are graduating from high school with the MST they need for success.

Today’s global language for economic competitiveness is math and science...if we’re illiterate in [these areas], we’re not going to be able to compete globally...if students don’t do well in high school, they’re going to be relegated to jobs in the service industry. –Business leader, manufacturing

We look for [workers] who are about to graduate from college in a lot of very technical fields...and often we just can’t find anyone...You go to marketing, journalism, and communication departments and those fields are chock-full of people, but we go to the engineering schools, chemistry departments, biochemical and physics departments...and the people are just not there. –Working chemist

Because of computers and technology, the old ‘arm and hammer’ jobs of the past just don’t exist anymore. Now they all require math. Almost every job now requires competency in algebra, for example. –Urban economic development expert

But parents and students are not on the same page. Though many parents we spoke with say things like, “math and science is probably getting more and more important all the time with the world changing so fast,” they tend to view the increased testing and more stringent requirements in these areas as signs that all is well, and that students are receiving an adequate background in these subjects. Our group discussions with parents further suggest that many parents continue to think that math and science are important primarily for college-bound students who already demonstrate an interest in the most obvious and traditional MST careers, like engineering or computer science.

If you have a child that decides that they don’t want to go to college, why should they have to take a bunch of math and science? –Suburban Parent, Kansas

In effect, while parents are aware that technology is rapidly changing the world, they have yet to appreciate the scale of these changes and their implications with respect to the economic demands and opportunities awaiting *their* children. Moreover, they tend to assume that the fact that their children are taking more MST than they did means that they are being adequately prepared, an assumption that most experts would dispute strongly.

² In 2006, Public Agenda found that public concern about math and science has declined since the mid-1990’s, even as concern among experts and leaders has ramped up dramatically. In 1994, 52 percent of parents thought their children were not getting enough math and science compared to only 32 percent of parents thinking the same in 2005. (“First Things First,” Public Agenda, 1994; “Reality Check: Are Parents and Students Ready for More Math and Science,” Public Agenda, 2006.)

³ We are currently fielding a large quantitative survey to further explore parent and student attitudes toward MST in the Kansas City region, and a full report will be available in August.

The students we spoke with, meanwhile, said virtually in chorus that they find higher level MST utterly irrelevant. This became apparent right from the start of our group discussions with high school students. Before telling them the subject of the discussion, we asked the following open-ended question: “You’re probably learning some things in school right now that you think will be useful to you later in life and you’re probably learning some things that seem totally useless. What is the most useless subject you’re learning in school now?” Whether they were from urban, suburban or exurban schools, an overwhelming majority of students named higher-level MST (most often geometry and chemistry) as the least relevant of the subjects they’re learning.

I hate math just because it’s hard for me to understand how that’s ever going to come back and help me. There’s just not a point. –Suburban student, Kansas

Science doesn’t matter unless you want to become a doctor or something like that. –Exurban student, Missouri

Even more than parents, our student respondents did not grasp the actual and varied career opportunities afforded by a strong background in math, science and technology. When we asked students about specific career opportunities made possible by high proficiency in MST, they had almost nothing to say beyond “doctor” and “scientist.” The gap between them and business leaders on this score could hardly be wider.

The Key: Speaking the Language of Opportunity, Making Opportunity Concrete

While education experts and business leaders often talk about MST achievement in terms of maintaining and/or developing regional and international competitiveness, we found in our focus groups that parents and students are not particularly moved by this argument. Perhaps not surprisingly, they are more likely to be motivated by perceived individual benefits, i.e., the idea that a strong MST education can open up opportunities by preparing students for good-paying jobs or by helping them attend a good college.

As noted earlier, the vast majority of students we encountered had come to the focus groups feeling that higher-level MST coursework could not be more irrelevant to their futures—a posture that MST teachers identified as *the* key impediment in their classrooms. But, every one of those students also said they would be willing to take more MST and work harder at it if they knew it would significantly increase their chances for good paying jobs, help them get scholarships to pay for college, or help them get into a better college than would otherwise be the case. Some were moved more by the job prospects, some by help with their college careers, but all of them responded to at least one of these means for improving their future possibilities and prospects.

Some experts we interviewed, particularly community leaders working in lower-income urban settings, echoed our findings with parents and students by seizing on increased opportunity as *the* key motivator.

People make choices based on defined opportunity. ...If we start showing kids the things that can happen if they achieve certain levels of [MST] competency then they’ll start studying harder, they’ll start seeing the value of doing their homework, of taking more advanced classes. –Urban community leader

The opportunity-equation has to be answered...because you're in competition, whether it's competition with the television or competition with their friends, [kids] have got to see the reason why they're doing [math homework] rather than something else that might seem more enjoyable. –Urban economic development expert

Appreciating the contours of public opinion and understanding the nature of the gaps between leaders/experts and the public around MST can inform school boards as they think about their role in improving MST education and outcomes for students. Specifically, local school boards have a vital role to play in engaging in a dialogue with communities about the relevance of MST and in fostering the kinds of partnerships that can bring the “opportunity-equation” home to parents and students alike. As we turn our discussion now to what school board members themselves told us about their roles, needs, and priorities around MST, it is useful to keep in mind this broader context in which they do their hard work.

The Role of School Boards: Broad Leadership *not* Narrow Expertise

In the course of nearly fifty interviews with local school board members, superintendents and principals in the Kansas City region, we asked all of the respondents the following question: What is the role of the local school board when it comes to improving math, science and technology education and outcomes for all students? The wide variety of answers we were given served as a continual reminder of the fact that lay governance of public education is indeed a complicated affair, and underscored the extent to which differences in district size, demographics and local customs have a major impact on people’s perceptions of school boards.

Despite the variety of viewpoints expressed by individual board members about the role and priorities of local school boards, there was widespread agreement that school board members should not take on the role of education experts.

I'm in favor of getting all the information we can, but I don't think it should be written at the level of the administrators. It needs to be written for the board member who is also the patron of the district, and that person may be an engineer or he may be a farmer. Not everyone is a professional and nobody is an education expert, and it's important to keep that in mind. –Exurban board member, Missouri

However, most board members, superintendents, principals and teachers we spoke with suggested that the local school board plays a vital leadership role in the community. Not only does the board communicate on behalf of the community to the superintendent and professional educators of the district, the board also has the important job of communicating to the community the educational goals and vision of the district. As one board member explained it,

[School boards] are intermediary organizations really. We're not experts, but we still have important leadership functions even as go-betweens between the school and community and I don't think we get nearly enough opportunity to really think about what that means for how we operate or how that leadership can affect student achievement. –Suburban board member, Kansas

When we asked board members about their needs and priorities around MST education in particular, we learned that there are essentially two kinds of leadership roles played by local

boards. The first concerns leadership around teaching and learning. This is where we learned most about the specific needs and priorities school board members have with respect to MST instruction, curriculum and assessment.

The second form of leadership is broader and centers on the role of the school board in communicating effectively with, and representing, the community it serves, including parents, community organizations, local businesses and institutions of higher education. There are many ways in which these two forms of leadership are intertwined and overlapping, especially with respect to the way local boards can help bridge the urgency gap. By beginning with leadership around teaching and learning, and then expanding the scope to consider the broader community leadership functions of local boards, we can see these relationships more clearly.

Teaching and Learning Leadership: Clarifying the Tasks by Disentangling the Disciplines

When it comes to teaching and learning leadership, disentangling the disciplines is an important first step toward understanding and addressing boards' priorities and needs around MST education. In our conversations with board members we found that the needs and priorities around math are often quite different from the challenges presented by science. In turn, technology education poses a novel challenge to school boards, especially given its uniquely uncertain status with respect to state and national standards.

Leading Math Education: The Challenge of Data Overload

Closing achievement gaps and improving “data-driven decision-making” in math were the top priorities and needs mentioned by a majority of board members, and it became clear in our conversations how these two challenges are interrelated. Given the now-standard emphasis on math and reading in the early grades, and the NCLB assessment requirements in these areas, most districts have developed a great deal of capacity with respect to testing and assessment in these subjects. As a result, districts have an enormous volume of data on math achievement among various subgroups and now know more than they ever have about which groups of students are struggling to keep up in math.

At the same time, however, most of the board members we spoke with said that they do not feel as though they are equipped to really use this wealth of data effectively.

I don't think we're given sufficient information on how to use data at the board level, to really be able to report back to the public that we are confident that we are moving in the right direction [in these subjects] because we have asked the right questions and the questions we have asked guide the direction that the administration takes the school district. –Urban board member, Missouri

Effective use of data to make decisions would include an improved capacity to determine what changes need to be made in order to improve results for those students lagging behind. While board members spoke a great deal about the out-of-school factors (social and home life) that need to be addressed in order for kids to come to school ready to learn, many also focused on the need to sort through different instructional approaches and curriculum around math.

We need a more efficient way to get up to speed on new thinking and data about curriculum and teaching methods in these subjects. –Exurban board member, Missouri

In short, board members feel as though they have a great deal of data at their fingertips but are lacking the ability to analyze the data effectively and make decisions accordingly.

Science Priorities: Strengthening the Foundation in the Early Grades, Deploying Scarce Resources Effectively

Spurred by the new NCLB science assessment requirements beginning later this year, many school board members are concerned with appropriately aligning science curriculum and standards from grade to grade and, more fundamentally, with strengthening the overall quality of elementary science instruction. While elementary school teachers tend to be prepared as a matter of course to teach mathematics, this is not the case at all for science education. According to education experts we have spoken with, many elementary school teachers simply do not have the background that would allow them to teach science effectively and thus build the foundation for success in later grades.

I think the biggest area of difficulty that we see is elementary teachers who have maybe one course in teaching science and are deathly afraid of it, and so they just teach straight out of the book and teach memorization and don't get kids curious and involved and excited about science. –Science education expert

In addition to building for success through improved instruction in the early grades, almost every board member we spoke with suggested that securing resources is a particular challenge in science. While nearly all board members place concerns about resources and funding at or near the top of their most general list of concerns, these concerns are intensified around disciplines like science and technology that expend large amounts of resources. Between lab equipment, materials for inquiry-based science experiments and computers, most districts feel particular financial pressure around science and technology, and many board members we spoke with said they would like to have better access to the information that would help them determine what equipment and technology is the best investment.

Technology Priorities: Figuring Out the What, Why and How

Based on both our previous research and our conversations with board members, we found that technology education poses a novel challenge to districts. First, most people (board members included) tend to assume that technology education is synonymous with computer literacy. With this definition of technology education in mind, board members' needs and priorities fall into two categories: 1) they want to find a way to secure funding so that computers can be integrated into various subject areas, including math and science, and 2) they want to make sure that all kids learn how to use common computer applications such as Excel, Power Point, and Word. Therefore, they are concerned, first, about funding and, second, about finding and training teachers in the use of computers and technology.

It's by the luck of the draw if your child is in a classroom where the teacher knows how to use technology and integrates it into the classroom. –Suburban board member, Kansas

What seems to be missing from board members' understanding of technology education is the basic idea that technology is not merely about computers, it is about the human-made world (the built environment), and so technology education is just as much about innovation, design and engineering as it is about computer literacy. Of all of the board members we interviewed, only one suggested that technology education is about much more than computers.

We really need to have a better handle on what actually constitutes an adequate education in technology, because people just collapse everything that falls under the heading of technology into computers...It's only because I'm lucky enough to serve in a district that offers architecture... robotics... and some pre-engineering classes that I know that technology education is not just about computers. But there is still a lot we don't know... –Suburban board member, Kansas

This, then, is an area where board members need to be exposed to a broader and deeper array of perspectives about the role of technology in our lives and the place of technology education in K-12.

Community Leadership: Engaging the Public, Navigating Controversy, Facing Challenges both Old and New

Community Leadership Part I -- Engaging the Public, Closing the Urgency Gap

When it comes to community leadership, board members we spoke with said they need help engaging parents and the community more effectively (in both articulating the educational vision to the community and engaging the community as partners in fine-tuning and pursuing this vision). It is through effective community engagement that boards will be able to help bridge the urgency gap and bring parents, students and leaders onto the same page with respect to MST achievement. Given their unique intermediary position, there are a few different roles that boards can play closing the urgency gap.

First, local boards are uniquely positioned to help parents get past their own resistances and sense of being intimidated when it comes to these subjects.

I think a lot of parents are scared of these subjects themselves, and so I don't know if they really understand what their kids are learning and why. I'd like our board to do a better job explaining this to parents. –Exurban board member, Missouri

A lot of parents are just intimidated by these subjects because they're the hard ones. I'd like to be able to offer parents some help so that they can help their kids, whether it's with homework or just with encouraging them to take these courses. – Urban board member, Missouri

A lot of board members don't know how to talk to the public about the importance of these areas, or don't feel comfortable going out into the public and talking about how education has changed, or don't see that as their job. But it can't just be the educators going out there and saying these things; boards need to do it, too. –Exurban board member, Kansas

Second, board members seem clear that part of communicating more effectively with parents and the community is about learning how to communicate the importance of these subjects for their

children's futures. They need to learn how to articulate the opportunity-equation in accessible ways.

I think parents basically understand that these subjects are more important, but I think they're kind of fuzzy on the specifics of why that's the case. I guess I'm kind of fuzzy on that too. That's where I'd like to get some focused help. –Suburban board member, Kansas

What kinds of jobs are out there and what kinds of skills do kids need to have to be successful in those careers? That's what I want to know more about, and think more about as I do my job on the board –Urban board member, Missouri

We need more training around the real, concrete opportunities out there for kids in these subject areas. We're very focused on testing and sub-group achievement, which is good, but I think we need a broader focus too. It should all be part of the same goal: preparing kids for success. –Suburban board member, Kansas

We should be able help parents visualize how a proper education in these subjects will change the lives of their students and give them so many more opportunities. –Suburban board member, Missouri

Many board members said that stronger connections to businesses and colleges in the community would be enormously helpful for both getting the information they need and for finding ways to communicate that information effectively.

I'd like us to work more closely with businesses and colleges on figuring out what it really means to prepare kids for life after high school. –Suburban board member, Kansas

I want to have stronger channels of communication between colleges, businesses, and the board...where are college freshman falling down in these subjects? What kinds of math or science skills are employers having a hard time finding? – Exurban board member, Missouri

There is a connection here between these kinds of partnerships and school boards' abilities to navigate controversial issues around MST education. The key is that stronger partnerships between schools, business and higher education are crucial not only for building the kinds of relationships that aid student achievement but are useful for diffusing and working through political conflicts around controversial issues, should these arise.

Community Leadership Part II -- Navigating Controversial Issues

The role of the Kansas State School Board in the controversy around science education – particularly the teaching of evolution and 'intelligent design' – in the Kansas public schools is well documented. Though media attention has made the Kansas state school board the center of attention in recent years, the role of local school boards in this controversy over evolution is less well known.

In our conversations with educators in Kansas and Missouri we sought to explore these issues in greater depth. What we found is that while most board members worry about and would like to avoid controversial issues like evolution bubbling up in their communities, nobody we spoke with

reported that this is an issue they have *actually* had to deal with. In Kansas, board members and others expressed a kind of fatigue about the issue and suggested that state-level politics has very little impact on local governance of education.

That's the state school board's issue, not ours –Suburban board member, Kansas

Honestly... we just ignore what goes on up there and worry about educating kids here. It doesn't affect us. –Exurban board member, Kansas

In Missouri, many board members say they are anxious about the Kansas situation, but again, nobody said that the Kansas controversy has affected them directly. In fact, many said that Kansas represents a kind of cautionary tale.

I think a lot of people look across the state line and say, "No thanks, we don't want to get into that. It's pointless." –Urban school board member, Missouri

When asked to articulate why they think the issue became so heated at the state level, many school board members we spoke with described the state board in Kansas as a political battleground rather than an educational body. Moreover, virtually every local board member we spoke with suggested that because the controversy was political, rather than educational, it had little substantive impact on curriculum, instruction or community relations at the local level.

It's not an issue here...because our board isn't elected according to party and our interest is in giving kids the best education they can get. If that's really what you're interested in, then this issue just doesn't come up, because that so-called controversy is a political controversy and not educational one. –Suburban board member, Kansas

I really believe, and I know I'm not alone on this, that that whole... debacle is just about politics... You just listen to the way they talk and it's clear that they're not really talking about education. –Exurban board member, Kansas

As we pushed Kansans we spoke with to talk more about the way that changes in State standards might impact education in the classroom, many resisted the idea of talking further or more deeply about the evolution issue and suggested that the focus on this moral/political controversy is misplaced. Instead of focusing on this or any other isolated political controversy, board members, superintendents, and principals, suggested that energy would be better spent improving the board's capacity to understand what it means to adequately prepare kids for success in today's economy, and to communicate that message more effectively in the community.

I really don't want to talk about [evolution] anymore. I think it's just takes our attention away from the things that really matter, like getting kids ready for success in life. Can we talk about that now? –Suburban superintendent, Kansas

What we took from this and other comments like it is that many board members feel that, instead of buying into politicized rhetoric around specific controversial issues, a more general approach to community engagement and communication would be most effective in helping parents and the community to focus attention where it is most needed, namely on student achievement and preparation for success.

In sum, by working to engage the community more effectively around issues of student success, boards will be in a better position both to prevent serious conflicts concerning controversial issues around MST education from arising *and* to deal with such issues more effectively if they should arise. Thus, school boards that are able to deal effectively with flare-ups of controversial issues will be those that have built strong relationships with their communities. Further, those with strong two-way communication are less likely to have problems occur in the first place.

Community Leadership Part III -- Changing Demographics, Changing Times

In a 2002 study of local school boards for the National School Boards Association, researchers at the University of Virginia found that “the most striking” outcome of their research “is that large-district boards are fundamentally different from their smaller, more plentiful, counterparts.” While it is extremely difficult to generalize about districts given the way that differences in size, demographics, and local values and customs affect everything from the board structure to the scope of its functions, “it appears that the public image of school boards and school systems is informed largely by the conditions that prevail in the scant 2 percent of [large] districts that enroll 25,000 or more students.”⁴

Since only two of the 34 districts in the five-county Kansas City region enroll more than 25,000 students, we were given the opportunity to explore how differences in size and urbanicity affect board members’ perceptions of the challenges local boards face with respect to community engagement around MST education. Chief among our findings is that exurban and rural boards face unique challenges (compared to boards in larger suburban and urban districts) as they struggle to both respect traditional values *and* communicate about the changing world to their patrons.

The world is really changing... and it's hard to keep up. Most of Kansas is very rural in nature and the people in our community are smart people... who work hard... but they really need help understanding that what kids today need for success is different from the way it used to be. –Exurban board member, Kansas

As growth transforms rural areas into exurban communities (and exurban communities into suburban communities) many local school boards find themselves struggling to represent different segments of the community. Often, board members we spoke with used the language of growing pains to describe the situation and characterized it as a clash between older rural values and modern suburban values. Board members who represent the latter perspective were eager to be interviewed and virtually all said that they most needed help communicating effectively about the value of science and technology to the more traditional, rural patrons in the community and the board members who represent those patrons.⁵

A lot of people in our community don't understand how important technology is in the classroom, and so we have to be able to make the case...I really don't see how I can make the case to the community if there are board members who themselves don't believe there's value in technology or who believe this focus [on MST] is just a fad. –Exurban board member, Missouri

⁴ “School Boards at the Dawn of the 21st Century.” Prepared by Frederick Hess for the National School Boards Association, 2002.

⁵ It is important to note that board members who represent the more rural parts of these communities were harder to reach (many do not use email or have cellular phones) and were far more likely to decline our request for an interview. Therefore, in order to really understand the extent and significance of competing value systems in exurban and more rural communities, more research needs to be conducted on the attitudes of those it was hardest to reach.

I think some people [on our board and in the community] think the emphasis on math, science and technology is just a fad and that it'll pass. They really think that next year the focus might be [on] something else. –Rural board member, Kansas

What these comments make clear is that it is important to keep in mind that different communities have to overcome different obstacles in order to successfully engage parents and the public around issues of MST achievement. This means, above all, that one-size-fits-all engagement efforts are probably not going to be as effective as those efforts that take into account the community's particular dynamics around this set of issues.

Appendix 1

The research and fieldwork for this study took place between February and April of 2007. Forty-eight interviews and five focus groups were conducted.

- 28 interviews were conducted with school board members in the five-county region of Kansas City, as well as in Lawrence and Manhattan Kansas. We interviewed roughly equal numbers of urban, suburban, and exurban board members. 25 of the interviews were conducted over the phone, three were conducted via email.
- 10 phone interviews were conducted with Superintendents in urban, suburban and exurban districts in the Kansas City region.
- 10 phone interviews were conducted with elementary, middle and high school principals in urban, suburban and exurban districts in the Kansas City region.
- 3 focus groups with high school and middle school math and science teachers were conducted, one each with teachers from urban, suburban and exurban districts.
- 2 focus groups, one each with parents and students were conducted and filmed. Both groups were composed of participants from urban, suburban and exurban districts.

The focus groups were recruited by professional market research firms in the Kansas City area, according to Public Agenda's specification and moderated by senior Public Agenda research staff.

Given the relatively small number of interviews and focus groups, and given the qualitative nature of this research, the findings in this report should be regarded as suggestive rather than definitive.