Approved: 3.26.08
Date

MINUTES OF THE HOUSE EDUCATION COMMITTEE

The meeting was called to order by Chairman Clay Aurand at 9:05 A.M. on March 6, 2008 in Room 313-S of the Capitol.

All members were present except:
Marti Crow, excused
Ben Hodge, absent

Committee staff present:
Theresa Kiernan, Office of Revisor of Statutes
Dianne Rosell, Office of Revisor of Statutes
Dale Dennis, Kansas State Department of Education
Martha Dorsey, Kansas Legislative Research Department
Sharon Wenger, Kansas Legislative Research Department
Janet Henning, Committee Assistant

Conferees appearing before the committee:
Senator Karin Brownlee
Senator Nick Jordan
Dr. Gary George, Olathe School District
Kathyrne Mueller, Director of Academic Initiatives, Kansas Board of Regents
Dr. Ed Hammond, Ft. Hays State University
Tom Krebs, Kansas Association of School Boards
Written testimony - Paul Yarslaski, Dodge City Community College
Written testimony - Stan Ahlerich, President, Kansas, Inc.
Written testimony - Eric Stafford, Kansas Associated General Contractors

SB 421: School districts; concurrent enrollment; pupils in grade 10

Senator Karin Brownlee spoke to Committee members in support of **SB 421.**

Dr. Gary George, Olathe School District, addressed Committee members in support of **SB 421.** (Attachment 1)

Written testimony from Paul Yarslaski, Professor of Information Technology, Faculty Association, President, Dodge City Community College, was given to Committee members in opposition of **SB 421.** (Attachment 2)

A question and answer session followed the presentation.

The hearing for **SB 421** was closed.

SB 404: Kansas academy of mathematics and science; admission of nonresidents; fees and tuition; attendance and qualified admissions, exceptions.

Senator Nick Jordan spoke to Committee members in support of **SB 404** and advised that improving Kansas' capacity in mathematics, engineering, technology, and science (METS) is vital if Kansas is to remain nationally as well as internationally competitive. (Attachments 3 and 4)

Kathyrne Mueller, Director of Academic Initiatives, Kansas Board of Regents, spoke to Committee members and urged support of **SB 404.** She further stated that KAMS is a two-year residential academy for 11th and 12th graders who are academically talented in science and mathematics. Graduates will earn both a high school diploma and college credits equivalent to an associate degree. (Attachment 5)

Dr. Ed Hammond, President, Fort Hays State University, spoke to Committee members in support of **SB 404.** Dr. Hammond told Committee members this program was based in part after successful programs

in Missouri and Texas. He stated KAMS will begin recruiting students in fall 2008, once funding is made available, with an anticipated first class of 40 Kansas juniors enrolling in fall 2009. (On file - *"Kansas Academy of Mathematics and Science"* Brochure and Booklet, Teacher Education & Physics Department, Fort Hays State University)

A question and answer session followed the presentations.

The hearing for **SB 404** was closed.

SB 507: METS education innovation council; members; duties

Theresa Kiernan, Revisor, Office of the Revisor of Statutes, gave an explanation of **SB 507** to Committee members.

Senator Jordan, while speaking to **SB 404**, also addressed support of **SB 507** to Committee members.

Tom Krebs, Governmental Relations specialist, Kansas Association of School Boards, spoke to Committee members in support of **SB 507.** (Attachment 6)

Written testimony was received from Stan Ahlerich, President, Kansas, Inc in support of **SB 507.** (Attachment 7)

Written testimony was received from Eric Stafford, Associated General Contractors of Kansas, Inc in support of **SB 507**. (Attachment 8)

A question and answer session followed the presentations.

The hearing for **SB 507** was closed.

The meeting was adjourned at 10:45 A.M. The next meeting is scheduled for March 7, 2008.

Olathe
Unified School District 233

Olathe School District
Testimony provided by Dr. Gary George
March 6, 2008

House Education Committee

Regarding Senate Bill 421:

Thank you for considering our testimony on Senate Bill 421, a bill which would permit grade 10 students to participate in dual credit programs with colleges.

Under the current law, only students in grades 11 and 12 or gifted students in grades 9 through 12 may participate in such programs. This new proposal simply provides additional educational opportunities for more students.

The Olathe School District supports Senate Bill 421 and urges its passage.

House Education Committee
Date 3-6-08
Attachment # 1

Clay Aurand - Senate Bill 421

From: "Yaroslaski, Paul" <PYaroslaski@dc3.edu>
To: "'sstorm717@aol.com'" <sstorm717@aol.com>, "'aurand@house.state.ks.us'" <aurand@house.state.ks.us>, "'horst@house.state.ks.us'" <horst@house.state.ks.us>, "'mah@house.state.ks.us'" <mah@house.state.ks.us>, "'phelps@house.state.ks.us'" <phelps@house.state.ks.us>, "'huelskamp@senate.state.ks.us'" <huelskamp@senate.state.ks.us>, "'george@house.state.ks.us'" <george@house.state.ks.us>
Date: 2/29/2008 2:47 PM
Subject: Senate Bill 421

I am writing to you concerning Senate Bill 421. And would like my statement to be read before the education committee.

Changing concurrent enrollment to include 10th grade students in college classes is not a sound decision.

As a professor at Dodge City Community College, I have had the opportunity to teach college level classes with 11th and 12th grade high school student mixed in with full time college students. These high school students are at a much different level of development than those students that are enrolled in college full or part time.

Including high school students that are even younger will create even more problems.

During our faculty meeting on February 28, 2008, this issue was discussed, and there were no faculty members that felt this was a good idea.....in fact each and everyone of them felt that this was a ill-conceived concept.

If colleges are to be the educators for high school students, why do we keep funding high schools? Why do high schools get funding for the time a student is being taught in college courses?

High school students need to learn at high school with their peers, learning to be responsible for themselves, becoming independent and self motivated before they are thrust into college level courses.

There are many potential problem.

How are the faculty to handle students this young being assigned to group projects or study groups with students much older than them?

How are the faculty to deal with parents that call us to discuss class situations or grades, when the student is covered by FERPA and the faculty can not even acknowledge that the student is attending classes?

There are many questions that need to be answered before this bill becomes law.

House Education Committee
Date 3-6-08
Attachment # 2

If I can provide you with more information, or answer any question, please contact me.

Paul Yaroslaski
Professor of Information Technology
Faculty Association, President
Dodge City Community College
Dodge City, KS 67801
1.800.FOR.DCCC X324

ANCORA IMPARO

"Take nothing on its looks; take everything on evidence. There's no better rule."

— Charles Dickens (1812–1870), Great Expectations

Report of the Advisory Committee on Math and Science Education to the 2008 Kansas Legislature

CHAIRPERSON: Senator Nick Jordan

VICE-CHAIRPERSON: Representative Kenny Wilk

RANKING MINORITY MEMBER: Senator Laura Kelly

OTHER MEMBERS: Senator Ruth Teichman; and Representatives Shirley Palmer, Sheryl Spalding, and Kenny Wilk

STUDY TOPICS

- Math and Science Education

January 2008

Math and Science Education Advisory Committee

Report to the 2008 Legislature
Road Map to Success

Conclusions and Recommendations

Although Kansas leads the world in production agriculture and airplane design and manufacturing, the economy of the state is more diverse and more service-oriented than many may realize. The sectors that are most likely to generate significant numbers of high-wage jobs are knowledge based. Most of these high-growth sectors also are intensely competitive. In order to create and maintain competitive advantage, Kansas must produce a deeper pool of technically skilled workers, while at the same time building capacity in frontier research and product development in selected fields.

Improving Kansas' capacity in mathematics, engineering, technology, and science (METS) is vital if Kansas is to remain nationally as well as internationally competitive. Improving this capacity will require increasing awareness of the issue among students and parents, improving the salary and benefits of the state's teachers, aligning classroom learning with the requirements of the marketplace, and keeping the state at the cutting edge of innovation in math and science teacher preparation and education.

In acknowledgment of this, the Math and Science Education Advisory Committee, composed of legislative, education, and business leaders from across the state developed the recommendations described below.

Public Awareness Strategies

- Encourage the Governor and legislators to speak publicly and frequently about the critical shortage of math and science majors and the impact on Kansas.
- Develop public awareness initiatives that consider students of all ages beginning with elementary school, including the following:
  - Produce marketing initiatives that highlight the benefits of science and math careers for students, partnering with METS industries whenever possible to increase the awareness of the need for math and science in all levels of students' career goals.
  - Develop a public campaign that stresses the importance of math and science to the general public.
  - Coordinate and develop the Kansas Math and Science Awards Program to celebrate and reward outstanding students for METS achievements.
- Expand after school and summer program opportunities for elementary through high school students to nurture skills, interests and appreciation for science and mathematics.

- Support the development of the Kansas Academy for Math and Sciences at Fort Hays State University.

Teacher Preparation Strategies

- Support new innovative pathways to math and science teacher licensure, such as the UKanTeach Program, at the University of Kansas.
- Encourage better partnerships between higher education METS departments and the schools of education in the preparation of teachers.
- Establish a joint masters program for teachers offered collaboratively by Regents' universities through on-line delivery methods for preparation and professional development.
- Support new, innovative and cooperative programs to produce METS teachers between universities and community colleges, such as the "2+2 program" which Emporia State University cooperatively operates with Butler and Kansas City, Kansas, Community Colleges.

Teacher Recruitment and Retention Strategies

- Provide METS teachers special incentives, partnerships, and competitive compensation, using vehicles such as the UpLink program which connects educators with businesses; teacher housing as provided in some rural western Kansas school districts; and the tax credit program which provides tax credits to businesses hiring teachers during the summer.
- Support a set of coordinated regional centers for METS at institutions of higher education that would provide on-going professional development.
- Support the development of a master teacher program to provide mentoring support and professional development opportunities for METS teachers. Create efficient pathways for second career teacher candidates.
- Develop strategies that allow "retired teachers" in METS disciplines to return to the classroom with no reduction of retirement payments.
- Support summer institutes that provide opportunities to update the skills of mathematics and science teachers, examples of such institutes include the Emporia State University Bioscience Institute for Kansas high school teachers.

Alignment Strategies

- Strengthen and align preschool through career recommended curricula in METS areas, including career emphasis activities.
- Expand the academic competition and award opportunities that promote research in the classroom at the secondary level. Advance the METS learning timeline while exposing students to real world METS applications. Encourage algebra in the 8th grade and calculus

in 12th grade. Begin to move toward a 4 X 4 required secondary curriculum – four years of science and four years of mathematics required for every student.

Coordination Activities

- Create a statewide METS Education Innovation Council made up of appointments from the Kansas Board of Regents, State Board of Education, and the business community. The Secretary of the Kansas Department of Commerce would be the Council's convener.

Proposed Legislation: This Committee is not authorized to introduce legislation.

Background

Upon the request of Senator Nick Jordan and Representative Kenny Wilk, the Legislative Coordinating Council (LCC) created the Math and Science Education Advisory Committee as a 2007 Interim Committee. Membership of the Committee included six legislators, four business leaders, and four education community leaders with all appointments made by legislative leadership. The Committee held its first meeting on September 26, 2007. The Committee met monthly through early January 2008. Results of the Committee's meetings included two products: a data book entitled: *The Talent Imperative: Building Kansas' Capacity in Mathematics, Engineering, Technology, and Science* and recommendations designed to improve the mathematics, engineering, technology, and science efforts of the State.

Committee Activities

Testimony

Over the course of five months, the Committee heard testimony from a variety of educators and program directors involved in providing innovative METS programming across the State. Foundational information on current METS programming in the State was presented at the Committee's first meeting by Dr. Alexa Posny, Commissioner, Kansas Department of Education, and Reginald L. Robinson, President and CEO of the Kansas Board of Regents. Other presenters discussed METS programs:

- Jewell Scott, Executive Director, The Civic Council of Greater Kansas City;
- Dr. Patricia All, Superintendent, Olathe School District;
- Verneda Edwards, Executive Director of Curriculum and Instruction, Blue Valley School District;
- Denise Wren, Assistant Superintendent for High Schools, Wichita School District;
- Lori Doyle, Principal, Wichita West High School, Wichita School District;
- Dr. Janis Lariviere, Director, UKan Teach Math and Science Teacher Preparation Program;
- Brigadier General Deborah Rose, STARBASE Program;
- Nicole Riegel and Dr. Keith Gary, Kansas Area Life Sciences Institute, Inc.;
- Laura Norris, Executive Vice President, Youth Friends in Greater Kansas City;
- Joan Friend, Superintendent, Unified School District 494, Syracuse;
- Joe T. Davis and Laura Loyacono, Project Lead the Way, Kansas City; and
- Dr. Zulma Toro-Ramos and Lary Whitman, College of Engineering, Wichita State University.

Committee meeting minutes will provide greater detail regarding each presenter's

testimony. Meeting minutes can be reviewed in the Office of Legislative Administrative Services.

Development of a Data Book

The data presented in this book are designed to illuminate two basic questions: First, why does building capacity in mathematics, engineering, technology, and science (METS) matter to the nation as a whole and especially to the State of Kansas? Second, where does Kansas stand in regard to METS? The development of the data book was made possible by a grant from the Ewing Marion Kauffman Foundation to the Building Engineering and Science Talent (BEST), an independent, San Diego-based non-profit organization that specializes in education and workforce development in technical fields. BEST assembled a data book for the State of Missouri in 2006. Mr. John Yochelson of BEST worked closely with the Committee and others, including the Kansas Board of Regents, Kansas Department of Education, Kansas Department of Commerce, and Kansas, Inc. in compiling the data book.

The Talent Imperative

BUILDING KANSAS' CAPACITY IN MATHEMATICS, ENGINEERING, TECHNOLOGY, AND SCIENCE

January 2008

BEST
Building Engineering & Science Talent

Prepared by Building Engineering & Science Talent

House Education Committee
Date 3-6-08
Attachment # 4

About this Data Book

This data book was assembled to help inform the work of the Kansas Legislature's Advisory Committee on Mathematics, Science, & Innovation. The Committee met monthly from September through December 2007 under the chairmanship of Senator Nick Jordan and co-chairmanship of Representative Kenny Wilk. Drawing upon the experience and insights of legislators, educators, and private sector representatives, the Committee took a fresh overall look at the challenge of equipping Kansans with the skills needed to underpin the state's prosperity in a 21st century economy. A list of Committee members is on Appendix I.

The data presented are meant to illuminate two basic questions. First, why does building capacity in mathematics, engineering, technology, and science (METS) matter to the nation as a whole and especially to the state of Kansas? Second, where does Kansas stand? The effort was made possible by a grant from the Ewing Marion Kauffman Foundation to Building Engineering and Science Talent (BEST), an independent San Diego-based non-profit organization that specializes in education and workforce development in technical fields. BEST assembled a comparable data book for the state of Missouri in 2006.

This project could not have been completed on the timeline requested by the Committee without its active engagement as well as that of concerned government agencies. BEST wishes to thank the chair, co-chair, and members of the Committee for their helpful insights every step of the way. The Kansas Department of Education, Board of Regents, and Department of Labor also provided their full cooperation. In addition, BEST was able to draw upon site visits to Kansas State University and the University of Kansas. Sharon Wenger, a research analyst in the Kansas Legislative Research Department, played an indispensable coordinating role. BEST also wishes to thank Dr. Linda Rosen, president of Education and Management Innovations, Inc. and former Mathematics Advisor to U.S. Secretary of Education Richard Riley; and Dr. Robert D. Muller, founder, Practical Strategy LLC, and former Deputy Assistant Secretary of Education, for sharing their insights.

BEST assumes sole responsibility for the selection and interpretation of the data presented here.

BEST
Building Engineering & Science Talent

Building Engineering & Science Talent
5143-C Renaissance
San Diego, CA 92122
www.bestworkforce.org

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Table of Contents

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Section I: Why METS and Innovation Matter for the U.S.

National Indicators

The United States comprises five percent of the world's population and produces 20 percent of global economic output. Technological innovation lies at the heart of this economic capacity. Half of our nation's growth stems from the creation of new knowledge and its translation into high-value products and services. The power that flows from U.S. strength in mathematics, engineering, technology and science (METS) makes the U.S. workforce the world's most productive and underpins the world's highest standard of living.

U.S. leadership cannot be taken for granted in today's global economy. Others are racing to catch up - making investments in education, infrastructure, and R&D that will position them to capture the high end of the value chain. A recent report of the National Academy of Sciences aptly described the forces at work as a "gathering storm" that requires a nationwide call to action. This section highlights some of the international and domestic indicators that have made METS a focal point of concern leading to passage of the 2007 America Competes Act.

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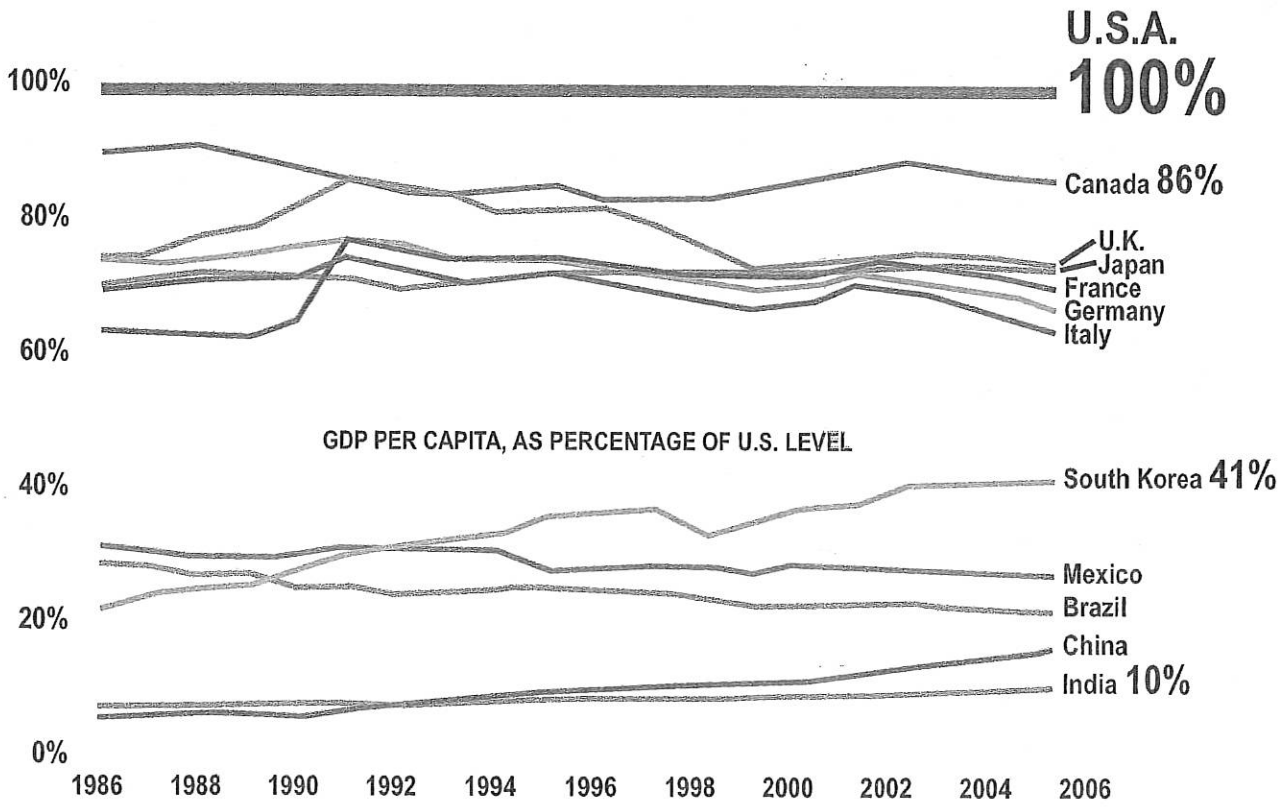
4-5

Why METS and Innovation Matter for the U.S.

The United States leads all major economies in per capita GDP



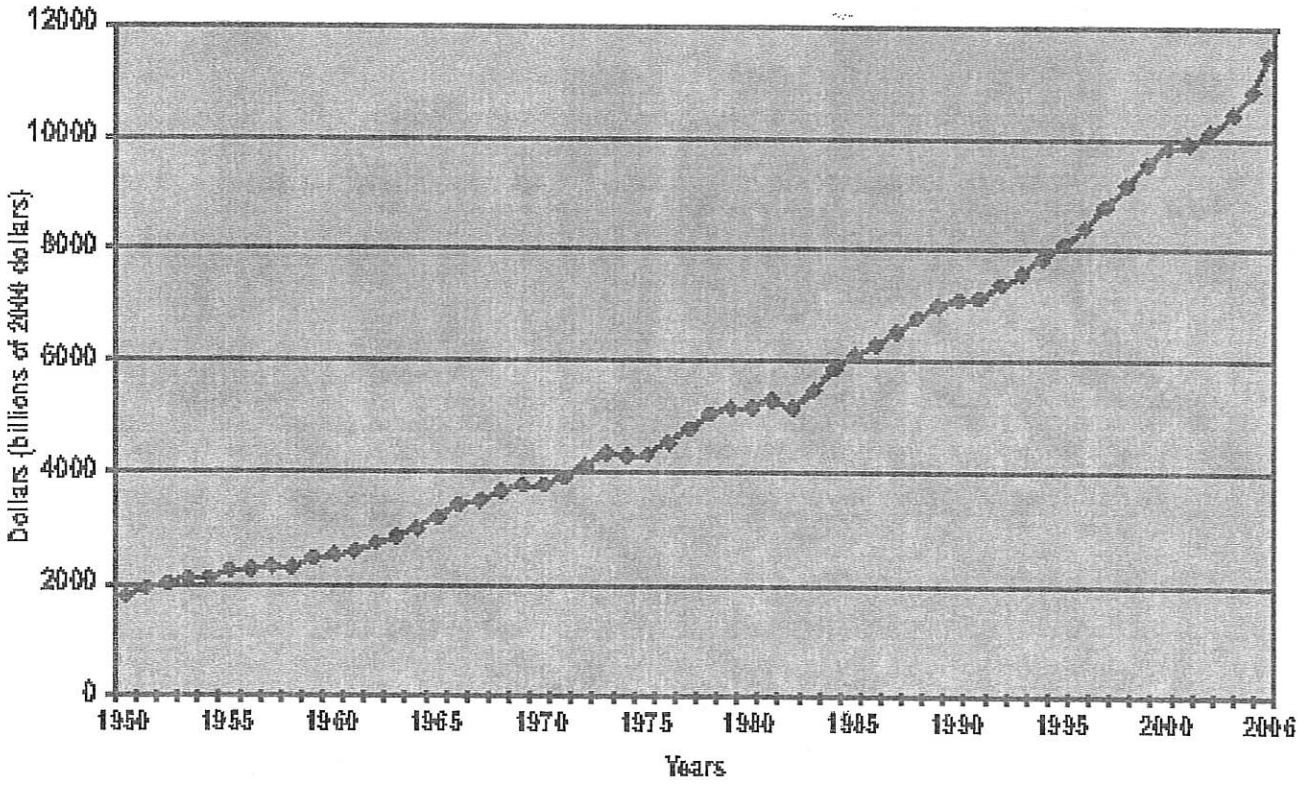
Source: Competitiveness Index: Where America Stands. Council on Competitiveness, 2006.

4-5

Why METS and Innovation Matter for the U.S.

Technological innovation accounts for 50% of US economic growth*

Real Gross Domestic Product
1950-2006



*For research supporting this chart, see Michael J. Boskin and Lawrence J. Lau. 1992. Capital, Technology, and Economic Growth. In Nathan Rosenberg, Ralph Landau, and David C. Mowery, eds. Technology and the Wealth of Nations: Stanford University Press. Stanford, CA

Source: Bureau of Economic Analysis, U.S. Department of Commerce.

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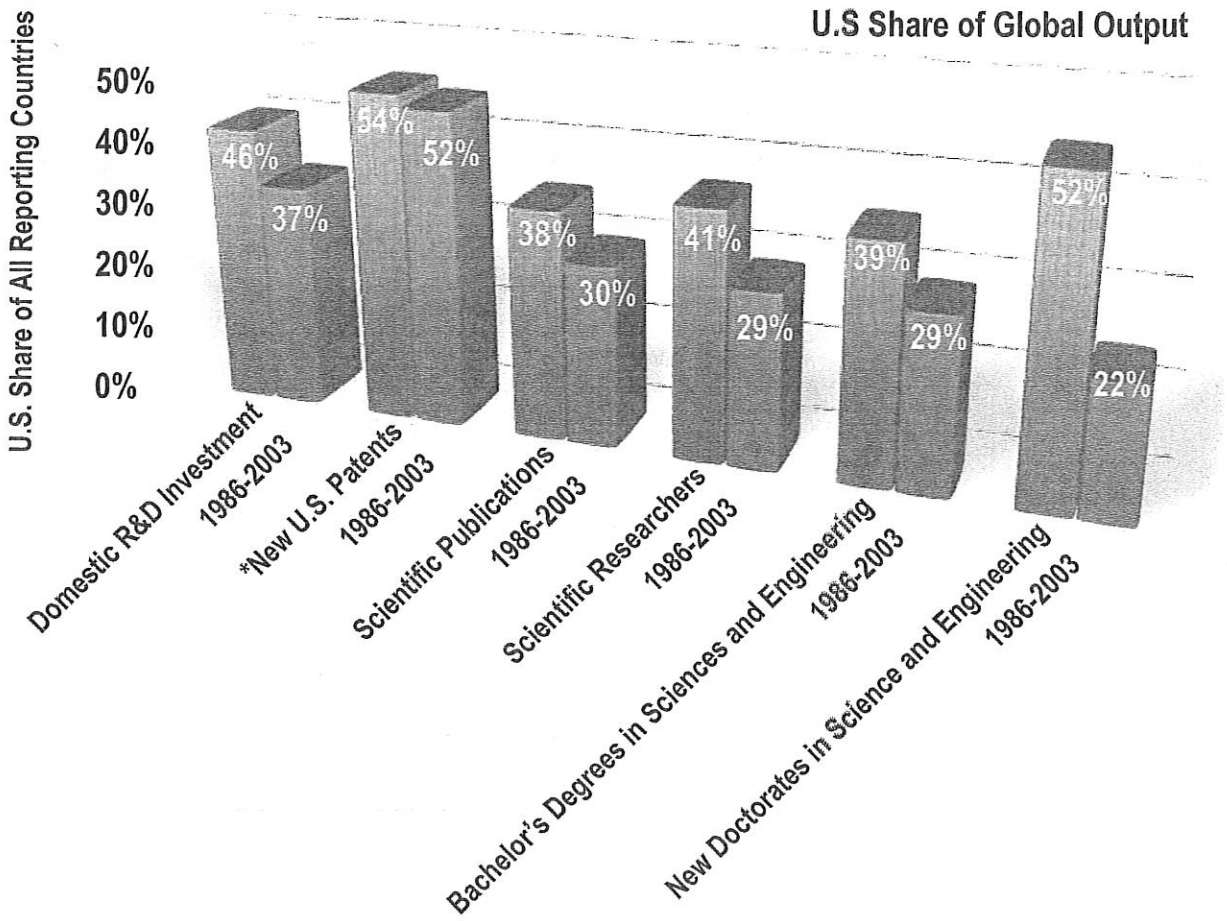
Why METS and Innovation Matter for the U.S.

The U.S. global lead in science and technology is narrowing



* Countries from around the world register their patents in the U.S. because it is such a key market.

Source: Competitiveness Index: Where America Stands. Council on Competitiveness, 2006.

4-8

Why METS and Innovation Matter for the U.S.

Emerging economies have joined the high technology club

Top Ten High Tech Exporters (1986)	Top 10 High Tech Exporters (2005)
In billions of 1997 U.S. Dollars	
1. United States $65	1. China $406
2. Japan $53	2. United States $284
3. Germany $31	3. Japan $212
4. United Kingdom $24	4. Germany $$183
5. France $14	5. South Korea $167
6. Netherlands $9	6. Hong Kong $157
7. Italy $8	7. Taiwan
8. Switzerland $8	8. Singapore $126
9. Taiwan $7	9. Malaysia $99
10. South Korea $7	10. United Kingdom $95

Emerging economies

Developed economies

Source: Competitiveness Index: Where America Stands. Council on Competitiveness, 2006.

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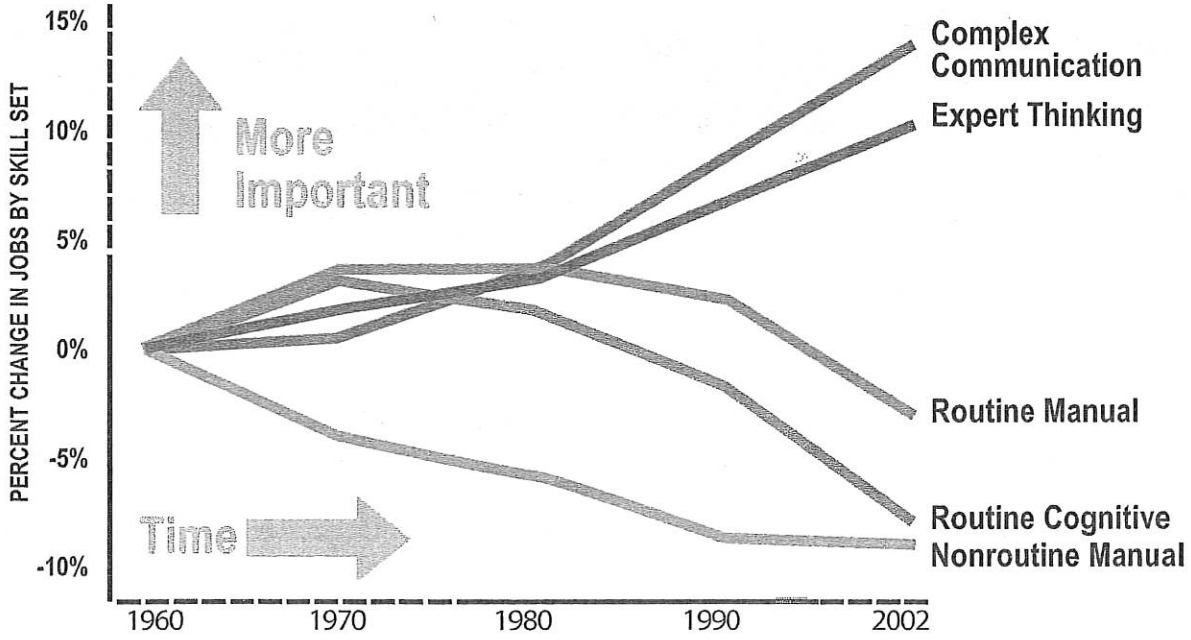
Why METS and Innovation Matter for the U.S.

Innovation-based economies require higher skills



Source: Competitiveness Index: Where America Stands. Council on Competitiveness, 2006.

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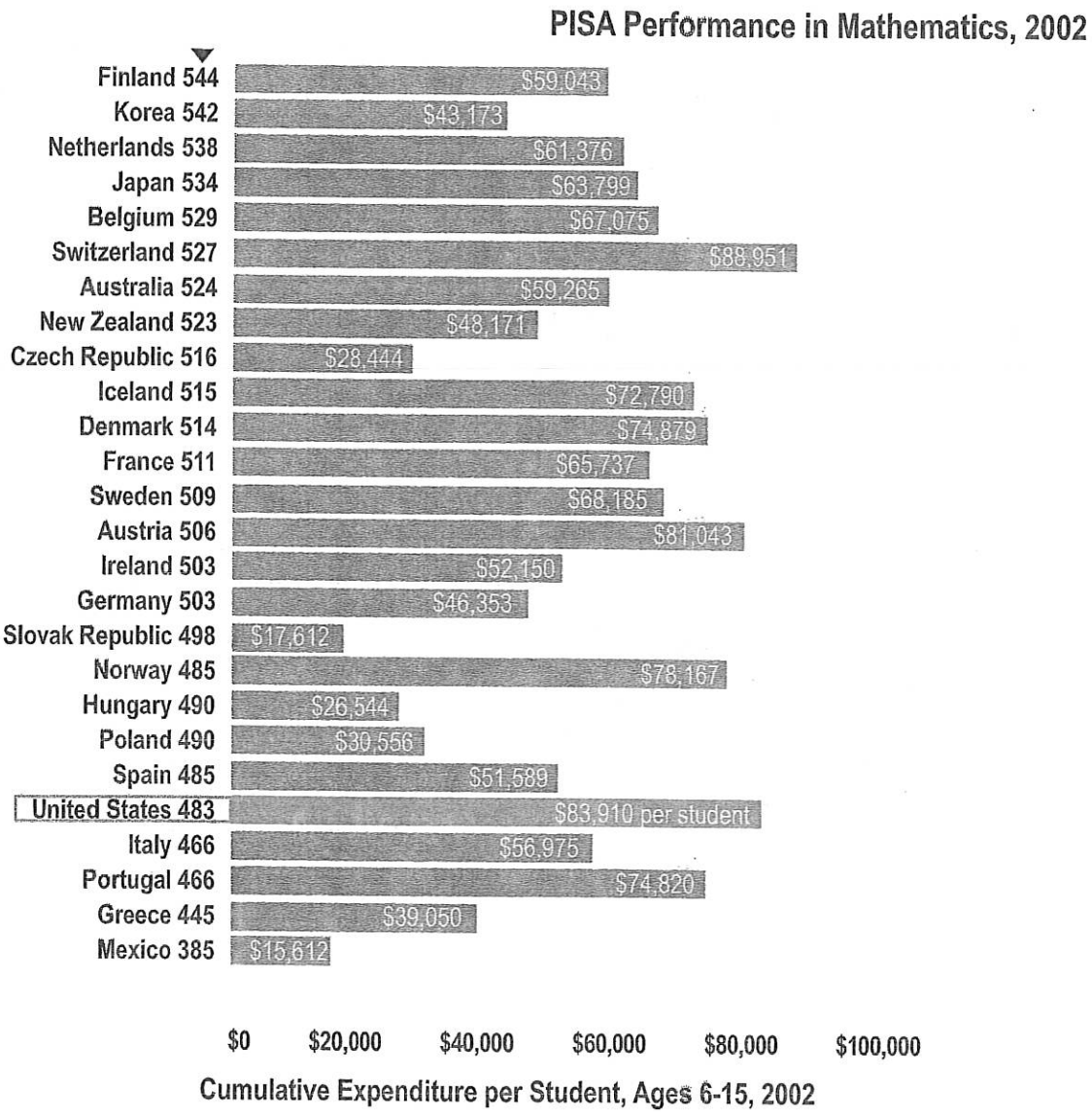
Why METS and Innovation Matter for the U.S.

The U.S. outspends others in K-12 education, but return on investment in math and science is low*



*The chart on this page summarizes the results of an international comparison of math proficiency of 15-year-olds sponsored by the Program for International Assessment (PISA) of the Paris-based Organization for Economic Cooperation and Development (OECD). Only member countries of the OECD participated in the assessment. The 2006 PISA assessments of math and science, released in December 2007 show comparable results.

Source: Competitiveness Index: Where America Stands. Council on Competitiveness, 2006.

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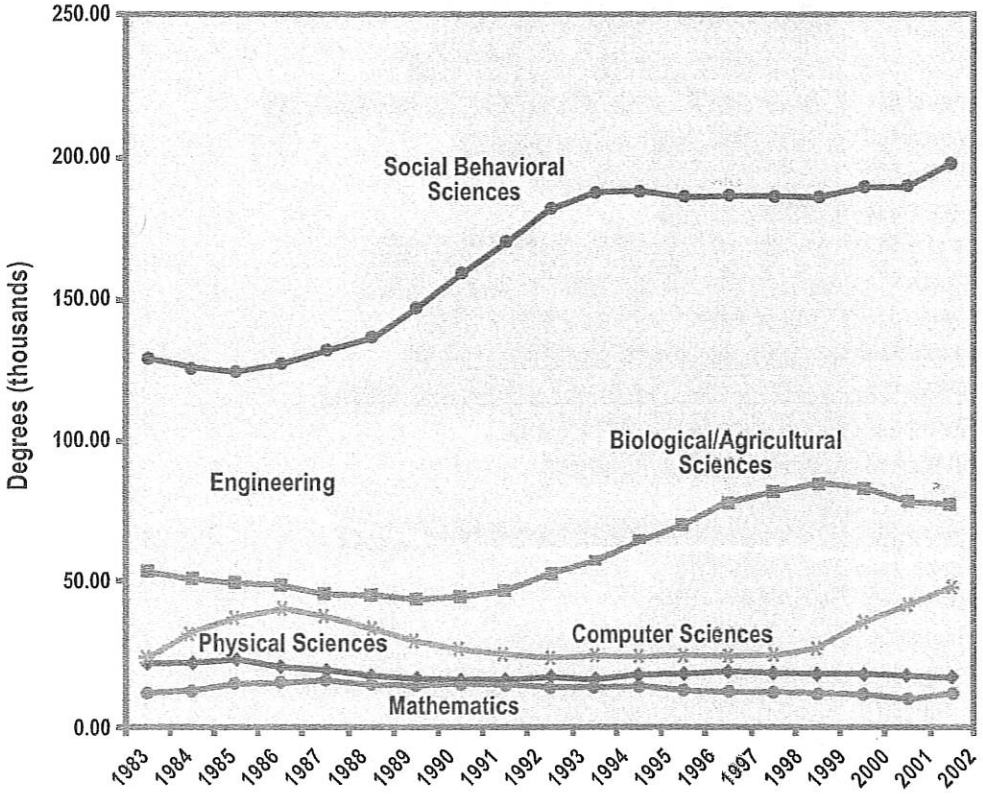
Why METS and Innovation Matter for the U.S.

With few exceptions, US bachelor degree production in technical disciplines has remained flat or declining for the past two decades*

U.S. S&E Bachelor's Degrees by Field
1983 - 2002



* The number of foreign-born students earning U.S. degrees increases significantly at the Master's and Doctoral level.

Source: NSF, Science and Economic Indicators, 2006.

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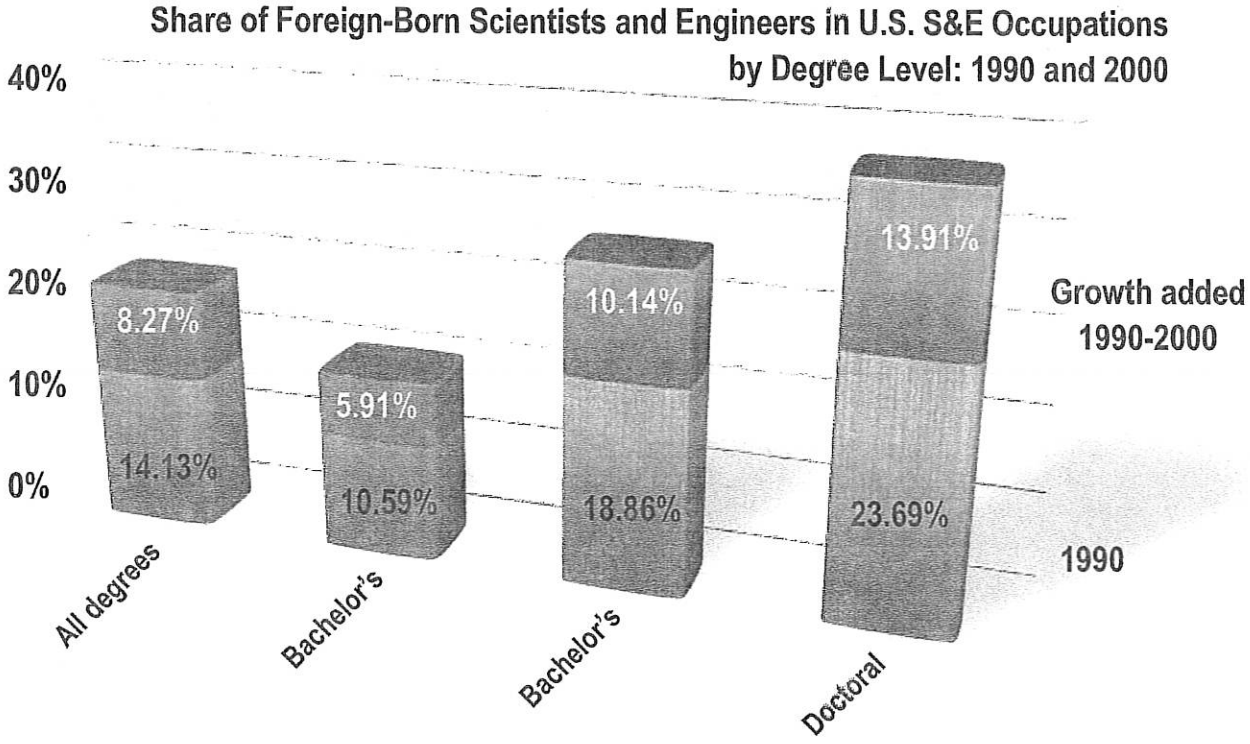
Why METS and Innovation Matter for the U.S.

The U.S. is relying increasingly on foreign-born science and engineering professionals, even though opportunities are growing in their home countries



The Bottom Line

Americans will not continue to enjoy the world's highest standard of living without building capacity in METS

U.S. reliance on foreign-born technical talent is a natural result of globalization, but also a warning sign that home-grown does not measure up

Source: National Science Board, Science and Engineering Indicators, 2006.

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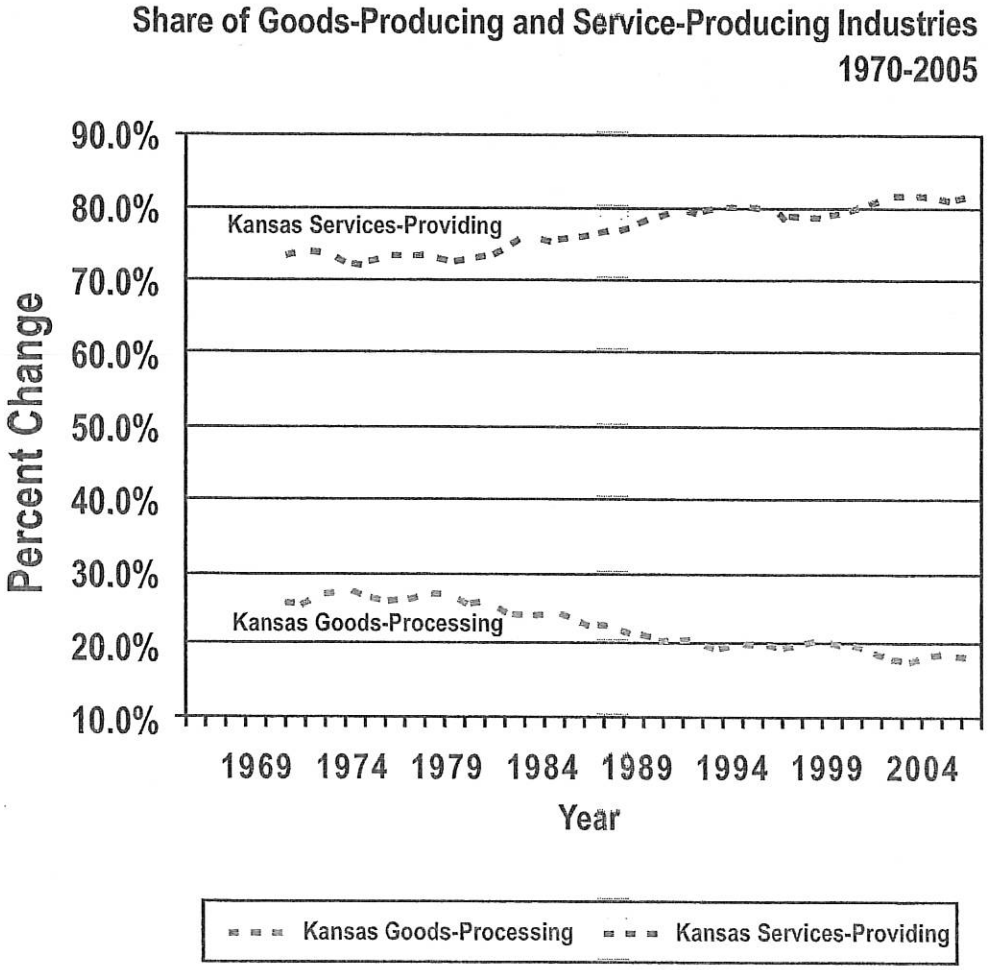
Section II: Why METS and Innovation Matter for Kansas

Although Kansas leads the world in production agriculture, the economy of the state is more diverse and more service-oriented than many may realize. The sectors that are most likely to generate significant numbers of high-wage jobs are knowledge-based. Most of these high-growth sectors are also intensely competitive. In order to create and maintain competitive advantage, Kansas must produce a deeper pool of technically skilled workers, while at the same time building capacity in frontier research and product development in selected fields. This section of the data book presents selected indicators highlighting why METS and innovation matter to Kansas.

Why METS and Innovation Matter for Kansas

Although Kansas is a world leader in production agriculture, service industries account for more than 80% of the state's Gross Domestic Product (GDP)*



* Key service-producing industries include wholesale and retail trade, transportation, utilities, financial activities, professional and business services, education, health, leisure and hospitality, and government. Key good-producing industries include natural resources and mining, construction, durable goods manufacturing, (e.g., aviation) and non-durable goods manufacturing (e.g., food processing).

Source: Bureau of Labor Statistics, Labor Market Information Services, Kansas Department of Labor.

Why METS and Innovation Matter for Kansas

The manufacturing sector in Kansas is stronger than neighboring states and the U.S. economy as a whole*

Manufacturing Employment							
All employees, thousands							
	Aug - 97	Aug - 02	Aug - 06	Aug - 07	1 - year change	5 - year change	10 - year change
Kansas	200	184.8	184.6	187	1.3%	1.2%	-6.5%
6-State Region	1,334.8	1,188.2	1,140	1,118.2	-1.9%	-5.9%	-16.2%
U.S.	17,552	15,272	14,303	14,098	-1.4&	-7.7%	-19.7%

* Whereas the national share of goods producing industries fell nearly 6 percent from 1990 to 2007, the Kansas share fell roughly 2 percent. This explains why the trend toward a service-driven economy is less pronounced in Kansas than the U.S. economy as a whole.

Source: Bureau of Labor Statistics, Labor Market Information Services, Kansas Department of Labor.

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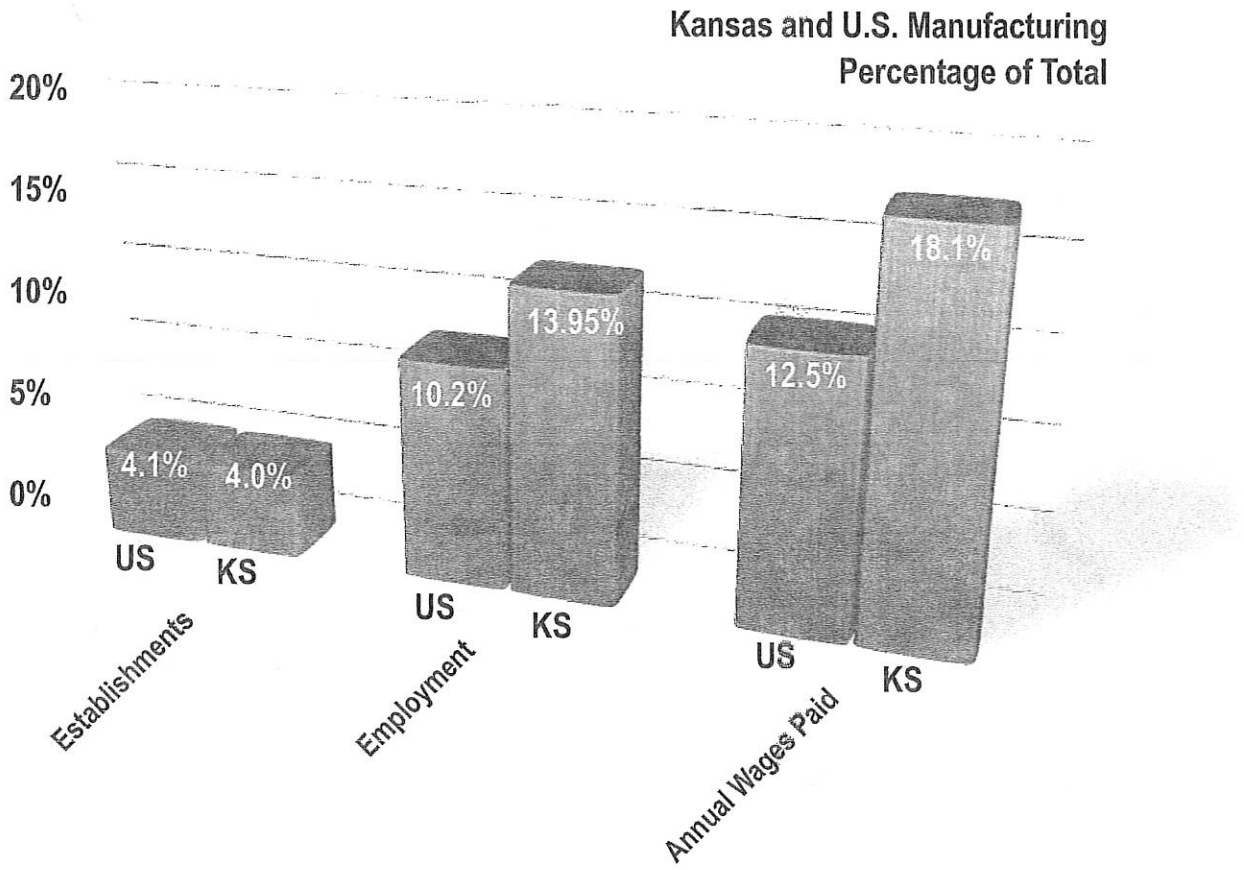
Why Math, Science and Innovation Matter to Kansas

Manufacturing accounts for a larger share of employment and wages in Kansas than the U.S. economy as a whole



Source: Bureau of Labor Statistics, Labor Market Information Services, Kansas Department of Labor.

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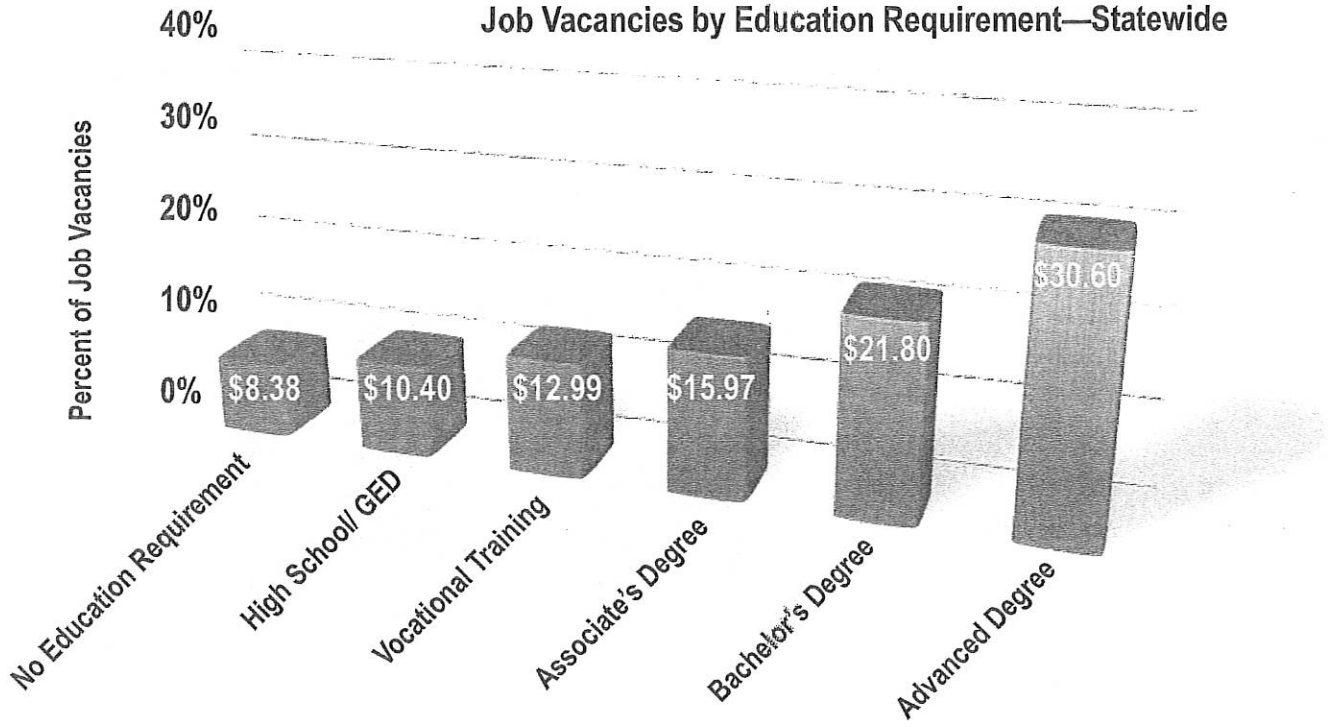
Why Math, Science and Innovation Matter to Kansas

More education commands higher-paying jobs in all economic sectors



Source: Kansas Department of Labor, Labor Market Information Services. Second Quarter 2007 Job Vacancy Survey.

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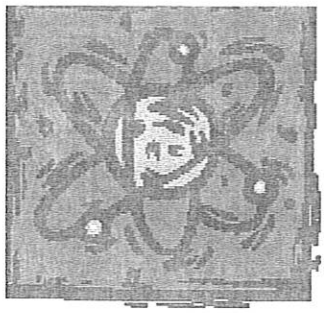
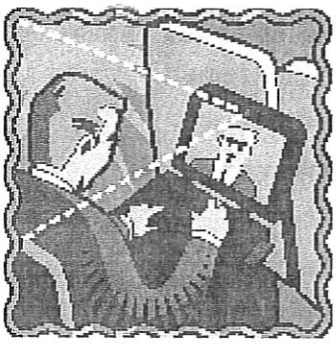
Why Math, Science and Innovation Matter to Kansas

A recent study by Kansas, Inc. identifies five high-growth industry clusters in which the state has the potential to create competitive advantage*



Bioscience§



Communications

Healthcare

Energyχ

Advanced Manufacturing/Aviation

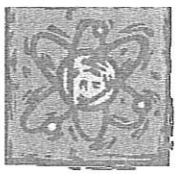
§ *Includes animal health*
χ *Includes bio-fuels*

* A February 2007 competitive benchmarking of the Kansas economy by the Monitor Group and the National Governors' Association Center for Best Practices reaches roughly the same conclusions, while also drawing a distinction between industry clusters that are exposed to national and international competition ("traded clusters") and those that are not ("local clusters"). Crop agriculture and food processing are defined in the Monitor-NGA benchmarking report as traded clusters, as are the five clusters called out in the Kansas, Inc. study.

Source: Positioning Kansas for Competitive Advantage: Aligning Key Industry Clusters and Occupations with Postsecondary Education and Workforce Development. Kansas, Inc. 2007. "A Competitive Benchmarking of the Kansas Economy," Monitor Group and NGA Center for Best Practices, February 2007.

Why Math, Science and Innovation Matter to Kansas

These high-value sectors will generate growing demand for highly-skilled workers



Bioscience

- R&D in physical, engineering, and life sciences
- Animal Health
- Pharmacology
- Clinical testing
- Manufacturing
- Software development and application
- Management and sales

Communications

- R&D in new products, methods of transmission, and services
- Systems engineering
- Systems software
- Network and computer administration
- Business operations

Energy

- R&D in bio-fuels and other renewable resources
- Cost analysis
- Information systems support
- Production
- Maintenance
- Transportation

Advanced Manufacturing/Aviation

- R&D in new materials, electronics, information systems
- Production and installation
- Maintenance
- Supply Chain Management
- Transportation
- Business and Finance

Health Care

- R&D in devices, genetics, nanotechnology, and robotics
- Diagnostics
- Health information
- Medical services (physicians, nurses, therapists)
- Clinical and dental technology
- Management

Source: The 2007 State New Economy Index: Benchmarking Economic Transformation in the States, The Information Technology and Innovation Foundation and Ewing Marion Kauffman Foundation.

Why Math, Science and Innovation Matter to Kansas

The educational attainment of the Kansas workforce is slightly above the national average

State Ranking by Educational Attainment		
State	**Rank**	**Score (Weighted Average*)**
Massachusetts	1	52.4
Colorado	2	50.0
Kansas	**19**	**40.8**
Nebraska	21	40.1
Iowa	36	35.2
Missouri	38	35.9
Arkansas	49	28.7
US Average		*39.7*

* A weighted average of advanced degrees, bachelor's degrees, associate's degrees, and some college coursework.

Source: State "New Economy" Index.

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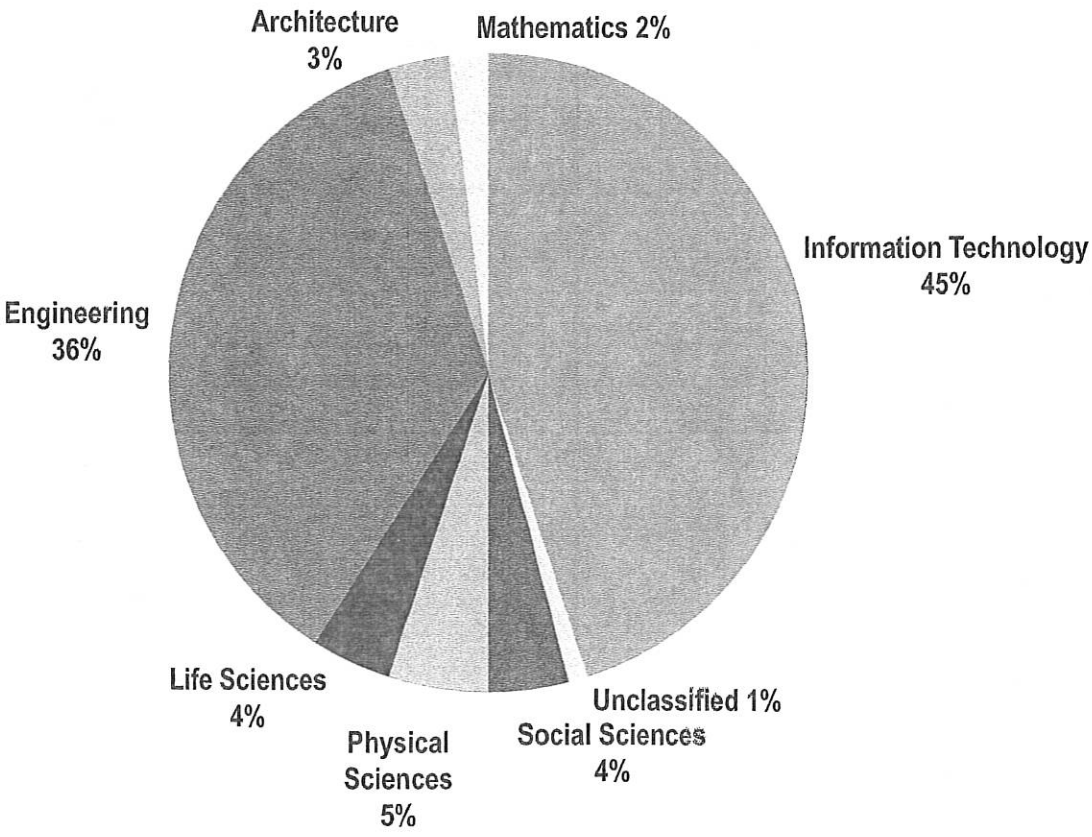
Why Math, Science and Innovation Matter to Kansas

Information technology and engineering loom large in the state's technical workforce of baccalaureate and advanced degree holders

Science and Engineering Occupations in Kansas



Source: 2007 Population Reference Bureau.

Why Math, Science and Innovation Matter to Kansas

Kansas ranks above average in meeting its own needs in computer science and especially in engineering

In-State Degree Production in Selected Tech Fields (by 1,000 jobs, 2005)					
National Ranking		Bachelor's Degrees Awarded per 1,000 Tech Jobs	Change from 2001 to 2005	Degrees Awarded	Tech Jobs in Selected Fields
Engineering Bachelors	14	69.5	25.7%	697	10,034
Engineering Tech Bachelors	24	72.6	6.7%	466	6,422
Computer Science Bachelors	16	47.3	9.3%	475	10,040
Computer Science Associates	42	18.2	-2.0%	193	10,620

Source: NCEMS Information Center for State Higher Education Policy Making and Analysis, www.higheredinfo.com.

Why Math, Science and Innovation Matter to Kansas

Nevertheless, almost one out of every three reported employment vacancies requires post-secondary education

All Job Vacancies	Number of Job Vacancies	Percent of All Job Vacancies	Average Minimum Wage Offer	Average Maximum Wage Offer
All Job Vacancies	*52,229*	*100*	*$11.97*	*$13.80*
No Education Requirement	14,132	27	$8.38	$9.70
High School or GED	19,692	38	$10.40	$11.87
→ Vocational Training	4,438	9	$12.99	$16.10
→ Associate's Degree	2,715	5	$15.97	$18.06
→ Bachelor's Degree	6,904	13	$21.80	$25.05
→ Advanced Degree	1,234	2	$30.60	$33.69
No response	3,114	6	$11.53	$13.26

* Percentages may not add up due to rounding.

Source: Kansas Department of Labor, Labor Market Information Services. Second Quarter 2007 Job Vacancy Survey.

Why Math, Science and Innovation Matter to Kansas

Employer surveys and gap analysis also indicate long-term shortfalls in job categories requiring post-secondary education in technical fields*

Projected Occupational Shortages
Accounting
Agriculture
Aviation
Engineering
Information-Technology
Nursing
Protective Services
Skilled Trades
Teachers of Math and Science*

* K-12 teachers of math and science did not fall within the purview of the 2007 cluster study, but the shortages estimated in this data book prompted the Legislature's Advisory Committee to include this occupation.

Source: Positioning Kansas for Competitive Advantage: Aligning Key Industry Clusters and Occupations with Postsecondary Education and Workforce Development. Kansas, Inc. 2007.

Why Math, Science and Innovation Matter to Kansas

Historically, Kansas has been less competitive than most states in winning federal research awards.

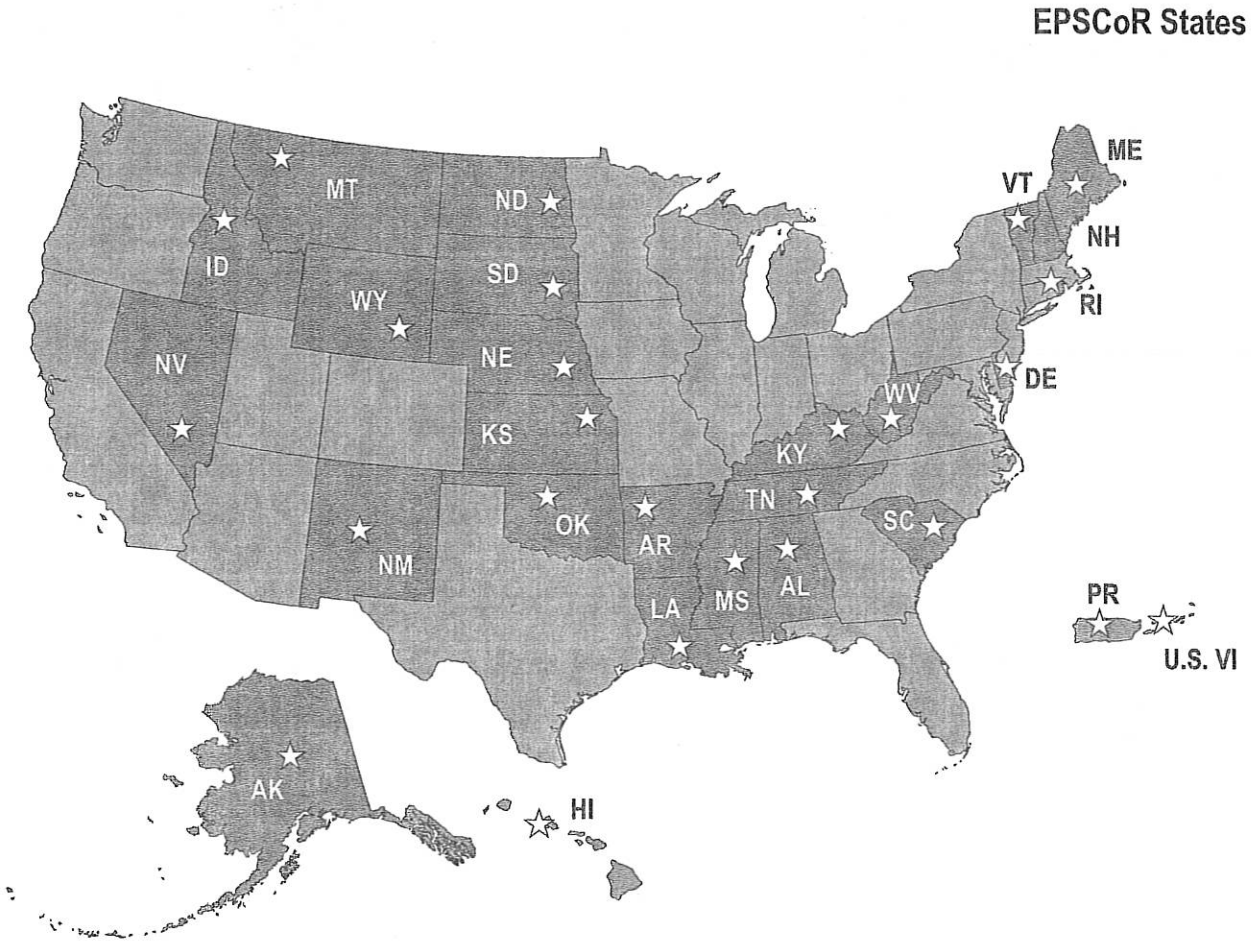
Federal Grants to Kansas FY 2002					
Agency	**Total**	**Industrial Firms**	**Universities & Colleges**	**Other Non-Profits**	**Rank**
All agencies	290,516	21,030	17,154	106,164	38
Dept. Agriculture	16,907	0	8,118	0	36
Dept. Commerce	835	835	0	0	45
Dept. Defense	17,941	8,887	5,150	0	45
Dept. Energy	8,193	462	7,731	0	34
Dept. HHS	207,653	3,415	69,907	105,159	27
Dept. Interior	2,940	2	556	0	37
Dept. Transportation	9,444	4,448	3,200	0	18
EPA	459	0	208	126	43
NASA	4,311	1,190	2,242	879	44
NSF	21,833	1,791	20,042	0	32
Rank	**38**	**43**	**35**	**13**	**na**

Note: Federal R&D obligations are as reported by funding agencies. Ranks and totals are based on data for 50 states, District of Columbia and Puerto Rico.

Source: National Science Foundation/Division of Science Resources Statistics.

Why Math, Science and Innovation Matter to Kansas

As a result, Kansas is one of 24 states qualifying for federal support under the Experimental Program to Stimulate Competitive Research (EPSCoR)



Source: National Science Foundation.

Why Math, Science and Innovation Matter to Kansas

The state also lags in key "new economy" indicators including entrepreneurial activity, initial public offerings, fast-growing firms and inventor patents*

New Economy Indicators		
State	**Rank**	**Score**
Utah	1	13.78
Colorado	3	13.23
Arkansas	25	9.16
Missouri	37	7.30
Kansas	**45**	**6.11**
Iowa	48	5.59
US Average		*10*

* Kansas has taken action to strengthen the state's "new economy" assets through the 2004 Kansas Economic Growth Act, a key component of which included the establishment of a Bioscience Authority to attract world-class talent and guide cutting-edge investments.

The Bottom Line

Kansas' economic future depends on deepening its pool of technical talent.

The state is not producing sufficient technical talent to meet near-term needs and capitalize on long-term opportunities.

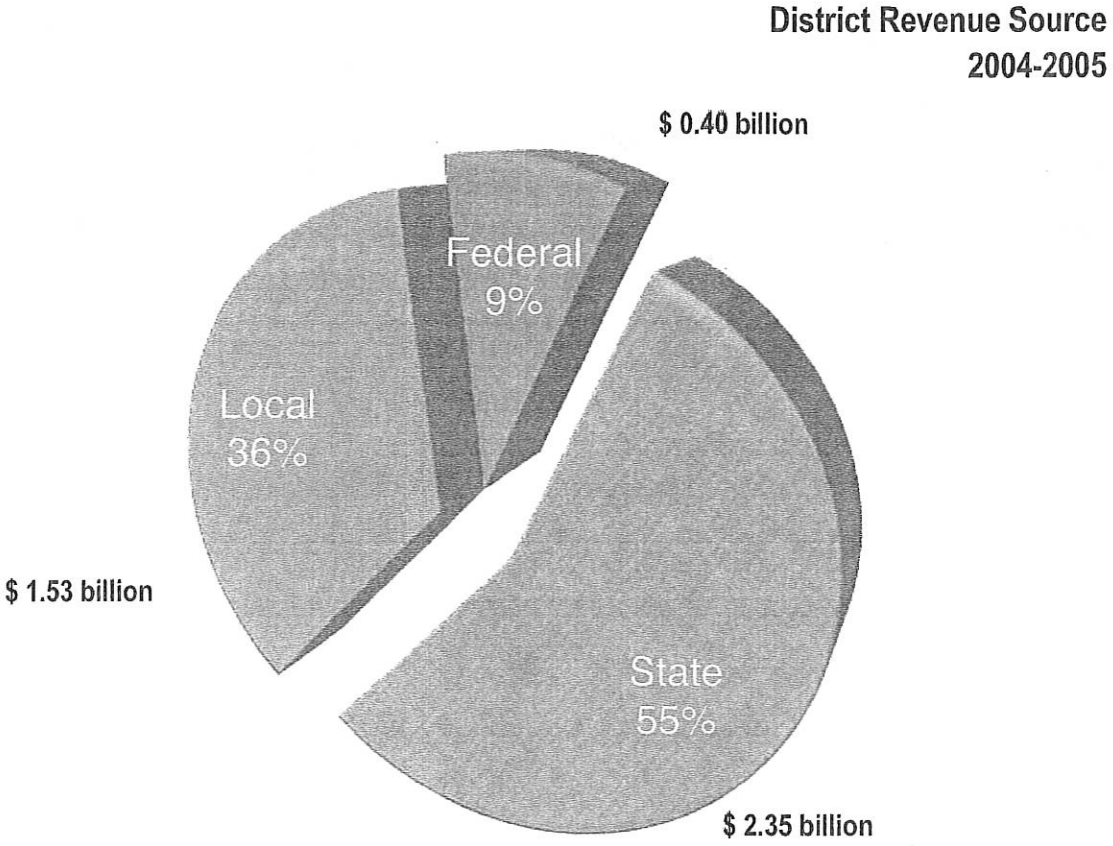
Source: The 2007 State New Economy Index: Benchmarking Economic Transformation in the States, The Information Technology and Innovation Foundation and Ewing Marion Kauffman Foundation.

Section III: K-12 Indicators

K-12 math and science education in Kansas is shaped by the interplay of federal, state, and local decisions. The federal No Child Left Behind Act sets national achievement goals and holds schools accountable for annual progress toward reaching them. The State Board of Education determines what students are expected to learn at each grade level and what qualifications teachers of math and science must hold. The state also develops and administers tests to measure student proficiency. Two hundred ninety-six local school districts, varying widely in size, enrollment, and resources, have the last word on matters of governance, curriculum, and teacher hiring. This section of the data book highlights the performance of Kansas' K-12 enterprise in equipping students with foundational skills in math and science.

K-12 Indicators

Kansas' $4 billion K-12 enterprise draws upon federal, state, and local resources



Source: U.S. Department of Education, National Center for Education Studies.

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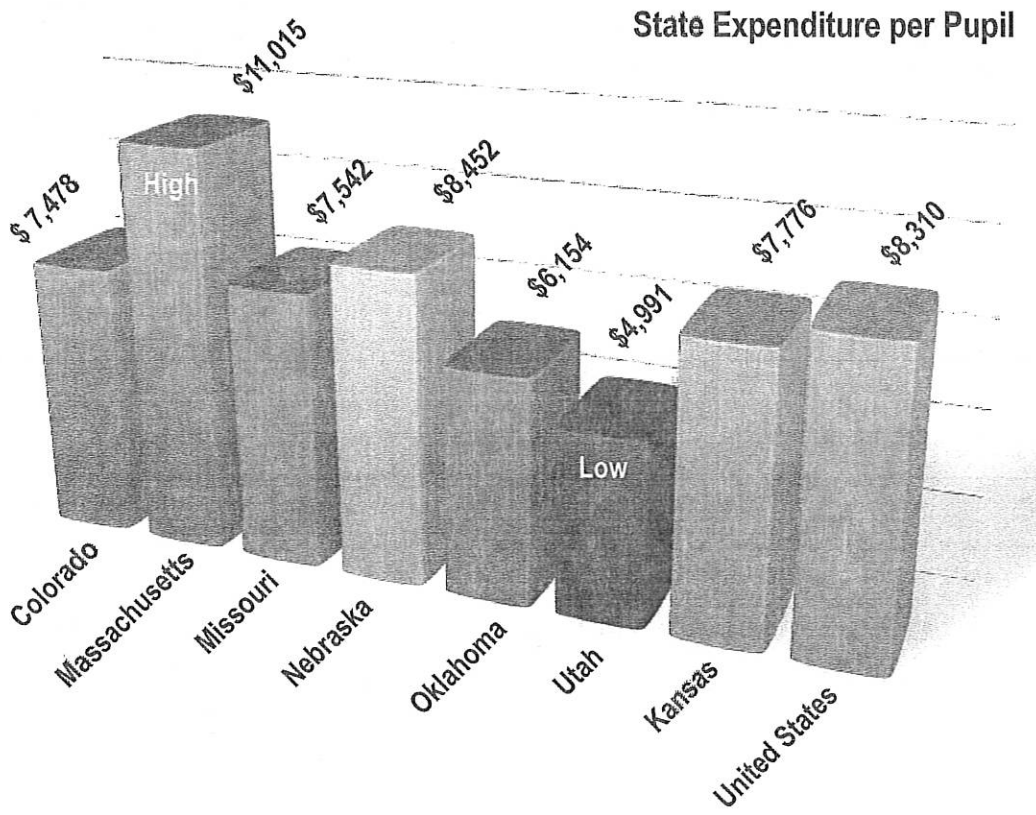
K-12 Indicators

Kansas K-12 spending per pupil is not as high as most states



Source: National Center for Education Statistics: Digest of Education Statistics 2006.

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K-12 Indicators

The student population of about 465,000 is less diverse than the U.S. as a whole, but the pace of recent change has been dramatic

Racial/Ethnic Composition of Students		
	Kansas	**National**
White	73.4	59.2
African-American	8.4	17.7
American Indian	1.4	1.2
Asian	2.3	4.4
Two or more races	2.6	-
Hispanic	11.8	18.1

Recent Changes in Kansas K-12 Enrollment by Race and Sex													
				White		**Black**		**Hispanic**		**Amer. Ind./Alaska**		**Asian/Pac Is.**	
	Total	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1999	469,205	242,149	227,056	193,538	180,949	20,949	19,998	19,808	18,375	2,941	2,836	4,910	4,896
2006	465,135	240,147	224,988	174,394	162,306	18,724	17,652	28,743	27,159	3,277	3,134	5,405	5,436

Source: Kansas Department of Education.

K-12 Indicators

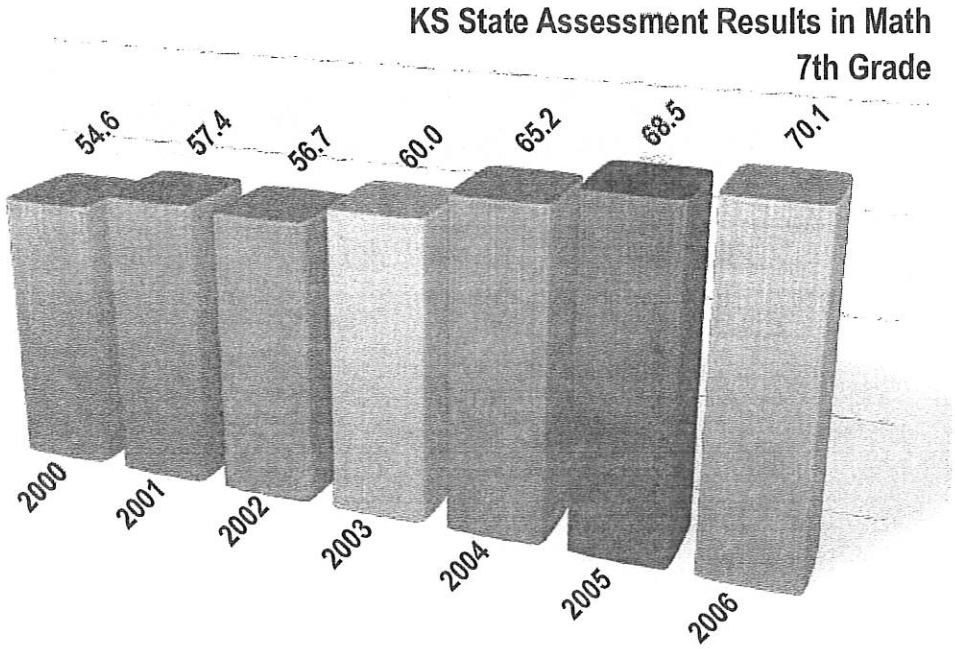
Steady enrollments have produced about 30,000 high school graduates per year

High School Graduates	
2005-06	29,836
2004-05	30,192
2003-04	30,123
2002-03	29,930
2001-02	29,510

Source: Kansas Department of Education.

K-12 Indicators

State math assessments show impressive gains since 2000 as well as 2006 achievement levels exceeding performance targets in all grades

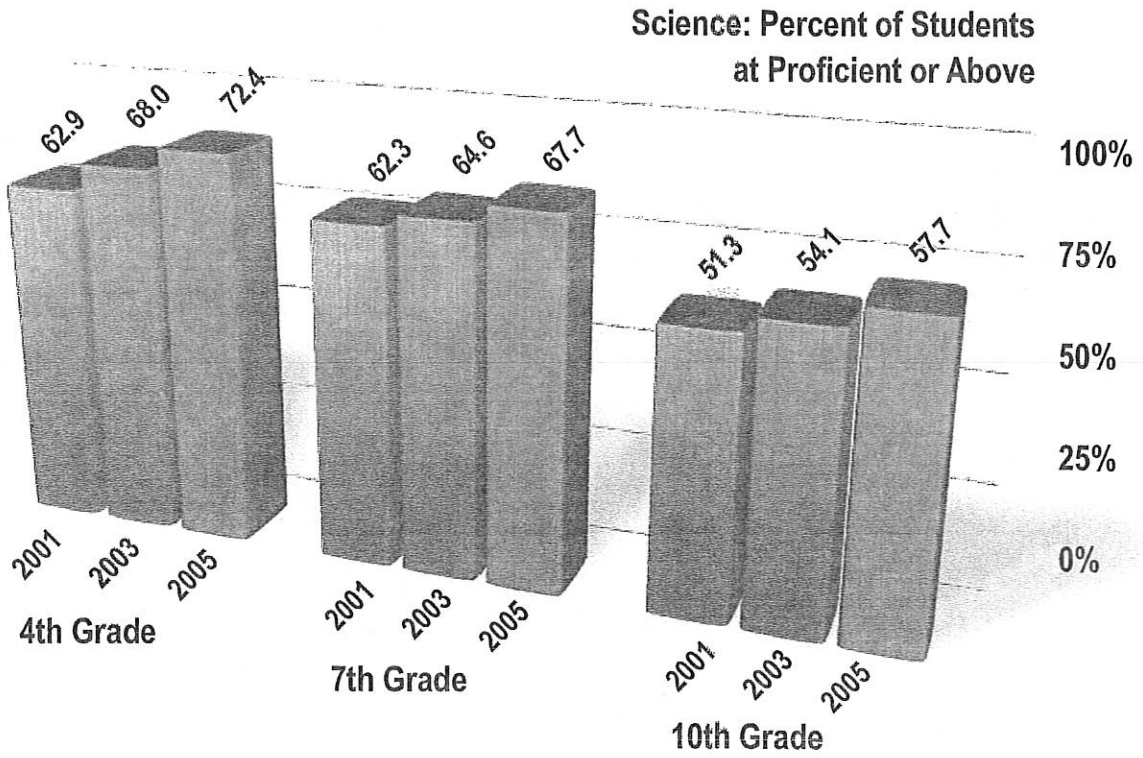


Kansas State Assessment Results: Math			
State	**Grade**	**Score**	**No Child Left Behind Target Score**
Student achievement in the top three performance categories remain strong: - meets standard - exceeds standard - exemplary	3	80.9	66.8
	4	80.7	66.8
	5	78.8	66.8
	7	74.3	66.8
	7	70.1	66.8
	8	66.6	66.8
	HS	58.3	55.7

Source: Kansas Department of Education.

K-12 Indicators

State science assessments also show gains in achievement

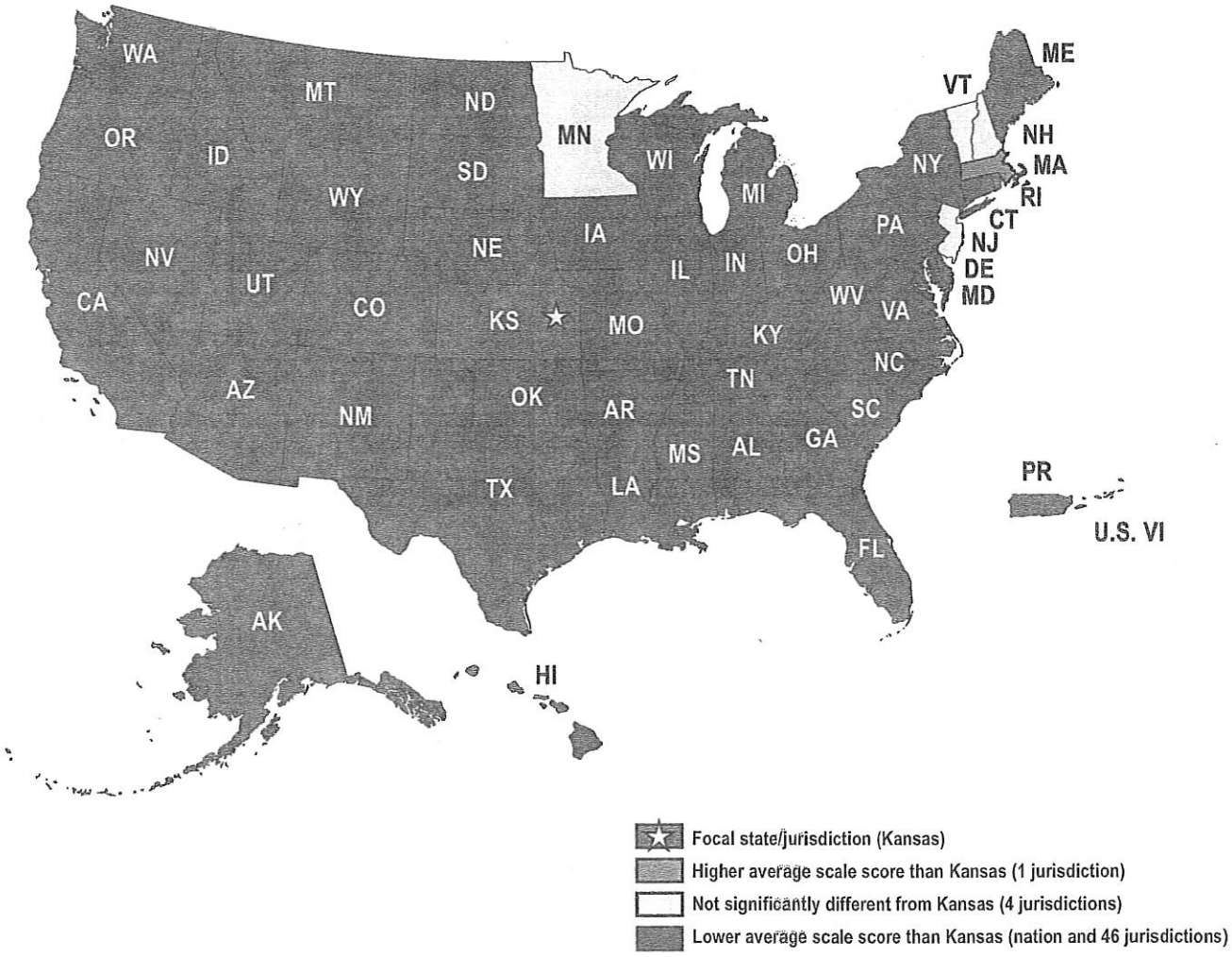


Source: Kansas Department of Education.

K-12 Indicators

National 4th grade math assessments confirm that Kansas is a high-performing state

Kansas Scores in Comparison with NAEP, 4th Grade



Source: U.S. Dept. of Education, Institute of Education Sciences/National Assessment of Education Progress (NAEP) 2007.

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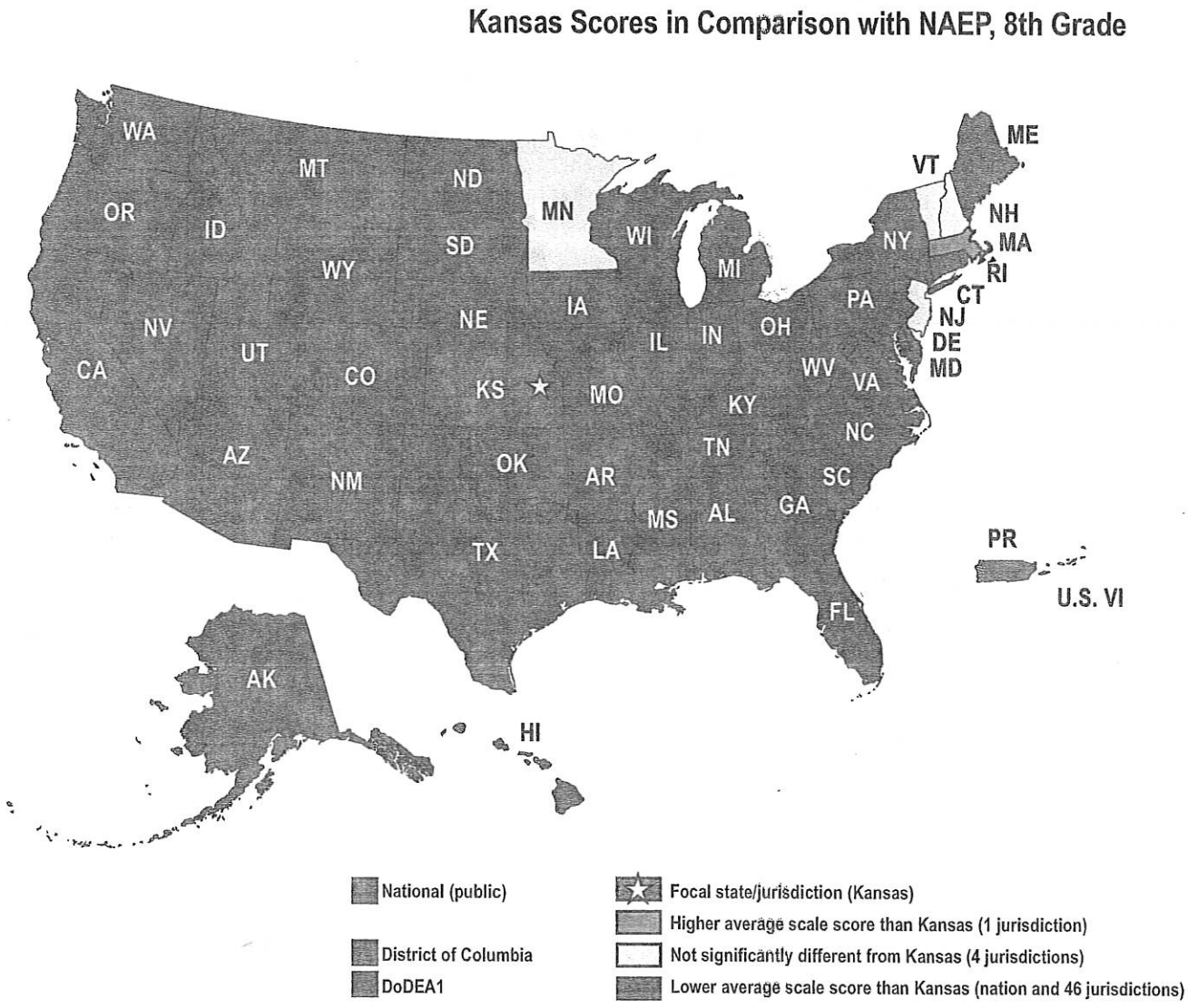
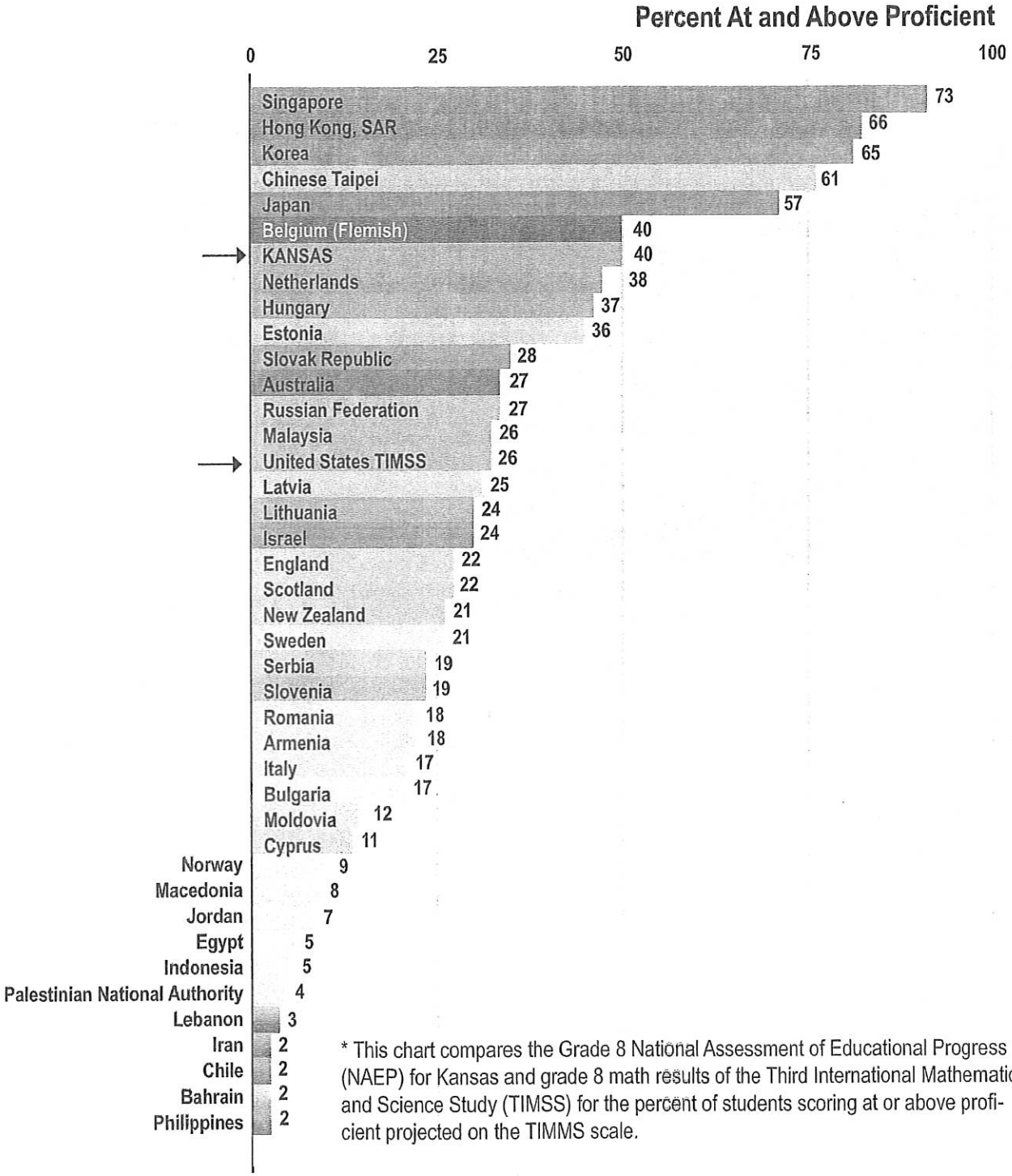
K-12 Indicators

National 8th grade assessments also show high relative performance



Source: U.S. Dept. of Education, Institute of Education Sciences/National Assessment of Education Progress (NAEP) 2007.

Math achievement in Kansas compares favorably with many countries, but significantly lags the highest-achieving countries*



* This chart compares the Grade 8 National Assessment of Educational Progress (NAEP) for Kansas and grade 8 math results of the Third International Mathematics and Science Study (TIMSS) for the percent of students scoring at or above proficient projected on the TIMMS scale.

Source: Phillips, Gary W., Chance Favors the Prepared Mind: Mathematics and Science Indicators For Comparing States and Nations, AIR: Wash., DC, 2007. Kansas did not participate in the grade 8 state NAEP in science.

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K-12 Indicators

Despite comparatively high achievement in math, about half the Kansas student sample taking the national assessment scores below grade level*

Proficiency of Kansas Students in Math					
		Below Basic	Basic	Proficient	Advanced
		Percentage at Grade Level			
Grade 4	2000	24	47	26	2
	2003	15	44	36	6
	2005	12	41	39	8
	2007	11	38	42	9
Grade 8	2000	24	43	29	5
	2003	24	42	28	6
	2005	23	42	29	5
	2007	19	41	32	9

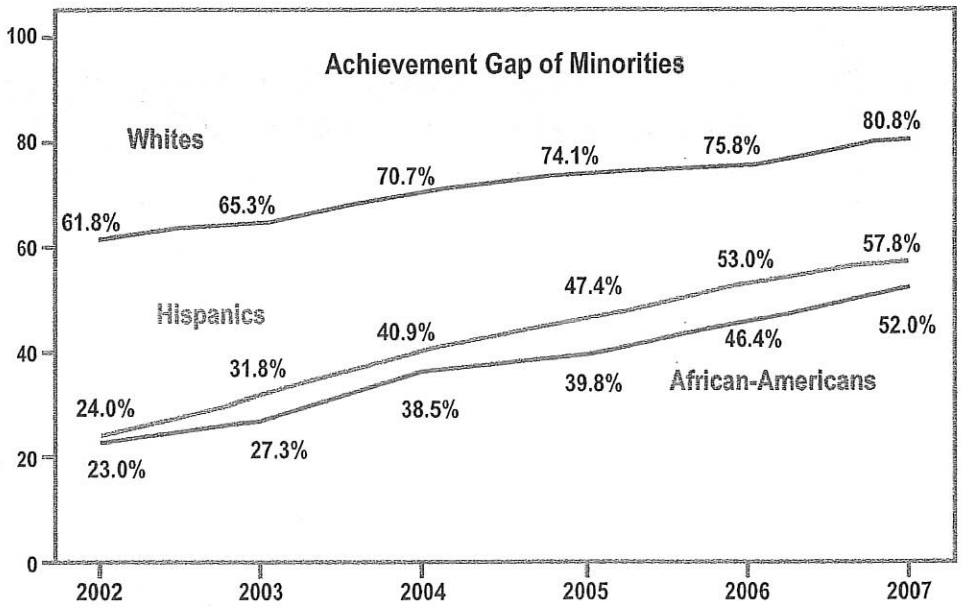
* Grade level is the equivalent of "proficient."

Source: U.S. Department of Education, National Assessment of Educational Progress (NAEP).

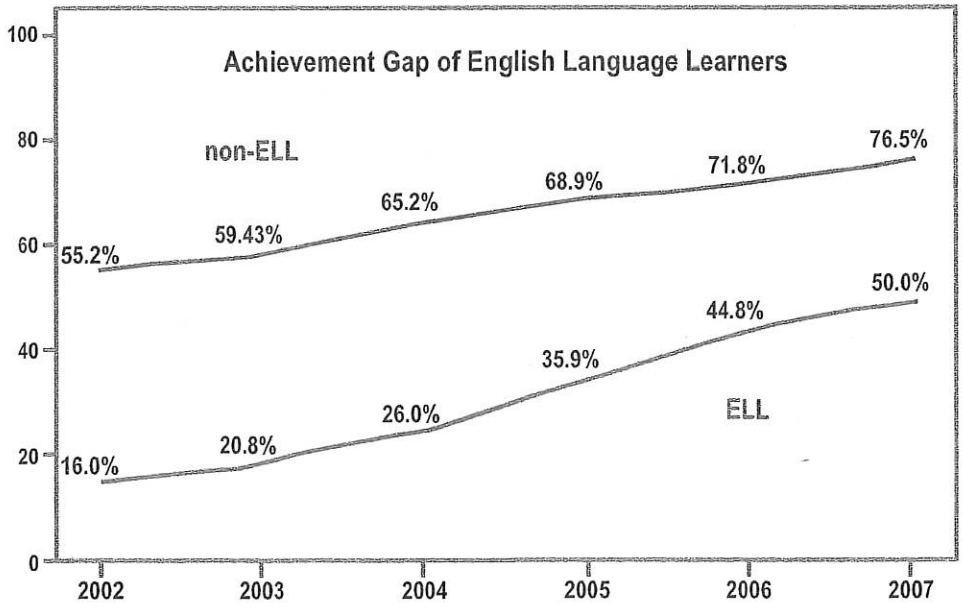
K-12 Indicators

Despite gains across all groups, achievement varies widely among income level, race and ethnicity, language status, and special learning needs.

Kansas 7th Grade Mathematics Trends, % at Standard or Above



Kansas 7th Grade Mathematics Trends, % at Standard or Above



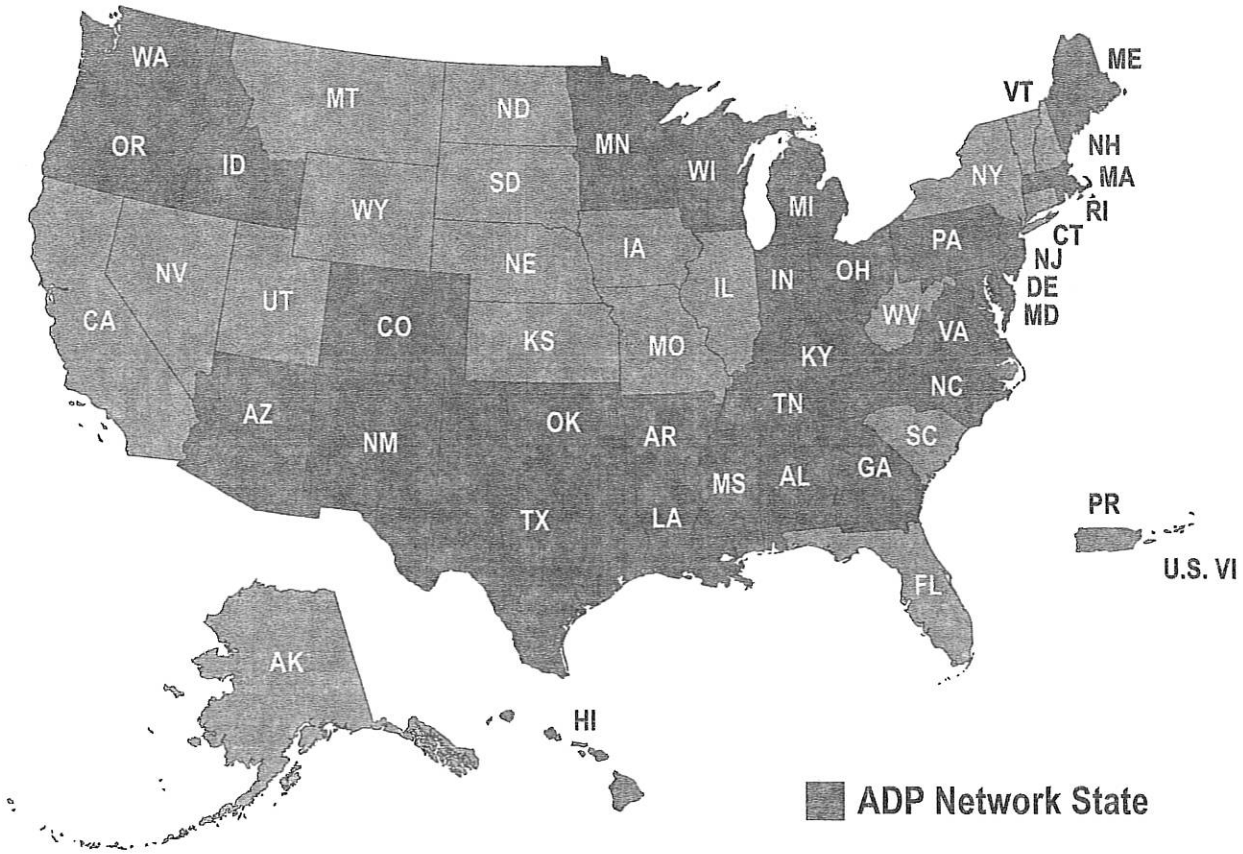
Source: Kansas State Department of Education.

K-12 Indicators

Math course requirements are on par with many states, but not among the most rigorous

High School Math Course Requirements	
Kansas	3 units including Algebra I and geometry concepts
Guidelines for 30 state members of American Diploma Project Network	4 units, including the content equivalent of Algebra I and II, geometry, and statistics or pre-calculus

Member States of the American Diploma Project Network



Source: American Diploma Project, www.achieve.org.

K-12 Indicators

Kansas science course requirements are not among the most rigorous

High School Science Course Requirements	
Kansas	3 approved units Including chemistry or physics and one lab course
National	35 states require (or are phasing in) three or more units of science. 17 states require (or plan to require) at least two lab sciences. Georgia, Indiana and West Virginia require explicit lab-based science

Source: Education Commission of the States, State Notes Mathematics/Science June 2007.

K-12 Indicators

Science assessments mandated under No Child Left Behind will begin in 2007-2008, but will be less frequent and less high stakes than those mandated for math

High School Science Course Requirements	
Math	**Science**
Tests administered annually in every grade span 3-8 and at least once in grade span 10-12	Tests administered at least once annually in grade spans 3-4, 6-9, 10-12
Results Factor in school accountability	**Results** Do not factor in school accountability

K-12 Indicators

Kansas high school students take the ACT college admission test at comparable rates to most surrounding states and score above the national average in math and science

2007 ACT-Tested High School Graduates	
State	**Percent of Graduates Tested**
Arkansas	75
Colorado	100 (required)
Iowa	66
Kansas	**76**
Missouri	74
Nebraska	77
Oklahoma	71
National	**42***

Five-Year Trends - Average ACT Scores						
	Number of Students Tested		**Average ACT Scores**			
			Mathematics		**Science**	
Grad Year	**State**	**National**	**State**	**National**	**State**	**National**
2003	23,813	1,175,059	21.2	20.6	21.5	20.8
2004	23,472	1,171,460	21.1	20.7	21.5	20.9
2005	23,106	1,186,251	21.2	20.7	21.6	20.9
2006	23,056	1,206,455	21.3	20.8	21.6	20.9
2007	23,196	1,300,599	21.4	21.0	21.7	21.0

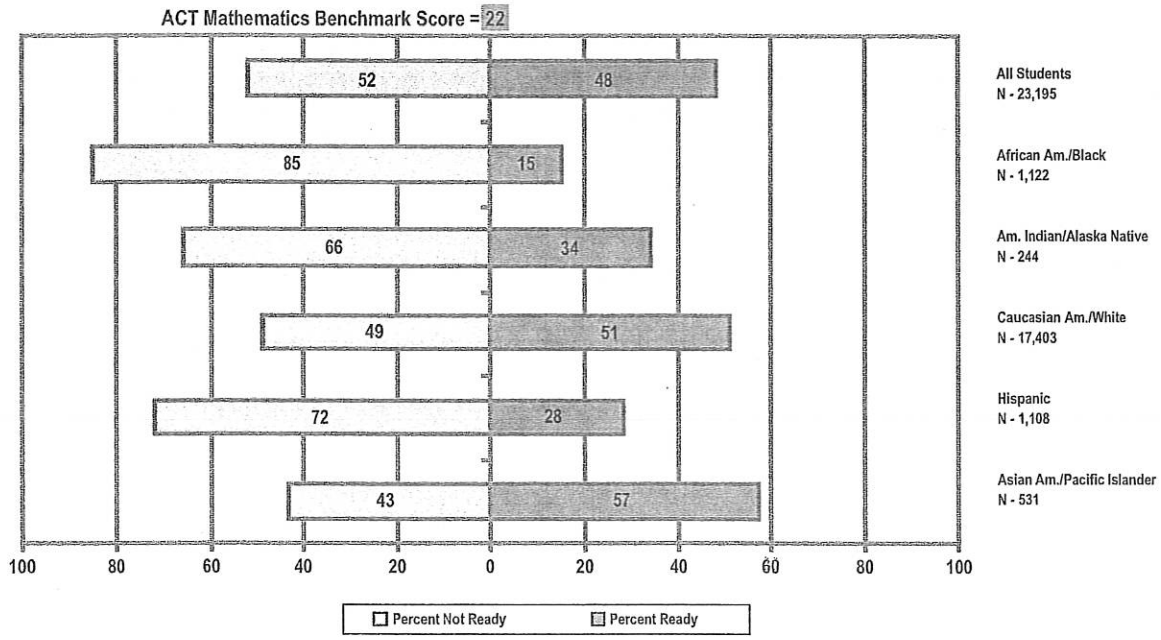
** The Scholastic Aptitude test (SAT) of the College Board is used in many high-population states outside the Midwest.*

Source: ACT High School Profile Report: The Graduating Class of 2007/Kansas www.act.org/news/data/07/pdf/states/Kansas.pdf.

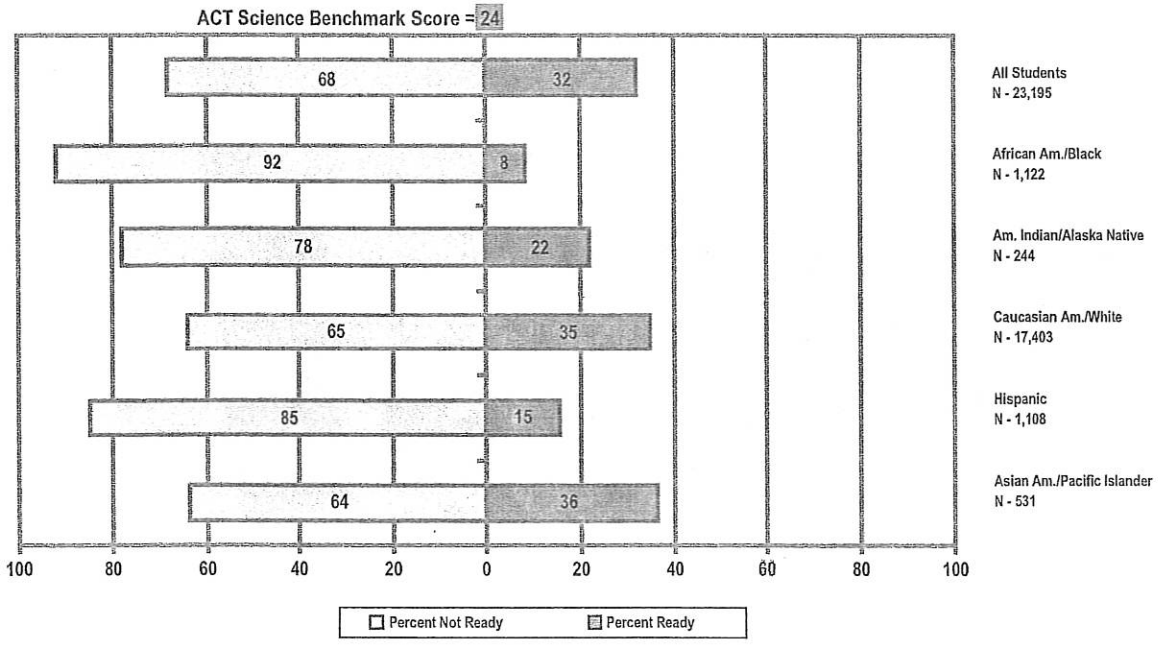
K-12 Indicators

However, only about half of ACT test takers are deemed college ready in math and only about one-third are college ready in science

Percent of Students Meeting ACT College Readiness Benchmark Scores by Race/Ethnicity: Mathematics



Percent of Students Meeting ACT College Readiness Benchmark Scores by Race/Ethnicity: Science

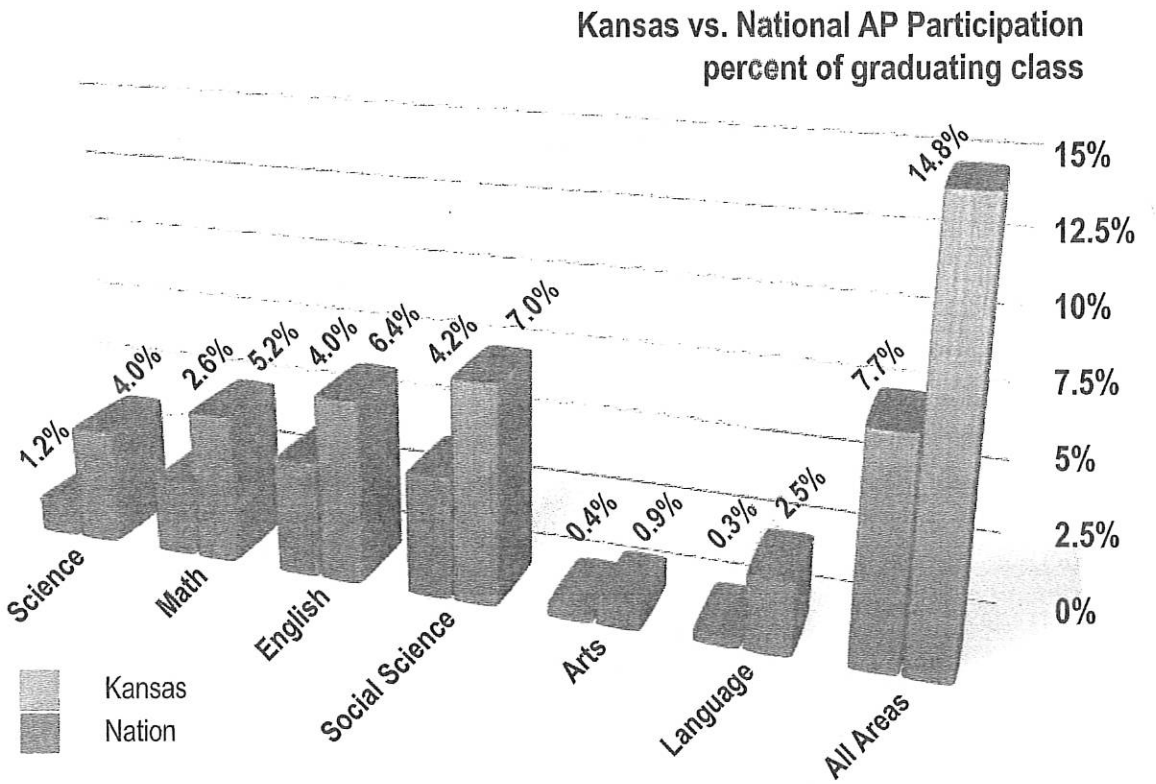


Source: ACT Kansas Profile 2007.

K-12 Indicators

Concurrent enrollment in Kansas provides readily available college opportunities, limiting participation in nationally benchmarked Advanced Placement courses

Concurrent Enrollment in Kansas	
Vocational Tech	2,080
Community College	5,564
State University	341
Private College	370
Total	8,355



Source: AP Report to the Nation 2007 Kansas State Report.

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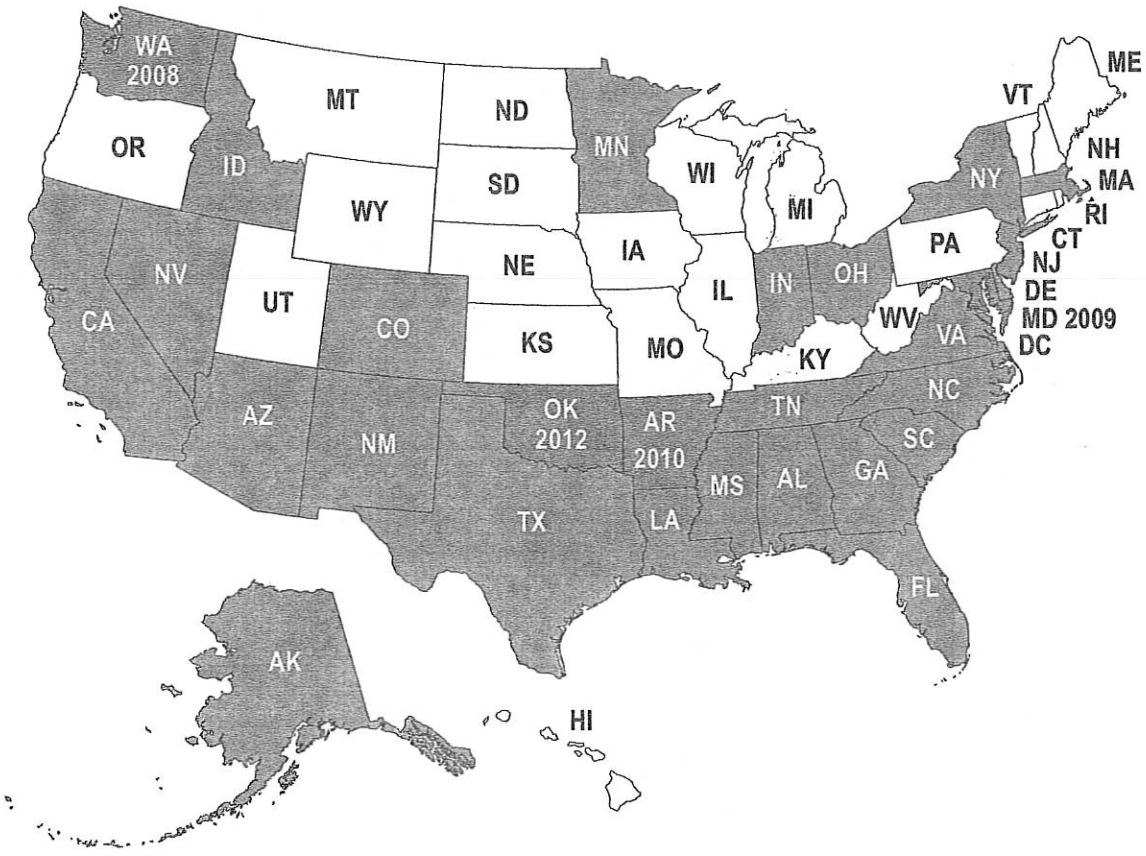
K-12 Indicators

Kansas does not use a high school exit exam to establish an achievement "floor" in math

States with Mandatory Exit Exams (2007)



States with mandatory exit exams in 2007:
AL, AK, AZ, CA, FL, GA, ID, IN, LA, MA, MN, MS, NV, NJ, NM, NY, NC, OH, SC, TN, TX, VA
(22 states)

States phasing in exit exams by 2012 but not yet withholding diplomas:
AR (2010), MD (2009), OK (2012), WA (2008)
(4 states)

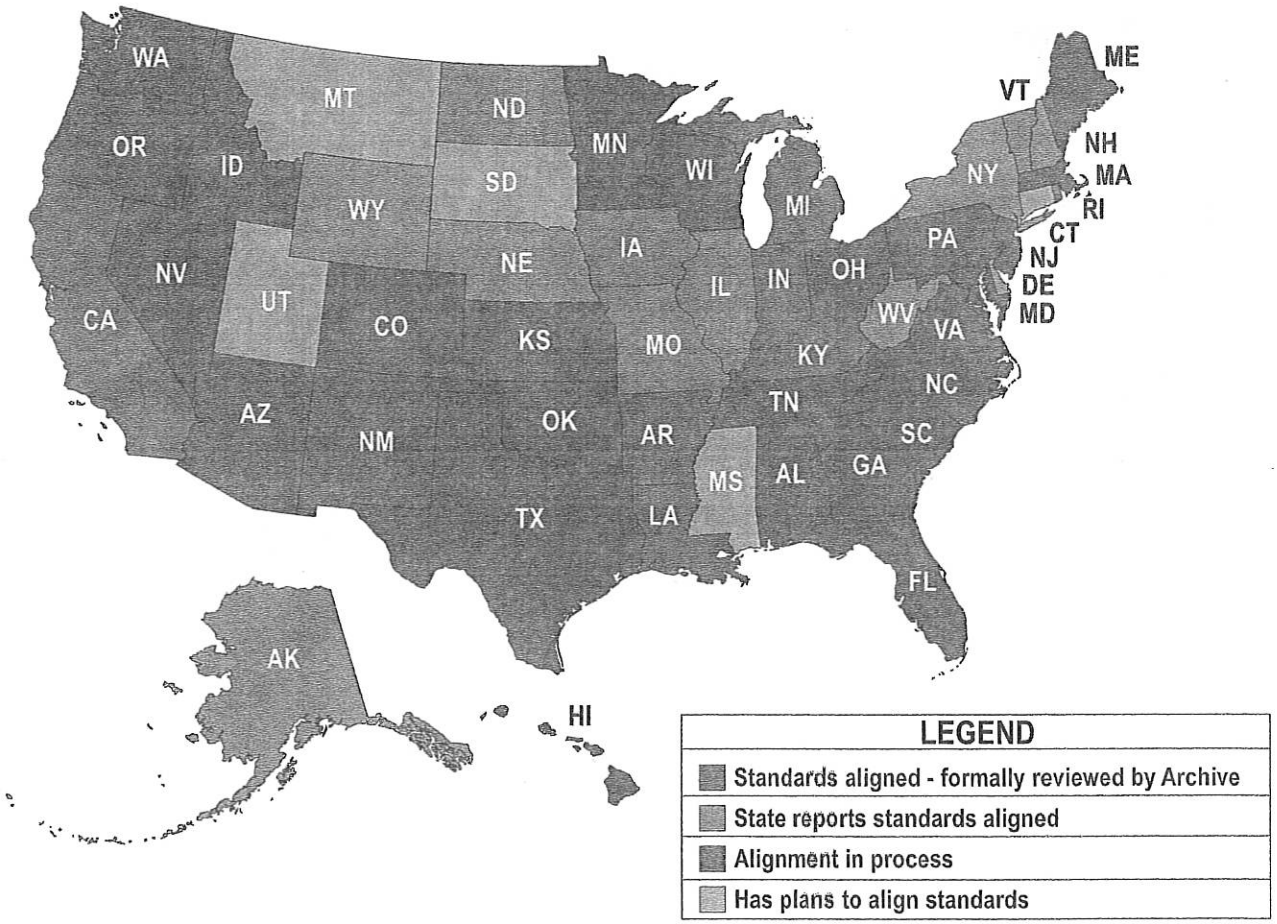
States with no mandatory exit exam:
CO, CT, DE, DC, HI, IL, IA, KS, KY, ME, MI, MO, MT, NE, NH, ND, OR, PA, RI, SD, UT, VT, WV, WI, WY
(24 states and DC)

Source: Center on Education Policy, exit exam survey of state departments of education, June 2007.

K-12 Indicators

Kansas is putting in place an integrated K-20 data system and Council, but has not yet made as comprehensive an effort as some states to align K-12 and post-secondary education

States that Align Standards



Source: www.achieve.org.

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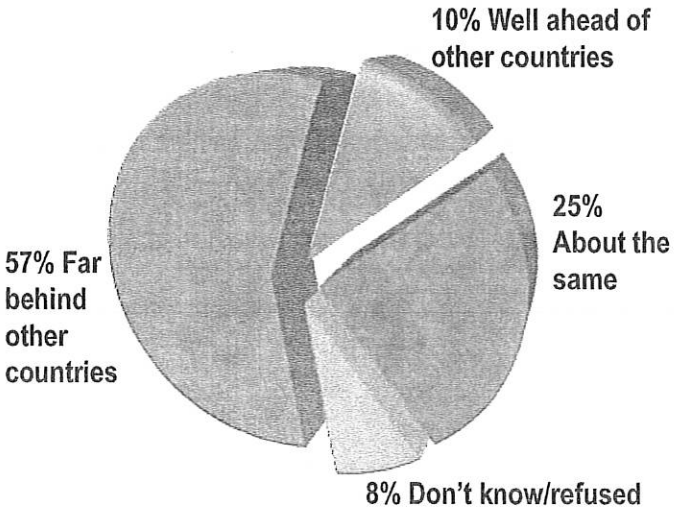
K-12 Indicators

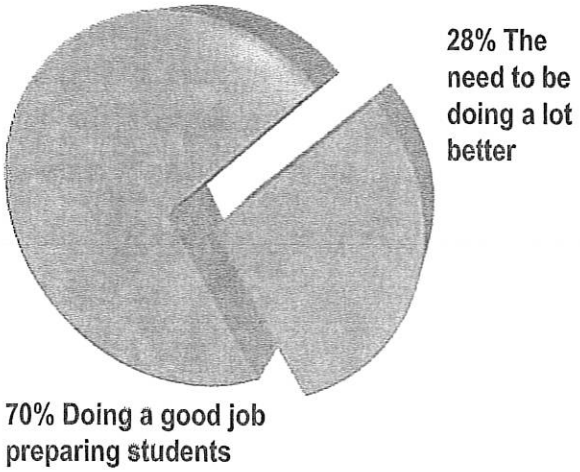
Parents in Kansas recognize the importance of METS, but are much less concerned than employers about the quality of math and science education in local schools

Is the U.S. Competitive in METS?



Most parents recognize that the United States is behind other countries in math, science and technology education.

How Does METS Education in Kansas Rate?



But unlike local leaders, they are confident that local schools are doing a good job preparing students for the future.

The Bottom Line

Despite Kansas' high achievement in math and science, a significant minority achievement gap persists and half the state's graduates are not ready for college-level work in these disciplines

Kansas has an opportunity to collaborate productively with other states in meeting METS challenges

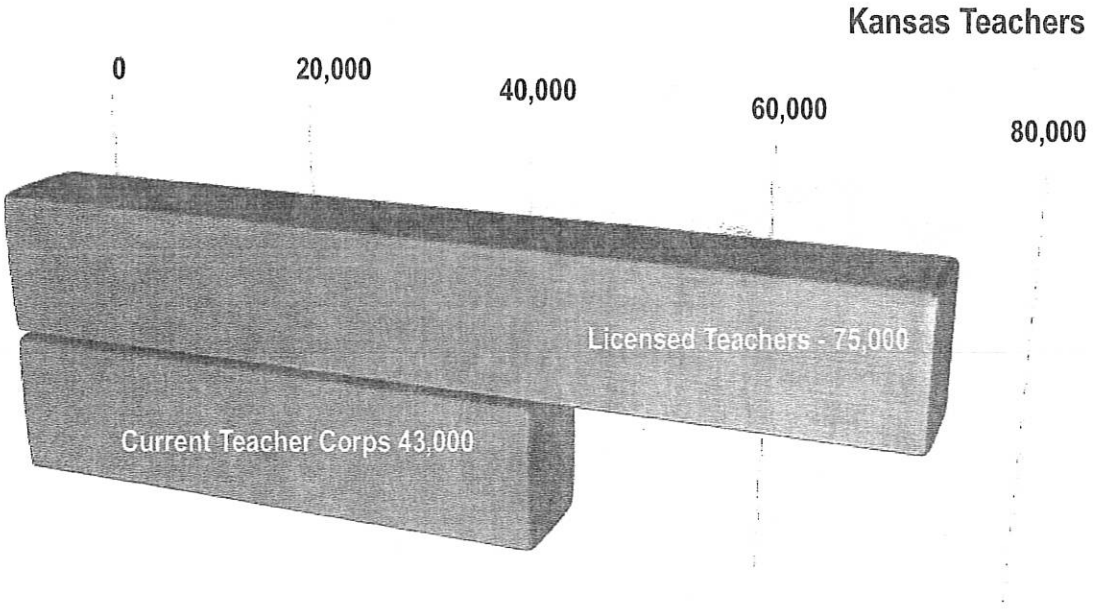
Source: "Important, But Not for Me; Kansas and Missouri Students and Parents Talk about Math, Science and Technology Education." Public Agenda 2007.

Section IV: K-12 Math-Science Teacher Corps

Decades of research indicate that teachers play a critical role in math and science education. Although the teaching profession has had historic appeal in Kansas, a number of factors have converged in recent years to put the math and science teacher corps under increasing pressure. These include the high-stakes testing and accountability provisions of No Child Left Behind, the influx of English language learners, the aging of the current teacher workforce, the lag in teacher salaries relative to other professions, and the aggressive recruitment practices of school districts outside the state. This section of the data book highlights some of the key forces at work.

K-12 Math-Science Teacher Corps

The number of Kansans holding valid teacher credentials is almost double the number that actually teach



Source: KS State Department of Education.

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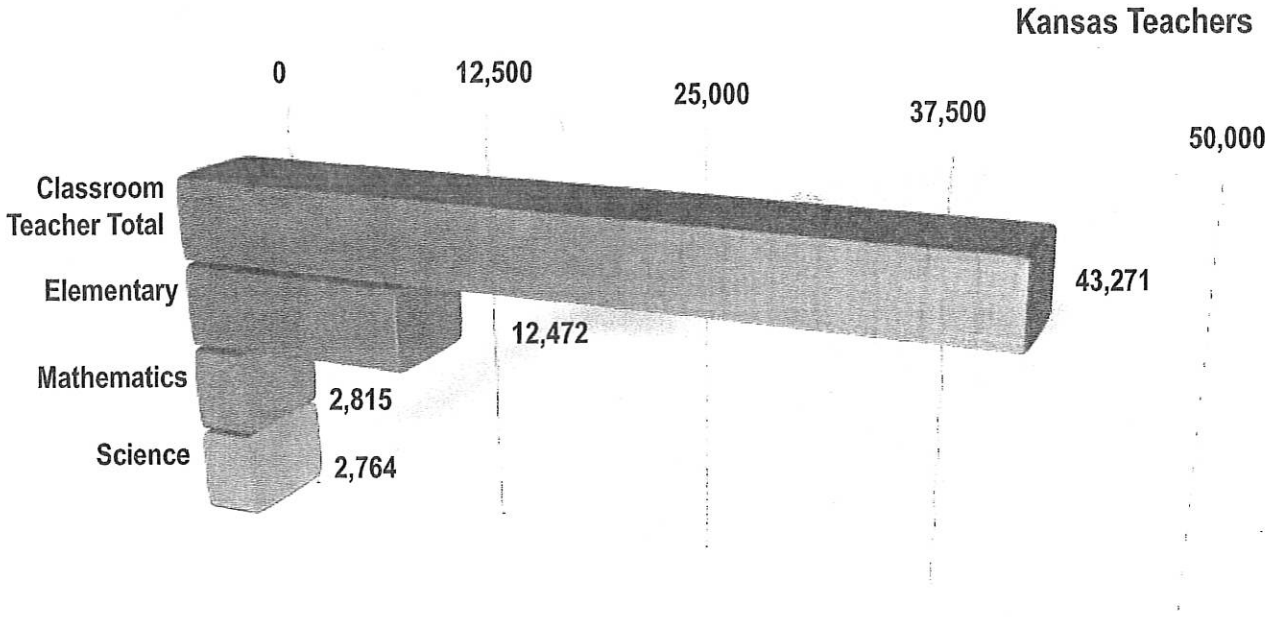
K-12 Math-Science Teacher Corps

The classroom teacher corps includes about 12,500 elementary school and 4500 secondary teachers of math and science



Source: KS State Department of Education.

K-12 Math-Science Teacher Corps

The demand for teachers has been steady in recent years

Kansas Teaching Corps	
Year	**Total Licensed Personnel**
2001	43,738
2002	44.066
2003	44,296
2004	43,897
2005	43,918
2006	41,882
2007	43,271

Source: Kansas State Department of Education.

K-12 Math-Science Teacher Corps

Returning teachers account for almost 90% of the teacher corps year over year

Statewide Teacher Turnover Information 1990-00 to 2003-04			
Year	Teachers Leaving Kansas Public Schools		
	Non-Retirees	Retirees	Total
1990-00	2,444 7.3%	590 1.8%	3,034 9.1%
2000-01	2,583 7.6%	673 2.0%	3,257 9.6%
2001-02	2,356 6.9%	649 1.9%	3,005 8.9%
2002-03	2,083 6.2%	638 1.9%	2,721 8.1%
2003-04	2,061 6.2%	744 2.2%	2,806 8.4%
Five-Year Average	2,306 6.9%	659 2.0%	2,965 8.8%

Note: may not add up due to rounding.

Source: LPA Analysis of data provided by the Kansas Department of Education and Kansas Public Employees Retirement System.

K-12 Math-Science Teacher Corps

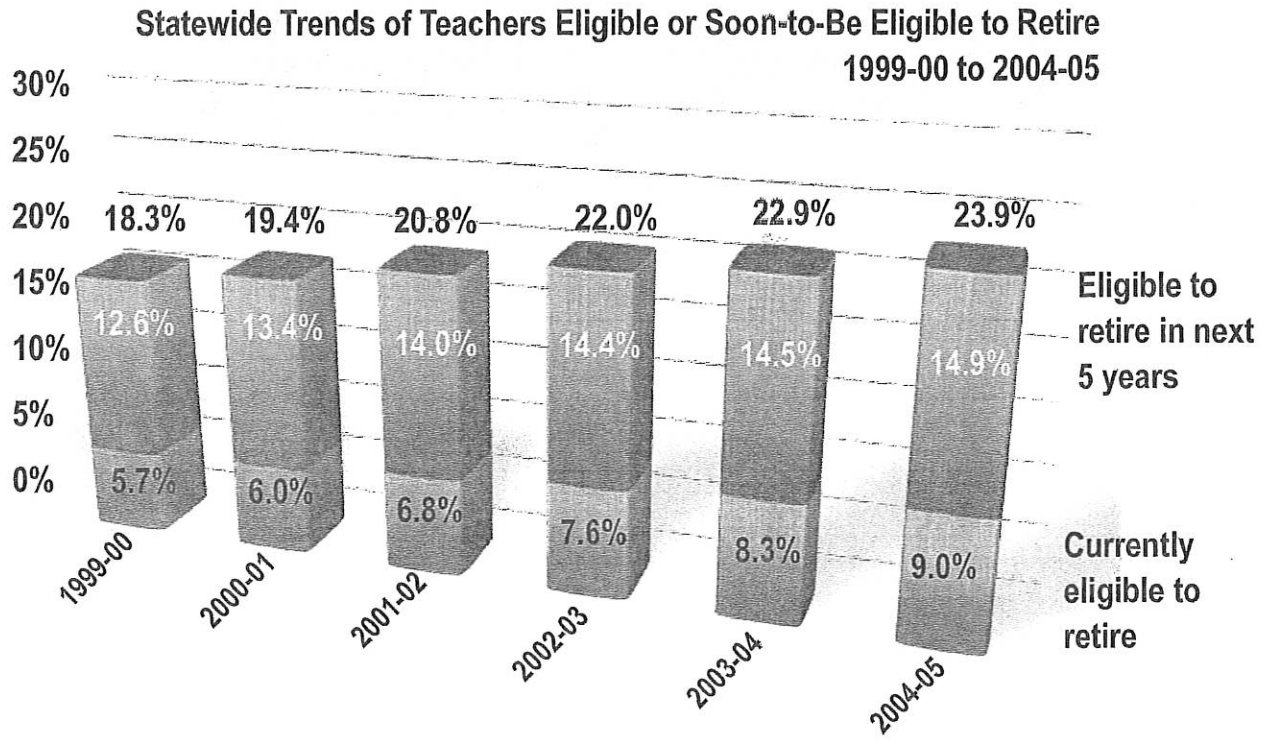
Turnover rates are highest in high-poverty areas

Statewide Teacher Turnover Information by type of district (2003-04)			
	Teachers Leaving Kansas Public Schools		
	Non-Retirees	Retirees	Total
High Poverty	561 7.0%	234 2.9%	795 9.9%
Rural	351 5.8%	136 2.3%	487 8.1%
Other	1,149 6.0%	375 2.0%	1,524 8.0%
Overall	2,061 6.2%	744 2.2%	2,806 8.4%

Source: LPA Analysis of data provided by the Kansas Department of Education and Kansas Public Employees Retirement System.

K-12 Math-Science Teacher Corps

Almost one-quarter of the teacher corps will become retirement eligible within five years



Source: LPA Analysis of data provided by the Kansas Department of Education.

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4-24

K-12 Math-Science Teacher Corps

The traditional pre-service track produces far more licensed math and science teachers than alternative licensure

Track 1: Traditional Pre-Service*

- Hold a bachelor's degree from an accredited college or university
- Complete a state-approved teacher preparation program
- Pass a subject or grade level content assessment
- Pass a pedagogy assessment
- Receive conditional two-year license
- Receive professional license

Track 2: Alternative Licensure**

- Hold a bachelor's degree from an accredited college or university in the content area to be taught or a degree with equivalent coursework
- Collaborate with a mentor teacher, the school district, and a teacher preparation institution
- Receive a three-year restricted license to teach full-time in an area of demonstrated content knowledge
- Complete professional teaching skills coursework (usually online)
- Receive conditional two-year license
- Receive professional license

* Track 1 completion, 2005-06: 75 math and 50 science

** Track 2 completion, 2005-06: 7 math and 11 science

Source: Kansas Department of Education.

K-12 Math-Science Teacher Corps

Although more than 90% of the teacher corps meet the "highly qualified" standard, lesser percentages of math and science teachers meet that requirement

2007 Licensed Personnel Report NCLB - Highly Qualified by Class					
		Fully Licensed		NCLB Highly Qualified	
	Total	Number	Percent	Number	Percent
Elementary	20,278	19,704	97.2	19,704	97.2
Fine Arts	15,536	14,434	92.9	13,974	89.9
Foreign Language	3,856	3,274	84.9	3,216	83.4
History/Govt.	9,755	9,113	93.4	8,832	90.5
Language Arts	16,755	15,423	92.1	14,286	85.3
Mathematics	13,578	12,203	89.9	11,653	85.8
Science	11,497	9,943	86.5	9,578	83.3
ESL/Bilingual	1,444	1,158	80.2	1,158	80.2
Special Ed.	6,808	5,395	79.3	5,370	78.9
Total Assignments	99,507	90,650	91.1	87,771	88.2

Source: Kansas State Department of Education.

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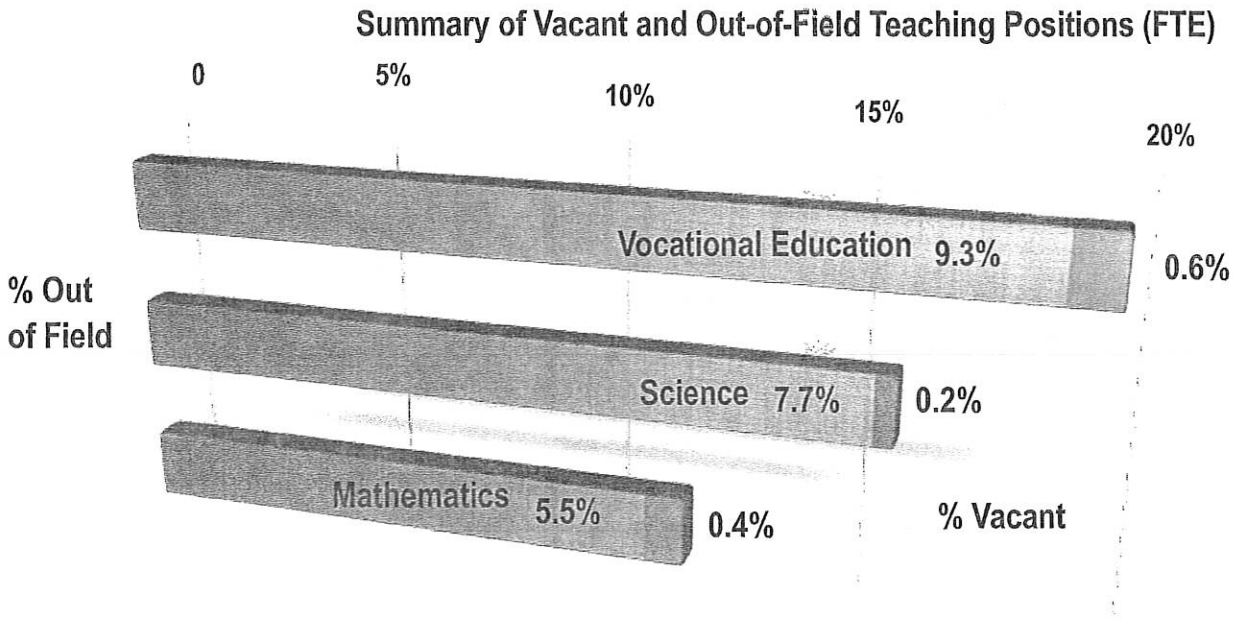
K-12 Math-Science Teacher Corps

The shortage of qualified teachers in math, science, and vocational education forces districts to rely on less-qualified out-of-field teaching personnel



Note: This includes teachers assigned to teach family and consumer science, industrial arts, and vocational education.

Source: Legislative Division of Post Audit State of Kansas: School District Performance Audit Report, April 2007.

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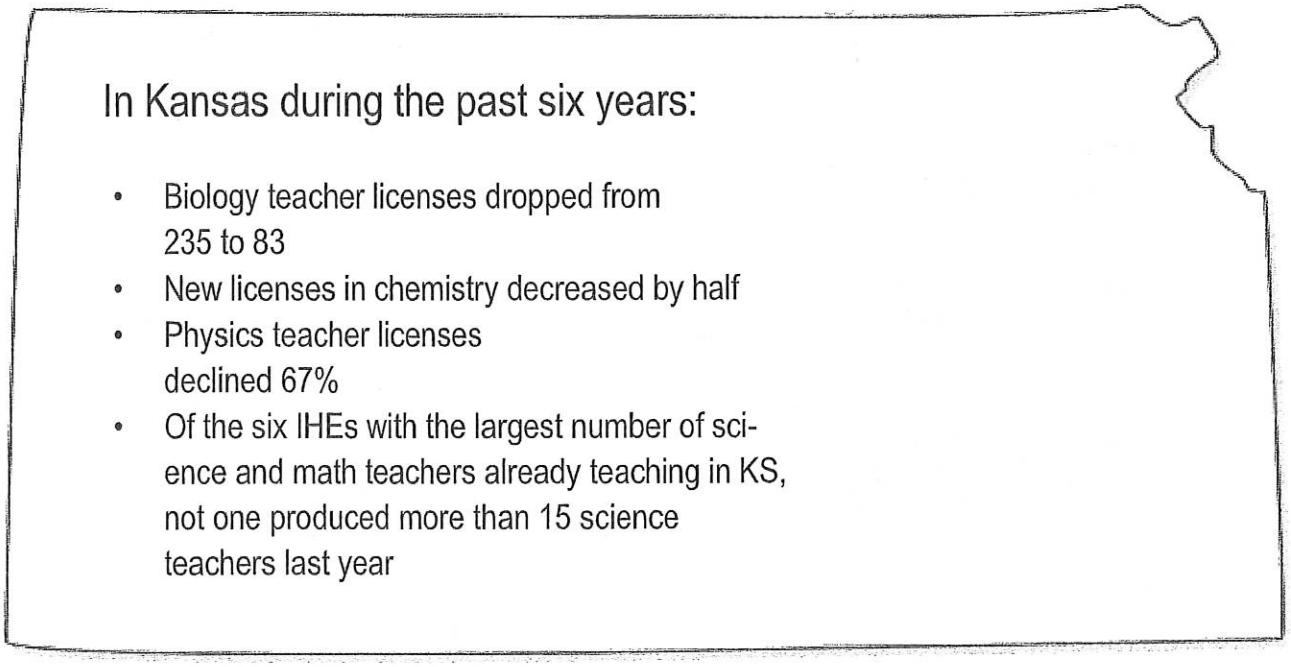
K-12 Math-Science Teacher Corps

The number of newly credentialed science teachers has declined sharply in recent years



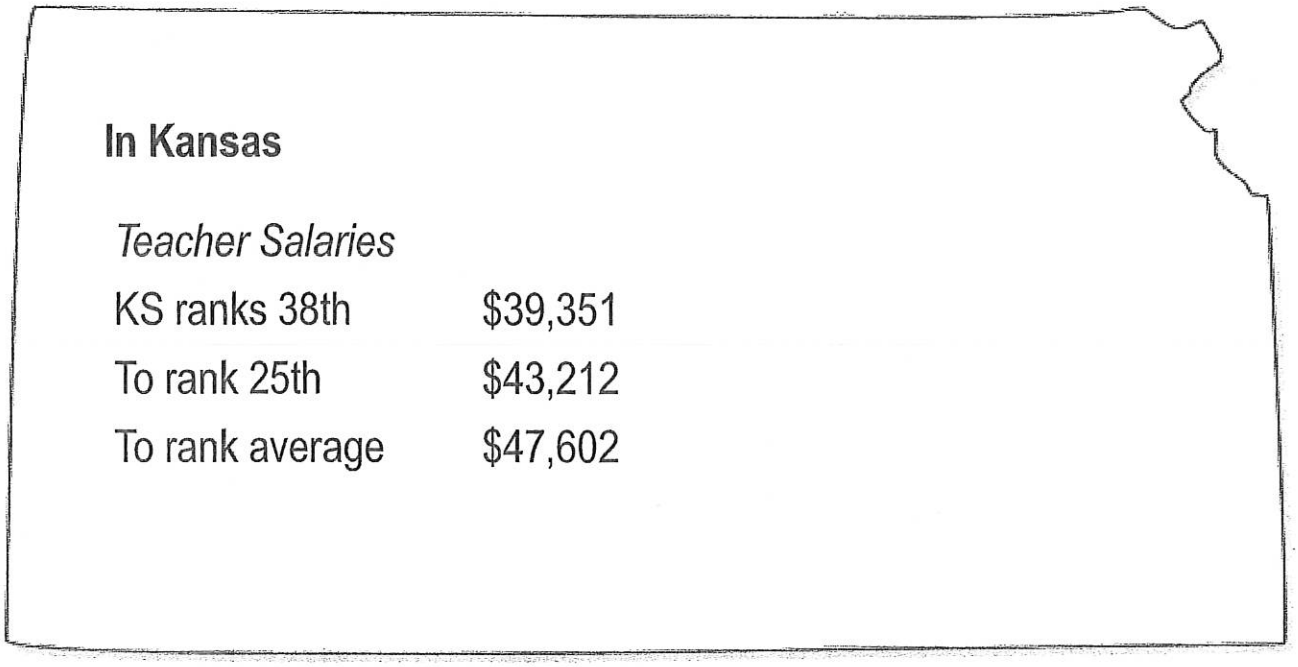
In Kansas during the past six years:

- Biology teacher licenses dropped from 235 to 83
- New licenses in chemistry decreased by half
- Physics teacher licenses declined 67%
- Of the six IHEs with the largest number of science and math teachers already teaching in KS, not one produced more than 15 science teachers last year

Source: Kansas State Department of Education.

K-12 Math-Science Teacher Corps

Teachers in Kansas are paid less than the national average



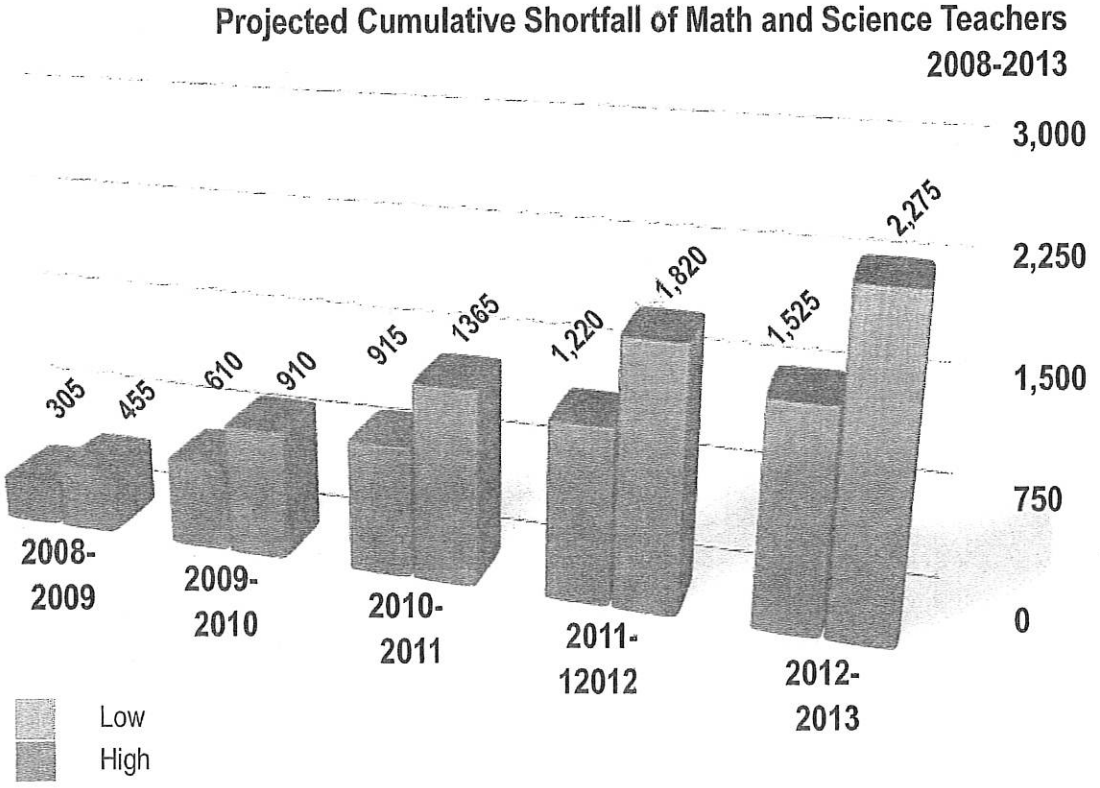
In Kansas

Teacher Salaries	
KS ranks 38th	$39,351
To rank 25th	$43,212
To rank average	$47,602

Source: Kansas Department of Education.

K-12 Math-Science Teacher Corps

The Department of Eduation estimates a shortfall of at least 1,500 math and science teachers over the next five years if current trends continue*



* The projections in this chart are based on the low and high estimates of K-12 math and science teacher vacancies for 2008-09 provided by districts to the Kansas Department of Education.

The Bottom Line

Kansas has reached a crisis point in producing and retaining K-12 math and science teachers

Source: (for graph) Kansas Department of Education.

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Section V: Post-Secondary Indicators

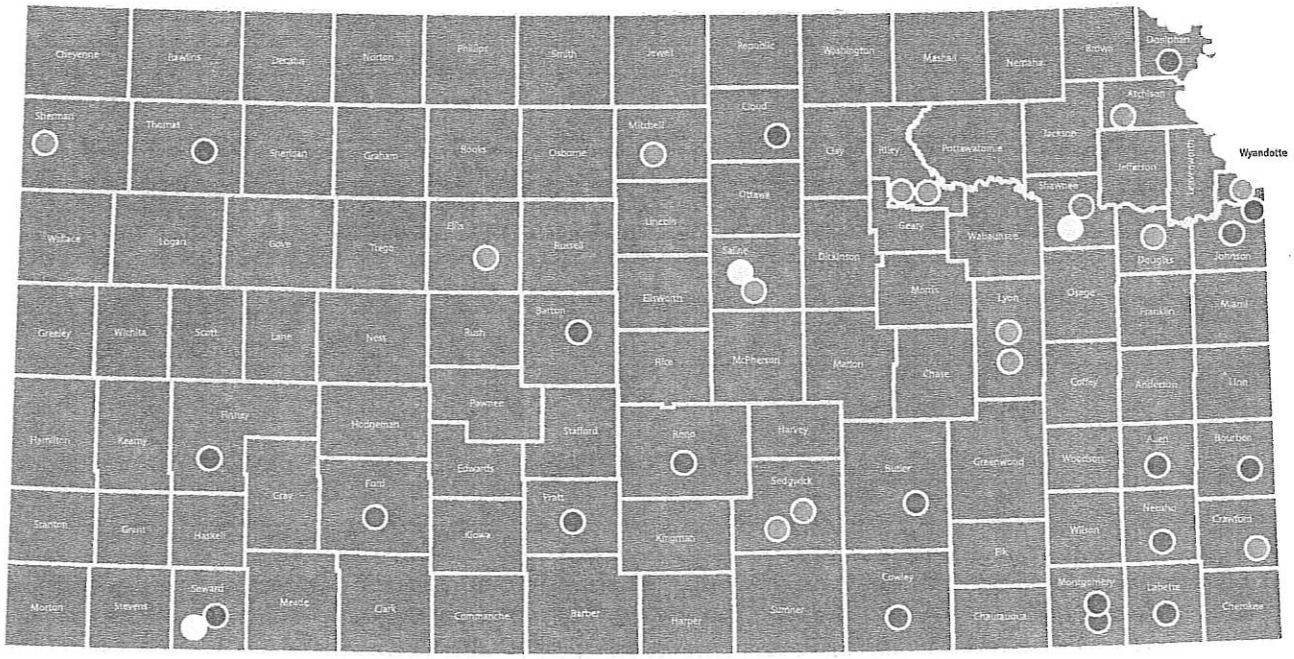
Institutions of higher education in Kansas provide the bridge between the K-12 system and the METS workplace. They develop both the human and intellectual capital that drives the economy of the state. The higher education enterprise includes 36 public institutions serving a student population of about 200,000. One of the essential roles of these institutions is to ensure that all graduates are sufficiently fluent in math, science, and technology to meet the demands of today's workplace. Another is to produce a specialized talent pool with quality and depth to support Kansas' prosperity. In addition, the state's three research universities have the mission of generating knowledge that can be translated into high-value products and services. The indicators in this section put into perspective the capacity of Kansas' institutions of higher education to produce METS talent.

Post-Secondary Indicators

Thirty-six public post-secondary institutions contribute to building the state's capacity in technical fields

State Universities
Municipal University
Community Colleges
Technical Colleges
Technical Schools

- University
- Municipal University
- Community College
- Community College/Area ATS
- Technical College
- Technical Schools



Source: Kansas Board of Regents.

Post-Secondary Indicators

Kansas state investment per full-time student in higher education is less than most states

Kansas Investment Per Student			
	State	**Approp. per FTE**	**Percentile Rank**
High	Alaska	$12,413	100.0
	Nebraska	$5,801	59.1
	Missouri	$5,793	57.1
	Arkansas	$5,769	53.0
	Kansas	**$5,448**	**38.7**
	Oklahoma	$5,110	32.6
Low	Colorado	$2,827	0.0
	Average	*$5,540*	

Source: Kansas Board of Regents.

Post-Secondary Indicators

The Board of Regents provides a structure for integrated coordination of post-secondary education

Kansas Board of Regents			
Governed Institutions	**Coordinated Institutions**		
Emporia State Univ.	Washburn Univ.	Community Colleges	Technical Institutions
Fort Hays State Univ.		Allen Cty CC	Flint Hills TC
Kansas State Univ.		Barton Cty CC	Manhattan Area TC
University of Kansas		Butler Cty CC	N. Central Area TC
Pittsburg State Univ.		Cloud Cty CC	NE KS Area TC
Wichita State Univ.		Coffeyville CC	NW KS Area TC
		Colby CC	Wichita Area TC
		Dodge City CC	
		Fort Scott CC	Kansas City Area TS
		Garden City CC	Kaw Area TS
		Highland CC	Salina Area TS
		Hutchinson CC	SW Area TS
		Independence CC	
		Johnson Cty CC	TC = Technical College
		Kansas City KS CC	
		Labette CC	TS = Technical School
		Neosha CC	
		Pratt CC	
		Seward CC	

Source: Kansas Board of Regents.

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Post-Secondary Indicators

Together, two and four-year institutions serve a large and diverse student population

Fall 2006 Enrollment in Secondary Education	
Public 4-year	96,659
Public 2-year and less*	76,614
Independent 4-year	23,894
Independent 2-year and less	984
	197,464
* includes community colleges, technical colleges, and technical schools; IPEDS fall 2008 data used for technical schools	
** includes Haskell University (federal institution)	

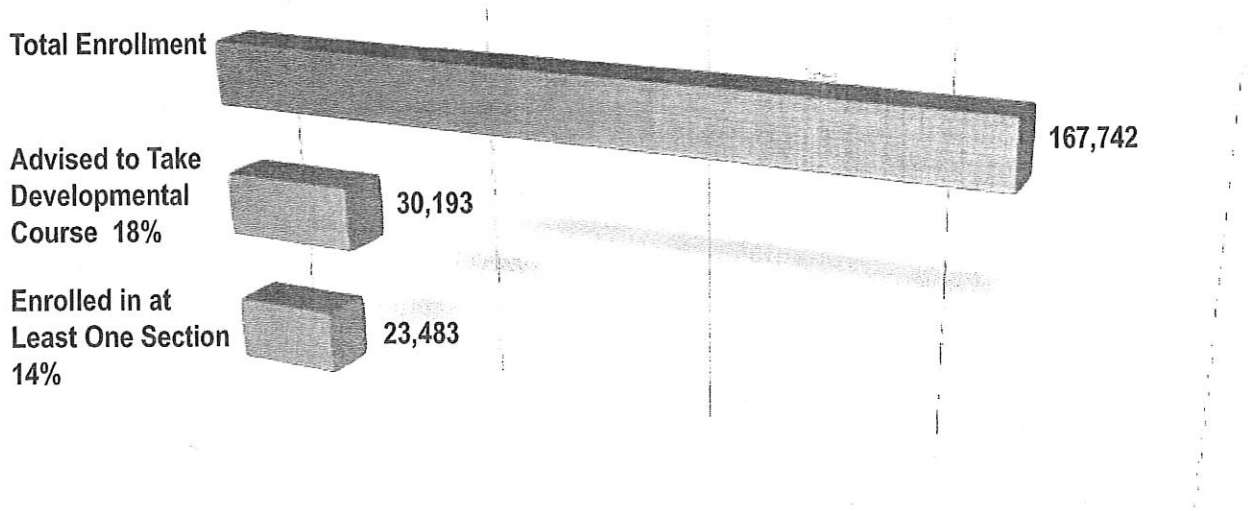
Average Age of Enrolled by Institution Sector	
State University	23 years old
Community College	28 years old

Enrollment by Race/Ethnicity and Institution Sector (%)		
	Universities	Comm. Colleges
White	75	77
African-American	3	7
Hispanic	3	5
Unknown	8	6
Other	11	4
	100	**100**

Source: Kansas Board of Regents.

Post-Secondary Indicators

Post-secondary institutions provide developmental math education for a large number of under-prepared students



Source: Kansas Board of Regents.

Post-Secondary Indicators

Two-year institutions respond to needs for general and technical education as well as local workforce requirements

Kansas Board of Regents					
Associate Degrees Awarded - Specific Majors					
	2002	2003	2004	2005	2006
Total Associate Degrees	5,558	6,074	6,494	6,534	6,429
General Studies Majors	1,509	2,198	3,142	3,189	3,232
Science Majors	259	237	156	185	145
Engineering Majors	122	102	70	56	53
Mathematics Majors	6	10	3	4	9

Note: Institutions have reported a decrease in STEM-related Associate Degrees over the five-year period. In 2003-2004 a reporting change occurred where Community Colleges started to report STEM Majors in the broader Major of General Studies. However, one cannot conclude that the large increase in General Studies Majors in 2004 and later can be attributed to the change in reporting STEM Majors, because the General Studies Major includes other Majors or Areas of Study (Psychology, History, English, etc.) at the Associate Degree level.

Source: U.S. Department of Education, IPEDS Completion Surveys.

Post-Secondary Indicators

Large number of students change from one Kansas post-secondary institution to another

Transfer Pathways into Four-Year Institutions					
Number of Students Enrolled in Fall 2003 at One Institution, who then Enrolled in a Different Institution, by Institution Sector					
	Fall 2004 Institutions				
Fall 2003 Institutions	Universities	Community Colleges	Technical Colleges	Technical Schools	**Grand Total**
Universities Total	1,385	1,743	66	14	**3,208**
Community Colleges Total	6,631	1,665	233	67	**8,596**
Technical Colleges Total	51	206	2	0	**259**
Technical Schools Total	80	87	3	0	**170**
Grand Total	**8,147**	**3,701**	**304**	**81**	**12,233**

Source: Kansas Board of Regents.

Post-Secondary Indicators

The state's major institutions of higher education play a distributed role in the preparation of K-12 math and science teachers

Traditional Program Completers				
Institution		**2004**	**2005**	**2006**
Emporia State University	math	5	5	13
	science	11	5	4
Fort Hays State University	math	14	1	3
	science	8	5	0
Kansas State University	math	16	15	13
	science	8	10	10
Pittsburg State University	math	6	9	10
	science	6	10	6
University of Kansas	math	12	12	13
	science	6	12	12
Washburn University	math	2	6	2
	science	2	2	1
Wichita State University	math	4	4	5
	science	2	4	5

Source: HEA Title II.

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Post-Secondary Indicators

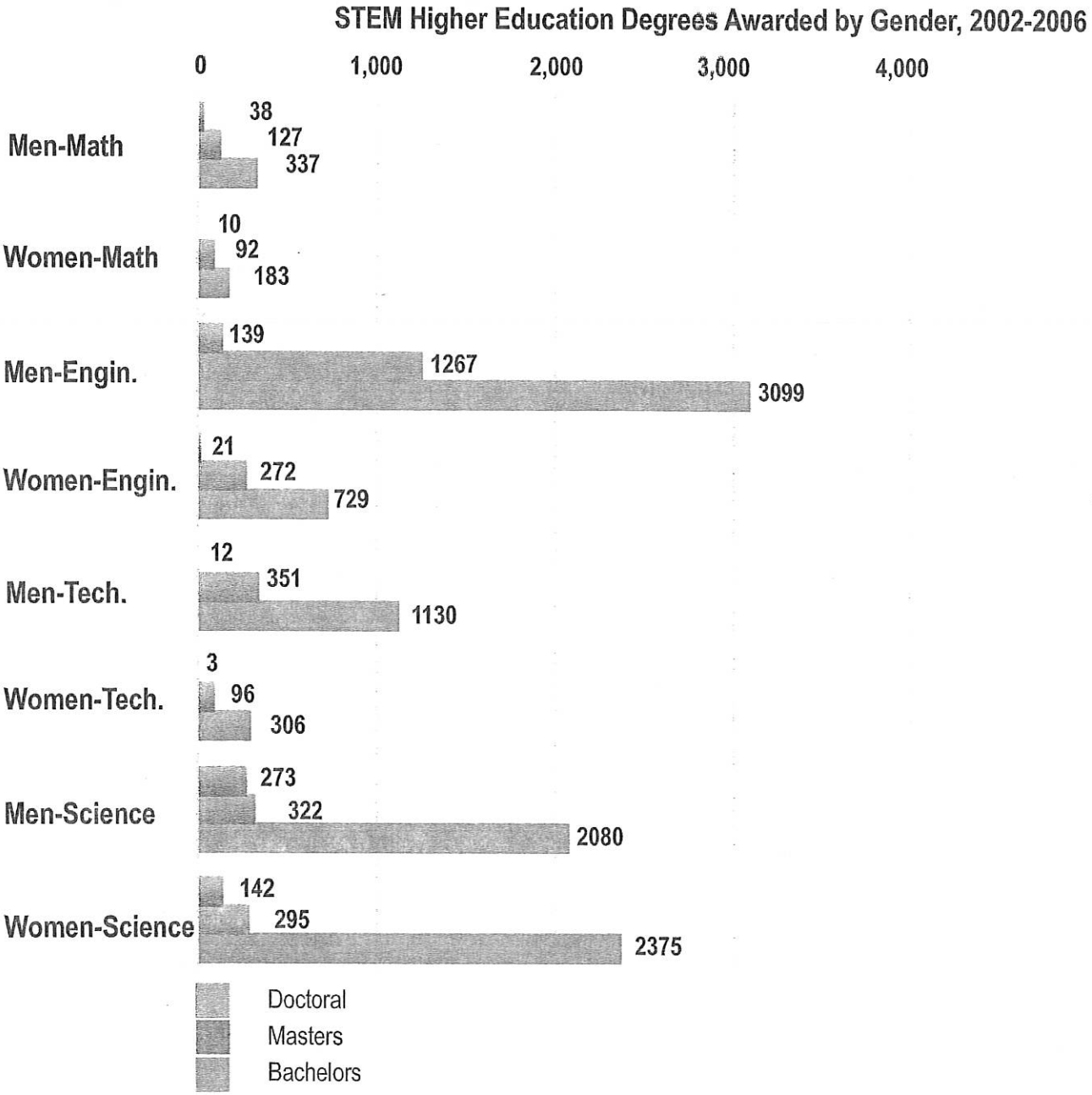
The state's production of baccalaureate and advanced degrees in technical field has remained flat in recent years in spite of rising overall enrollment

Kansas Board of Regents						
Degrees Awarded in METS Categories Statewide Totals, Academic Years 2002-2006						
Institution	**Degree Level**	**2002**	**2003**	**2004**	**2005**	**2006**
Emporia State University	Bachelor's	68	98	90	63	66
	Master's	6	15	11	8	11
	Total	*74*	*113*	*101*	*71*	*77*
Fort Hays State University	Bachelor's	103	92	76	51	56
	Master's	10	11	9	13	8
	Total	*113*	*103*	*85*	*64*	*64*
Kansas State University	Bachelor's	610	822	771	794	798
	Master's	117	167	179	203	188
	Doctoral	56	58	62	61	67
	Total	*783*	*1,047*	*1,012*	*1,058*	*1,053*
Pittsburg State University	Bachelor's	62	90	86	87	87
	Master's	3	17	13	9	10
	Total	*65*	*107*	*99*	*96*	*97*
University of Kansas Main Campus	Bachelor's	615	676	683	676	664
	Master's	165	181	196	168	174
	Doctoral	39	45	27	21	32
	Total	*819*	*902*	*906*	*865*	*870*
University of Kansas Medical Center	Bachelor's	0	16	2	2	3
	Master's	0	4	11	10	14
	Total	*0*	*20*	*13*	*12*	*17*
Washburn University	Bachelor's	66	43	39	32	45
	Total	*66*	*43*	*39*	*32*	*45*
Wichita State University	Bachelor's	298	331	307	329	261
	Master's	92	158	232	216	173
	Doctoral	22	7	7	11	6
	Total	*412*	*496*	*546*	*556*	*440*

Source: U.S. Dept. of Education, IPEDS Completions Survey, 2002-2006.

Post-Secondary Indicators

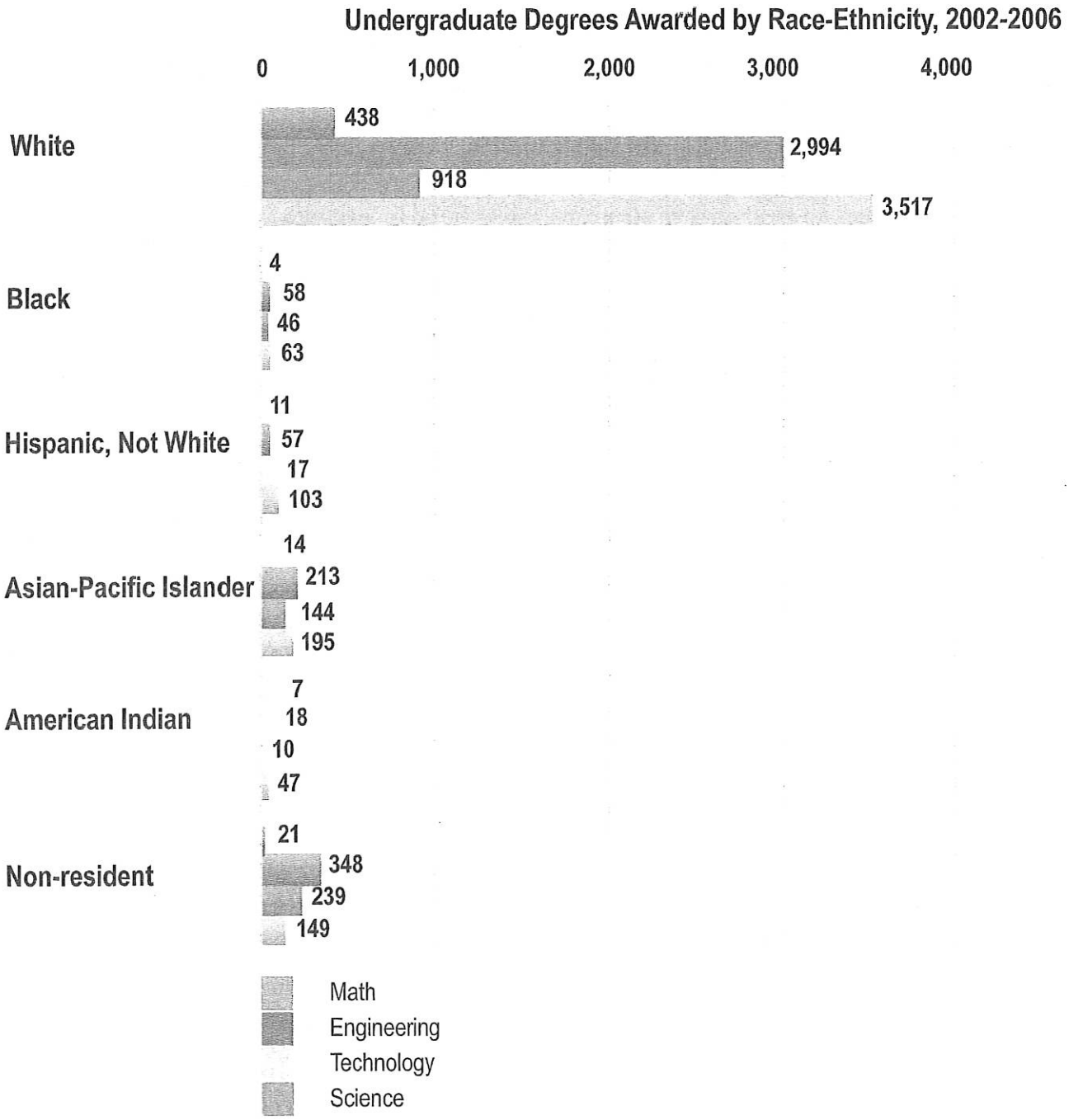
Women now earn more bachelor's degrees in science than men, but remain significantly underrepresented in engineering, technology and mathematics



Source: U.S. Department of Education, IPEDS Completion Survey.

Post-Secondary Indicators

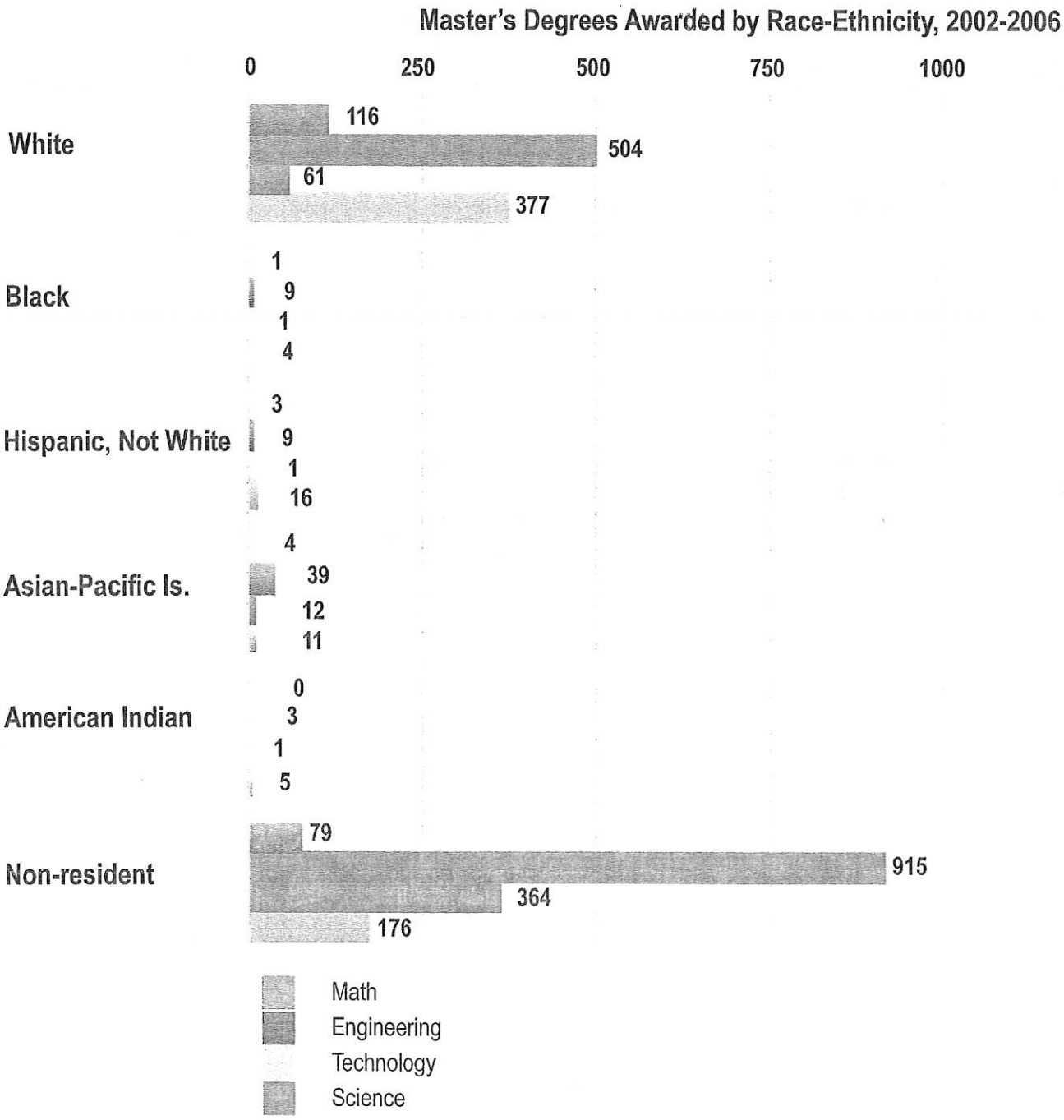
African Americans and Hispanics are strikingly underrepresented in METS degree production



Source: U.S. Department of Education, IPEDS Completion Survey.

Post-Secondary Indicators

Non-U.S. residents earn a high share of advanced degrees in technical fields



Source: U.S. Department of Education, IPEDS Completion Survey.

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Post-Secondary Indicators

The R&D expenditures of the state's three research universities are comparatively low

R&D Expenditures at Universities and Colleges									
ranked by FY 2005 R&D Expenditures, FY 1998-2005, $ in thousands									
Rank	Institution	1998	1999	2000	2001	2002	2003	2004	2005
	All	25,857,149	27,532,203	30,069,991	32,805,014	36,384,500	40,074,699	43,228,773	45,750,413
83	U. KS all campuses	117,115	132,752	148,670	156,467	172,131	173,024	181,192	190,105
112	KS State U	81,233	85,580	91,790	94,030	106,804	112,733	119,306	123,398
192	Wichita State U	13,117	14,555	16,213	16,142	18,842	22,401	29,948	32,726

Research Expenditures per Full-Time Faculty	
Public research, Fall 2005	
Kansas	$70,357
U.S. Average	$88,566

The Bottom Line

Kansas' higher education enterprise is stronger in METS degree production than research and development

Sources: (from top) National Science Foundation/Division of Science Resources Statistics, Kansas Board of Regents.

Appendix I

Math and Science Education Advisory Committee		
Legislators	**Business Leaders**	**Education Community Leader**
Sen. Nick Jordan, chair Rep. Kenny Wilk, co-chair	Mitch Counce, general manager Servi-Tech	Kenneth Clouse, president Northwest Kansas Technical College
Sen. Laura Kelly	Dan Jacobsen, president AT&T Kansas	Edward Hammond, president Ft. Hays State University
Rep. Shirley Palmer	Richard Taylor Plumbers and Pipefitters Local Union 441	Michael Lane, president Emporia State University
Rep. Sheryl Spalding	Paul Weida, vice president Black & Veatch Corp.	Janis Lariviere Center for Science Education University of Kansas
Sen. Ruth Teichman		

KANSAS BOARD OF REGENTS

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House Education Committee
March 6, 2008

Testimony in Support of Senate Bill 404

Kathyrne Mueller, Director of Academic Initiatives

Good morning Chairman Aurand, Ranking Member Storm, and members of the Committee. My name is Kathyrne Mueller and I am the Director of Academic Initiatives at the Kansas Board of Regents. I am here to testify in support of Senate Bill 404, that proposes amendments of K.S.A. 72-9711 through 13, Kansas Academy of Mathematics and Science (KAMS), and K.S.A. 72-1111, Compulsory School Attendance; Exemptions. As you may know, this legislation was unanimously approved by the Senate on February 21.

Background

K.S.A. 72-9711 through 13 provides for the establishment and operation of KAMS. KAMS is a two-year residential academy for 11th and 12th graders who are academically talented in science and mathematics. Graduates will earn both a high school diploma and college credits equivalent to an associate degree. During the spring of 2007, a steering committee conducted research about the operation of similar academies in other states and developed a Request for Proposals for institutions that wish to be considered for hosting the KAMS. It is interesting to note that similar academies current exist in 15 other states including our neighboring states of Missouri and Oklahoma. During its deliberations, the steering committee realized that several statutory changes would be required for the KAMS to reach its full potential, and the Board agreed with these suggestions at its November meeting.

As you may know, just last month, the Board selected Fort Hays State University to be the home of the new academy.

Proposed Amendments

Exclusion from Compulsory Attendance Law. K.S.A. 72-111, the compulsory attendance law, requires high school-aged students to be enrolled in high school. Students who are required to be enrolled in high school are not eligible for federal financial aid. KAMS students are high school aged students who will be enrolled full-time in college courses for a two-year period. Access to federal financial aid is essential to make the Academy an affordable option for Kansas families. Other states have addressed this problem by amending the state compulsory attendance law to exclude Academy students from its requirements, and therefore eliminate this barrier to receipt of federal financial aid.

House Education Committee
Date: 3-6-08
Attachment # 5

Exclusion from Qualified Admission Requirements. K.S.A. 76-717, the Qualified Admission statute, prescribes minimum requirements for admission of students to state universities. One requirement is graduation from an accredited high school or receipt of a GED with minimum scores. Even though KAMS students are of high school age, they will be enrolled in full-time college coursework. The amendment proposes excluding KAMS students from the requirements of the Qualified Admission statute, so that KAMS students may enroll in a state university.

Admission of Nonresident Students. Most similar academies in other states enroll international and out-of-state students. In fact, Kansas residents are currently enrolled in the Missouri Academy of Mathematics and Science. The ability to admit nonresident students could increase the visibility and reputation of KAMS. The larger student pool from which to recruit may also help to ensure the continuation of KAMS. The Board proposes amending the KAMS statute to allow limited enrollment of nonresidents. Nonresidents would be charged tuition, fees, and room/board at a rate that would cover costs.

Procedure for Selecting KAMS Students. The statute provided "for admission of 20 students selected on a congressional district basis with no more than five pupils from each of the four congressional districts and 20 other pupils selected on a statewide basis." An amendment, which would be added to Senate Bill 404, and which has been forwarded to Revisor's staff for your consideration, is proposed to ensure that the number of students admitted to KAMS isn't limited simply because one or more congressional districts may have less than five qualified candidates who desire to attend KAMS. The amendment states that if any congressional district has less than five applicants qualified for admission to KAMS, then more than five applicants may be selected from other congressional districts, with the congressional district balance being maintained to the greatest extent possible.

Clarification of Tuition and Fees for Resident Students not Enrolled in the Public School System. The KAMS statute states that Kansas students shall be admitted without payment of tuition and fees; fees shall be paid by the student's home school district, and shall be limited to base state aid per pupil. This arrangement does not account for students from private schools, home-schools or who are non-residents and who are not enrolled in a Kansas school district. Amendment of the statute is proposed to clarify that students from private schools and home schools may attend KAMS at their own expense.

Thank you for your consideration of Senate Bill 404. I would be happy to address any questions that you may have.

KANSAS ASSOCIATION OF SCHOOL BOARDS

1420 SW Arrowhead Road • Topeka, Kansas 66604-4024
785-273-3600

Testimony on **SB 507**
before the
House Education Committee

by

Tom Krebs, Governmental Relations Specialist
Kansas Association of School Boards

March 6, 2008

Mr. Chairman and Members of the Committee;

When first introduced, the bill had two sections that created concern for KASB. The first was the omission of a school board member on the council. The second was the requirement that all 8th grade students develop a flexible career plan. Both of those concerns were addressed on the Senate side. As a result, we speak as a proponent for the bill.

As amended, **SB 507** will be helpful to our members as they work to improve math, engineering, technology and science instruction. This will hopefully spark a greater interest among students for those disciplines, the career opportunities associated with them, and the role they often play in important public policy decisions, such as the ones Kansans are currently engaged in as they discuss the future of electric generation and transmission in the state.

Thank you for your consideration.

House Education Committee
Date: 3-6-08
Attachment # 6

Kansas, Inc. Written Testimony on Senate Bill 507
House Education Committee
March 6, 2008
Stan R. Ahlerich, President

Chairman Aurand, members of the House Education Committee, Kansas, Inc. appreciates the opportunity to provide written testimony on Senate Bill 507 creating the mathematics, engineering, technology and science (METS) education innovation council.

Kansas, Inc. is an independent, objective, and non-partisan organization designed to conduct economic development research and analysis with the goal of crafting policies and recommendations to ensure the state's ongoing competitiveness for economic growth. Through analysis and open dialogue, Kansas, Inc. identifies policy options and builds consensus essential for concerted action on vital economic issues.

Kansas, Inc. stands as a proponent to the concepts addressed in Senate Bill 507 as it relates the 2007 Kansas Economic Development Strategic Plan. Entitled *Leveraging our Foundations and Designing the Future: A Kansas Economic Renaissance*, the 2007 Strategic Plan was the result of a yearlong process, driven by sound, fundamental research and tested with business input throughout the state.

During the Strategic Planning process, participants throughout the state stressed the importance of the workforce and retaining youth in their communities. The importance of mathematics, engineering, technology and science were also addressed. Several of the responsibilities outlined for the METS council align with concepts recommended in the 2007 Strategic Plan.

Strategy 10 (*attached to testimony*) recommends that Kansas **"ensure all graduates are informed and prepared for professional, scientific, and technical service jobs in Kansas, particularly in STEM (Science, Technology, Engineering, and Math) fields."** Business and educational partnerships are stressed as ways to encourage student involvement, such as the Olathe 21st Century High Schools program which provides relevant education in a hands-on environment. The Kansas Career Pipeline, an online career assessment tool, can be used to encourage student exploration into careers and educational paths in Kansas.

Strategy 31 (*attached to testimony*) is from the perspective of workforce development and building capacity by retaining and attracting a skilled and educated workforce. Strategy 31-1 specifically recommends **"ensure the state equips primary and secondary students with the skills necessary to pursue education and employment opportunities, with the focus being on STEM (Science, Technology, Engineering, and Math) fields."** Along with the above mentioned examples, it mentions the Kansas Academy of Mathematics and Science as a new way to educate those truly gifted in the mathematics and science fields. Other recommendations for Strategy 31 include providing incentives to take advantage of the opportunities in Kansas and marketing these options and opportunities to students, parents, and educators.

In conclusion, the education of Kansas' youth, particularly in the fields of mathematics, engineering, technology and science will be critical for the economic growth of Kansas. The METS council may provide the guidance to achieve some of the strategies and recommendations brought forward by the citizens of Kansas and may be a conduit in which innovation and change can occur for Kansas' educational system. Any efforts the state makes in ensuring the success of our students in these areas will help Kansas to strategically position itself for success. Thank you for the opportunity to testify and we applaud the common sense approach of your Committee to build prudent policies for our future.

Strategy 10 – Ensure all graduates are informed and prepared for professional, scientific, and technical service jobs in Kansas, particularly in STEM (Science, Technology, Engineering, and Math) fields.

10-1 Develop partnerships between businesses and secondary educational institutions to design curriculum that prepares students for jobs in Kansas. Utilize successful career curriculum alignment programs, such as the Olathe 21st Century High Schools program and design a template for statewide application.

Partnerships between businesses and secondary educational institutions can ensure students are prepared and informed regarding educational and career opportunities in Kansas. Programs that engrain businesses within the educational process ensure students are better prepared for the workforce. This also provides a connection between students and businesses, creating a relevancy between their educational curriculum and their real-world opportunities.

The Olathe 21st Century High Schools Program[1] was designed to provide educational programs with business involvement and partnerships. Programs are centered around the following criteria: making classroom learning relevant to the outside world, focusing on the global workplace, recognizing the broad-based role of technology, promoting the importance of citizenship and character, and providing flexibility of schedule and interactive instructional methodology. Program examples include: aerospace and engineering, biotechnology/life sciences, computer systems networking, health career sciences, culinary arts, e-communication and many others.

With this program students have opportunities to complete internships with businesses and work with college professors on various projects. These types of programs should be further developed as a template for statewide application.

10-2 Promote the statewide use and business involvement with the Kansas Career Pipeline to encourage student exploration into careers and educational paths in Kansas. Encourage contact with Kansas businesses through internships and job shadowing.

The Kansas Career Pipeline (KCP)[2] is an online assessment tool intended to match aptitudes and interests with in-demand careers and postsecondary institutions providing the relevant curriculum. Students can also be matched with businesses through e-mentors, summer jobs, apprenticeships, job training, scholarships and eventual employment. During the 2007 Legislative Session, $420,120 was appropriated for funding the KCP, contingent on a dollar-for-dollar match from business and industry partners. The sustainability of this program will depend on the long-term commitment of private industry and the state. Businesses must be encouraged to meet the match requirements. There must be widespread involvement from the private sector to highlight career opportunities throughout Kansas and match students with the needs of businesses.

STEM fields are visible in the KCP, as it focuses on careers in healthcare, biotechnology, technology, energy and manufacturing.

Beyond the KCP, businesses should be encouraged to interact with students in Kansas through various other internship and job shadowing programs, orchestrated through educational institutions or other programs. Business interaction with students is critical to building our future workforce.

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[1] Olathe 21st Century High Schools Program was developed out of necessity to attract and provide incentives for students to attend the new Olathe High School in early 2000. The program was designed based on community input, national research and student interest. Students began enrolling in the spring of 2003.

[2] Accessed at: http://www.careerpipeline.org

1-2

10-3 Incorporate entrepreneurship, leadership, innovation and customer service training into our education system.

The service sector is a vital part of the Kansas economy. To be successful in this sector, the workforce must possess specific skills and competencies that are non-disciplinary and important to business opportunities. Entrepreneurship, leadership, innovation and customer service are skills that should be emphasized in our education system. Students must be exposed to their use and relevance in the workplace.

Strategy 31 – Build capacity by retaining and attracting a skilled and educated workforce.

31-1 Ensure the state equips primary and secondary students with the skills necessary to pursue education and employment opportunities, with the focus being on STEM (Science, Technology, Engineering, and Math) fields.

To ensure a supply of educated workers in Kansas, our primary and secondary educational institutions must sufficiently prepare students for postsecondary education and career opportunities in Kansas. Educators must begin this process at a younger age. The focus of this process should be on future career opportunities and the best path to attain that goal. Student aptitudes and interests should be matched with business demands to ensure student success.

Potential tools to assist this process include the Kansas Career Pipeline (KCP) and the Olathe 21st Century High Schools Program. STEM (Science, Technology, Engineering and Math) fields are visible in the KCP and Olathe 21st High Schools Century Programs, and are major drivers for the Kansas economy. Another example program is the Kansas Academy of Mathematics and Science (KAMS)[3], a new way of preparing students in STEM fields, designed for high school juniors and seniors talented in science and math to enroll in a two-year program of study culminating in both a high school diploma and college credits equivalent to an associate's degree.

31-2 Support and facilitate business interaction with postsecondary students through scholarships, internships, and job shadowing. Businesses should be an active partner with educational institutions in regards to career curriculum, guidance, and opportunities and could be awarded with potential tax incentives or credits.

Interaction between students and businesses must occur at the postsecondary level. To retain Kansas graduates they must have interaction with businesses to inform them of career opportunities. Businesses should partner with postsecondary educational institutions to ensure career curriculum alignment, guidance and opportunities are made available to students. Scholarships, internships and job shadowing are ways for businesses to interact with students. Programs such as the Kansas Career Pipeline can be used to connect postsecondary students with businesses using tools such as e-mentors, summer jobs, apprenticeships, job training, scholarship, and eventual employment.

31-3 Provide incentives that encourage students to remain in Kansas for postsecondary education and careers.

Being an importer of postsecondary students, Kansas has the opportunity to build incentives into its education structure to retain a larger percentage of graduates in the state if we can match them up with the desirable career opportunities.

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[3] An RFP was issued to Kansas public postsecondary educational institutions during 2007 and a final decision will be made during 2008. Responding institutions will describe the specifics of the operation of KAMS and provide a detailed budget. The recipient of the award will receive $100,000 to finalize plans for the Academy. The Board of Regents 2007 legislative agenda includes implementation of the Kansas Academy of Mathematics and Science.

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To build a qualified workforce, Kansas must continue to attract and retain postsecondary graduates. Offering scholarships, loan repayment, in-state tuition, etc. may help retain more graduates. Offering in-state tuition to students from surrounding states or former residents could provide some incentive to come to and potentially stay in Kansas. Research could provide further insight into incentives and other methods of attracting and retaining a larger percentage of Kansas graduates.

31-4 Design a Leadership Kansas-type program that incorporates entrepreneurial and leadership experience into our educational system.

Entrepreneurship and leadership are a few of the characteristics our youth should be exposed to at a younger age, and these types of opportunities should be built into our educational system. Programs that serve as catalysts for the continued development of entrepreneurship and leadership should be created to target Kansas youth. Existing program models, such as the Leadership Kansas[4] Program could be utilized to target students.

31-5 Market business and career opportunities in Kansas to all prospective individuals.

Many opportunities exist to market business and career opportunities in Kansas to specific groups including: graduates, older citizens, military, immigrants, and disabled citizens. Targeted marketing campaigns and programs, such as the Helmets to Hardhats[5] program may make these populations aware of the opportunities. Kansas should actively encourage participation in these types of programs.

Innovative concepts will help equip our students with the skills they need to succeed during their careers. Kansas exports workers; we need to be more creative and have the tools necessary to keep individuals here.

31-6 Market postsecondary technical education opportunities and careers by targeting students, parents, educators and counselors.

In March of 2007, the Kansas Technical College and Vocational School Commission submitted a report to the state legislature, stating that only 20 percent of current jobs require a four-year degree and there is an increased demand for skilled workers.[6] There is a shortage of workers for jobs requiring only a technical degree.

The focus of high-school counselors seems to be on enrollment into four-year institutions. Students, parents, educators and counselors must be aware of the potential opportunities that exist with careers requiring technical degrees. We must market and educate these opportunities to help address our workforce shortages by developing a message campaign that highlights the importance of postsecondary technical education and specific skill sets.

31-7 Study and develop workforce solutions for the aging population and immigrants.

Workforce shortages are becoming an issue not only in Kansas, but throughout the U.S. Opportunities for recruiting alternative or non-traditional workers, such as the older population and immigrants may provide a solution to this issue. Workforce solutions must remain flexible enough to accommodate these workers. Further study of these issues may produce innovative ways to recruit and accommodate a non-traditional workforce in Kansas.

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[4] Leadership Kansas is a statewide program designed to enhance and motivate current and future leaders from various communities. Participants engage in educational and informational training sessions in six Kansas communities over the course of a year, with discussion surrounding various topics including business, education, agriculture, public policy, societal health and development, economics, and government.

[5] Helmets to Hardhats is a national program that connects National Guard, Reserve and transitioning active-duty military members with quality career training and employment opportunities within the construction industry. The program is administered by the Center for Military Recruitment, Assessment, and Veterans Employment and headquartered in Washington, D.C. Direction for management of the center comes from a board of trustees comprised of equal numbers of employer and labor trustees.

[6] See *Positioning Kansas,* p. 59.

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TESTIMONY OF
ASSOCIATED GENERAL CONTRACTORS OF KANSAS
BEFORE HOUSE COMMITTEE ON EDUCATION
SB 507

March 6, 2008

By Eric Stafford, Associated General Contractors of Kansas, Inc.

Mister Chairman and members of the committee, my name is Eric Stafford. I am the Associate Director of Government Affairs for the Associated General Contractors of Kansas, Inc. The AGC of Kansas is a trade association representing the commercial building construction industry, including general contractors, subcontractors and suppliers throughout Kansas (with the exception of Johnson and Wyandotte counties).

The AGC of Kansas supports Senate Bill 507 and requests that you report it favorably for passage.

In 2007, AGC testified in support of HB 2556 which established the Postsecondary Technical Education Authority to review and recommend any changes to the governance, programs, funding and other services of postsecondary technical education programs.

As stated last year, AGC has been working on developing a statewide, seamless construction program that would feature Kansas high schools, technical schools, colleges and community colleges. It has been AGC's vision to create an opportunity for Kansas' young people to advance through a system that will best prepare them for a rewarding career in the construction industry. In conjunction with the Technical Education Authority, the METS Innovation Council is one step closer in accomplishing that goal.

In 2000, AGC created a construction program at Wichita East High School that has become the model for four additional programs across the state. This program is unique as it brings industry representatives into the classroom to teach students not only about specific construction trades, but about the career opportunities available in the construction industry, much like what is proposed in SB 507. Students who perform well in each class are also given the opportunity to gain experience in the field with a contractor or subcontractor in the summer months. Several students from these classes have joined the workforce immediately following high school, or have enrolled in the construction science and management programs at Kansas State and Pittsburg State Universities.

The Kansas Legislature has made great strides in the past few years, realizing that education and workforce development are critical to economic development in the state of Kansas. AGC commends the work of the legislature, but a major investment is needed in technical education for an effective technical education and training system. Without adequate funding, efforts by this council, will fall far short of what is needed to keep Kansas competitive with other states when competing for well-trained employees

House Education Committee
Date: 3-6-08
Attachment # 8

The benefits of technical education should not be ignored, both for the opportunities it creates for the citizens of Kansas and for our state's ability to grow economically. Again, for Kansas to be successful, it must have a trained workforce, including technical professions, starting as early as the middle school level.

In closing, the state of Kansas desperately needs a coordinated, well funded, technical education system that is responsive to the industries that will eventually be providing jobs to the students graduating from these programs.

The AGC of Kansas respectfully requests that you recommend SB 507 for passage. Thank you for your consideration.