

Kansas Academy of Mathematics & Science

House Education Committee

March 15, 2012



FORT HAYS STATE
UNIVERSITY

Forward thinking. World ready.

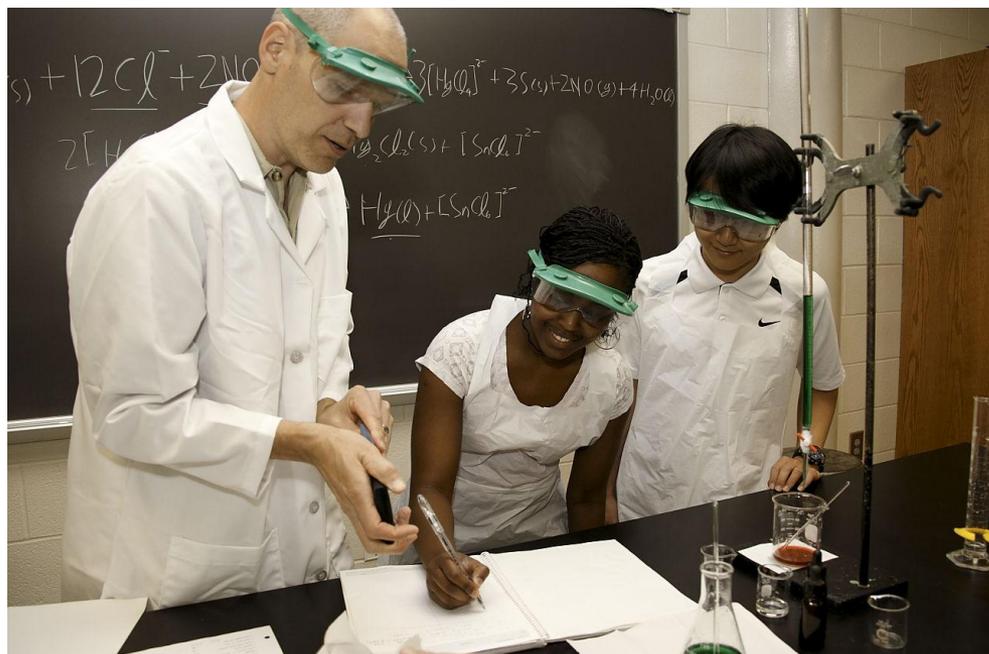
What is KAMS?

An early-entry-to-college program that allows academically *talented* and *motivated* high school juniors & seniors who are interested in math and science the opportunity to live at FHSU and attend a residential academy.



About KAMS...

- Students receive a minimum of 68 hours of college credit
- Focused on academics, research, leadership development, and civic engagement
- Established and funded by the Kansas State Legislature to promote mathematics and science education



Brief History

2006

Kansas Legislature established KAMS (SB 139)

2009

First class of 26 students accepted to KAMS

2010

Second class of 24 students accepted to KAMS (includes one international student)

Returning class of students joins second class of KAMS students on the FHSU campus to continue their academic journey

2011

28 students selected for admission for the 2011/2012 academic year; this includes 2 international students

These 28 students join the 21 returning students on the FHSU campus to continue their academic journey

Recruit students for the 2012/2013 academic year

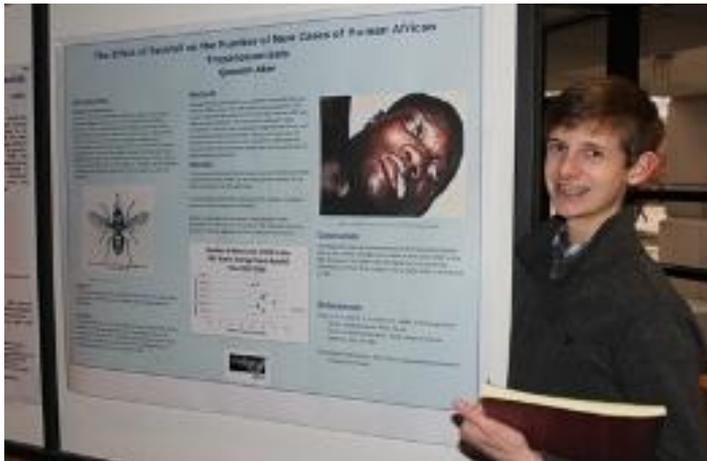
Academics

- KAMS students take regular college courses, integrated with FHSU students
- KAMS students are expected to maintain a 3.0 GPA
- Upon completion of KAMS – students receive a completion certificate from FHSU and a high school diploma from their sending school

Research Opportunities

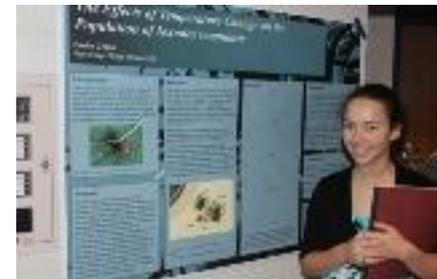
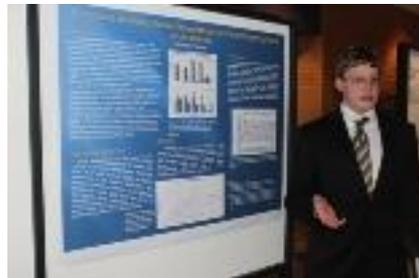
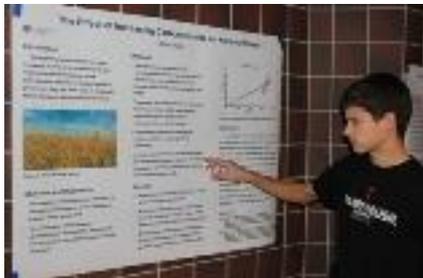


- Gain hands-on research experience with PhD-level faculty
- Develop research skills during junior year
- Conduct research over the course of their junior year, during the summer, and/or during senior year
- Make a professional presentation before graduation



Samples of Current KAMS Students' Research Topics

- Perceived Threat of Climate Change
- Population Rise of the Ixodes Scapularis Tick as a Result of Climate Change
- Effect of Increasing Atmospheric Carbon Dioxide on Kansas Winter Wheat Yield
- Surface Ozone Versus Temperature
- Atmospheric Concentrations of Nitrous Oxide on Skin Cancer
- Data From Thunderstorms That Did Produce Tornadoes and Did Not Produce Tornadoes



Samples of Current KAMS Students' Research Topics (cont'd)

- Correlation Between Lightning and Carbon Dioxide
- Impact of Human Decomensation on Atmospheric Levels of Carbon Dioxide/Genetic Modifying Plants
- Effects of Global Warming on USDA Hardiness Zones
- The Correlation Between Altered Diets and the Methane Emissions From Beef Cattle
- Carbon Footprints



Courses

Junior Year Courses

Fall Semester

- Pre-Calculus
- University Chemistry I & Lab
- Global Climate Change: Science and Impacts
- English Composition I
- US History before 1877

17 Credit Hours

Spring Semester:

- Analytic Geometry & Calculus I
- University Chemistry II & Lab
- English Composition II
- US History after 1877

16 Credit Hours

Senior Year Courses

Fall Semester

- Calculus II
- Principles of Biology
- Physics for Scientists & Engineers I
- Fundamentals of Oral Communication
- Departmental Research & Writing

18 Credit Hours

Spring Semester:

- American Government
- Computer Science Elective
- Physics for Scientists & Engineers II
- Issues in Leadership: Seven Revolutions
- Departmental Research & Writing

17 Credit Hours

Advising

The KAMS staff :

- ❖ Establishes academic articulation agreements with each sending school
- ❖ Coordinates transfer of records with each sending school
- ❖ Ensures that state assessments are conducted and scores submitted to each sending school
- ❖ Registers students for classes
- ❖ Actively monitors student progress/performance
- ❖ Assists students in setting up tutoring opportunities
- ❖ Assists students with college application process
- ❖ Assists students with test registration such as SAT & ACT



Safety

- Student safety is **first** and **foremost**
- KAMS staff is located in Custer Hall
- FHSU Police Department located in Custer Hall
- Custer Hall outer doors secured on the evenings and weekends
- Custer Hall – KAMS residential floors (3rd and 4th floors) are secured with swipe card security system and individual room keys



Student Life

- KAMS is an approved school through the Kansas State High School Activities Association
- The Kansas State High School Activities Association allows non-athletic activities, but no League or State-level competition for KAMS students
- Currently available:
 - KAMS-specific clubs and activities such as hall officers and student government
 - Membership in FHSU clubs and organizations such as marching band, choir & departmental clubs
 - Recreational and cultural events on campus such as intramurals & fine arts series
 - Specialized programming by KAMS staff and FHSU organizations
 - Trips to other Regents institutions, field trips to sites in Kansas (and beyond) & trips to Kansas businesses & industries

Student Engagement

❖ Opportunities/Expectation to Volunteer

❖ KAMS & FHSU

❖ Community Service

❖ Leadership Development

Admission & Selection

Requirements

- ✓ Algebra II and Geometry successfully completed before enrollment at KAMS (Pre-calculus preferred)

- ✓ Minimum 23* composite on ACT

- or

- ✓ Minimum 1570* on SAT

*subject to change

Evaluation of Applicants

- Overall GPA

- ACT/SAT scores

- GPA in relevant classes

- Class rank

- Student Essays

- Teacher evaluations

- Leadership qualities

- Maturity & motivation

- Phone interview

Characteristics of a Successful KAMS Student

- Enjoys mathematics and science
- Un(der)challenged in school
- Demonstrates maturity and dedication
- Willing to live away from home
- Willing to take risks
- Willing to work hard
- Willing to be part of a group
- Exhibits high personal standards

2011/2012

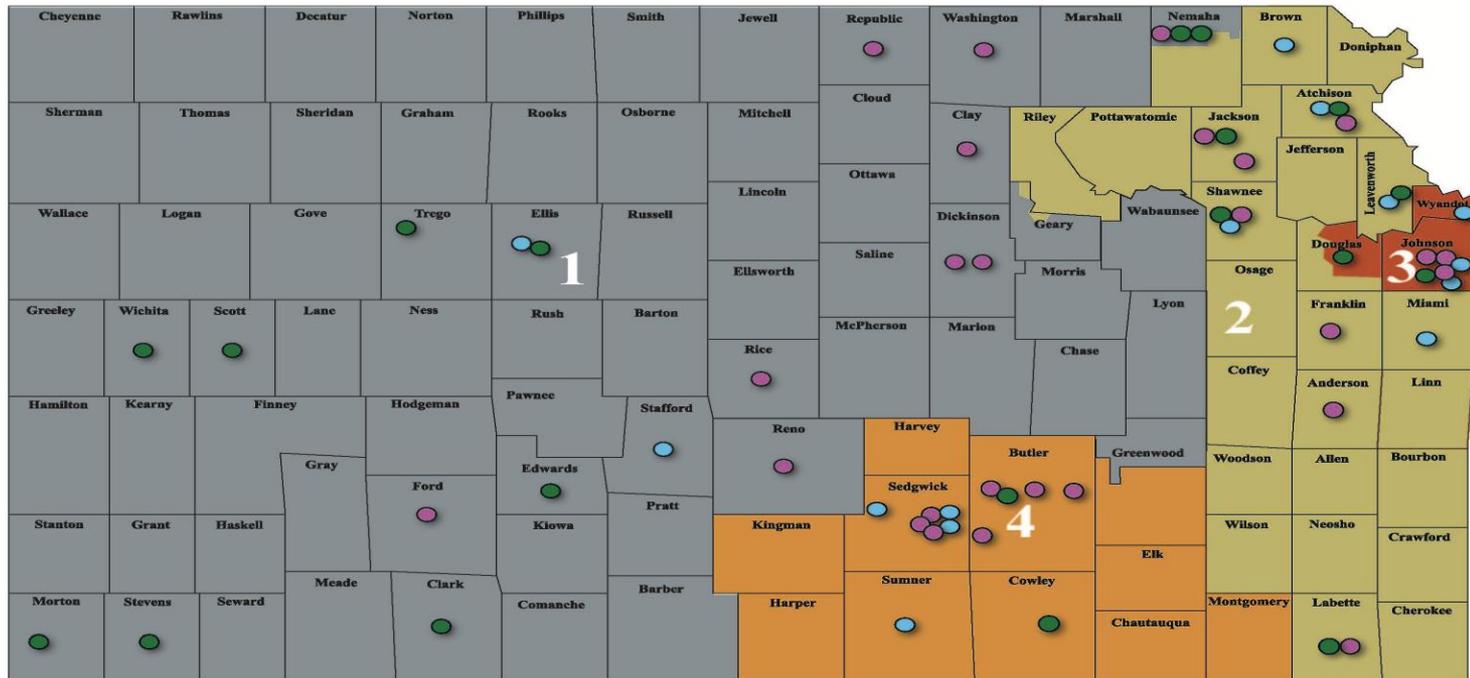
Current KAMS Students

2011 - 2012 KAMS DATA

by City and Congressional Legislative Districts

Breakdown by City

City	CLD
Abilene	2
Ashland	1
Atchison	3
Augusta	2
Belleville	1
Benton	1
Bucklin	1
El Dorado	1
Eudora	1
Everest	1
Garnett	1
Green	1
Hays	2
Holton	2
Hugoton	1
Hutchinson	1
Kansas City	1
Kinsley	1
Lansing	2
Leawood	1
Leon	1
Leoti	1
Lyons	1
Mayetta	1
Mt. Hope	1
Olathe	4
Ottawa	1
Overland Park	1
Paola	1
Parsons	2
Richfield	1
Sabetha	3
Scott City	1
St. John	1
Topeka	3
WaKeeney	1
Washington	1
Wellington	1
Wichita	5
Winfield	1



Breakdown by gender

female	33	53%
male	29	47%

Breakdown by legislative district

District 1	21	36%
District 2	17	29%
District 3	8	14%
District 4	13	22%

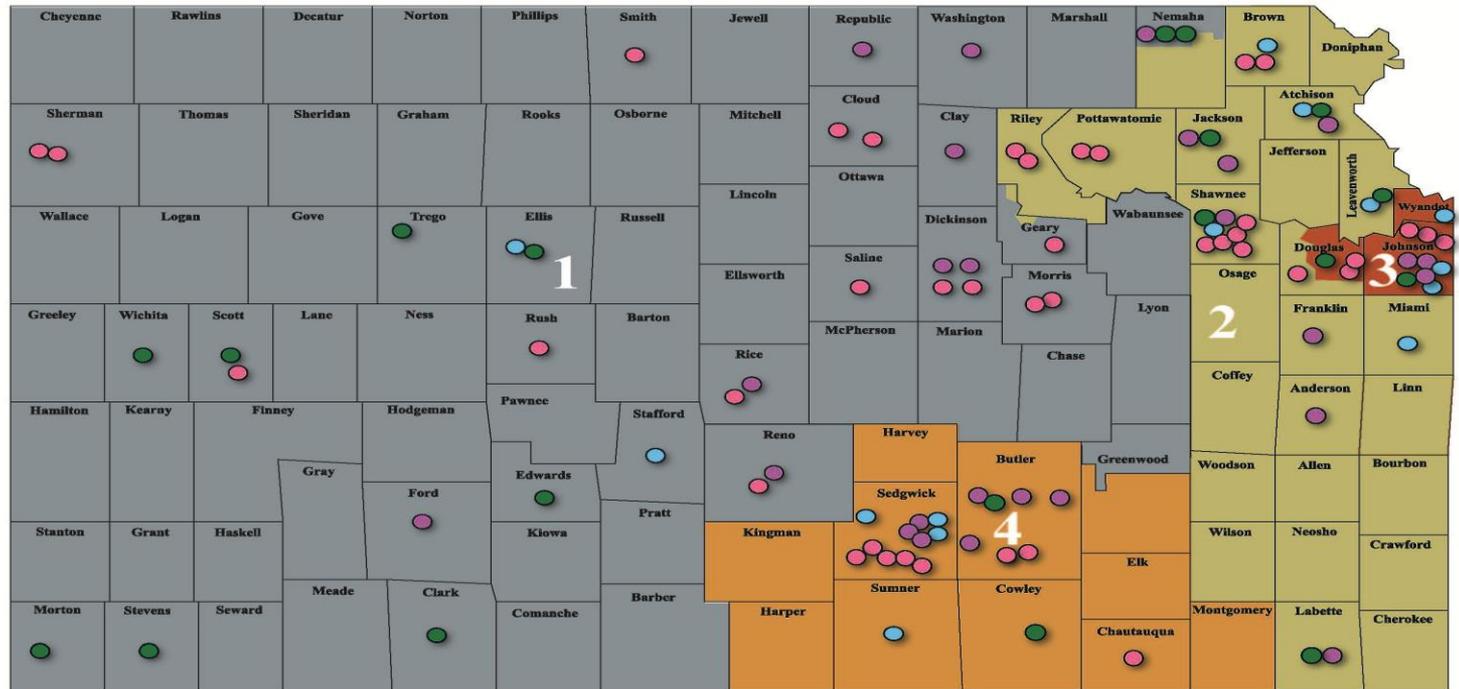
- Graduates/Pioneers - Class of 2011 (14)
- Seniors/Trailblazers - Class of 2012 (20)
International Student - South Korea (1)
- Juniors/Voyagers - Class of 2013 (28)
International Students - South Korea (1)/China (1)

2011/2012

KAMS Students – Graduates, Current, and Prospective Students

2011 - 2012 KAMS DATA by City and Congressional Legislative Districts

City	CLD
Abilene	3
Alexander	1
Ashland	1
Atchison	3
Augusta	3
Baldwin City	1
Belleville	1
Benton	2
Bucklin	1
Chapman	1
Concordia	2
Council Grove	1
El Dorado	1
Eudora	1
Everest	1
Garnett	1
Gasco	1
Goodland	2
Green	1
Hays	2
Hiawatha	2
Holton	2
Hugoton	1
Hutchinson	2
Junction City	1
Kansas City	1
Kinsley	1
Lansing	2
Leawood	3
Leon	1
Leoti	1
Lyons	2
Manhattan	2
Mayetta	1
Mt. Hope	1
Olathe	5
Olsburg	1
Ottawa	1
Overland Park	2
Paola	1
Parsons	2
Peru	1
Richfield	1
Sabetha	3
Scott City	2
Shawnee	1
Smith Center	1
St. John	1
Topeka	8
WaKeeney	1
Wamego	1
Washington	1
Wellington	1
White City	1
Wichita	10
Winfield	1



Breakdown by Legislative District		
District 1	36	36%
District 2	29	29%
District 3	13	13%
District 4	21	21%

Breakdown by gender		
Female	54	53%
Male	50	48%

- Graduates/Pioneers - Class of 2011 (14)
- Seniors/Trailblazers - Class of 2012 (20)
International Student - South Korea (1)
- Juniors/Voyagers - Class of 2013 (28)
International Students - South Korea (1)
/China (1)
- Prospective Students
International Student - Argentina (1)
International Student - China (2)



Costs



Tuition and Fees

Transfer of base state aid from sending school to KAMS, tuition and fees covered for Kansas public school students

Tablet Computer

Necessary and provided by private funding last 2 years

Textbooks

Provided by state appropriation

Responsibility of Students/Families

Housing (including meal plan)

Approximately \$7,000 in 2012/13

Working to develop private funding for scholarships

Transportation to/from campus

Incidentals

(snacks, spending money)

KAMS Students Accomplishments

Junior “Voyager” Class

- 7 students currently on Dean’s Honor Roll
- 4 students currently have a 4.0 GPA
- 1 student tutoring at Kelly Center
- 1 student will be studying in Spain over the Summer, 2012
- 1 student will be studying in Germany over the Summer, 2012
- 1 student works for FHSU Virtual College
- 1 student works for FHSU International Student Services
- 1 student works for Area Sports Medicine group through Hays Medical Center
- 1 student works for University Web Developer
- 2 students won Silver at Regional Science & Engineering Fair
- 5 students won Gold at Regional Science & Engineering Fair

Senior “Trailblazer” Class

- 4 students currently on Dean’s Honor Roll
- 2 students currently have a 4.0 GPA
- 2 students selected for Fort Hays State University Honor Society
- 4 students tutoring at Kelly Center
- 4 students - - semi-finalists for National Merit Scholarship
- 1 student nominated for Presidential Scholars Program
- 2 students received Putnam Scholarship
- 2 students received Ralph & Lucille Hunter Scholarship
- 2 students accepted into Georgia Tech
- 1 student coordinator for FHSU Democracy Project
- 1 student working for Physics Department
- 3 students working as FHSU Orientation Advisors
- 1 student won Gold at Regional Science & Engineering Fair
- Of the students who remain at FHSU, four will major in Physics

Q & A

Contact KAMS



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