Wichita State University’s
Fairmount Center for Science and Mathematics Education
Background Information

HISTORY AND PURPOSE

The Fairmount Center for Science and Mathematics Education was founded in July, 1995 within the Fairmount College of Liberal Arts and Sciences at Wichita State University. At that time, the Center brought together a number of math and science outreach programs that the college was involved in including the operation of the Lake Afton Public Observatory and the Observatory’s outreach program, the Kansas Science Olympiad, and the Kansas Junior Academy of Science competition.

One of the goals of the Center was to take the successful model of K-12 classroom outreach that had been developed in astronomy by the Observatory staff and expand that into other areas of math and science. During the 2005-06 school year, 25 thousand students/people experienced the fun and excitement of learning about science and mathematics through one of the Center’s activities. Information on specific activities is given below.

Activities:

• Organization and development of the Kansas Science Olympiad. Teams of 15 middle or high school students in competed in one of twenty three events such as Chemistry Lab, Bridge Building, Rocks and Minerals, Astronomy, Designer Genes, etc. In Kansas during the 2005-06 school year more than 130 middle and high schools participated in one of five regional tournaments. Of these, 60 teams advance to the state tournament at WSU held on the first Saturday in April. In all about 2,600 students participate at the regional level and about 1,000 at the state level.

• Organization and development of the Kansas Junior Academy of Science competition. During the school year more than 200 middle and high school students work on scientific research projects. In April they present their results, just like a scientist would present his/her results at a scientific meeting, to a panel of judges at one of six district competitions. Those projects that are rated superior are invited to the state competition at WSU on the first Thursday in May.

• Operation of the Lake Afton Public Observatory. Each year the Observatory presents over 100 programs to the general public and averages another 35 programs for school groups. Each of these programs centers on a specific theme such as the birth and death of stars, the type of objects that comprise our Milky Way galaxy, features on the sun, and so on. This thematic approach shows
visitors that objects in the sky are not necessarily independent, but are related to each other. An exhibit area of hands-on astronomy activities reinforce the concepts that are discussed while people are looking through the telescope or describes concepts that are not visible through a telescope. During an average year, over 6,000 attend an Observatory public or school program.

- Classroom Presentations. The Center staff makes classroom presentations on various topics in science. Some of the topics include: Solids, Liquids, and Gasses (including demonstrations using liquid nitrogen to explore what happens to objects when they're cooled to -300°F); Physical and Chemical Changes; Electricity and Magnetism; Fun With Science; Life of a Thunderstorm; The Solar System; and the Moon. During the 2005-2006 school year, Center staff made 178 such presentations to 7,868 students.

- Math and Science Kits. Through a series of grants from the Boeing Company, the Fairmount Center has been able to either purchase or assemble a number of kits of hands-on materials which teachers can use as they are teaching a particular topic in math or science. Science topics include: the solar system, telescopes, trees, air and weather, and sound. Math kits topics include: fractions, algebra, probability, geometry, basic math facts and so on. These math and science kits were used by over 1,500 students during the 2005-06 school year.

- The Kansas JASON Project. The JASON Project offers students and teachers in grades 4 through 9 a comprehensive, multimedia approach to enhance teaching and learning in science, technology, math, geography, and language arts. The project delivers its educational content through a print curriculum, videos, fully interactive Internet programming, and live satellite "telepresence" broadcasts. During the 2005-2006 school year 40 teachers and 3,000 students participated in the project. Of these, 17 teachers brought a total of 975 students to the on campus broadcast event to view the live broadcast and take part in the supplementary activities following the broadcast.

- 2007 National Science Olympiad Tournament. Wichita State will host the 2007 National Science Tournament next May. This tournament will bring over 2,500 of the nations best and brightest science students and another 1,500 parents and officials to Wichita. As with the state tournament teams of 15 middle or high school students in compete in one of twenty three events such as Chemistry Lab, Bridge Building, Rocks and Minerals, Astronomy, Designer Genes, etc.
STAFF:

The staff of the Center consists of the following personnel:

• Director (full time) – Serves as the Observatory Director (20%), the Director of the Kansas Science Olympiad, makes classroom presentations, oversees the operation of the Center and participates in other Fairmount Center activities.

• Assistant Director, JASON Project Program Manager (full time) – Oversees the JASON Project (75%), serves as the director of the Kansas Junior Academy of Science, makes classroom presentations, and participates in other Fairmount Center activities.

• Assistant Director (full time), Lake Afton Public Observatory Program Manager – Oversees the operation of the Lake Afton Public Observatory (75%), serves as the assistant director of the Kansas Science Olympiad, makes classroom presentations, and participates in other Fairmount Center activities. (This is the position we are hoping to fill.)

• 2007 National Science Olympiad Tournament Director (half time) – Oversees the organization and planning for the 2007 tournament. (This is a temporary position.)

• Graduate Assistant, 20 hours per week

• 2 Student Assistants, each 20 hours per week.

Additional information about Center programs can be found at:

www.wichita.edu/facsme