



# THE Dakota Science Center

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Inquiry Science Implementation Final Report June 2006

December – February 2006

The GEOG 900 Geospatial Technologies workshop schedule was completed and is attached. The schedule meets the criteria set:

- ✓ a scientist that specializes in geospatial technology will provide the fundamentals of remote sensing or GIS,
- ✓ participants will reinforce their learning with a hands-on exercise,
- ✓ the exercise will be coupled with an appropriate grade-level classroom activity,
- ✓ and the workshop schedule has been accepted by the UND Division of Continuing Education.

Teachers were polled to help determine the best dates for the workshop; June 14 & 21, 2006.

February – April 2006

The workshop has been promoted in a variety of ways:

- UND Division of Continuing Education catalog
- ND Geographic Alliance newsletter
- ND Council for the Social Studies mailing list
- ND Science Teacher's Association mailing list
- ND Department of Public Instruction science teacher mailing list
- Grand Forks School District science teaching team.

Schools in the region with significant Native American Indian populations are being contacted by telephone and encouraged to send teachers to the workshop.

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April – June 2006

A planning meeting was held on the Mayville State University campus on May 25, 2006.

Class participations were provided with a listing of URL's for key websites.

Eleven educators registered for the class. Ten of the participants were K-12 teachers and one participant was an assistant professor from the University of North Dakota. All the K-12 educators were taking the course for continuing education credit. They represented schools from East Grand Forks, Minnesota and the North Dakota communities of Grand Forks, Jamestown, Minot, Devils Lake, Granville, and Thompson. Most of these schools have significant American Indian populations. Pre-evaluation instruments showed that none of the K-12 teachers were currently using GIS/GPS software in their classrooms. The university instructor had tried to use GPS equipment for a course but could not find suitable user-friendly software to provide a successful experience for the students.

Post-evaluations revealed that the most valuable aspects of the course were the hands-on learning with the GPS equipment (2.5 hours) and the supervised lab time with the computer software for both GPS and GIS (6.5 hours). The teachers gave the course an overall rating of 'good' (50%) and 'excellent' (50%). The teachers were especially appreciative of being able to take home the software after the first day of class to work with it at home. This response by the participants confirms that the week interval between class meeting days was the correct choice for the workshop format and will be adopted for such programs after this year's grant activity.

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For future reference the preferred month for a class was overwhelming June. Preferred locations (in descending order) were Mayville, Devils Lake, Grand Forks, Valley City, Jamestown and Minot. The teachers learned about the class mainly through the two Dakota Science Center mailings; one to middle school science teachers in the state and one to school principals. Two teachers read about the class in the North Dakota Geographic Alliance newsletter.

Plans are underway to provide additional programs in the 2006-07 academic year in cooperation with ND EdPARC and the University of North Dakota Department of Geography across the Peace Garden State.. Mini-workshop sessions on geographic education applications of geospatial technologies are being developed for a regional meeting of professional geographers and K-12 teachers at Rugby (late September), a statewide K-12 teachers meeting at Bismarck (mid-October), and a regional meeting of professional geographers and K-12 teachers at Belcourt (early November). The last mini-workshop session will be targeting K-12 teachers from tribal schools and instructors from tribal community colleges that are located on North Dakota's four reservations. The current plan is to have another mini-workshop session United Tribes Technical College in mid-March as a precursor to a two-day GEOG 900 workshop to be held at Fort Totten in June.

Overall, the program at Mayville State University can be considered successful. Because of this workshop, a cadre of K-12 teachers and university-level educators now exists to help take this program to the next level in the future. Also, the infrastructure for the expansion of this project currently is being utilized and already there is a growing interest for an advance version of the two-day program at Mayville State University for the 2006 participants in addition to the next round of introductory workshops. To summarize, this collaboration of various partners of NDView has made a significant advance in the offering of programs on geographic education applications of geospatial technologies in the Peace Garden State.

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GEOG 900: Geospatial Technologies for Implementing National Geographic Standards  
June 14 and 21, 2006 Budget

Income	
Registration	\$ 275.00
Expenses	
Mapping Your World textbooks	\$1439.75
Continuing Education Tuition	\$500.00
Remote Sensing/GIS Presenter	\$500.00
Geospatial Presenter	\$500.00
Dakota Science Center Program Coordinator	\$500.00
Mailing	\$127.74
700 fliers to ND science teachers and principals	
Handouts	\$70.98
Laptop rental	\$110.00
Equipment	\$191.00
Coursework Binders	\$20.00
Transportation	\$1234.00
Dakota Science Center overhead	\$491.85
Total	\$5685.32

Expenses – Income = \$5410.32

Contributions	
UMAC	\$353.84
Dr. Munki (Mayville Dining Services)	\$82.39
In-Kind Contribution	
Dr. Munki (materials, teleconferences, labor)	\$600.00
Total	\$1036.23