



*South Dakota*

# EPSCoR UPDATE

Experimental Program to Stimulate Competitive Research

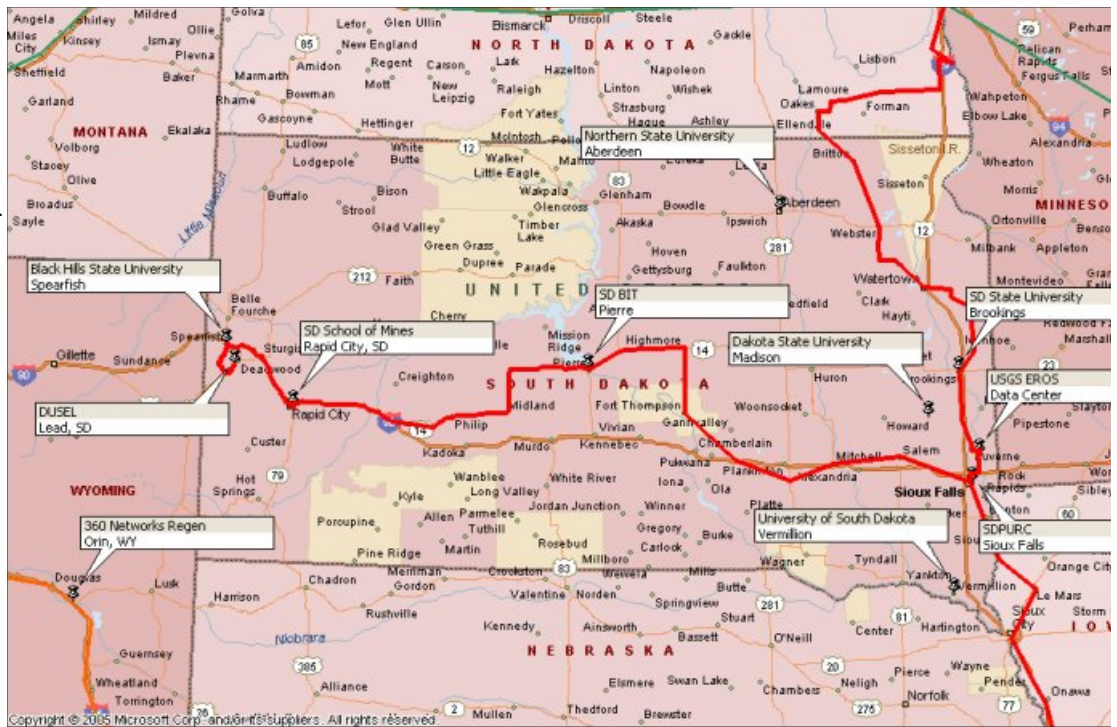
## Northern Tier Networking Consortium

In an effort to increase broadband network availability within South Dakota, SD EPSCoR provided funding for the development of a business plan to complete the next generation of internet connectivity. The result has been the creation of the Northern Tier Networking Consortium (NTNC) that consists of South Dakota, North Dakota, Wyoming and Idaho.

The red lines on the map represent one of the options presented to the SD Board of Regents at their meeting on Friday, October 20, 2006. This option, that the Board adopted, provides connectivity from the North Dakota border near Fargo to Kansas City (a hub on the national broadband network) and from Sioux Falls, through Pierre and Rapid City, to Spearfish and Lead. Fargo will be on a fiber path from Seattle to Chicago, both hubs on the national broadband network. All Regental universities and DUSEL will be connected. This plan creates the critical broadband base network for South Dakota.

The cost for this option is \$7,595,500 in one-time monies and \$1,748,790 in annual recurring costs.

The total costs by one-time category are: Right to Use of the



Fiber-\$2,714,000; Optical Equipment-\$4,420,000; and telecommunication company last mile charges-\$437,500. On-going total costs by category are: Collocation-\$418,000; Route O&M-\$285,750; Equipment Replacement-\$379,140; Equipment Maintenance-\$529,500; and Remote Hands Maintenance-\$136,400.

Other options represent redundant network paths. One would provide a redundant route from Lead to Orin, WY and then on to Denver, which is a hub on the national broadband network. The other had a redundant loop going from Sturgis to Bismarck, ND. The third redundant path was between Pierre and Aberdeen. Due to costs, these options are not being pursued at this time.

The NTNC consultant's report was finalized on October 27, 2006. The consultant's report will be available on the NTNC website, <http://www.ntnc.org/default.htm>. For more information contact Dr. Warren Wilson at [wjwilson@sdbor.edu](mailto:wjwilson@sdbor.edu) or 605-677-5916.

### South Dakota Northern Tier Backbone and Local Connectivity Cost Estimates for Base Network

| From                | To          | Miles        | Total One-Time Cost | Total Annual Recurring Cost |
|---------------------|-------------|--------------|---------------------|-----------------------------|
| North Dakota Border | Omaha       | 521          | \$ 3,686,900        | \$ 860,770                  |
| Omaha               | Kansas City | 172          | \$ 662,400          | \$ 179,490                  |
| Sioux Falls         | Rapid City  | 397          | \$ 2,001,800        | \$ 456,180                  |
| Rapid City          | Sturgis     | 55           | \$ 670,500          | \$ 127,300                  |
| Sturgis             | Spearfish   | 21           | \$ 573,900          | \$ 125,050                  |
| <b>Total</b>        |             | <b>1,156</b> | <b>\$ 7,595,500</b> | <b>\$ 1,748,790</b>         |

## South Dakota EPSCoR - 2010 NSF RII Award Goals

### Photo-Activated Nanostructured Systems (PANS)

- Research focused in two core areas
  - Third Generation Photovoltaics Based on Spectral Conversion of Solar Radiation
  - Photo-Active Nano-Inks for Direct Write Electronics Fabrication
  - Collaborative effort—researchers from South Dakota School of Mines & Technology, University of South Dakota and South Dakota State University

### Outreach Activities

- South Dakota EPSCoR raises awareness of research and its contributions to the state
  - Research experiences provided to its Tribal College faculty and students
  - K-12 teachers and students
  - National science & economic development and entrepreneurship conferences held in South Dakota
  - Annual Student Research Poster Day held at the Capitol Building in Pierre
  - Collaboration with the SD Science Discovery Center
    - Traveling exhibits
    - Women In Science program for girls ages 12-18
  - Science on the Move
    - Mobile labs travel to South Dakota's K-12 schools
    - Teacher seminars to integrate activities into current curriculum

### Partnership with Sinte Gleska University

- Develop and implement research infrastructure improvements
  - Increase collaborations with other South Dakota universities
  - Promote participation in the South Dakota 2010 Initiative's economic development activities

### Technology-Based Economic Development & Entrepreneurship

- Partner with the Governor's Office of Economic Development (Department of Tourism & State Development) and the National Network for Technology Entrepreneurship and Commercialization (N2TEC) and Black Hills State University to promote entrepreneurship
  - Developing Mobile Science Laboratory technology entrepreneurship modules
  - Encouraging S&T leadership development
  - Supporting technology entrepreneurship education programs
  - Utilizing at least 30 South Dakota communities/regions and 5 Native American communities

### The REACH Committee

- Provides leadership to South Dakota EPSCoR
- Promotes understanding of EPSCoR programs and their impact on our state
  - Spearheads new policies and resources
  - Ensures rigorous merit review processes
  - Generates high levels of collaboration
  - Keeps EPSCoR responsive to state and regional needs
- Develop and implement the state's first Science and Technology Strategic Development Plan
  - Expand graduate education
  - Strengthen interdisciplinary and collaborative research in targeted "niche" areas
  - Develop the state's research infrastructure
  - Support the Governor's 2010 Initiative
- Members are South Dakota's leading scientists, political leaders, university administrators and representatives of the private sector

### South Dakota REACH Committee

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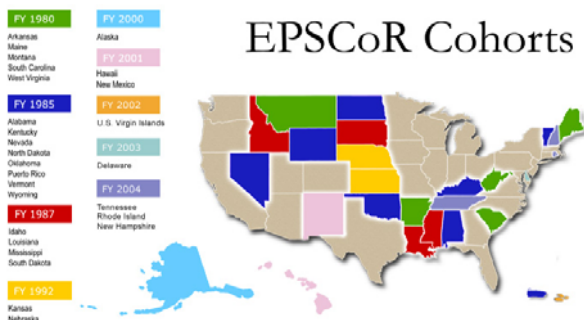
RealTronics Corporation

**Ray Trankle**

Sioux Valley Hospital & Health Care System

## NSF EPSCoR

**What is EPSCoR?** The National Science Foundation (NSF) created the first **Experimental Program to Stimulate Competitive Research (EPSCoR)** program in 1980. Its success led Congress to expand the program and, since 1990 create EPSCoR-like programs in several federal agencies, including: USDA, NIH, DoD, DOE, NASA and EPA. The EPSCoR program is a merit-based science and technology (S&T) initiative to improve the research capacity, capability and competitiveness of selected universities and non-profit institutions in jurisdictions that have not participated fully in the federal research and development (R&D) enterprise.



### Why is EPSCoR Important?

EPSCoR is ensuring that all regions of the country participate in and benefit from the building of an active and competitive R&D base.