

Computational Science & Engineering Research & Education Program Development – Status, Goals and Needs

1. Clarify where we are now.
2. Clarify and distinguish computational science, engineering research, educational development.
3. Explicitly recognize the interdisciplinary nature of computational science.
4. Don't wait five years.
5. Clarify to what end we are building cyber infrastructure.
 - a. Overcome isolation with in the state and from the rest of the world
 - b. Build platform for the future
 - c. Recognize budding business our relying on this cyber infrastructure
6. Define driving problems that test the system.
7. Recognize that computational science is the math of the 21st century.
8. Recognize the central role of teachers and faculty to this effort.
 - a. Give them a repertiore that includes the familiarity with computational techniques.
9. Create opportunities for students to shadow professionals in business and identify coordinator for program.
10. Look for ways to retain students until graduation at tribal colleges to obtain full skill set.

Specific Steps.

1. Improve computational literacy across disciplines
2. Convene regional workshops in South Dakota and develop computational skills of teachers and professors.
3. Bring in experts during the first two years, then shift to home-grown capacity.
4. Fund South Dakota instructors to attend national workshops.
5. Identify a leader at each institution to support individual faculty with their initiatives.
6. Take advantage of NSF workshop programs for funding workshops.
7. Include Wyoming in organization and participation in workshops.

1. Build on strengths of individual institutions.
 - a. Encourage collaboration to draft curricula on computational thinking.
2. Share common core courses.
3. Look at collaborations across regental and tribal colleges.
4. Identify needs for human capital.
5. Create partnership the emphasize telecommuting.
6. Create protocal for addressing confidentiality concerns.