QuarkNet

2004

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Helping Develop America's Technological Workforce

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Goals

- Scientists as mentors
- Teachers as researchers & facilitators
- Students as researchers

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Classroom Vision

School science should reflect the practice of science and should allow students to be *active* participants.

Science is what students DO,

not what is done to them.

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- Supports learning by inquiry.
- Provides teachers and students with real research opportunities in particle physics.
- Encourages national and international collaboration among students, teachers and scientists.

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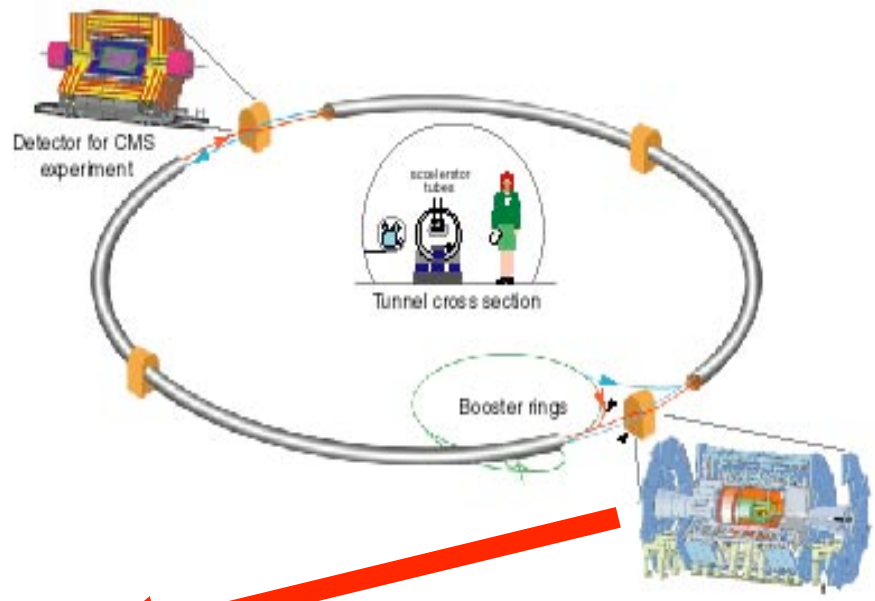
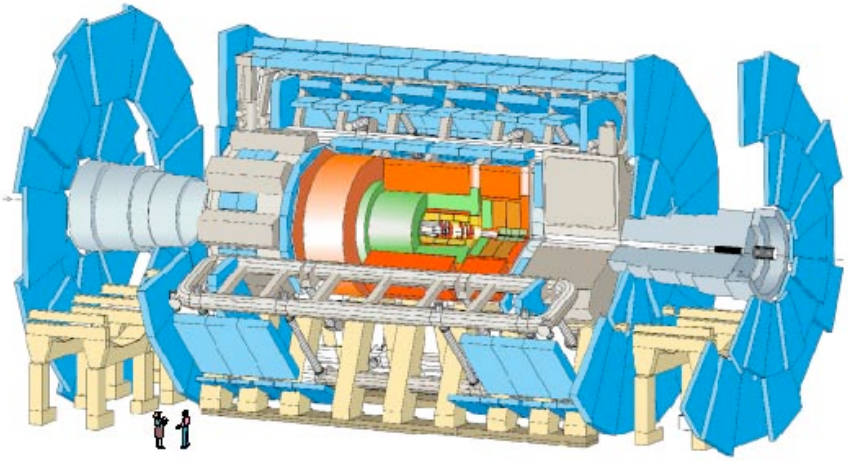
QuarkNet Origins





ATLAS and CMS at CERN

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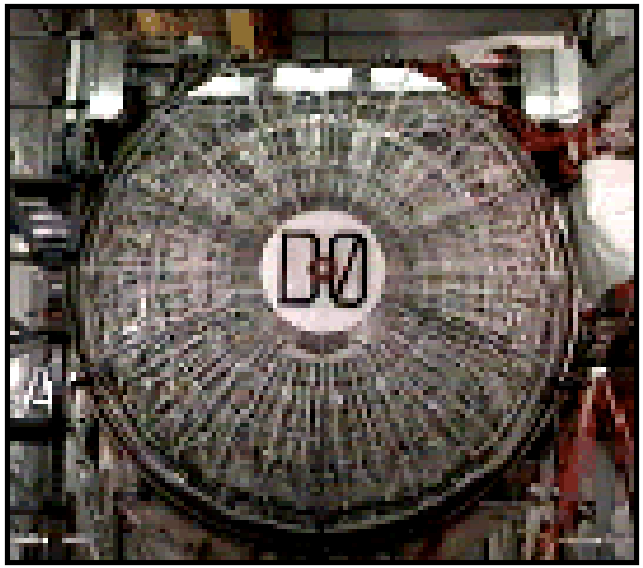
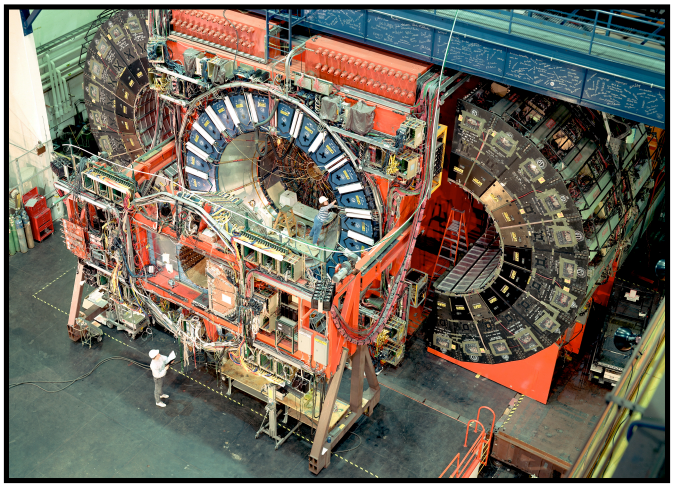
QuarkNet Origins

CDF & DØ at Fermilab





5 Year Program

For each center:

- Year 1
  - 2 lead teachers, 2 mentors
  - 8 weeks research
- Year 2
  - 2 lead teachers, 2 mentors
  - 8-10 associate teachers
  - 2- to 3-week workshop
- Years 3, 4, 5
  - All in 1-week workshop
  - OR meetings spread out over the year

Teacher Support

Research Stipends

- Year 1 (2 lead teachers)
  - 8 weeks + travel + subsistence
  - $550/week
- Year 2 (12 teachers on average)
  - 2-3 weeks
  - $300/week + $250 (mini-grant)
- Year 3, . . .
  - 1 week
  - $300/week + $250 (mini-grant)

Teachers as Researchers

- Construct and test detector components.
- Create data sets for students.
- Develop online experiments for students.
- Develop classroom detectors.

Totals (Goals)

- 120 Lead Teachers
- 600 Associate Teachers
- 100,000 Students

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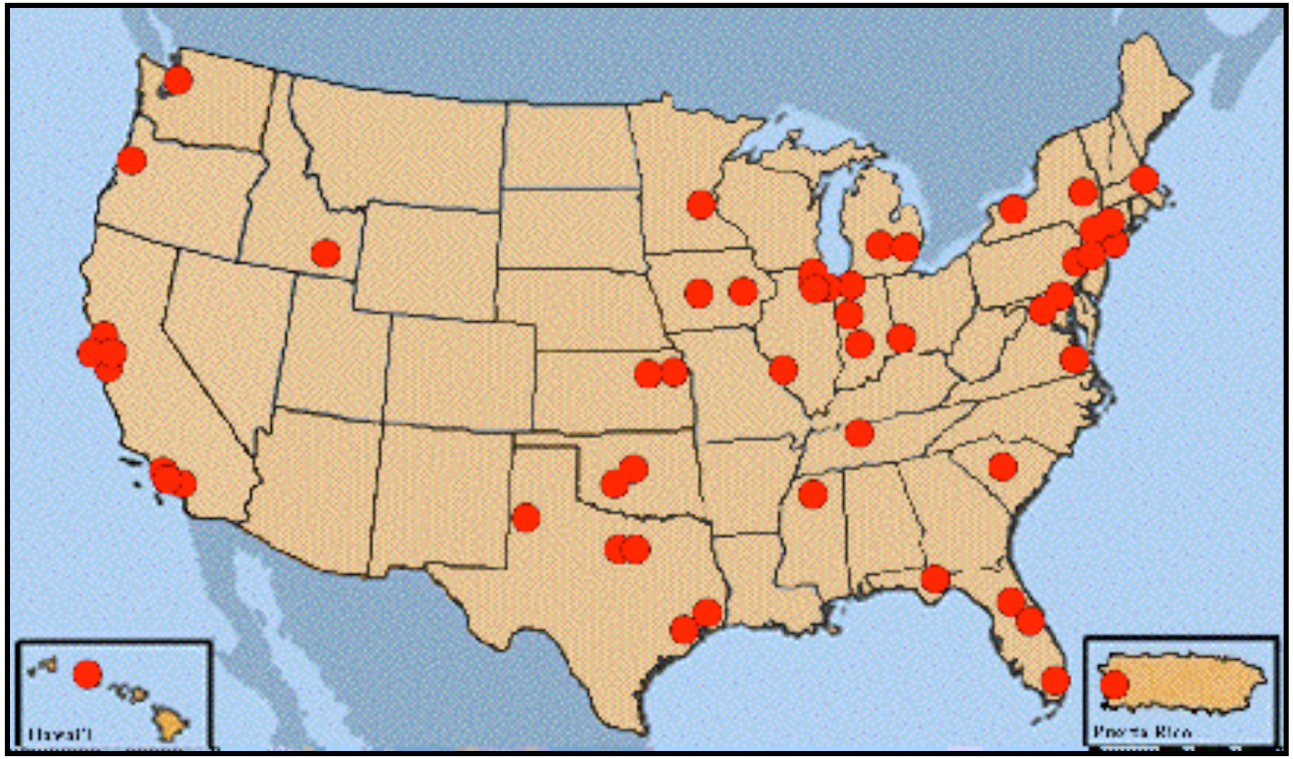
Goal: 60 Universities & Labs



12 new centers each year for 5 years (beginning in 1999)

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Current Status

- 53 Active Centers
- 158 Mentors
- 506 Teachers
- 33 Summer Students

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QuarkNet Centers

U. of Rochester

U. Of Oregon

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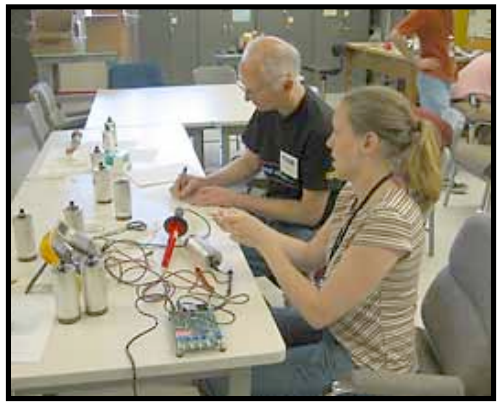
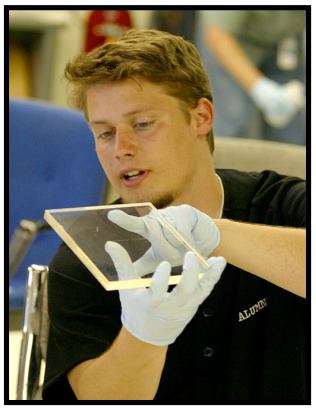
SLAC/Stanford University





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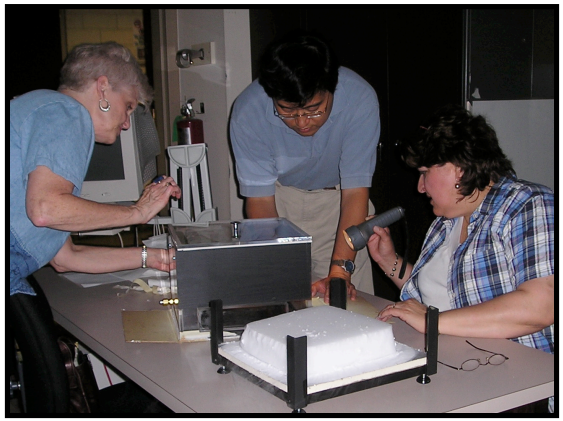
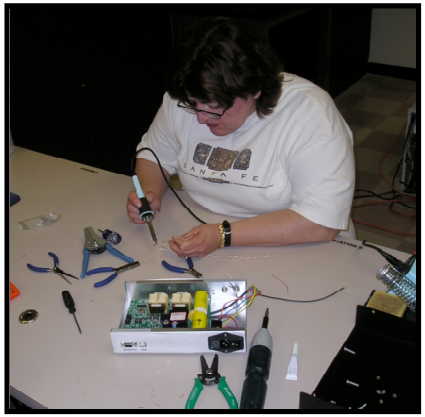
Southern Methodist University





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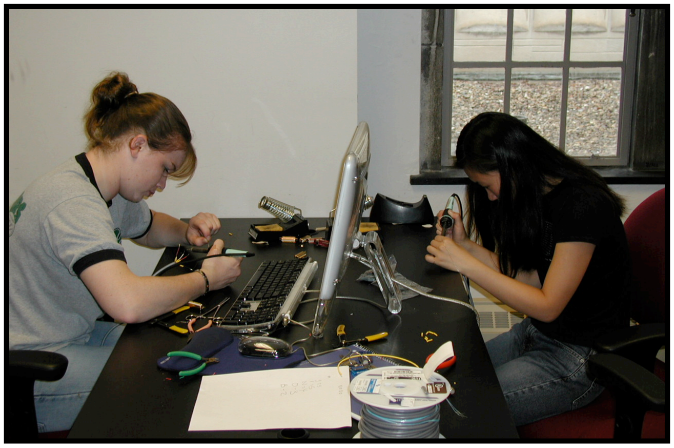
Indiana University



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University of Notre Dame

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University of Texas at Arlington

Funding

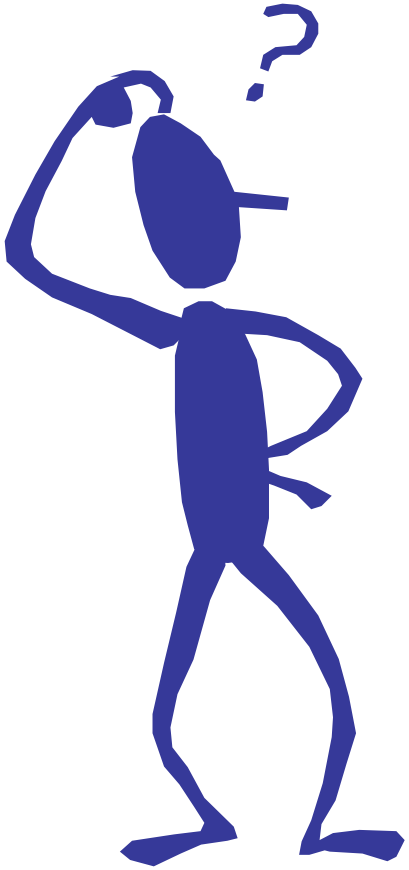
Program Budget

- Teacher Support
- Staff Salaries and Travel
- Evaluation
- Advisory Board
- Materials & Supplies

Funding

- NSF ESIE Grant
- NSF Experimental Particle Physics Support
- DOE High-Energy Physics Support
- ATLAS & CMS Education Support
- Research Groups & Dept.'s In-Kind Contributions

Questions????



For more information:

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