

CREATING
CHANGE IN
HIGHER
EDUCATION



CONSTRUCTING,
CONNECTING
AND
COLLABORATING

The University of Alabama
Fayetteville State University
University of Idaho

NOVA

*NASA Opportunities for
Visionary Academics*

*Incipit Vita Nova
(The new life begins)*



NOVA - Who We Are

The University of Alabama

- Mike Freeman
 - Aerospace Engineering
- Kevin Whitaker
 - Aerospace Engineering
- Dennis Sunal
 - Science Education
- Jeanelle Hodges
 - NOVA Fellow

NASA Headquarters

- Debbie Gallaway
 - Education Division

Fayetteville State University

- Leo Edwards
 - Math/Science Education Center
- Ron Johnston
 - Natural Sciences

University of Idaho

- Mike Odell
 - Science Education
- Bob Kearney
 - Physics



Our Vision

To prepare highly literate pre-service teachers in science, mathematics and technology by creating change in higher education

NOVA Objectives

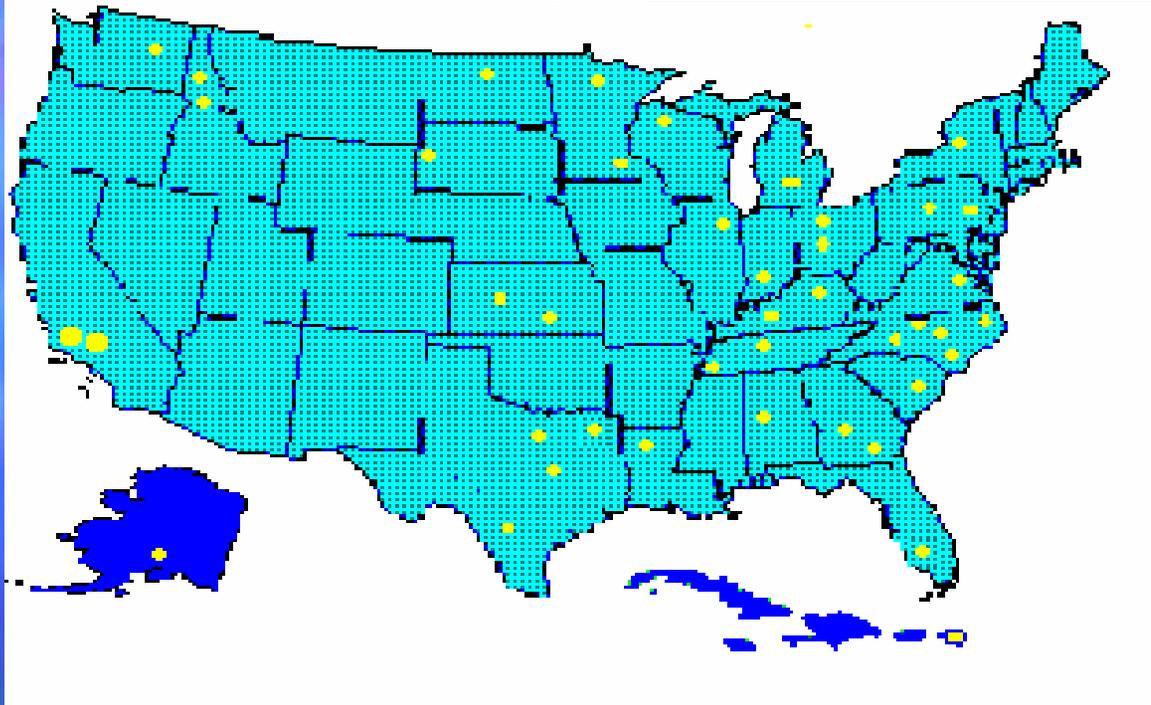
- **Disseminate** the NOVA higher education preservice change model nationally to a diverse population of institutions, addressing critical concerns for equity and geographic distribution.
- **Sustain** the change process by mentoring and partnering with workshop participants and NOVA grantees.
- **Increase the interaction** among members of the NOVA network by providing a forum for exchanging innovative ideas and leadership opportunities in higher education reform.



NOVA Objectives (continued)

- **Assess and evaluate** all project activities to determine short- and long-term effectiveness and impact.
- **Conduct and stimulate research** on reform and change in higher education.
- **Continue development** of the NOVA higher education preservice change model whose foundation is based upon national standards and benchmarks for science, mathematics, and technology and NASA's strategic enterprises.

NOVA Network Grant Recipients



Alaska Pacific University
Austin Peay State University, TN
Baylor University, TX
Blackhills State University
Bowling Green State Univ., OH
Cedar Crest College, PA
Clemson University, SC
Columbus State University, GA
Crichton College, TN
CSU-Northridge, CA
CSU-Pomona, CA

Elizabeth City State University, NC
Elon College, NC
Emporia State University, KS
Fort Hayes State University, KS
Guilford College, NC
Hampton University, VA
Indiana University, IN
Lewis-Clark State College, ID
Michigan State University
Morehead State University, KY
North Carolina Central University

Northwestern State Univ., LA
St. John Fisher College, NY
St. Mary's University, MN
Susquehanna University, PA
Texarkana College, TX
Texas A&M-Texarkana
Texas Women's University
Trinity Christian College, IL
University of Alabama
University of Dayton, OH
University of Idaho
University of the Incarnate
Word, TX
University of North Carolina-
Charlotte
University of South Florida
University of Virgin Islands
Univ. of Wisconsin-La Crosse
Univ. of Wisconsin-Superior
Valdosta State University, GA
Western Kentucky University
Whitworth College, WA

Example #1

University of Dayton

SCI 190: The Physical Universe

SCI 210: The Dynamic Earth

SCI 230: Organisms, Evolution, & Environment

*Strategic Enterprises: Earth Science,
Space Science*



Example #2

Cedar Crest College

MAT 103: Exploring Mathematics

*Strategic Enterprises: Earth Science,
Space Science,
& HEDS*



What is NOVA?

NASA's preservice education program which creates faculty change by:

- National workshops
- National conferences
- Grants to other institutions
- Research on change in higher education
- Continuous mentoring

NOVA Workshops

Our primary dissemination vehicle is a university faculty development model with emphasis on:

- developing faculty expertise
- modeling and demonstrating
- practicing and applying
- developing an action plan

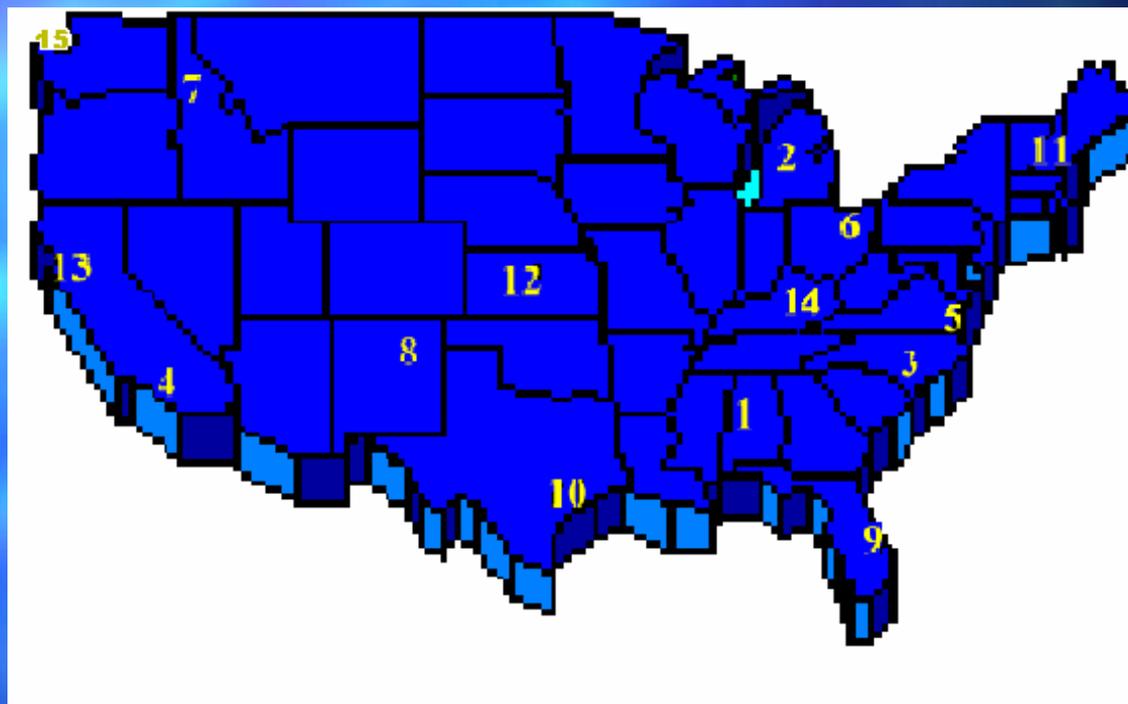
in the areas of pedagogy, curriculum, assessment and educational technology



NOVA Workshops

- Interdisciplinary teams ONLY
 - content faculty (science, math, engineering, etc.)
 - education faculty
 - administrator(s)
- NOVA consortium subsidizes travel expenses for participants

Workshop Sites



1) Univ. of Alabama

2) Eastern Michigan Univ.

3) Fayetteville State, NC

4) NASA / JPL , CA

5) NASA / LaRC, VA

6) NASA / LeRC, OH

7) Univ. of Idaho

8) New Mexico Highlands
Univ.

9) NASA / KSC, FL

10) NASA / JSC, TX

11) Univ. of New Hampshire

12) Kansas State Univ.

13) NASA / ARC , CA

14) Western Kentucky
Univ.

15) Bellingham, WA

NOVA Workshops

- 21 regional workshops scheduled
- 15 workshops held to date - 127 total institutions participating

Implementation Planning Grants

- All workshop teams eligible to propose
 - proposals reviewed three times a year
 - quick review ~ 4 weeks after submission
- \$30,000 limit with a one-to-one cost sharing requirement
- One-year duration

Key Proposal Elements

- Present Course and Sequence
- New/Modified Course(s)
 - Innovative instruction & use of technology
 - Inclusion of standards
- Connection to NASA Strategic Enterprise(s)
- Collaborative Efforts
- Assessment & Evaluation
- Action Research

Details of Grant Recipients

NAME OF SCHOOL	AMOUNT AWARDED	MONTH/YEAR AWARDED
Alaska Pacific University	\$20,340	Jul 98
Austin Peay State University	\$23,504	Jun 97
Baylor University	\$29,356	Jun 97
Black Hills State University	\$27,885	Jul 98
Bowling Green State University	\$12,000	Jul 98
CSU - Pomona	\$30,000	Mar 97
CSU - Northridge	\$22,155	Jan 99
Cedar Crest College	\$27,120	Jan 97
Clemson University	\$22,000	Aug 96
Columbus State University	\$22,831	Aug 96
Crichton College	\$7,746	Jul 98
Elizabeth City State University	\$29,000	Jul 97
Elon College	\$15,000	Jun 97
Emporia State University	\$29,732	Nov 96

Details of Grant Recipients

NAME OF SCHOOL	AMOUNT AWARDED	MONTH/YEAR AWARDED
Fort Hays State University	\$30,000	Jul 97
Guilford College	\$30,000	Jan 97
Hampton University	\$29,995	Jul 97
Indiana University	\$23,668	Jan 98
Lewis-Clark State University	\$29,988	Apr 98
Michigan State University	\$30,000	Jul 97
Morehead State University	\$26,417	Jan 99
North Carolina Central University	\$22,952	Oct 97
Northwestern State University	\$15,178	Jan 98
St. John Fisher College	\$29,930	Apr 98
St. Mary's University	\$29,750	Jan 97
Susquehanna University	\$23,283	Jul 97
Texarkana College	\$23,000	Jan 99
Texas Women's University	\$29,824	Jun 97

Details of Grant Recipients

NAME OF SCHOOL	AMOUNT AWARDED	MONTH/YEAR AWARDED
Trinity College	\$22,000	Jan 99
University of Alabama	\$29,832	Sep 96
University of Dayton	\$29,615	Sep 96
University of the Incarnate Word	\$23,845	Jul 97
University of North Carolina-Charlotte	\$30,000	Jan 97/Oct 98
University of South Florida	\$30,000	Jul 98
University of the Virgin Islands	\$23,510	Jul 98
University of Wisconsin-La Crosse	\$27,851	Sep 98
University of Wisconsin-Superior	\$29,673	Sep 96
Valdosta State University	\$27,520	Jan 98
Western Kentucky University	\$25,669	Apr 98
Whitworth College	\$28,450	Jan 98

Electronic Dissemination

- NOVA Web Site (www.eng.ua.edu/~nova)
 - consortium information
 - curriculum materials
 - electronic workshop application
 - additional relevant links
- Grant Recipients' Web Sites
 - local institution information
 - curriculum materials
 - points of contact

Assessment and Evaluation

- Pre- and post-evaluation of participants
- Post-workshop surveys and interviews
- Workshop evaluations
- Evaluation of NOVA Grant projects
- NOVA Network Institution site visits

Mentoring

ALL workshop participants are mentored after their workshop experience

- IP grant proposal preparation
- IP grant proposal revision(s)
- Implementation
- Institutional barriers
- Site visits

Follow-up Conference (Leadership Development Conference)

Grant recipients are brought back together to present their projects and research results

- Held each Fall
- Presentations along with focus groups to address key topics of concern
- 2 days

Phase II Grants

- Schools eligible after completion of initial NOVA grant
- Up to \$30,000 (with 1:1 match)
- Expansion of initial NOVA project to other faculty, other courses, other institutions (for example, feeder community colleges)

Closing Remarks

- Can NOVA help you create change on your campus?
- First step → put together an interdisciplinary team and come to a workshop

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