

1998 Strategic Planning Conference

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**New Mexico Space Grant Consortium
Strategic Plan 1998-2004 Summary
Submitted to NASA - 1998**

In August of 1998, the partners and affiliates of New Mexico Space Grant Consortium(NMSGC) held a strategic planning conference to develop a strategic plan, which would guide our activities through the year 2004.

The National Space Grant College and Fellowship Program legislation was designed to broaden the base of universities and individuals contributing to, and benefitting from, aerospace science and technology. The national program was designed to ultimately contribute to the development and utilization of space resources.

Awareness of the national objectives guided NMSGC's efforts in creating a future for New Mexico that:

- promotes programs that support research in both undergraduate and graduate education
- creates programs that make a difference in student lives
- stimulates interest and learning in science
- improves pre-college and higher education classroom learning
- increases diversity in the workforce
- impacts all four years of higher education and graduate school
- stimulates student interest to pursue graduate school

Our external global assessment surveyed what has happened in the last five years in order to assess the basis for understanding large global forces and their potential to impact our programs in the next five years.

These forces, both human and material include:

- the internet
- advances in computing
- global connectiveness through microwave links
- transgenetics
- patenting of living organisms
- growth of the launch industry
- poor access to technology for education

In consideration of our national objectives and global forces impacting our organization, the partners and affiliates developed the following goals and objectives to guide NMSGC's work over the next five years.

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Goal #1 - Research:

Continue research with strong student involvement which supports NASA's strategic enterprises (Space Science, Mission to Planet Earth, Human Exploration and Development of Space, and Aero-Space Technology).

Objectives include:

- Increase student participation in faculty research
- Continue NMSGC Research Enhancement Program
- Submit proposals to the New Mexico State Legislature to expand funding for research
- Support the dissemination of research results
- Disseminate benefits of research to citizens of New Mexico
- Provide links to NASA data for high school research projects

Goal #2 - Education:

Increase interest and learning, within the education systems, in the areas of science, engineering, technology, and mathematics, using the challenges of NASA's strategic enterprises. We will increase interest and learning by improving education and by providing professional development, kindergarten through graduate school.

Objectives include:

- Increase interest and learning by improving pre-college education
- Increase interest and learning by improving undergraduate education
- Increase interest and learning by improving graduate education
- Increase interest and learning by providing professional development for faculty

Goal #3 - Public Service:

Create programs that support literacy in science, engineering, technology, and mathematics, for the citizens of New Mexico.

Objectives include:

- Disseminate benefits of Space Grant programs to the general public
- Work with university administrators as first recipients of science literacy program
- Enhance science, engineering, technology, and mathematics programs for the general public throughout New Mexico

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Strategic Plan 1998-2004 Summary
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These goals and objectives support NMSGC's mission:

- To encourage New Mexicans to participate in the economic, educational, and scientific benefits of aerospace
- To establish commonalities among the programs of consortium partners
- To enrich the educational process of all New Mexico students at all levels of instruction by creating programs and funding research that will encourage students to pursue aerospace science, engineering, technology, and mathematics careers

Major points of the Mission include:

- Strong K-Ph.D science, engineering, technology, and mathematics education program
- Encourage and recruit women, minorities, and first generation students into science, engineering, technology, and mathematics careers
- Network with universities, museums, state/local governments, and school district science, engineering, technology, and mathematics programs
- Integrate and develop aerospace science, engineering, technology, and mathematics, in the everyday life and development of all New Mexicans

Annual Assessment:

The assessment component of the NMSGC programs will include:

- Annual review by the advisory board regarding how objectives within each goal are progressing as outlined in the Five Year Timeline developed at the strategic planning conference
- Annual colloquia at each partner university will determine progress of research funded by Space Grant

DESIRABLE FUTURE

What is the desirable future of Space Grant for the next 5 years (2004) given the data on the wall? This is the future we want to create for ourselves. The future we are willing to work for.

- NMSGC has statewide visibility
- Continuity and bridges from kindergarten to Ph.D
- Include families who want to learn (parents exposed)
- Selectivity - with limited resources
- More minorities and women participate
- Facilitate scholarships
- Focus on education
- More hands on activities in classroom
- All of New Mexico is aware and involved in NMSGC activities
- Accountability feedback
- Get funding from State legislature (25% - 35% increase)
- Spaceport succeeds with McDonald Douglas venture support
- Focal points for our jobs
- Partnership with administration in of school systems
- Scholarships by demonstrated ability throughout New Mexico - advertise results of research
- Student Launch projects to continue into other expanded projects
- Teachers are more able to get more access to more students and resources necessary to create success
- Appreciation of science and math for all students K thru 12
- Appreciation of utility of space in forwarding science and technology
- Explore ways to involve local businesses in Space Grant
- Continuing education for teachers
- Support innovate research and technology that would bring space science into New Mexico
- Provide intern experiences for all levels
- Money is channeled to students
- Scholarships to all based upon merit
- Space station experiment availability
 - 2 per year high school
 - 2 per year college
- Research moves into the classroom and classroom moves into the workplace
- Federal labs including White Sands Missile Range become stronger because they interact with the education community and vice versa
- Increase knowledge and skills in mathematics and least 25%
- Create an interest in space for K - 12 students
- Component explores impact of science and technology on society
- Expand web page
- Space Grant has impact on individual lives
- Space Grant has statewide visibility

Desirable Future continued

- Get parents on board
- Some linking of Space Grant to national labs and NASA
- More students involved throughout state
- Increased funding allows more student the resources they need to graduate from a university and get jobs in New Mexico

DESIRABLE FUTURE - Integrated

- Disagree: Space
- Promote programs that support research in both undergraduate and graduate education
- Create programs that make a difference in student lives
- Stimulate interest and learning in science
- Improve pre-college and higher education classroom learning
- Increase diversity in the workforce
- Impact all 4 years of higher education and graduate school
- Stimulate student interest to pursue graduate school

HISTORY

What is the history of this organization (Space Grant)? Where did the system come from and what made it look like it does today.

1988

- Space Grant established
- 21 Space Grant Consortia
- \$275 K total budget
- \$100 K to scholarships

1989

- Funded December 1989

1990

- Pat & Judy came on
- Got money
- Western Regional Meeting - at Johnson's Space Center
- NASA - must get more women and minorities involved
- UNM became a partner
- Logo developed

1991

- New Mexico Tech became a partner (did summer bridge programs)
- UNM
 - Program 25,000 for K-12 activities
 - Short courses for teachers
 - State-wide design projects - competition
 - Invited to Conference
 - Scholarship program established thru Pd.D. program
 - Faculty POC
 - Guidelines developed
 - 2-3 under grads and 3 grads
 - R.A.B. Board established
 - Space outreach committee established (Statewide)
- NMSU Summer Institute
 - Systemic Initiative K-9
 - Space Center - Teacher resource centers and materials
 - SCIAD

HISTORY

1992

- New offices - Space Grant COE fund remodeling of Wells Hall
- Working with High Schools
- No central focus
- Summer institute
- Teachers workshops
- Outreach for schools

1993

- NASA starting to get national agendas for education
- Space Grant limited \$ for K-12 to 20% of total budget
- HQ funding to support consortium management system
 - \$30,000
- Additional funding from NSF, Business (\$100 K)
- Dona Ana Branch , Santa Fe Community, SIPI, Public schools, Tech all became Partners
- 5 - Year Review
- Brought Dave Westpfahl in as new director at Tech

1994

- First strategic planning conference
- New goals
- Advisory panel
- Met Paul Arthur
- Student launch project focused outreach
- Tech
 - Started scholarship fellowship program
 - 2 under and 2 grads
 - Started a course in image processing (physics and E.E.), physics and non linear math (fractals)
 - Marketable skills for graduates, theory + applied
- Courses that Space Grant supported in higher education
- Funding under grad research
- Brought in New Mexico Highlands - Scholarships only

1995

- Launch Project (First at White Sands)
- Taught first class in Physics at Mayfield and Oate High Schools
- UNM
 - Changed scope to space technology
 - Next generation launch system
 - Thermal Physics Conference
 - Asked to comply with new NASA guidelines

History - Continued

1995 (Continued)

- Space and nuclear science for educators course
 - Focus on a number of topics
 - Limit lectures
 - No Equations
 - Lesson Plans
 - Maximize hands on
- Santa Fe - Women in Science Program
- Dona Ana Branch Community College - continued scholarship program, developed survey industry for Aerospace Degree
- New Mexico Highlands continue scholarship program
- New Mexico Museum of Natural History funded earth science
- Steve Horan - NMSU - taught first E.E. payload class
- Launch Projects in Las Cruces, Bernalillo, Tularosa and Alamogordo
- Mission to Mars with SIMSE
 - PBL Just-In-Time learning

1996

- Tech
 - Concentrated on faculty breadth (2 members)
 - Used Adm. funds to support a visiting professor
 - Student retention and achievement
 - Launch Project
 - Williamsburg, VA conference - national Space Grant Conference
 - Working Tularosa, Alamogordo, Bernalillo P.S
 - Western Regional meeting in Santa Fe (brought consortia from all over US)
 - Got home page up
 - Teacher Resource Center came on line accessible Statewide
 - Study said engineering students need management skills
 - New Mexico Tech started launch project for triggering lightning
 - Started working with Farmington High School, Dora, Van Horn

1997

- Wyoming organized Distance Education Conference
- CMIS Reports placed on web
- Marsville Project, Starshine
- New Mexico Tech course became a permanent
- Started working with Highlands on project
- NASA gave additional funding that was used for research
- Albuquerque schools had crystalline space project
- Reported to Spaceport Commission

History - Continued

1998

- Strategic Planning Conference
- Entering freshmen scholarships available
- NASA undergraduate student funded
- Recruit and train minority students
- Mentoring and tutoring for all students in program
- Undergraduate student research project
- Pat got selected as Director

KEEP/CREATE/DROP

What do we want to keep doing, start doing, stop doing?

Keep

- Making special courses using NASA images
- Offering innovative courses
- Launch Project
- Design competition
- Current partners
- Research enhancement
- Everything that serves the desirable future and create list
- K-12 programs support higher educations through resources and teacher preparation
- Continuing education in-service and pre-service
- Creating scientific literacy for mainstream population
- Faculty based research with strong student involvement

Drop

- Goal 6-Satellite teacher resource center
- Goal 4-A.A. degree program
- Goal 3-Expand funding

Create

- Impact first 2-years science/engineering curriculum
- Impact the second 2-years (post-grad)
- Seek out agents of change (evolving mission - visionaries)
- Impact educators preparation K-12
- Professional development (follow-on symposia, conferences, short courses)
- Link with relevant externals Apache Point, TDRSS, Phillip's Lab, LANL, Sandia, WSTF, etc.
- Link CTEP other SMET Programs
- Collaborate
- Links with professional Societies: SHPE, MESA, MAES, AISES, SACNAS, SWE, and other national tech societies
- Integrate activities throughout the state

GOALS

Create goals which will guide us for the next 5 years. Keep in mind the goals must be attainable, measurable, reflect the organization as it can be, specific .

Research

Continue research with strong student involvement which supports NASA's strategic enterprises.

Education

Increase interest and learning, within the education systems, in the areas of science, engineering, technology, and mathematics, using the challenges of NASA's strategic enterprises. We will increase interest and learning by improving education and by providing professional development, kindergarten through graduate school.

Public Service

Create programs that support literacy in science, engineering, technology, and mathematics for the citizens of New Mexico.

NASA's Strategic Enterprises include;

- Space Science
- Earth Science Systems
- Human Exploration and Development of Space
- Aero-Space Technology

GOAL: RESEARCH

Goal: Research

Continue research with strong student involvement which supports NASA's strategic enterprises (Space Science, Mission to Planet Earth, Human Exploration and Development of Space, and Aero-Space Technology).

Objective: Increase student participation in faculty research

Tasks:

1. Recruit more students to participate in research
2. Recruit faculty with research projects
3. Provide flyers and recruitment tools to faculty for student recruitment
4. Support faculty to mentor students doing research

Objective: Continue NMSGC Research Enhancement Program

Tasks:

5. Update the RFP for proposals
6. Review the submitted proposals
7. Disseminate the research results on the Space Grant Web Page.
8. NMSGC staff write proposals to external agencies to increase funding.
9. NMSGC staff write proposals to the Legislature.

Objective: Submit proposals to the New Mexico State Legislature to expand funding for research.

Tasks:

10. Partners write letters of support
11. Advisory Board to assist in this effort.

Objective: Support the dissemination of research results

Tasks:

12. Create Space Grant fellows page
13. Create web page for publication of research results
14. Students will submit research reports html formatted
15. Support student and faculty travel to present published papers
16. Consider statewide symposium - See Education #7

Objective: Disseminate benefits of research to citizen of New Mexico

Tasks:

17. Create html ready documents

Objective: Provide links to NASA data for high school research projects

Tasks:

18. Recruit high schools to participate with Space Grant

INTEGRATION

Goal: Research

Continue research with strong student involvement which supports NASA's strategic enterprises (Space Science, Mission to Planet Earth, Human Exploration and Development of Space, and Aero-Space Technology).

OBJECTIVES & TASKS	WHO	WHEN
<p>Objective: Increase student participation in faculty research</p> <p>Tasks:</p> <ol style="list-style-type: none"> 1. Recruit more students to participate in research 2. Recruit faculty with research projects 3. Provide flyers and recruitment tools 4. Support faculty to mentor students doing research 	<p>Dave</p> <p>Larry</p> <p>Mohammed</p> <p>Greg</p> <p>Adrian</p> <p>Bill</p> <p>Elba</p>	<p>1998-2000</p> <p>1998-2000</p> <p>1998-2000</p> <p>1998-2000</p> <p>1998-2000</p> <p>1998-2000</p> <p>1998-2000</p>
<p>Objective: Continue NMSGC Research Enhancement Program</p> <p>Tasks:</p> <ol style="list-style-type: none"> 5. Update the RFP for proposals. 6. Review the submitted proposals. 7. Disseminate the research results on the Space Grant web page. 8. NMSGC staff write proposals to external agencies to increase funding. 9. NMSGC staff write proposals to the Legislature. 	ALL	Ongoing
<p>Objective: Submit proposals to the New Mexico State Legislature to expand funding for research.</p> <p>Tasks:</p> <ol style="list-style-type: none"> 10. Partners write letters of support. 11. Advisory Board to assist in this effort. 	<p>Paul</p> <p>Pat</p> <p>Jean</p> <p>Judy</p> <p>Hugh</p> <p>Larry</p> <p>Mohammed</p> <p>Dave</p>	Ongoing
<p>Objective: Support the dissemination of research results</p> <p>Tasks:</p> <ol style="list-style-type: none"> 12. Create Space Grant fellows page 13. Create web page for publication of research results 14. Students will submit research reports html formatted 15. Support student and faculty travel to present published papers 16. Support dissemination of Research Results 	<p>Mohammed</p> <p>Dave</p> <p>Larry</p> <p>ALL</p>	Ongoing

INTEGRATION - Continued
Goal - Research

<p>Objective: Disseminate benefits of research to citizen of New Mexico</p> <p>Tasks:</p> <p>17. Create html ready documents</p>	<p>ALL</p>	<p>Ongoing</p>
<p>Objective: Provide links to NASA data for high school research projects</p> <p>Tasks:</p> <p>18. Recruit high schools to participate with Space Grant</p>	<p>Hugh K-12 Debbie K-12 Jean K-12</p>	

SKILLS MATRIX

<p>○ = No Skill ✓ = Skill ✓✓ = Can Teach + ✓ = Knows Resource</p>
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GOAL: Research

SKILL	TASKS	PH	JM	JW	ES	AH	GR	SC	MEG	DW	BW	LS	BT	DP	PA	HM	VA	JD
Designing Research Projects (K-12)	17	✓✓	✓	✓	○	○	○	✓	✓✓	○	○	+ ✓		✓	○	✓✓		+ ✓
Write Proposals	5-6-9-10-11	✓✓	✓✓	○	✓✓ + ✓	✓✓	✓	○	✓✓	✓✓	✓✓	✓		✓	+ ✓	✓		○
Knowledge of Word Processing and HTML	7-12-13-14-16-17	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓	✓	✓	+ ✓	✓		✓ + ✓	+ ✓	✓✓		○
Knowledge of PR, Advertising, and Marketing	1-2-3-7-12-13-18	✓✓	○	○	○	✓	✓	✓	✓	○	○	○		✓	○	✓		✓
Knowledge of NASA's databases	18																	

Skills added after conference

SKILL	TASKS	PH	JM	JW	ES	AH	GR	SC	MEG	DW	BW	LS	BT	DP	PA	HM	VA	JD
Recruit students & faculty to participate in Research	1-2-16-18																	
Mentor student doing Research	4-16																	

GOAL: PUBLIC SERVICE

Goal: Public Service

Create programs that support literacy in science, engineering, technology, and mathematics, for the citizens of New Mexico.

Objective: Disseminate benefits of Space Grant programs to the general public.

Tasks:

1. Invite individuals to NMSGC activities to increase science literacy, support, and collaborations.
2. Advertise NMSGC activities and coordinate public service announcements of NMSGC activities, celestial events, scholarships, etc.
3. Enhance the NMSGC web page/CD ROMS
4. Disseminate information about NMSGC activities on NASA select

Objective: Work with university administrators as first recipients of science literacy program.

Tasks:

5. Talk with university administrators about NMSGC's efforts to increase science literacy.
6. AAAS "Science for All Americans" to all administrators

Objective: Enhance science, engineering, technology, and mathematics programs for the general public throughout New Mexico.

Tasks:

7. Create a speakers bureau
8. Work with museums
9. Increase participation in science fair
10. Get involved with career fair
11. Collaborate with 4-H, boy scouts, girl scouts, and extension programs
12. Check to see if Los Alamos is still doing summer education programs for teachers
13. Continue the Science Advisor's Program
14. Offer hands-on science activities at the malls
15. Create a statewide space day
 - a. All students gather data on same day around State
 - b. Create web site
 - c. Scientist on site to answer questions on collection day
16. Collaborate with Boeing Space Lab

INTEGRATION

Goal: Public Service

Create programs that support literacy in science, engineering, technology, and mathematics for the citizens of New Mexico.

OBJECTIVES & TASKS	WHO	WHEN
Objective: Disseminate benefits of Space Grant programs to the general public		
Tasks: 1. Invite individuals to NMSGC activities to increase science literacy, support for SG activities, and collaborations with other programs. Invite the following to SG activities: families, media, general public, legislators, officials, clubs, other programs. SG activities include: colloquiums, Launch Project, competitions, conferences. Purpose: To increase science literacy, increase support for SG activities, increase collaborations between SG and other programs.	Pat Joylynn Hugh Debbie Jean Mohammed Bill Winn Larry Velia	1998-2004 1998-2004 1998-2004 1998-2004 1998-2004 1998-2004 1998-2004 1998-2004
Tasks: 2. Advertise NMSGC activities and coordinate public service announcements of NMSGC activities, celestial events, web site, scholarships, Science Fair , etc.	Pat Velia	1998-2004
Tasks: 3. Enhance the NMSGC web page Create Web Page/CD ROMS Hot links on map of New Mexico All partners will create their own homepage& link to NMSGC NMSGC main office will provide template All scholars will submit reports html format	Adrian Hugh Greg Velia	
Task: 4. Disseminate information of NMSGC activities on NASA Select.	Mohammed Pat	Ongoing
Objective: Work with university administrators as first recipients of Science Literacy Programs.		
Task: 5. Talk with university administrators about NMSGC's efforts to increase science literacy	Pat Velia	Ongoing

OBJECTIVES & TASKS	WHO	WHEN
6. Distribute AAAS "Science for All Americans" to all administrators		
Objective: Enhance science, engineering, technology, and mathematics programs for the general public throughout New Mexico.		
Task: 7. Create a Speakers Bureau	Pat Mohammed	Ongoing (1999) Ongoing
Task: 8. Work with museums	David Mohammed Jean	Ongoing
Task: 9. Increase participation in Science Fair	Larry Mohammed Judy	
Task: 10. Get involved in high school Career Fairs	Debbie	
Task: 11. Collaborate with public groups(4-H, Boy Scouts, Girl Scouts, Extension Programs, etc.)	Pat Joylynn Hugh Debbie Jean Mohammed Bill Winn Larry	1998-2004 1998-2004 1998-2004 1998-2004 1998-2004 1998-2004 1998-2004 1998-2004
Task: 12. Continue the SCIAD program	Hugh Pat	Ongoing Ongoing
13. Check to see if Los Alamos is still doing summer education programs for teachers.		
Task: 14. Offer hands-on activities at Malls	David Mohammed Jean	Ongoing
Task: 15. Create and provide leadership for a statewide space day; Hook up with Astronomy Day; Coordinate with Science Olympiad and Space Design Competition a. All students gather data on same day around State b. Create web site c. Scientist on site to answer questions on collection day	Paul Jean Mohammed Larry	

OBJECTIVES & TASKS	WHO	WHEN
<p>Task:</p> <p>16. Collaborate with Boeing Space Lab Keep in touch with Boeing Space lab event in Albuquerque in order to assist in publicizing statewide JSC</p>	<p>Mohammed Pat</p>	

SKILLS MATRIX

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GOAL: Public Service

SKILL	TASKS	PH	JM	JW	ES	AH	GR	SC	MEG	DW	BW	LS	BT	DP	PA	HM	VA	JD
Public Relations	1-2-5-6-7-8-9-10-11-13-14-15-16	✓✓	○	✓	✓	○	○	✓	✓	○	○	✓ + ✓		✓	○	○		✓
Web Site Authoring	1-2-3-9-13-15	+ ✓	○	○ + ✓	✓	✓✓	✓✓	✓✓	○	+ ✓	+ ✓	✓ + ✓		+ ✓	+ ✓	✓ + ✓		○
Create Exhibits	5-12	+ ✓	✓	✓	✓	○	✓	○	✓	✓	✓	✓		✓ + ✓	+ ✓	✓		+ ✓
Public Speaking	4-7-8-9-10-13	✓✓	✓	✓	✓	✓✓	+ ✓	✓	✓	✓	✓	✓ + ✓		✓ + ✓	✓	○		✓ + ✓
Hands-On Activities	8-10-12-13-15	✓✓	✓✓	✓	✓	○	✓	○	✓✓	○	✓✓	✓		✓✓	○	✓✓		✓ + ✓
Program Coordination	1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16	✓✓	✓✓	✓✓	✓	✓	✓	○	✓✓	✓	✓	✓ + ✓		✓	✓	○		○
Advertising/Marketing	11-15	✓✓	○	○	○	○		○	✓	○				+ ✓		○		○

GOAL: EDUCATION

Goal: Education

Increase interest and learning within the education systems, in the areas of science, engineering, technology, and mathematics, using the challenges of NASA's strategic enterprises. We will increase interest and learning by improving education and by providing professional development, kindergarten through graduate school.

Objective: Increase interest and learning by improving pre-college education.

Tasks:

1. Implement a mentoring program at all academic levels
2. Create excitement in the elementary students in the areas of science, engineering, technology, and mathematics
3. Retain interest of middle school students in the areas of science, engineering, technology, and mathematics
4. Provide summer research opportunities for high school students
5. Continue the statewide Student Launch Project
6. Develop a visiting student program for high school students
7. Host a statewide Space Grant competition
8. Create a summer academy for K-12 educators, students, and mentors

Objective: Increase interest and learning by improving undergraduate education.

Tasks:

9. Create an introductory, freshmen university course that would be interdisciplinary, hands-on, with iterative problem solving
10. Offer research opportunities for students
11. Implement a mentoring program
12. Organize space games/Olympics/odyssey/space day
13. Provide summer research opportunities for students at NASA and national laboratories

Objective: Increase interest and learning in higher education by improving graduate education.

Tasks:

14. Offer technical and scientific workshops for graduate students
15. Support attendance at conferences and publishing
16. Implement a mentoring program
17. Support student research
18. Support speakers

Objective: Increase interest and learning by providing professional development for faculty.

Tasks:

19. Promote and augment multimedia presentation in the classrooms through ITV - consider short course for faculty
20. Offer workshops to educators for continuing education

INTEGRATION

GOAL: Education

Increase interest and learning, within the education systems, in the areas of science, engineering, technology, and mathematics, using the challenges of NASA's strategic enterprises. We will increase interest and learning by improving education and by providing professional development, kindergarten through graduate school.

OBJECTIVES AND TASKS	WHO	WHEN
Objective: Increase interest and learning by improving pre-college education.		
Tasks: 1. Implement mentoring program (cascade) at all levels Assure statewide access representation to mentors Research mentoring Create matches of students with mentors in High School; create e-mail lists; visits	Mohammed Jean Debbie Sam Larry	1999
Task: 2. Create excitement in the elementary students in the areas of science, engineering, technology, and mathematics	Joy Mohammed	1999
Tasks: 3. Retain interest in middle school students in the areas of science, engineering, technology, and mathematics Role models from high school and undergraduate students and principle investigators Speakers Travel of students and teachers to research sites	Jean Sam	1999
Tasks: 4. Provide summer research opportunities for high school students Science projects based on undergraduate college research.	Debbie Hugh Mohammed Pat	1999
Tasks: 5. Continue the statewide Student Launch Project	Paul Hugh Debbie Joylynn Jean Judy Velia	1999

OBJECTIVES AND TASKS	WHO	WHEN
<p>Tasks:</p> <p>6. Develop a visiting student program for high school students to visit universities, research site, etc.</p>	<p>Debbie Judy Jean Mohammed Velia</p>	<p>1999</p>
<p>Tasks:</p> <p>7. Host a statewide Space Grant Competition - SEE also Research #16 Link with Mohammad's competition Link with WERC, AMP, CETP, for competitions Network of students Mentors (SCIAD??), other</p>	<p>Mohammed Hugh Pat (Available to all)</p>	<p>Ongoing</p>
<p>Tasks:</p> <p>8. Create a Summer Academy for K-12 Educators & Students and Mentors</p> <p style="text-align: center;">BIO</p> <p>K-12 Educator</p> <p>Student</p> <p style="text-align: center;">MATH ME</p> <p style="text-align: center;">Multi disciplinary (hosted by multiple organizations) WSTF</p>	<p>Elba- Lead Pat Judy Paul Dave Larry Debbie Jean Velia</p>	<p>2000</p>

OBJECTIVES AND TASKS	WHO	WHEN
<p>Objective: Increase interest and learning by improving undergraduate education.</p> <p>Tasks:</p> <p>9. Create exciting introductory freshmen level university course for export to other universities Freshman/Sophomore: retention motivation survival skills career development innovative courses Viewing a Wider World (V.W.W) interdisciplinary hands on iterative problem solving focus on space science Intro - no pre-req develop math and communication skills (Ex: W.A.C. or V.W.W.) feed into SG projects</p>	<p>Elba - Biology Mohammed</p> <p>Adrian - RFP</p> <p>Larry Greg Pat Debbie Jean</p>	<p>2000</p> <p>1999</p>
<p>Task:</p> <p>10. Offer research opportunities for students</p>	<p>Dave Larry Mohammed Greg Adrian Bill Elba</p>	<p>1998-2000 1998-2000 1998-2000 1998-2000 1998-2000 1998-2000 1998-2000</p>
<p>Tasks:</p> <p>11. Implement a mentoring program other students faculty</p>	<p>Mohammed Sam Larry</p>	<p>1999</p>
<p>Tasks:</p> <p>12. Organize space games/Olympics/odyssey/space day</p>	<p>Mohammed Joy</p>	
<p>Tasks:</p> <p>13. Provide summer research opportunities for students at NASA and national laboratories</p>	<p>Pat Mohammed</p>	
.		

OBJECTIVES AND TASKS	WHO	WHEN
<p>Objective: Increase interest and learning by improving graduate education</p> <p>Tasks:</p> <p>14. Offer technical and scientific workshops for graduate students</p>	<p>Mohammed Dave Pat Adrian</p>	<p>Ongoing</p>
<p>Task:</p> <p>15. Support attendance at conferences and publishing</p>	<p>ALL</p>	<p>Ongoing</p>
<p>Task:</p> <p>16. Implement a mentoring program</p>	<p>ALL</p>	<p>Ongoing</p>
<p>Task:</p> <p>17. Support student research</p>	<p>Bill Winn Dave Pat Adrian Mohammed</p>	<p>2000</p>
<p>Task:</p> <p>18. Support speakers</p>	<p>Mohammed Pat</p>	<p>2000</p>
<p>Objective: Increase interest and learning by providing professional development for faculty.</p>		
<p>Tasks:</p> <p>19. Promote and augment multimedia presentations in the classroom through ITV (Do by ITV?, Foundation funding)</p>	<p>Joylynn Greg Adrian Pat Dave Mohammed Larry Velia</p>	<p>2000</p>
<p>Tasks:</p> <p>20. Offer workshops to educators for continuing education Workshops - continuing education weekend summer vehicle tailored to level/context methods for effective teaching science topics technical accuracy in journalism (NMSGC Mentors & NMSGC Fellows)</p>	<p>Joylynn Judy Pat Mohammed Jean Hugh Velia</p>	<p>1999</p>

SKILLS MATRIX

O = No Skill ✓ = Skill ✓✓ = Can Teach + ✓ = Knows Resource

GOAL: Education

SKILL	TASKS	PH	JM	JW	ES	AH	GR	SC	MEG	DW	BW	LS	BT	DP	PA	HM	VA	JD
Team Building	5-7-12	✓✓	✓✓	✓	✓	✓	✓	O	✓✓ +✓	O	O	✓ +✓		✓	✓	✓		✓✓
Write RFP	7-8-9-14-15-17-18-19	✓✓	✓	O	✓	✓	✓	✓	✓✓	O	O	✓ +✓		O +✓	+✓	✓		O
Survey for Desirable Workshops	14-19-20	✓✓	O	✓	✓	✓	O	✓	✓	✓	O	✓		✓	O	O		O
Identify Subject Experts	14-16-20	+✓	O	O	✓✓ +✓	O	✓	+✓	✓	✓	✓	✓		✓	+✓	✓		✓✓
TV Skills & Accessibility	19	+✓	O	O	O	✓✓ +✓	O	O	✓✓	✓	O	O ✓		+✓	O	O		O
Authoring	10-14-17-19-20	+✓	O +✓	✓	✓	✓✓ +✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓			✓ +✓	✓		O
Public Relations	2-3-5-7-8-10-12	✓✓	O	✓	✓	✓	O	✓	+✓	O	O	✓		✓	O	O		O
Ability to ID Mentors	1-2-3-11-16	✓✓	✓	O	✓✓ +✓	Subj Dep.	✓	O	+✓	O	O	✓		✓	✓	✓		✓✓

SKILL	TASKS	PH	JM	JW	ES	AH	GR	SC	MEG	DW	BW	LS	BT	DP	PA	HM	VA	JD
Research Successful Mentor Program	1-2-3-11-16	✓✓	✓	O	✓	✓	✓	O	✓	O	O	✓ +✓		✓	O	O		O
Recruit for Summer Academy (a) participants	8	✓✓	✓✓	✓✓	✓ KR	✓	O	✓	+✓	+✓		O +✓		✓	✓	✓		✓
Recruit for Summer Academy (b) instructors	8	✓✓	✓✓	✓	✓ KR	✓	O	+✓		+✓		✓ +✓		✓	✓	✓		✓
Can be a research advisor to high school students (a) H.S. partner	8	+✓	✓	O	O	✓	✓	O	✓	O	O?	✓ +✓		✓	+✓	✓✓		
Can be research advisor to high school students (b) Univ. partner	8	✓✓	✓	O	✓ +✓	✓✓	✓	+✓	✓	+✓	O?	✓		✓	+✓	O		✓
Can be a research advisor to high school students (c) Industry/lab partner	8	+✓	✓	✓	O		✓	+✓	✓	O	O	O		O	✓	✓✓ +✓		
Student Launch Rockets (a) Building	5	✓✓	✓✓	✓✓	O	✓	O	O	✓	✓✓	✓✓	O		✓✓	+✓	✓✓ +✓		✓
(b) Designing	5	+✓	✓✓	✓	O	O	O	O	✓	✓✓	✓✓	O		+✓	+✓	✓✓ +✓		✓

SKILL	TASKS	PH	JM	JW	ES	AH	GR	SC	MEG	DW	BW	LS	BT	DP	PA	HM	VA	JD
(c) Launching	5	+ ✓	✓✓	✓✓	O	✓	O	O	✓	O	✓✓	O		+ ✓	+ ✓	✓✓ + ✓		✓
Multimedia Presentation	19	+ ✓	O	✓	O	✓✓ + ✓	✓✓	O	✓✓	O	O	O + ✓		O + ✓	+ ✓	✓		O
Write Curriculum	14-19-20	✓	✓ ✓	O	✓✓ + ✓	✓✓	✓	O	✓	✓	✓	✓ + ✓ ✓ + ✓		✓	O	✓		✓✓ + ✓
Workshop Presentation	14-19-20	+ ✓	✓ ✓	O	✓✓ + ✓	✓✓	✓	✓	✓✓	✓	✓	✓		✓	✓	✓		✓✓ + ✓
Quality of Material Subject Experts	14-18-20	+ ✓	O	O	✓✓ + ✓	O	O	O	✓	✓		+ ✓ ✓		✓	✓	✓		✓ + ✓

CONSTRAINTS - OVERALL

What constraints will keep us from reaching our desirable future?
Look at the wall at the Keep/Drop/Create lists.

- Single largest constraint - **weak grass roots support**
- Time
- Funding
- Lack of awareness
- Lack of information
- Lack of ideas
- Name recognition

GOAL: Public Service

Public Service

- Create programs that support literacy in science, engineering, technology, and mathematics for the citizens of New Mexico.

CONSTRAINTS

- Articulating the benefits of NMSGC to the general public
- Making NMSGC benefits dynamic/visual/multimedia/hands-on
- Time/existing workload
- See small steps vs. large change
- Geography
- Apathy

STRATEGIES FOR PUBLIC SERVICE CONSTRAINTS

- Articulating the benefits of NMSGC to the general public
No strategies
- Making NMSGC benefits dynamic/visual/multimedia/hands-on
No strategies
- Time/existing workload
Collaboration
Delegation
- See small steps vs. large change
No strategies
- Geography
Collaboration
Delegation
Communications
Video Conferencing
\$\$\$
- Apathy
No strategies

CONSTRAINTS

GOAL: Research

Research

Continue research with strong student involvement which supports NASA's strategic enterprises

CONSTRAINTS

- Availability of well-prepared students who are US citizens
- Students doing space research
- U.S. citizenship requirements
- Large number of pre-existing faculty commitments
- Funding

STRATEGIES FOR RESEARCH CONSTRAINTS

- Availability of well-prepared students who are US citizens
 - K-12 outreach
 - Talk to student
 - Effective advertising
- Students doing space research
 - K-12 outreach
 - Talk to student
 - Effective advertising
- U.S. citizenship requirements
 - K-12 outreach
 - Talk to student
 - Effective advertising
- Large number of pre-existing faculty commitments
 - Increase number of faculty involved in Space Grant
- Funding -
 - Adequate?
 - Possible termination?
 - Importance of flexibility in use of funds including research enhancement

CONSTRAINTS
GOAL: Education

Education

Increase interest and learning, within the education systems, in the areas of science, engineering, technology, and mathematics, using the challenges of NASA's strategic enterprises. We will increase interest and learning by improving education and by providing professional development, kindergarten through graduate school

CONSTRAINTS

- Time to participate
- Network, hire education coordinator, volunteers, have more student participation
- Administrative infrastructure (at universities)
- Surround, shmooze, isolate, I.D., conquer, allies, ignore
- Resistance to change
- Educate, absorb, inform, present an organized professional program, market it!
- \$\$\$ \$\$\$

STRATEGIES FOR EDUCATION CONSTRAINTS

- Time to participate
No strategies
- Network, hire education coordinator, volunteers, have more student participation
No strategies
- Administrative infrastructure (at universities)
No strategies
- Surround, shmooze, isolate, I.D., conquer, allies, ignore
No strategies
- Resistance to change
No strategies
- Educate, absorb, inform, present an organized professional program, market it!
No strategies
- \$\$\$ \$\$\$
No strategies

ADVISORY BOARD

H E	1999	2000	2001	2002	2003
Principal	Mohammed Adrian	Mohammed Adrian	Mohammed Adrian	Bill Winn	Bill Winn
Alternate	NMSU Greg Reynolds Highlands Larry Svem	Greg R Larry S	Greg R Larry S	Dave W.	Dave W.
Military P Principal	Paul Arthur	Paul Arthur	Paul Arthur		
Alternate	Hugh				
Student P	Samantha				
A					
K-12					
Principal	Jean	Jean	Jean		
Alternate	Debbie	Debbie	Debbie		