New Directions in Astronomy and Astrobiology

Dr. Donald K. Walter, PI

MUCERPI 2003 Award

South Carolina State University

Objectives

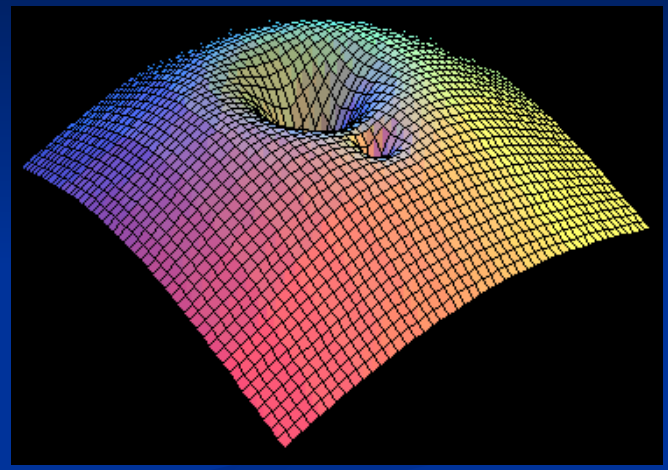
1. Create an astronomy minor that attracts biology students as well as traditional physics majors
2. Enhance faculty research in astronomy & astrobiology
3. Develop & implement a multi-grade-level program of space science activities for grades 6-16
4. Workshops & mentorships for in-service teachers
5. Develop new or enhance existing partnerships with NASA missions, centers and laboratories as well as other Federal laboratories and space science organizations

SCSU

- MUCERPI 2000 award
- Enrollment of 4,200
- 95% are African-American
- 1,100 in STEM fields
- No STEM grad programs
- Focus on undergrads

SCSU Team

- Dr. Jennifer Cash
  - CoI for Astronomy
- Dr. James Payne
  - CoI for Student Research
- Dr. Linda Payne
  - CoI for Outreach
- Dr. Judith Salley
  - CoI for Astrobiology

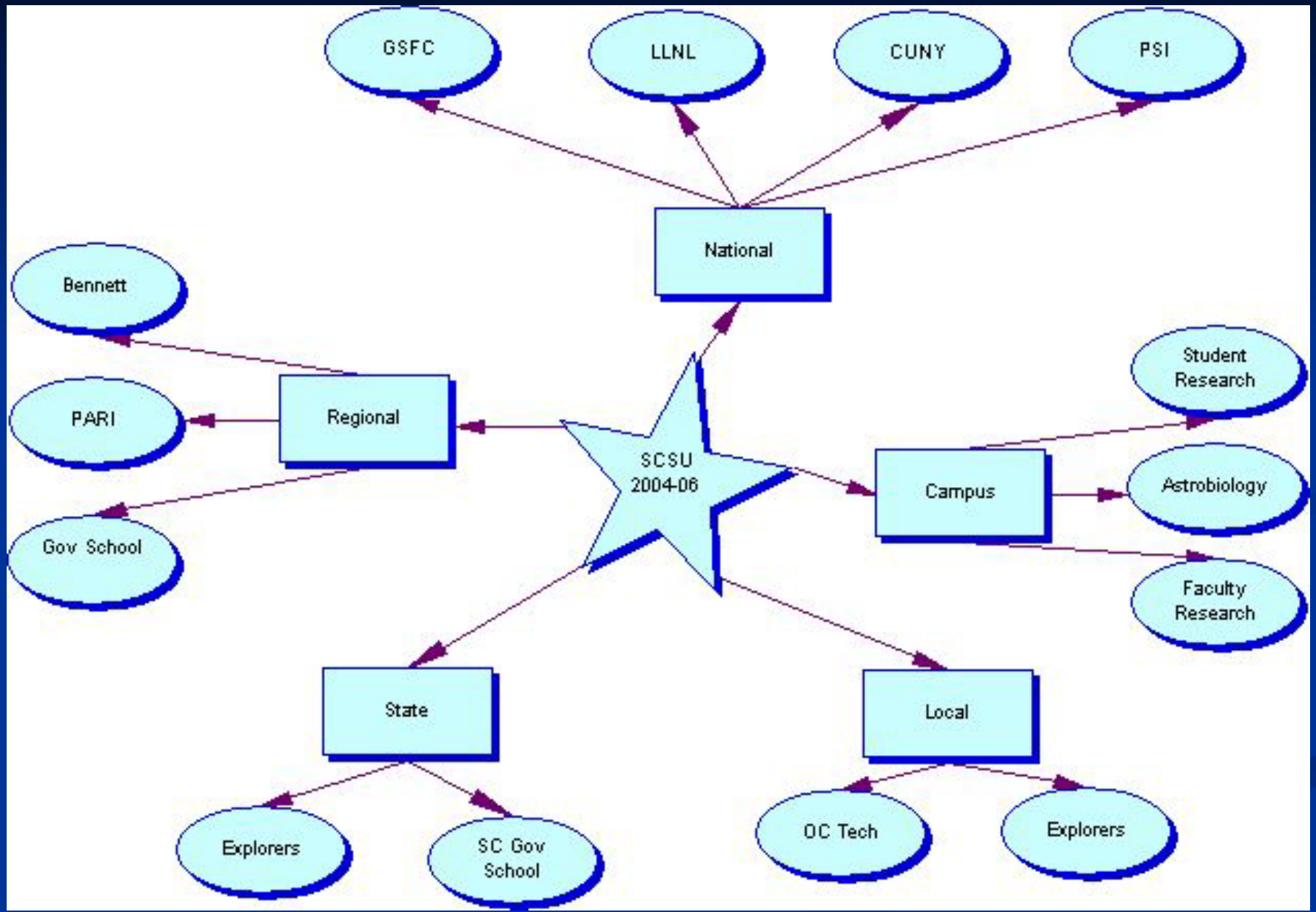


Partners

- Goddard Space Flight Center
  - Drs. M. Mumma, T. Gull, M. Still
- Bennett College
  - Dr. B. Bell
- Lawrence Livermore National Lab
  - Drs. K. Reed, D. Dearborn
- Planetary Science Institute
  - Dr. D. Davis
- Medgar Evers College (MUCERPI 2000, 2003)
  - Drs. L. Johnson, S. Austin

Partners

- Pisgah Astronomical Research Institute
  - Dr. M. Castelaz
- NASA Explorer Schools in South Carolina
  - Drs. C. Down, S. Tonnsen & Ms. S. Watts
- South Carolina Governor's School for Science and Mathematics
  - Dr. C. Randolph
- Orangeburg-Calhoun Technical College
  - Dr. W. Tobin


GSFC
LLNL
CUNY
PSI
National
Bennett
PARI
Regional
Gov School
SCSU
2004-06
Student
Research
Campus
Astrobiology
Faculty
Research
State
Local
Explorers
SC Gov
School
OC Tech
Explorers

Activities

- Develop & implement astronomy minor
- Recruit biology majors as well as physics majors to NASA Astrobiology Academy, NAI summer internships, etc.
- Recruit faculty to participate in NASA faculty programs (e.g. NFFP, NAI sabbatical)
- Faculty research collaborations with GSFC, LLNL, PSI
- Faculty research or curriculum collaborations with Bennett, Medgar Evers, others

Activities

- Summer internships for undergrads
  - at SCSU, PARI, GSFC
  - radio astronomy, astrobiology of comets, computational astrophysics, studies of the interstellar medium
- High School student-faculty team projects in summer & academic year
- Explorer school teacher workshops
- Explorer school student science projects
- Explorer school family observing sessions

Outcomes

- 2-3 faculty involved in astrobiology (by Yr 3)
- 2-3 new physics minors per year (by Yr 3)
- 2-4 peer reviewed faculty publications per yr in astrophysics
- 6-10 undergraduate internships per yr
- 2-4 high school internships per yr
- 10 middle school teachers receive training per yr
- 20 middle school student science projects per yr
- 400 students & parents attend observing night per yr