SERCH Annual Progress Report – 2002

Submitted
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From
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To
Dr. Philip Sakimoto
NASA Headquarters
Office of Space Science
SERCH ACCOMPLISHMENTS IN 2002

SERCH Announcement of Opportunity 2002
SERCH set aside $45,000 in funding to support education/outreach initiatives that increase the awareness and understanding of the four major scientific themes/forums of NASA's OSS. Grants were competitively awarded for a period of one year in amounts ranging from $5,000 to $10,000. The AO was released through our Space Grant network, each SERCH state's Department of Education, Science Liaisons in our region, NSTA’s Building a Presence for Science points of contact within our region, and to our SERCH contact database of regional educators.

SERCH received 16 Letters of Intent from AL, AR-2, DC/MD-2, DE, FL, GA, KY, LA, MS, SC-3, TN and VA, and 10 proposals from AL, DC/MD-2, DE, FL, GA, KY, MS, SC and TN. Each state Space Grant ranked their top 5 proposals and forwarded them to SERCH by May 3rd. SERCH convened an external board of reviewers composed of scientists and educators to review the top proposals for the region and select the final awards. Award notifications were sent on May 15th, 2002 to the District of Columbia, Kentucky, Mississippi, South Carolina, and Virginia. Following is a brief summary of the AO.

Brief Overview
SERCH has set aside $30,000 from its budget to support education/outreach initiatives that increase the awareness and understanding of the four major scientific themes/forums of NASA's OSS:

SERCH is particularly interested in proposals for education/outreach efforts that establish strong and lasting partnerships between the space science and education communities and that support the education mission of the OSS and NASA's Education Program. Grants will be awarded for a period of one year in amounts ranging from $5,000 to $10,000. Inter-disciplinary teams involving both scientists and educators are strongly encouraged to apply.

Eligibility
- Scientists/Educators who work in one of the sixteen SERCH/Space Grant states.
- Scientists/Educators who are working toward education reform particularly at the pre-college level.
- Scientists/Educators who are interested in space science, including mathematics and/or technology.
- Team members must be US citizens and associated with an organization. No grants will be made to individuals.

Applying
If you are interested in applying for funding for the 2001 SERCH Announcement of Opportunity, please visit the SERCH website at: http://serch.cofc.edu/serch/ao2001.htm or expand the attached AO2001pack.

SE Space Grant Meeting
Cassandra attended the annual Southeast regional Space Grant meeting at Marshall Space Flight Center, January 23-25, 2002. She presented a summary of SERCH activities over the last year to the Space Grant directors and participated in strategy and planning discussions with the participants regarding future joint research and education / training collaborations.

Broker Retreat
Cassandra and Don attended the Broker Retreat at the Lunar and Planetary Institute in Houston in early February. Cass helped to organize and facilitate this meeting with Lynn Narasimhan (DePaul), Terry Teays (Origins), and Phil Sakimoto (HQ).

STARLAB Training
SERCH, the Charleston Math & Science Hub, and Charleston County School District’s Project Inquiry hosted an all-day STARLAB training workshop, Saturday, February 2, 2002. Andy Cohen, Science Specialist at the Charleston Math & Science Hub, and Rodney Moore, Project Inquiry Middle School point of contact, lead the workshop. Once trained in one of these
workshops, educators are able to check the STARLAB out for a one-week period for use in their school. The application form is available via the SERCH web site.

**SERCH visit to Stennis Space Center, National Space Science & Technology Center, US Space & Rocket Center (AL) and Marshall Space Flight Center**

Cassandra and Kathryn made site visits to Stennis Space Center, NSSTC, US Space & Rocket Center, and Marshall Space Flight Center. SERCH, along with the Director of the Mississippi Space Grant, met with the education and technical staff at Stennis. We everyone attending gave briefings on their programs current and upcoming projects and activities, we concluded the day in their technology center to organize an action plan to continue working with one another. We then traveled to Huntsville, AL to meet with staff at NSSTC, the US Space & Rocket Center, Marshall Space Flight Center and the Alabama Space Grant. Similarly we each gave short briefings on our projects and discussed how we could work more collaboratively in our mutual state(s). Also, while in Alabama we secured dates and a training site for our Exceptional Needs Workshop: Phase 2 – Technology (see above description). Both site visits proved to be very useful and promising for future collaboration with our NASA colleagues.

**2002 NASA ERCN Training Conference**

Cassandra and Patricia Moore (retired SC School for the Deaf & Blind educator), presented three tutorials at the 2002 NASA ERCN Training Conference, May 8-10. The focus of their presentations was on using space science educational materials with adaptations for students with exceptional needs. Each ERCN director was provided with a copy of a Braille Tactile Map of the Solar System, the Dynamic Sun CD, and a tactile model of the Solar System.

Mary Dussault (SEU) provided an introductory discussion of size & scale, and history of the Universe and Bill Waller (NESSIE) brought his solar telescopes for us to observe the sun's activity in real-time. Cathy Clemens (NESSIE) provided assistance throughout the day and with the arrangements. Additionally, Jaclyn Allen and Kay Tobola assisted from NASA's Johnson Space Center/ Astromaterials Research & Exploration Science (ARES). Leveraged funding was provided by a separate OSS grant, outside of the SERCH grant to help support travel and materials for this workshop.

**SERCH Exceptional Needs Workshop and Mini-Awards**

SERCH set aside $42,000 in funding for each SERCH member Space Grant consortium to select one Exceptional Needs educator in their state to attend Phase 2 of the Exceptional Space Science Materials for Exceptional Students: Technology workshop. The workshop was held at the National Space Science & Technology Center in Huntsville, AL, June 2nd – 5th, 2002. We hosted two special training events at the US Space & Rocket Center, on the afternoon of Sunday, June 2nd and Monday, June 3rd. Collaborating on this workshop were SERCH, the AL Space Grant, NSSTC, the US Space & Rocket Center and Marshall Space Flight Center.

Funding in the amount of $3000.00 was awarded to each SERCH member Space Grant office to support the selected educator’s travel and time to the workshop. Any remaining funds are being used by the educator to support a small informational workshop for other special needs educators in their state to help build a local support network. In addition, the funded educator will agree to become a member of the extended SERCH Exceptional Needs Advisory Board and a point of contact to SERCH, their State Space Grant office and the state’s Exceptional Needs community. Details may be viewed at: [http://serch.cofc.edu/serch/tech.htm](http://serch.cofc.edu/serch/tech.htm)
Participants assumed a variety of roles during the three-day workshop, among which include: total blindness, cataracts, color blindness, glaucoma, loss of peripheral vision, 20/400; 20/400; tunnel vision; hemiplegic; paraplegic, quadriplegic, multiple motor disabilities, ADD/ADHD, varying degrees of hearing impairments; and various verbal communication impairments.

As a result of this simulation, both the educators and NASA education product developers gained a much greater awareness of the variety of needs to be addressed. A summary report with suggestions for working with Exceptional students on space science materials is being prepared based on direct feedback from the workshop participants.

General Recommendations for Product Developers:
- Use sans-serif fonts
- Use of a few bright colors is good
- Use of moderate-size fonts is good
- Use of higher contrast colors for background/foreground/font is best
- Be concise; offer a glossary of terms and acronyms

**Special Needs Resource Group [SNRG]**

The development of the Special Needs Resource Group [SNRG - pronounced “synergy"] took place at the SERCH Exceptional Needs Workshop II in Huntsville, AL this past June. At this meeting the group proposed to become a resource group for OSS educational product developers. In particular, SNRG proposed reviewing existing and/or future OSS education products to for use in special needs settings and if necessary, would make recommendations for adaptations or modifications to the products so that they are more accessible to special needs audiences.

SNRG is now taking a more concrete form. At the August Support Network meeting in Baltimore SNRG received a nod of approval from Jeff. Keeping up the momentum, Cassandra appointed Troy Cline (SECEF) and Kathryn Guimond (SERCH) as co-leads for SNRG. Troy and Kathryn have been working together to discuss the best way to work collectively with SNRG members and OSS product developers. Elaine Lewis has provided invaluable suggestions and ideas on how to bring SNRG in on the product review process. Troy visited SERCH in September to work with Kathryn on the purpose/goals of SNRG and soliciting confirmation of membership to SNRG.
ESRI Conference
SERCH attended ESRI’s 2nd Annual Education User Conference and the 22nd Annual ESRI International User Conference, in San Diego, CA, July 5-12. SERCH attended a number of presentations lead by GIS users / professionals who are working with education and science data from across the nation. More than 11,000 GIS professionals were present at the conference this year.

SERCH OSS Resource Locator
SERCH demonstrated a beta version of the new OSS Resource Locator at July’s Ed Council Meeting. The OSS Resource Locator is a powerful, internet-based mapping application that provides site visitors with a wealth of information. Populated with NASA OSS data, the Resource Locator allows visitors to: create custom maps, perform data queries, download customized data sets, save mapping projects, create/print/save maps, change data symbols/colors/sizes . . . just to name a few. SERCH is currently making efforts to develop a larger OSS Resource Locator that will target three separate audiences: NASA/OSS Management, OSS Support Network, and the public. In order to accomplish the task, SERCH will convene a users group in order to define and prioritize the data, to make recommendations on useful search and display formats, and to identify and locate data and to strategize the means by which to obtain the data.

The beta version of the OSS Resource Locator can be found at: http://maps.roktech.net/serch/ (username = guest, password = guest) or by navigating to the ‘Resource Locator’ section of the SERCH web site at http://serch.cofc.edu/serch/ .

SERCH OSS Resource Locator Users Group Meeting
SERCH will be hosting a small OSS Resource Locator user’s group meeting in Charleston, SC, November 8-9. This meeting will serve to define a baseline system and set of data for (a) NASA/OSS Management; (b) OSS Support Network; and (c) the public. In consultation with HQ, this small working group of 7-9 members shall represent a cross-section of OSS, the OSS Support Network, and our anticipated user community.

As a reminder: The beta version of the OSS Resource Locator can be found at: http://maps.roktech.net/serch/ (username = guest, password = guest) or by navigating to the ‘Resource Locator’ section of the SERCH web site at http://serch.cofc.edu/serch/

South Carolina NEW Workshop
Cassandra and Linda Payne helped to organize and represented SERCH and SC Space Grant at the SC NEW workshop at NASA Langley, Hampton, VA, August 3-9. The goal of this workshop was to strengthen connections and collaborations between NASA and South Carolina’s education community, businesses, and policy-makers. The objectives of this workshop are to: 1) clarify SC’s systemic initiative, 2) identify NASA facilities and programs from a systems perspective, 3) align NASA programs and resources with state-level standards-based reform initiatives, 4) reinforce the long-term Linking Leaders, 5) reinforce NASA’s position as a partner in state-based systemic improvement. The SC Team was made up of K-12, Higher-ed and informal science, geography, math and technology educators, administrators, business leaders and policy makers.

During the workshop, participants visited NASA Langley’s research facilities, discussed SC’s state systemic initiatives, examined which state systems support the systemic initiative and which NASA enterprises and education materials best support SC’s systemic initiative.

SERCH (Linda and Cassandra) is continuing to work with Andy Cohen, Charleston Math and Science Hub, to organize a pilot Distance Learning program with NASA Langley research chemists and several schools in SC. Two 45-minute classes are planned for the week of November 11 - 14. The NASA chemists at Langley will run through the lab with the classes on the first day and show how the concepts are applied in engineering with tours of their labs and demonstrations using materials they have developed. For the first day, students will be in their science lab with a television and phone line connection to LaRC. The second class will meet in their distance learning labs for 2-way video conferencing to LaRC. If this test works, we plan to be able to run a Physical Science course via Distance Learning to schools around the
state with connections to the NASA centers. Funding is still up in the air for this project.

**Space is Special - Out of this World Crystals**

SERCH and SC Space Grant have been working closely with Mike Kersjes and his Space is Special Foundation, the local school board, and 3 local schools, to initiate a pilot program in South Carolina to introduce K-12 students to hands-on space science through crystal growth experiments. Exceptional Needs classes from three schools have been volunteered to work with the Foundation to learn more about protein crystal growth, reduced gravity, materials science and space exploration. Each school will partner special needs students with gifted and talented students for mentoring and project execution.

Among the students involved at the elementary level are an orthopaedically impaired class paired with a 4th grade class. At the middle school level an eighth grade science class is paired with a middle-school special needs class, and six high-school science classes are paired with their peers with special needs.

Cassandra and a graduate student in Special Education, Mandi Simpson, have been working with the elementary school children to help them prepare for the more advanced experiments with growing rock crystals and eventually protein crystals. This past week, along with a local TV station and media representatives, Cassandra and Mandi helped the students begin their experiments and initial scientific observations.

On October 22nd, SERCH and SC Space Grant will host a ‘clinic’ at the College of Charleston for the local teachers interested in growing the protein crystals in their classes. 8th –12th grade students will have a chance to compete for 20 slots from SC to fly their experiments on board the International Space Station in late spring! Stay tuned for more info!

**SCSU Collaboration >> SERCH Minority Initiatives**

Linda & Don conducted a five-day *Space Science for Teachers* Course at SCSU, July 22-26, 2002. The course covered all of OSS with a different space science theme (e.g. SEU, SSE) presented each day. Teachers were exposed to the field of space science, were given astronomical materials and NASA resources supplied by SERCH (e.g. posters, CDs) and carried out hands-on activities that were based on the state and national science standards. A total of 54 applications were submitted and 10 teachers were selected from around the state of South Carolina. Funding for the course was supplied by NASA MU-SPIN Cooperative Agreement NCC5-534 and the Minority Initiative from OSS to SCSU, NAG 5-10145.

Linda and Don critiqued a NASA NOVA proposal by SCSU faculty members. They provided input on a number of issues including the availability and use of space science resources. The proposal is submitted in May and later announced (August) that SCSU’s proposal has been accepted. **SCSU is now a NASA NOVA school.**

Don assisted a SCSU physics faculty member in identifying speakers from the field of space science who can speak at the American Association of Physics Teachers (AAPT) national meeting in January 2003. Minority faculty members who are members of the AAPT are organizing this special session on space science.

Don met with faculty members from three other minority institutions to plan joint proposals to the Space Telescope Science Institute for use of the Hubble Space Telescope during the next cycle beginning in early 2003. These institutions include the University of North Carolina at Pembroke, Medgar Evers College and York College.

An administrator in the Orangeburg School District 5 asked Don to assist with the organization of a science club for middle school girls. A significant number of the members will be minority students. Don has suggested that the new SCSU astronomy faculty member, Dr. Jennifer Cash, be involved since she has previous experience in Wyoming with science outreach, which specifically targeted female

**Brokering**

SERCH has received many requests for assistance from recently funded science PIs interested in working on follow-up E/PO proposals. Among the OSS proposals are Mars Scout, IDEAS, and various research NRA programs.
students. Discussions are still in the early stages of planning.

Linda spent time in September working with Larry Cooper from NASA HQ on the details of modifying an existing OSS exhibit on minorities in space science into a format which SERCH can distribute to the K-16 community at low or no cost to the schools.

Linda is working with others (including Cassandra) on a distance-learning link to NASA Langley to connect high school physical science classes with researchers that will be a pilot program in three classrooms. A proof-of-concept test will include two 45-minute class periods in November. The teacher from the Orangeburg area is Ms. R. Ellis from Orangeburg-Wilkinson High School. She was a summer 2001 participant in the OSS-funded course at SCSU for in-service teachers entitled “Space Science for Teachers”.

Don attended an Astrobiology Strategy Session for minority universities held at the Goddard Space Flight Center (GSFC) September 18-20, 2002. The session was hosted by the Minority University Space Interdisciplinary Network (MU-SPIN). Speakers from NASA HQ, GSFC, NASA Ames and other participants in the NASA Astrobiology Institute provided background material to the attendees. Don, like all of the representatives of the minority institutions, gave an oral presentation, which provided the participants with an overview of SCSU and its NASA programs. Representatives from nine minority institutions present at the session (including SCSU) are in the process of forming a collaboration with a focus on the area of astrobiology.

OSS Minority Universities Initiative Conference
Donald Walter and Cassandra Runyon attended the OSS Minority Universities Initiative Conference in Washington, DC, September 25-27. This conference brought together the 15 awardees of the OSS Minority University Initiative (MUI). SCSU is one of the 15 MUI awardees. Don gave both an oral and poster presentation on the status of the SCSU MUI project at the midpoint of its 3-year award. In addition to the 15 MUI PIs, speakers included Dr. Edward J. Weiler, Associate Administrator for Space Science, as well as numerous individuals from NASA HQ and the Centers.

Members of the Space Science E/PO Support Network and other attending universities participated in several roundtable discussions and brainstorming sessions. Cassandra facilitated one of these morning discussions.

Facilitating Minority Research in Astronomy
Don continued work reported previously with faculty members at minority institutions Medgar Evers College, York College and the University of North Carolina at Pembroke. They are preparing several research projects for future submission. In October, Don worked on a proposal with P. Shopbell at Caltech for observing time on the Mt. Palomar 200-inch telescope. Some of the proposed observations will include objects to be studied by the minority group listed above.

UPCOMING Strategy Session
The MU-SPIN-funded Center for NASA Research and Technology at South Carolina State University and the OSS Broker/Facilitator SERCH at the College of Charleston will co-host a Strategy Session on November 18 and 19, 2002, for teams of K-12 and university partners. The session is designed to increase minority participation in activities sponsored by NASA’s Office of Space Science.

Travel awards are available for a limited number of teams, which come from Puerto Rico, the Virgin Islands and 12 Southeastern states. More details and an application form are available at: http://www.cnrt.scsu.edu/workshops/strategy.html

OSS Ed Council Meetings
SERCH regularly attends and participates at all OSS Ed Support Network Council meetings. In addition to providing brief SERCH updates, we participate on working groups, and help to facilitate whatever / wherever we can be of assistance.
SERCH PROPOSED ACTIVITIES

SERCH proposes to continue serving as a facilitator and broker of services, and to continue as a liaison between the Southeastern region’s diverse educational communities and national scientists and engineers involved in NASA’s OSS missions and research programs. Our goals are to continue:

- developing a network of educators and researchers interested in space science (see Table 1)
- being an effective interface between researchers and educators in the area of space science
- being a primary information and resource Clearinghouse for space science data, information, and educational products (see Table 2)
- supporting OSS mission scientists in their educational outreach activities
- facilitating the modification of OSS materials to meet the needs of diverse educational environments.
- being a leader in serving minority and exceptional students and the public
- developing an accessible nationwide GIS database that provides spatially-related information of targeted NASA educational resources with links to OSS Tracking & Reporting and EDCATS

In reaching these goals SERCH continues to be a “one-stop educational service center” for the science and mathematics educators in need of space science material and space scientists needing assistance while developing educational and outreach materials. SERCH will continue to promote the development of partnerships among educators and scientists to accomplish the educational and outreach missions of the Office of Space Science and will work closely with the OSS missions, the four OSS forums, and other broker / facilitators. The development of these national and regional partnerships will create educational activities that are effective, locally useful, and yet national in scope.

SERCH will also serve as a distribution hub, working in cooperation with the new NASA Education Enterprise (Code N) distribution infrastructure, such as the Education Resource Centers (ERC’s) and CORE, to provide educators within the region with valuable national standards-based educational resources, information, and data derived from the OSS missions. In short, SERCH will continue to be a vital link between NASA, OSS and the American public in the Southeastern U.S., and will strive to be a model for other broker/facilitator initiatives and other NASA strategic enterprises. We will work closely with our partners (Table 1) for all of our efforts.

SERCH will continue to play a vital role in translating OSS mission activities to educators who can use this information to advance national standards in mathematics and science classrooms across the Southeast.

For specific information about several of these areas, see below.

SERCH INTERACTIONS WITH THE SPACE SCIENCE COMMUNITY

SERCH will continue to interact with the Space Science community as it has for the past five years. Specific examples of current and future interactions are listed below:

OSS-SPONSORED RESEARCH PROGRAMS AND MISSIONS
- Mars Scout proposal assistance
- IDEAS proposal assistance
- OSS NRA research proposal and E/PO supplement assistance
- Communication with Magellan E/PO lead
- Communication with Athena science team members and Mars E/PO personnel

OSS RESEARCH AND PROGRAM MANAGERS
- Some NRA PI’s have contacted us prior to submitting their proposals and/or upon receiving their awards
- Interaction with NSSTC and MSFC scientists
- National Scientific Meetings SERCH has attended (& presented)
- AGU, GSA, NSTA, LPSC, ASTC, ESRI
- Other meetings SERCH has attended
- OSS Minority University Conference Museum, Science Centers & Planetariums Working Group
- Community-Based Organizations Working Group
NASA CENTERS
KSC - ERCN workshop in Cocoa Beach, April 2002
MSFC – site visit, Exceptional Needs II workshop, June 2002
SSC – site visit, interaction with education office
JSC – collaborated for Exploring the Solar System workshop and GSA, May / October 2002

EDUCATION DIVISION AT HEADQUARTERS
Continuous collaboration with Space Grant network
Liaison for some earmarks in the Southeast Museum, Science Centers & Planetariums Working Group
Community-Based Organizations Working Group

NASA OFFICE OF EQUAL OPPORTUNITY PROGRAMS
GIS data
Exceptional needs efforts

COLLABORATION WITH OTHER BROKER/FACILITATORS AND THE OSS-SPONSORED EDUCATION FORUMS

SERCH will continue to coordinate and collaborate with Broker/Facilitators and Forums within the OSS Support Network. SERCH will continue to participate in four major activities that demonstrate network-wide partnering:

1) Community-based Organizations Working Group The SERCH Program Manager, Kathryn Guimond, became a core member of the community-based organizations working group June 2002. The working groups charter is to 1) inventory the groups currently being reached by NASA missions and programs; 2) explore other community-based groups that are interested in working with the support network; 3) locate research on how informal activities supplement formal education; 4) determine expected goals and outcomes; and 5) identify strategies to meet the goals. Kathryn has offered to assist in inventorying and classifying the characteristics of community groups and to assist in surveying existing research. Cassandra and Kathryn, through the community-based organizations working group have discussed working with LPI’s library program and the possibility of piloting this program in the SERCH Region.

2) Museums and Planetariums Working Group
In July of 2001, the SEU Forum invited SERCH to help develop a web site for the Informal Education community. Prior to our involvement in the project, numerous members from the OSS Support Network developed the site structure and content. The members, collectively known as the ‘Informal Education Working Group’, delivered their work to SERCH. We completed the project by implementing design concepts, programming the HTML, building the graphics, and collaborating with the SSI broker on the database development.

The following year, SERCH director Cassandra Runyon became the co-chair of the group now known as the ‘Museums and Planetariums Working Group’. SERCH recently acquired the domain names ‘spacescienceportal.org’, ‘spacescienceportal.net’ and ‘spacescienceportal.com’. We are working closely with Mary Dussault and Freeman at SAO to transfer the web site to the new URL and to upgrade the web site. SERCH continues to massage, maintain, and advertise the web site in order to suit the needs of the informal education community. Craig has been granted access to the SAO server to be able to make these changes as necessary. SERCH will continue to support this effort.

3) Geographic Information Systems User’s Group
SERCH released the new OSS Resource Locator at the NASS OSS Education Council Meeting in July 2002. The OSS Resource Locator is a powerful, internet-based mapping application that provides site visitors with a wealth of information. Populated with NASA OSS data, the Resource Locator allows visitors to: create custom maps, perform data queries, download customized data sets, save mapping projects, create/print/save maps, change data symbols/colors/sizes . . . just to name a few.

SERCH is collaborating with members of the Support Network in order to strategically plan and implement a larger OSS Resource Locator tool that will target three separate audiences:
NASA/OSS Management, OSS Support Network, and the public. In order to accomplish the task, SERCH created a GIS User's Group. The group will convene in November of 2002 to define and prioritize data for the new tool, to make recommendations on useful search and display formats, and to identify and locate data and to strategize the means by which to obtain the data. SERCH will continue to work on this effort, populate the database, and design the server interface.

4) Special Needs Resource Group [SNRG]
SERCH is working closely with the SECEF forum to develop and support SNRG and the Exceptional Needs teacher training efforts. See details below.

**SERCH INTERACTION WITH MINORITY UNIVERSITIES AND UNDERSERVED / UNDERUTILIZED GROUPS**

SERCH will continue to support the Special Needs Resource Group [SNRG].

**SNRG DRAFT PURPOSE:**
To provide OSS product developers with guidance, direction and product enhancement strategies that will improve the usability of OSS products by special needs audiences.

**DRAFT SCOPE:**
- focus on OSS products that have received 'exemplary status' from the OSS product review;
- generate effective mechanisms for product modification;
  a. develop a network of special needs educators, that may be utilized as betatesters;
  b. establish communication and ties with special needs resource providers, professional societies and organizations (i.e., American Federation for the Blind);
  c. develop a handbook of ‘best practices’ for members of the NASA OSS Education Support Network;
- provide an informational website
- form a network of educators and product developers who will continue to work together to raise awareness of special needs educational materials.

SERCH will continue to work closely with its collaborators, Donald Walter and Linda Payne, at South Carolina State University to support Minority University Initiatives.

1. Continue to offer the "Space Science for Teachers Course" for ten (10) 6-12 grade minority teachers at SCSU.

2. Modify and distribute Larry Cooper’s existing large-scale exhibit on African-Americans in Space Science to make it smaller, more potable and more appropriate to the K-12 and small college communities to which it will tour.

3. SCSU & SERCH will conduct a 1.5 day strategy session for teams of K-12 and university educators to familiarize and motivate participation in OSS research and E/PO at another minority university within the SERCH region. Attendance to be kept around 15 to enhance individual participation during the session.

4. SCSU served as a facilitator to several university-level, minority faculty groups. Including (a) assisting in identifying space science speakers for the national meeting of the American Association of Physics Teachers; (b) finding space science researchers at majority universities to collaborate with researchers at minority institutions on HST research projects.

5. SERCH (SCSU and CoF) will continue to support the development of Distance-learning between NASA centers and K-12 schools in South Carolina.
<table>
<thead>
<tr>
<th>Associates</th>
<th>Role</th>
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<tbody>
<tr>
<td>SERCH Space Grant Members</td>
<td>Act as a Clearinghouse for NASA mission data, technology and images; liaison between public, educators and NASA facilities</td>
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<tr>
<td>National Space Grant Network</td>
<td>Nationwide network of 52 state-based consultants, scientists, specialists in space exploration, science and education; contact with motivated/gifted students; provide research and teacher training through hands-on experiences</td>
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<td>Higher Education</td>
<td>Prepare students and pre-service teachers for careers in science and education; help to maintain state and national teaching standards; provide materials and exposure to data and applications; conduit for technology exchange</td>
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<tr>
<td>Business and Industry</td>
<td>Provide monetary and material support for outreach and educational efforts; provide production expertise and guidance; foster technology exchange</td>
</tr>
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<td>Museums, Planetariums, Aquariums and Science Centers</td>
<td>Informal education centers; provide non-traditional education contacts to general public, such as the Discovery Center, SC State Museum, Ft. Lauderdale Museum of Discovery and Science, South Carolina Aquarium</td>
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<td>Educator Resource Center Networks</td>
<td>Provide NASA teaching materials; additional material and information distribution network, training opportunities</td>
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<td>Aerospace Educators</td>
<td>National network of trained education specialists with a myriad of space science, mathematics and engineering backgrounds.</td>
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<td>SSI Infrastructure (Professional development)</td>
<td>Provide resources, professional development and ensure adherence to national and state education standards</td>
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<td>National and State Teacher Networks (e.g., NSTA, (SC)²)</td>
<td>National and State networks of science, math and technology teachers for dissemination of data; development and evaluation of materials; consultants; training opportunities for in-service and pre-service teachers through workshops.</td>
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<td>NASSMC, Linking Leaders</td>
<td>Growing network of state-based coalitions dedicated to enhancing education in their states through fostering better ties between business and industry, state and federal government, and educators. Provide NASA materials and help with training.</td>
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<td>SCSU – MU-SPIN Network</td>
<td>To assist in increasing the involvement of minority institutions (MI) in space science activities by using SCSU's extensive ties to the MI community. SCSU will work directly with K-16 institutions and their faculty in the region and around the country; workshops and a museum exhibit are being planned.</td>
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### Table 2. Demographics for the Southeastern Space Grant Coalition based on 2000 census data

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<tr>
<th>SERCH Member States</th>
<th>Population</th>
<th>African-American (%)&lt;sup&gt;6&lt;/sup&gt;</th>
<th>American Indian (%)&lt;sup&gt;7&lt;/sup&gt;</th>
<th>Hispanic/Latino (%)&lt;sup&gt;8&lt;/sup&gt;</th>
<th>Poverty Population (%)&lt;sup&gt;*&lt;/sup&gt;</th>
<th>Rural Population (%)&lt;sup&gt;*&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>4,447,100</td>
<td>26.0</td>
<td>0.5</td>
<td>1.7</td>
<td>16.2</td>
<td>39.6</td>
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<tr>
<td>Arkansas</td>
<td>2,673,400</td>
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</tr>
</tbody>
</table>

*(From Census 2000, US Census Bureau)

*(From March 1998 Current Population Survey)

### CHANGES IN KEY PERSONNEL

There will be no changes in SERCH personnel for the next year.

The future growth of this program may be limited by the obligations of it’s PI and staff. To ensure that we continue to strive toward our full potential, and can meet the needs of our ‘clients’, SERCH requests that NASA HQ consider a future request for SERCH to hire a full-time Ph.D. or M.Ed. staff person with experience in K-12 education and expertise in the special needs area.
BUDGET NARRATIVE

1. Personnel
The requested funds support the SERCH Director, Dr. Cassandra Runyon, at 25%, and two full-time staff members, Program Manager (Kathryn Guimond) and Web/GIS Developer (Craig Anthony). Funds are also requested for a student assistant. College of Charleston charges a 28% fringe rate for faculty and full-time employees. Students receive a maximum fringe rate of 8.55%. The total personnel request is $122,300.

2. Travel
SERCH members travel to attend meeting and conferences, and to visit SERCH collaborators. A request of $22,046 is made to support travel to such meetings as
   o National Space Science E/PO Support Network meetings
   o State Science Meetings w/in the region
   o National Space Grant Meeting
   o National Science educational organizational meetings
   o Workshop support and regional networking

3. Equipment and supplies
Upgrade and maintenance of the computer network and general office supplies will come from matching funds. Additional funds will be used to prepare a traveling display to be used at local and state science education meeting. A total of $7,000 will be used from matching funds to supply supplies and equipment.

4. Subcontracts
Funds are request to support two subcontracts: the mini-grant program ($55,000) and the minority initiative ($38,500) at South Carolina State University. The mini-grant program is a competitive grant program run in cooperation with the Space Grant network with subcontracts going to a state’s space grant consortium ($30,000 will be set aside for this initiative). The remaining $25,000 in funds from the mini-grant program will be used to run 1-2 SERCH Exceptional Needs Workshops and ongoing meetings with SNRG. South Carolina State University will receive a subcontract to fund SERCH’s minority efforts.

5. Indirect
The College of Charleston’s indirect rate is 53.5% of salary and fringe. The indirect cost for this budget is $65,430.

OFFICE SPACE - THE COLLEGE OF CHARLESTON
The President of the College of Charleston has agreed to continue to provide office space for SERCH in the Low Country Hall of Science¹. We have approximately 1000 sq ft of space to house the staff, computers, and resources, and to provide storage space for OSS educational materials. A T1 line connects the College of Charleston and SERCH to the Internet. The SERCH facility within the Lowcountry Hall of Science and Math includes the NASA Technology Computer Center, the SERCH server and our administrative offices.

The College of Charleston will continue to provide adequate university space for OSS outreach activities, including computer facilities, storage space, office space, library space, and teacher / student seminar / workshop facilities.

¹ Low Country Hall of Science consists of the Charleston Mathematics & Science Hub, Alliance for Science, Education & Technology, SERCH, Masters of Education in Science and Mathematics