

Louisiana Space Grant Consortium
Louisiana State University
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PROGRAM DESCRIPTION

The National Space Grant College and Fellowship Program consists of 52 state-based, university-led Space Grant Consortia in each of the 50 states plus the District of Columbia and the Commonwealth of Puerto Rico. Annually, each consortium receives funds to develop and implement student fellowships and scholarships programs; interdisciplinary space-related research infrastructure, education, and public service programs; and cooperative initiatives with industry, research laboratories, and state, local, and other governments. Space Grant operates at the intersection of NASA's interest as implemented by alignment with the Mission Directorates and the state's interests. Although it is primarily a higher education program, Space Grant programs encompass the entire length of the education pipeline, including elementary/secondary and informal education. The Louisiana Space Consortium (LaSPACE) is a Designated Consortium funded at a level of \$575,000 for federal fiscal year 2013.

PROGRAM GOALS

The LaSPACE Strategic Goals are formulated into five areas, consistent with the Outcomes in the NASA Education Strategic Coordination Framework. Objectives follow directly from the Goals.

LaSPACE Strategic Goal 1: *Foster aerospace related, interdisciplinary, science, technology, and engineering research and education at Louisiana colleges and universities (NASA Outcome 1).*

This goal involves (1) enhancing student and faculty research, (2) training graduate and undergraduate students, (3) providing hands-on flight opportunities, and (4) supporting student internships, competitions, and design projects.

LaSPACE Strategic Goal 2: *Encourage aerospace related industries in Louisiana for economic development and diversification (NASA Outcome 1).*

Implementation includes working with the Michoud Assembly Facility, developing interactions between industry, students, and faculty, and making information available to students.

LaSPACE Strategic Goal 3: *Promote and contribute to science, technology, engineering, and mathematics pre-college education excellence (NASA Outcome 2).*

Targeted programs for middle and high school educator training and school district programs are the main tools to achieve this goal.

LaSPACE Strategic Goal 4: *Engage and educate the general public in NASA's space exploration projects, benefits and opportunities as well as Louisiana's role in the NASA program (NASA Outcome 3).*

Informal education projects and public outreach campaigns and events contribute to this goal.

LaSPACE Strategic Goal 5: *Maintain a cooperative, effective and inclusive consortium of Louisiana institutions to promote aerospace related research, education, and economic development (NASA Outcomes 1, 2, and 3).*

This requires effective program management and communication plus increasing stakeholder involvement, e.g. through Consortium Sustaining Grants.

PROGRAM/PROJECT BENEFIT TO OUTCOME (1, 2, & 3)

Supported by a LaSPACE LURA award, Clay Blanchard, an Undergraduate Mechanical Engineering Student at LSU, has been working in Dr. Adam Baran's lab on the investigation of using frozen propellants in launch vehicles. In addition to the hands-on research experience Clay has attained in the lab, LaSPACE also supported his attendance at two meetings to present his work. In FY 2013, Clay presented a scientific poster at the LaSPACE annual meeting in New Orleans in September and at the National Space Grant Director's meeting in Charleston, SC in October. The opportunity to participate in professional meetings and network with his peers, as well as graduate students and faculty from across the country has solidified Clay's commitment to pursuing an advanced degree. Specifically, Clay made connections with faculty in North Carolina and Alabama, where he intends to apply to a summer research program and graduate program respectively. *(Aligned with NASA Outcomes 1 & 2)*

The Louisiana Aerospace Catalyst Experiences for Students (LaACES) project offers students a true hands-on experience with project management, experiment development, payload construction, and data collection, analysis, and interpretation. LaACES students also learn to properly document the project lifecycle and give professional presentations of their findings. This project continues to attract participants at institutions across the state. Students from LSU, UNO, LaTech, Southern, and Grambling participated at some level during the 2012-13 academic year. These same campuses, as well as McNeese University (a recently reactivated consortium member), Loyola, and Xavier are actively participating in 2013-14. In addition to attracting a new crop of students annually, some campuses are retaining student experts to serve as peer mentors and advanced participants. Specifically, students from the 2012-13 UNO team have returned to form an advanced LaACES team, as well as to supervise and guide an additional team of new students for the 2014 launch. *(Aligned with NASA Outcomes 1 & 2)*

The LaSPACE-funded Sci-Botics Teacher Education Program administered by our affiliate Sci-Port, offers professional development for in-service teachers, helps to advance middle-school STEM curricula, stimulates student participation in science competitions, and creates partnerships among formal and informal education communities. In partnership with Barksdale Airforce Base, Sci-Port trains middle school teachers from Bossier Parish in robotics technology and in the development of a science pedagogy that uses robotics. Teachers incorporate robotics into their curriculum, students then compete in the regional LEGO NXT competition, and Sci-Port offers interactive exhibits of the types of robotic instruments produced by the students. This is the second year LaSPACE has funded this program. This year 40 middle school teachers were trained and are currently implementing their training in the classroom. (*Aligned with NASA Outcomes 2 & 3*)

PROGRAM ACCOMPLISHMENTS

ALIGNED WITH NASA OUTCOME 1

LaSPACE Strategic Goal 1: Foster aerospace related, interdisciplinary, science, technology, and engineering research and education at Louisiana colleges and universities (NASA Outcome 1).

Objective 1 – Enhancing student and faculty research

Research Enhancement Awards (REA): The primary goal of the REA program is to provide seed funding to affiliate faculty to develop new research projects and/or directions, obtain special training, and foster new collaborations among the campuses as well as with NASA centers, other federal labs, and the aerospace industry. During FY2013, we were able to issue five (5) new awards to researchers from three institutions (LSU, Nicholls, and ULL). The projects will investigate a range of areas including the development of detection of ground-level terrestrial gamma flashes, stability guaranteed fault tolerant flight control technology for safer aircraft systems, novel sensors for health monitoring, high-capacity cathode materials for superior lithium-ion batteries in space systems, and examination of impact response of aluminum foam sandwich panels. Four of the five projects included budget lines for student researchers; we anticipate at least 3 graduate students and 3 undergraduate students will participate in these research projects.

Note: The accomplishments included below under objective two are also relevant to supporting student research experiences for both undergraduate and graduate students.

Objective 2 – Training graduate and undergraduate students

Undergraduate Students: Between our LaSPACE Undergraduate Research Assistantship (LURA) and Scholars programs, we significantly supported 16 new students. We issued five (5) new LURA awards to undergraduate students working in labs across the following disciplines: Electrical Engineering, Mechanical Engineering, Physics, and Astronomy. LaSPACE continued to fund the Scholars program via the ongoing Timbuktu academy at Southern University in Baton Rouge. Of the 23 students currently enrolled,

11 new scholars received direct support via the Scholars program. Final collection of data for longitudinal tracking of previously funded students is still in progress.

Graduate Students: Eleven (11) graduate students from three affiliate institutions (LSU, LaTech, and ULL) received support as Fellows or GSRA awardees during the past year. We extended seven (7) previously established fellowships; two of those seven were partial extensions for students expected to graduate during this academic year. No new fellowships were available for 2012-13. We awarded four new (4) GSRAAs. GSRAAs are supplemental awards meant to support graduate students with the cost of research materials and travel to conferences and scientific meetings. These 11 awards meet our goal for supporting graduate students. Final collection of data for longitudinal tracking of these students is still in progress.

Objective 3 – Providing hands-on flight opportunities

Student Ballooning: The LaACES student ballooning project continued training students and had a successful launch trip in May of 2013. Two balloon flights were launched (ACES-34 & ACES-36) and 16 students from LaTech, LSU, SUBR and UNO launched payloads. Additional students from LSU, UNO, LaTech, Southern, and Grambling participated at some level during the 2012-13 academic year. These same campuses, as well as McNeese University a recently reactivated consortium member, Loyola and Xavier, are actively participating in 2013-14. Payloads are currently being designed across participating campuses for a May 2014 launch campaign.

LaSPACE, in conjunction with the NASA Balloon Program Office (BPO), conducted its 8th successful HASP (High Altitude Student Platform) flight. HASP is designed to carry up to twelve student payloads to an altitude of about 36 kilometers with flight durations of 15 to 20 hours using a small volume, zero pressure balloon. It is anticipated that the payloads carried by HASP will be designed and built by students and will be used to flight-test compact satellites or prototypes and to fly other small experiments. HASP 2013 launched at 8:57 am on September 2, 2013 carrying 12 student payloads involving 101 students (95 undergrad; 6 grad student) from 11 jurisdictions (AZ, PA, MN, MT, IL, MA, ND, FL, CO, LA, & P.R.). Two LSU project teams were included in this year's flight, involving 8 students (7 undergrads; 1 grad student). The flight lasted nearly 10.5 hours and was terminated just west of Phoenix, AZ at 9:25 pm.

Objective 4 – Supporting student internships, competitions, and design projects

Senior Design: LaSPACE is currently supporting active Senior Design projects at two affiliate campuses, ULL and LaTech. The Mechanical Engineering Senior Design Team at ULL will work on a project as part of the University's goal of establishing an on-going presence at ARLISS (A Rocket Launch for International Student Satellites) held in Nevada every September. The LaTech senior design team is comprised of three students in the Electrical Engineering Department and their project plan is to automate fabrication of superconductor filaments in support of advanced space-borne propulsion applications at the request of researchers at the Propulsion Research Lab in Huntsville, AL.

LaSPACE Strategic Goal 2: Encourage aerospace related industries in Louisiana for economic development and diversification (NASA Outcome 1).

Requested and sponsored by Lockheed Martin, the LSU College of Engineering is organizing a pilot outreach event on campus called LSU Space Day on March 28, 2014. The LaSPACE management team was recently approached about this in-progress initiative, and Greg Guzik and Colleen H. Fava have subsequently joined the planning committee as consultants. We have pointed the event organizers to numerous NASA resources and we will help recruit faculty and students working on LaSPACE & EPSCoR funded programs for the research poster exhibit.

Chip Howat, Public Affairs Officer for Jacobs Technology, is based at Michoud Assembly Facility in New Orleans and is an institutional representative on the LaSPACE Council. He has offered educational tours of the facility to our university affiliates, and just last semester, Dr. Illya Tietzel of SUNO (HBCU) took him up on the offer. Three faculty members and three undergraduate students participated in a tour that included examples of the work contributing to the Space Launch System (SLS) and Orion Flight hardware.

ALIGNED WITH NASA OUTCOME 2

LaSPACE Strategic Goal 3: Promote and contribute to science, technology, engineering, and mathematics pre-college education excellence (NASA Outcome 2).

LaSPACE has once again partnered with the Texas Space Grant Program, by supporting the attendance of four Louisiana teachers at the 2013 Lift-Off workshop in Houston. This aerospace workshop emphasizes science, technology, engineering, and mathematics (STEM) learning experiences by incorporating a space science theme supported by NASA missions. Teacher participants are provided with information and experiences through speakers, hands-on activities and field investigations that promote space science and enrichment activities for themselves and others.

LaSPACE supported another iteration of The Sci-Botics Teacher Education Program offered by LaSPACE affiliate Sci-Port, Louisiana's Science Center in partnership with Barksdale Air Force Base. Educators from Bossier Parish are trained in Robotics for use in the classroom, learn about the Air Force's applied robotics and related aeronautics activities, work with their classes to develop robotics programming skills, and advise student-teams which enter regional robotics competitions. Approximately 40 educators were trained (20 beginner teachers and 20 intermediate/advanced).

LaSPACE is still actively involved with the Scotlandville Magnet High School Engineering Program (SM-HSEP), now an official Academy of Engineering. LaSPACE Manager, Colleen H. Fava, has taken Dr. Wefel's seat on the SM-HSEP Program Advisory Council. She has served on the scholarship subcommittee, where she revised application guidelines and requirements and served as one of a two-person interview committee for final candidates. Ms. Fava has also served on the annual breakfast fundraiser planning committee as the PR point person, developing the Council's PowerPoint presentation and the event program.

The LaSPACE/NASA Michoud Education Fellows (MEF) program graduated its final cadre of teachers in FY12, and is now in ‘hibernation’ due to a lack of teachers/school districts available to participate.

LaSPACE management personnel have been in communication with the lab director of the Iberville Mathematics, Science, and Arts Academy-West Aerospace Science, Robotics, Technology, and Engineering Program (MAS-West ARTE Program) about participation in the Student Spaceflight Experiments Program (SSEP) Mission 6 operated by the National Center for Earth and Space Science Education (NCESSSE), which creates and oversees national initiatives addressing science, technology, engineering, and mathematics (STEM) education, with a focus on earth and space. LaSPACE offered outreach funding in 2011 to the Zachary Community School District and are hopeful that we can support Iberville Parish this year.

ALIGNED WITH NASA OUTCOME 3

***LaSPACE Strategic Goal 4:** Engage and educate the general public in NASA’s space exploration projects, benefits and opportunities as well as Louisiana’s role in the NASA program (NASA Outcome 3).*

Museum-Based Outreach and Education within a SPACE Systems Engineering Course is a LaSPACE-funded project led by LSU Mechanical Engineering professor Michael Martin. While Dr. Martin’s university students learn the relevant design material, they will also prepare an exhibit on a current NASA space exploration mission, explaining how the systems work in a manner that can be understood by the general public. The exhibit will ultimately be installed in Sci-Port, the Louisiana Science Center, in Shreveport.

The 2014 South Central Conference for Undergraduate Women in Physics (CUWiP) was hosted at LSU this year. The South Central CUWiP was one of eight regional conferences all taking place simultaneously and organized through the American Physical Society. This event attracted around 100 undergraduate women majoring in physics from Universities across 8 states (AL, AR, LA, MO, MS, OK, TN, & TX). In addition to research talks and poster sessions, the conference featured discussion panels on applying for and succeeding in graduate school, how to get involved in undergraduate research or summer programs, and the multitude of careers available to physicists. The LaSPACE Manager, Colleen H. Fava, sat on a discussion panel about undergraduate research opportunities. Ms. Fava offered information about LaSPACE, as well as the overall National NASA Space Grant program and its presence in every state. Ms. Fava also offered an optional post-conference workshop (attended by 11 students) on how to create a professional CV and effective graduate school admissions essay.

LaSPACE helped support a major refurbishment of two telescope systems at the Highland Road Park Observatory (HRPO), an affiliate of the LaSPACE consortium. This public optical observatory, located near Baton Rouge, LA, has operated since 1997 in partnership between the East Baton Rouge Parish park system, the Baton Rouge amateur astronomer society, the LSU Department of Physics & Astronomy, and LaSPACE. The HRPO supports public views of the heavens twice a week, a Friday Night Science lecture, Saturday Science Activities for elementary and middle school children, and a

Space Camp summer program. The recent refurbishment included replacement of the obsolete telescope control systems, dome control system, instrument selector, filter wheel, and control computers, and modernizing the control software. The modernization of these two telescopes will greatly enhance public viewing and will expand the capability for student projects in conjunction with LSU observational astronomy courses.

ALIGNED WITH NASA OUTCOMES 1, 2, & 3

LaSPACE Strategic Goal 5: *Maintain a cooperative, effective, and inclusive consortium of Louisiana institutions to promote aerospace related research, education and economic development (NASA Outcomes 1, 2, and 3).*

LaSPACE has continued our Consortium Sustaining Grant (CSG) program, which aims to assist institutional coordinators in promoting LaSPACE programs on their campuses. We issued three new awards for FY 13 at ULL, UNO, and LaTech. These grants typically offer some research or outreach project component for an undergraduate student, and typically help support attendance for students and faculty at professional meetings. We hope to offer several more CSG awards in the coming year.

A number of additional efforts have been undertaken to increase participation and strengthen the network of existing affiliates in Louisiana.

- We have improved our intra-consortium communications with a streamlined and comprehensive new format for our newsletter showcasing achievements from students and faculty across the state.
- We have also fostered greater LaSPACE-ownership for institutional coordinators by asking them to more directly participate in program development and information sharing. For example, we had faculty members give original presentations on our various programs at the annual meeting.

LaSPACE has also focused on growing membership and leveraging current networks into additional opportunities.

- The Louisiana Community College system has not traditionally been well-integrated with the four-year institutions in our state. In an effort to develop a space for community college participation in LaSPACE programs, we have reached out to Baton Rouge Community College (BRCC). In January 2014, LaSPACE Directors Wefel & Guzik met with the BRCC's Dean of the STEM Division and Departmental Chairs from Math & Engineering, the Science Department, and Computer Science. We hope to welcome BRCC into our consortium sometime this calendar year.
- In the Fall of 2012, a new solicitation was released to the Space Grant Community for proposals related to STEM retention. With guidance from the LaSPACE management team, a group of affiliates located in New Orleans joined together to develop a retention program that would both capitalize on each institution's strengths as well as meet a need present at each institution. In conjunction with the management staff at LaSPACE, a strong proposal was submitted and ultimately funded as of August 2013.

PROGRAM CONTRIBUTIONS TO NASA EDUCATION PERFORMANCE MEASURES

As fiscal year 2013 is still in-progress, we are still collecting student data and even reviewing a few more project proposals that could fall under FY13. Preliminary data for FY13 shows us in-line with data from 2012. At present we have collected data on 63 newly supported students and anticipate this number will increase to 70-75 once all the data is in. The current new students are distributed as follows:

New students by Awards Category

- Fellowship/Scholarship: 20
- Higher Education: 38
- Research Infrastructure: 5

New students by Gender

- Male: 46
- Female: 17

New students by Race/Ethnicity

- White: 35
- Black: 18
- Asian: 8
- Hispanic: 1
- Pacific Islander: 1

Of the 63 new students, 22 qualify as “significant” awards and will be added to our longitudinal tracking database. Of the 22 significant awards, 12 were awarded to women and 11 to African-American students.

We currently have 73 actively tracked students (from FY12 and earlier), and anticipate that 23 of these students will have graduated within FY 2013 while 50 remain enrolled in undergraduate or graduate programs at our affiliate institutions. We are currently collecting this information for the summer reporting, and can provide an updated APD if desired.

Minority-Serving Institution Collaborations

All five MSI (all HBCU) affiliates, Xavier, Grambling State, Dillard, Southern University in New Orleans (SUNO), and Southern University in Baton Rouge (SUBR), are engaged in various collaborative efforts with Space Grant Programs.

With guidance from LaSPACE management, Xavier took the lead in establishing the New Orleans Regional Collaborative (NORC), a collective of LaSPACE affiliates in New Orleans creating an inter-university STEM retention program, successfully funded via a National Space Grant CAN. Of the 6 participating universities, 3 are HBCUs: Xavier (lead institution), Dillard, and SUNO.

All five universities are active participants on the consortium council, and as such all had faculty and student representatives at our Fall 2013 meeting. Our undergraduate student presenter during the 2013 meeting is a current Minority Scholar student studying physics at SUBR.

Xavier, Grambling, and SUBR participated in LaACES during 2012-13 and are expected to participate in the 2014 LaACES Balloon launch this May in Palestine, TX.

LaSPACE and SUBR typically support about 20-25 total students annually via the Space Grant-Timbuktu Academy Scholars; 11 new scholars are supported this year with 23 total scholars enrolled.

Our Research Enhancement Award (REA) program encourages development of proposals involving collaborative research projects between majority and minority institutions. While we did not fund a new project at an HBCU this fiscal year, Prof. Meng at SUBR just wrapped up an REA project awarded to him in the FY12 competition.

Finally, LaSPACE actively supports the predominantly minority student body of the Academy of Engineering program at Scotlandville Magnet High School in Baton Rouge, as discussed in the previous Benefits Section of this report.

NASA Education Priorities

Authentic, Hands-on Student Experiences

The core focus of the LaSPACE program continues to be student involvement in genuine scientific research and engineering projects.

Graduate students, seeking a Fellowship or GSRA support, by definition must be actively pursuing aerospace-related research. Our Minority Research Scholars and LaSPACE Undergraduate Research Awards (LURA) Programs are year-long mentored research projects in which a faculty member and a student work on a pre-approved project.

Additionally our seed-funding research programs (REA, RIG, & URP) highly encourage the inclusion of undergraduate and graduate student researchers, and, consequently, most of our funded proposals do include budget lines for student workers.

Three of our programs focus highly on hands-on building experiences. Two are subsets of our student ballooning program, HASP and LaACES, and are detailed previously in this report. The third is our Higher Education/ Senior Design program, which tends to fund two senior design engineering teams annually. Last year we supported two teams at LSU on aeronautics projects, designing and developing a micro-air-vehicle for the SAE Aero Design Competition (one team competed in the ‘Regular’ class competition and the other in the ‘Micro’ class). This year we are supporting teams at two different universities (LaTech & ULL). Descriptions were provided earlier in this report.

Diversity

Diversity is a goal for all LaSPACE activities. The consortium includes all of the state’s MSIs (HBCUs). Our base proposal’s goal was to increase minority and female student participation by 5% per year (over the FY09 base) until the Louisiana NCES targets were reached. Subsequently, we would strive to maintain or exceed those targets. Using the link to the NCES site provided by NASA, we find that, for Louisiana students, the all minority ratio is 36%. We achieved this NCES “target” last year and anticipate achieving it again this year once we close out the fiscal year and have collected all data. Similarly, for female participants, the NCES site gives a percentage in the LA student population of 40%.

The LaSPACE Council (all institutional representatives) is composed of 25 members with one current vacancy. Of those 24 active members, five institutional reps are female and three are minority. This composition remains unchanged from last year. Similarly,

the LaSPACE management team includes two females and one African-American among the five principal staff (one of which is advisory).

Enhancing Middle School Teachers' Capabilities

Middle school teachers were involved in hands-on curriculum enhancement through the Texas Lift-Off Workshop held in Houston this summer. We supported the attendance of four Louisiana teachers. Our in-state Sci-Botics program run by Sci-Port in partnership with Barksdale Air force Base, provided 40 Bossier Parish middle school teachers with hands-on robotics training and robotics curriculum development tools. Subsequent classroom projects result in classes competing in regional robotics competitions in the Shreveport, LA area. As mentioned earlier in this report, we are hoping to support the Iberville MAS-West ARTE Program for middle school students to participate in the SSEP program operated by NCESSSE.

Summer Opportunities

Summer Opportunities for enrolling freshmen are provided as part of our Scholars program at Southern University Baton Rouge. Generally, all of the Science and many of the Engineering departments at LSU and other institutions offer their own summer preparation programs to acquaint potential students with the rigors and expectations of the university experience. These are not Space Grant sponsored efforts, but LaSPACE personnel are often involved.

Community Colleges

As mentioned earlier in this report, LaSPACE Management met with Baton Rouge Community College's (BRCC) Dean of the STEM Division and Departmental Chairs from Math & Engineering, the Science Department, and Computer Science. Our goal is to have BRCC join the consortium this calendar year, and in subsequent years to recruit a Community College from the central and northern regions of the state.

Aeronautics Research

Aeronautics Research was part of LaSPACE activity this past year, even though it is normally covered by the EPSCoR program. An REA awarded last year for a "Numerical Investigation of Flapping Wing Aerodynamics" to Dr. Ning Zhang of McNeese State University is still underway; the research goal is provide the analytical framework to develop micro-air vehicles that mimic the flying motions of birds or insects.

Environmental Science and Global Climate Change

Environmental Science and Global Climate Change projects are only considered by LaSPACE if they utilize NASA unique capabilities such as satellite remote sensing or global change modeling. One project that completed this year utilized NASA and NOAA satellite data to monitor rainfall on a global basis and develop a model to predict rainfall (or lack of it) for under-developed parts of the world that may suffer severe water stress accompanying climate change.

Early Career Faculty

Early Career Faculty are called out as one of the target groups for LaSPACE research awards as well as for student support awards, with a goal to help young faculty get started. Our Research Enhancement Awards are specifically well-suited to a new researcher as they are intended as seed-grants which will ultimately lead to larger funding

opportunities. Additionally, our LaSPACE Undergraduate Research Awards are a great way to offer funding for an undergraduate researcher to work in an up-and-coming lab.

IMPROVEMENTS MADE IN THE PAST YEAR

LaSPACE Communications

“The Space Porter,” the LaSPACE newsletter was overhauled with a complete redesign (design elements, layout, and content) and now has a formalized biannual schedule in line with the academic calendar. The 2013 issues were very well received by our diverse audiences. We received complimentary notes from students, faculty, and staff with our affiliate institutions, Coordinators and Directors of our peer Space Grant jurisdictions, and NASA Headquarters. The Spring 2014 issue will be released in late March/early April and the Fall 2014 Issue should be distributed in early November.

Strengthening the LaSPACE Network

To strengthen our consortium, we are encouraging faculty across different institutions to recognize themselves as LaSPACE program-area experts. At the 2013 annual LaSPACE council meeting, we asked faculty members with varying degrees of experience to present on program areas for which they received funding. In addition to sharing the content-focus of their project, they discussed the LaSPACE/NASA SG requirements, the proposal development process, and implementation of the project. We noticed a spirit of LaSPACE-ownership among the faculty who presented that had previously been lacking and faculty in the audience expressed an interest in having these types of talks duplicated on some member campuses by region. We hope to develop such an informational series of talks in the next fiscal year.

Professional Experiences for Students

LaSPACE has also been working hard to increase student exposure to professional meetings and events. We’ve consistently increased participation in the student poster session affiliated with our annual council meeting. Approximately 32 undergraduate and graduate students gathered for the session which featured 22 posters from 11 campuses, Dillard, Grambling, LaTech, Loyola, LSU, McNeese, Southern-BR, SUNO, ULL, UNO, and Xavier, which is all of our active higher education institutions. Just before the poster session closed out our meeting, we had two student talks, one undergraduate student in our Minority Scholars program at Southern University and one of our LaSPACE Fellows, an LSU PhD candidate. We intend to make student talks a regular part of our annual meetings.

In addition to the council meeting, LaSPACE program guidelines make professional experiences for students a priority. Many of the proposals we award include budget lines for student attendance at professional meetings and conferences. Clay Blanchard, undergrad in Mechanical Engineering at LSU, presented his research at the LaSPACE Council meeting and the National SG Directors’ meeting in Charleston, and is now being nominated to compete for a presentation spot at the LSU Discover Research Day, an inaugural campus-wide undergraduate research symposium to be held in March 2014. Janice Carter, an undergraduate at Southern University of New Orleans (HBCU) has just

been accepted to present her poster, “LEGO Robotics could increase females’ interest in STEM,” at the 71st Joint Annual Meeting of the NIS and BKX, "Ensuring STEM* Preparedness to meet Global Health Challenges."

PROGRAM PARTNERS AND ROLE OF PARTNERS IN PROJECT EXECUTION

Consortium members include colleges/universities [Research Intensive (RIU); Research Active (RAU); Four year institutions (4YI)], HBCU's, business/industry partners (B/I), state education boards (Ed), and nonprofit organizations (NPO), structured as Active Members (AM), and Inactive Members (IM). The LaSPACE Council, composed of the institutional representatives from each affiliate, provides advice and direction to LaSPACE management. The council participates wholly in regular discussions via an email listserv throughout the course of the year and more formally through an annual two-day consortium meeting. In September of 2013 the LaSPACE Council meeting was hosted by the University of New Orleans (UNO). The 2013 meeting was attended by 32 faculty & staff representatives from 20 member affiliates. This year’s session also featured 32 students presenting 22 posters from 11 campuses (Dillard, Grambling, LaTech, Loyola, LSU, McNeese, Southern-BR, SUNO, ULL, UNO, and Xavier), which is all of our active higher education institutions.

Louisiana Space Grant Consortium Member List

Dillard University (Dillard)	AM, HBCU,4YI
Gordon A. Cain Center for STEM Literacy	AM, NPO
Grambling State University (GSU)	AM, HBCU, 4YI
Jacobs Technology, Inc. at Michoud (Jacobs)	AM, B/I
Louisiana Arts and Science Museum (LASM)	AM, NPO
Louisiana Board of Elementary & Secondary Education (BESE)	AM, Ed
Louisiana Board of Regents (BOR)	(Co-founding Institution) AM, Ed
Louisiana Business and Technology Center (LBTC)	AM, B/I
Louisiana State University and A&M College (LSU) (Co-founding & Lead Institution)	AM, RIU
Louisiana State University of Shreveport (LSU-S)	AM, 4YI
Louisiana State University Agricultural Center (LSU-Ag)	(Research and Extension) AM, RIU
Louisiana Tech University (LaTech)	AM, RAU
Loyola University (Loyola)	AM, 4YI
McNeese State University (McNeese)	AM, 4YI
Nicholls State University (Nicholls)	AM, RAU
Northwestern State University of Louisiana (NWSU)	AM, 4YI
Recreation & Park Commission for the Parish of East Baton Rouge (BREC)	AM, NPO
Sci-Port Discovery Center (Sci-Port)	AM, NPO
Southeastern Louisiana University (SELU)	AM, 4YI
Southern University and A & M College (SUBR)	(Co-founding Institution) AM, HBCU, RAU
Southern University of New Orleans (SUNO)	AM, HBCU, 4YI
Tulane University (Tulane)	AM, RIU
University of Louisiana at Lafayette (ULL)	AM, RAU
University of Louisiana at Monroe (ULM)	AM, 4YI
University of New Orleans (UNO)	AM, RAU
Xavier University of Louisiana (Xavier)	AM, HBCU, RAU

The National Space Grant Office requires two annual reports, the Annual Performance Data Report (APD) and the Office of Education Performance Measurement System (OEPM) report. The former is primarily narrative and the latter data intensive. Because the reporting timeline cycles are different, data in the two reports may not necessarily agree at the time of report submission. OEPM data are used for official reporting.