

LA-SiGMA RII Symposium

July 23, 2012

Louisiana EPSCoR

Research Infrastructure Improvement
Project

Year 2 Evaluation Report

October 1, 2011 – May 31, 2012

Office of Educational Innovation and Evaluation

Kansas State University



Evaluation Questions

- **Who are the Louisiana EPSCoR participants? (LA-SiGMA, Females, URM populations)**
- **To what extent are project initiatives implemented (fidelity of implementation)?**
- **What are the short-term and long-term impacts of project initiatives?**
 1. How has the multi-scale computational tools developed by LA-SiGMA transformed advances in electronic materials, energy materials, and biomolecular materials?
 2. How has expanded and enhanced computational tools created by LA-SiGMA assisted Louisiana researchers and students?
 3. To what extent have LA-SiGMA researchers established interdisciplinary and interinstitutional collaborations that enhance the work of the project?
 4. To what extent has the project contributed to a diverse and technically trained STEM workforce (**pre-college, community college, Historically Black Universities and Colleges**)?
 5. How has the project **engaged the Louisiana community** in outreach and dissemination of efforts?
 6. To what extent have sustainable **partnerships with industry** and national and international laboratory collaborators been created and expanded?
 7. To what extent has Louisiana EPSCoR been successful in enhancing the competitiveness of Louisiana research enterprises?
- **What mechanisms have been put in place to ensure continued availability and accessibility to project initiatives?**



Analysis and Data Sources

- Content analysis of project formative and summative reports
- Descriptive and content analysis of participant information collected through OASIS
- Descriptive and content analysis of LA-SiGMA Project Progress Survey
- Citation analysis of Year 1 publications
- Content analysis of observations and data collected in project meetings (PET teleconferences, Internal Evaluation Team correspondence, etc.)



Year 2 Progress

- Who are the Louisiana EPSCoR participants?
 - LA-SiGMA programs

	Year 1	Year 2	Gain/loss
LA-SiGMA Faculty	54	56	2
Post-Doctoral Students	5	10	5
Graduate Students	44	71	27
Undergraduate Students	58	67	9
Technical/Non-technical Staff	18	19	1
RII Leadership	8	8	0

By Year 3, 30% female and 15% URM graduate students.

	Year 1		Year 2	
	Female	URM	Female	URM
LA-SiGMA Faculty	13%	10%	16%	13%
Post-Doctoral Students	20%	0%	10%	10%
Graduate Students	27%	14%	24%	15%
Undergraduates	47%	54%	42%	37%
Total	27%	19%	23%	19%

Year 2 Progress

- To what extent are project initiatives implemented (fidelity of implementation)?
 - Presentations at All Hands Meeting & Annual Report:
 - Most initiatives on or ahead of schedule for proposal milestones
 - Mitigation plans provided for initiatives behind schedule on milestones
 - LA-SiGMA Project Progress Survey Module in OASIS:

Process	Outcomes	Commitment	Efficiency	Effectiveness	Productivity
4.13 (.59)	4.20 (.58)	4.49 (.64)	4.19 (.64)	4.15 (.61)	4.16 (.61)

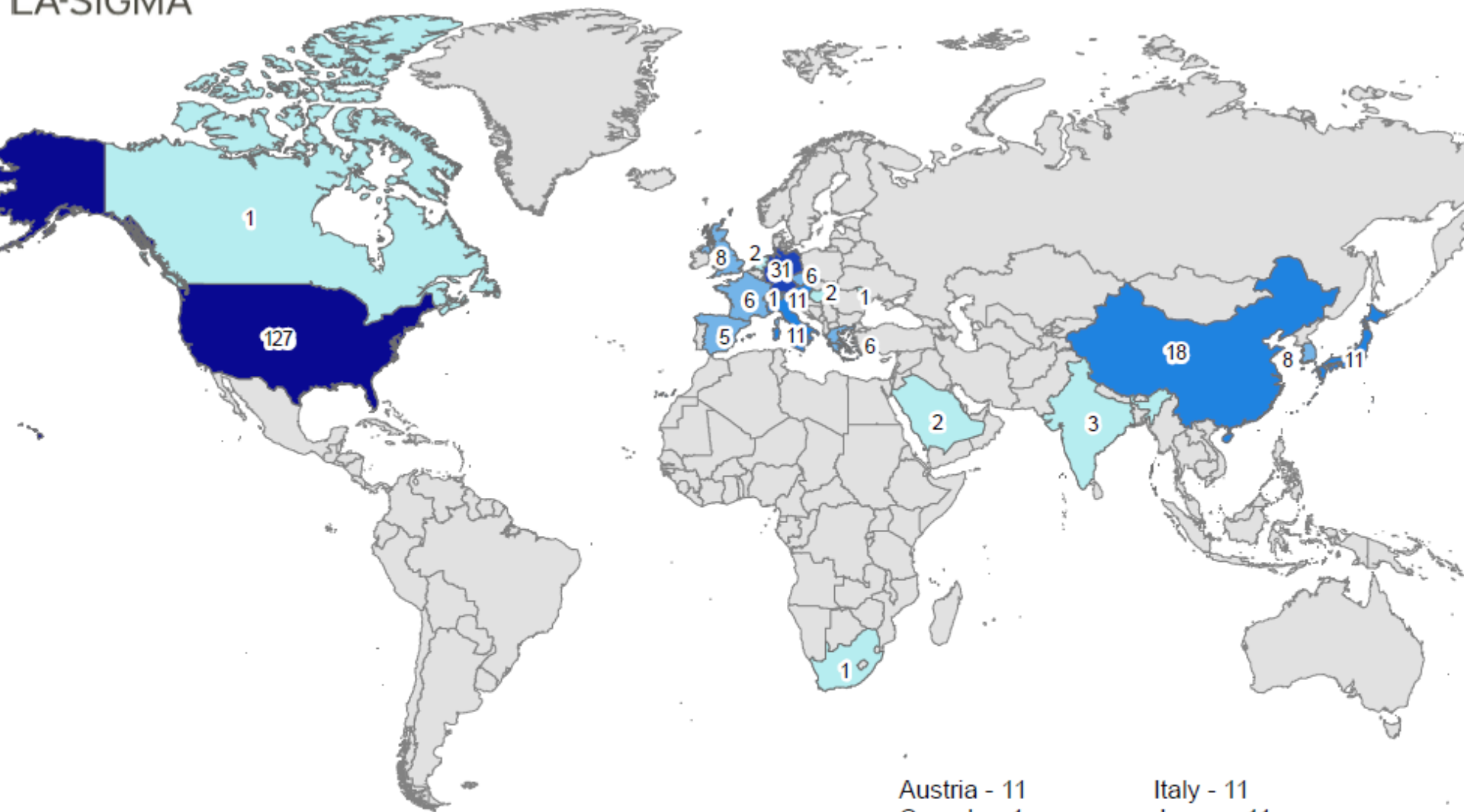


Year 2 Progress

- What are the short-term and long-term impacts of project initiatives?
 1. How has the multi-scale computational tools developed by LA-SiGMA transformed advances in electronic materials, energy materials, and biomolecular materials?

Preliminary Evidence	Number	Participants	NSF Acknowledged
Publications	Year 1 = 63 Year 2 = 51	NA	Year 1 = 70% Year 2 = 76%
Presentations	Year 1 = 106 Year 2 = 104	Year 1 = 74% invited Year 2 = 69% invited	Year 1 = 87% Year 2 = 99%
Citations of Y1 Publications	23 of 63 cited 104 times	261 authors 95 institutions	NA





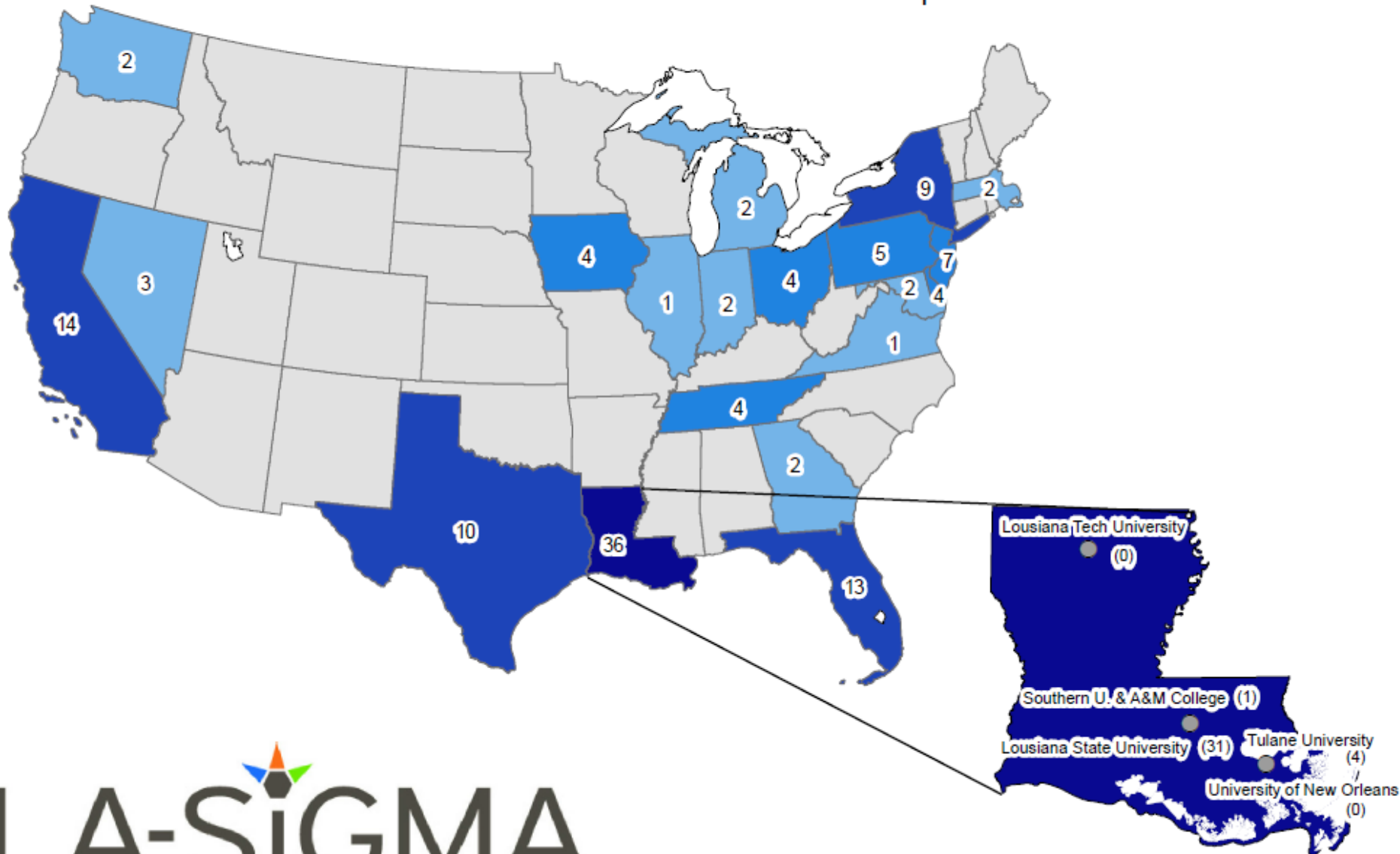
Austria - 11	Italy - 11
Canada - 1	Japan - 11
China - 18	Moldova - 1
Czech Republic - 6	Netherlands - 2
England - 8	Saudi Arabia - 2
France - 6	South Korea - 8
Germany - 31	South Africa - 1
Greece - 6	Spain - 5
Hungary - 2	Switzerland - 1
India - 3	United States - 127

Number of Authors Around the World Citing 2010-2011 LA-SiGMA EPSCoR Publications

does not include authors who cited their own publication

Number of Authors in US Citing 2010-2011 LA-SiGMA EPSCoR Publications

does not include authors who cited their own publication



LA-SiGMA

Louisiana Alliance for Simulation-Guided Materials Applications

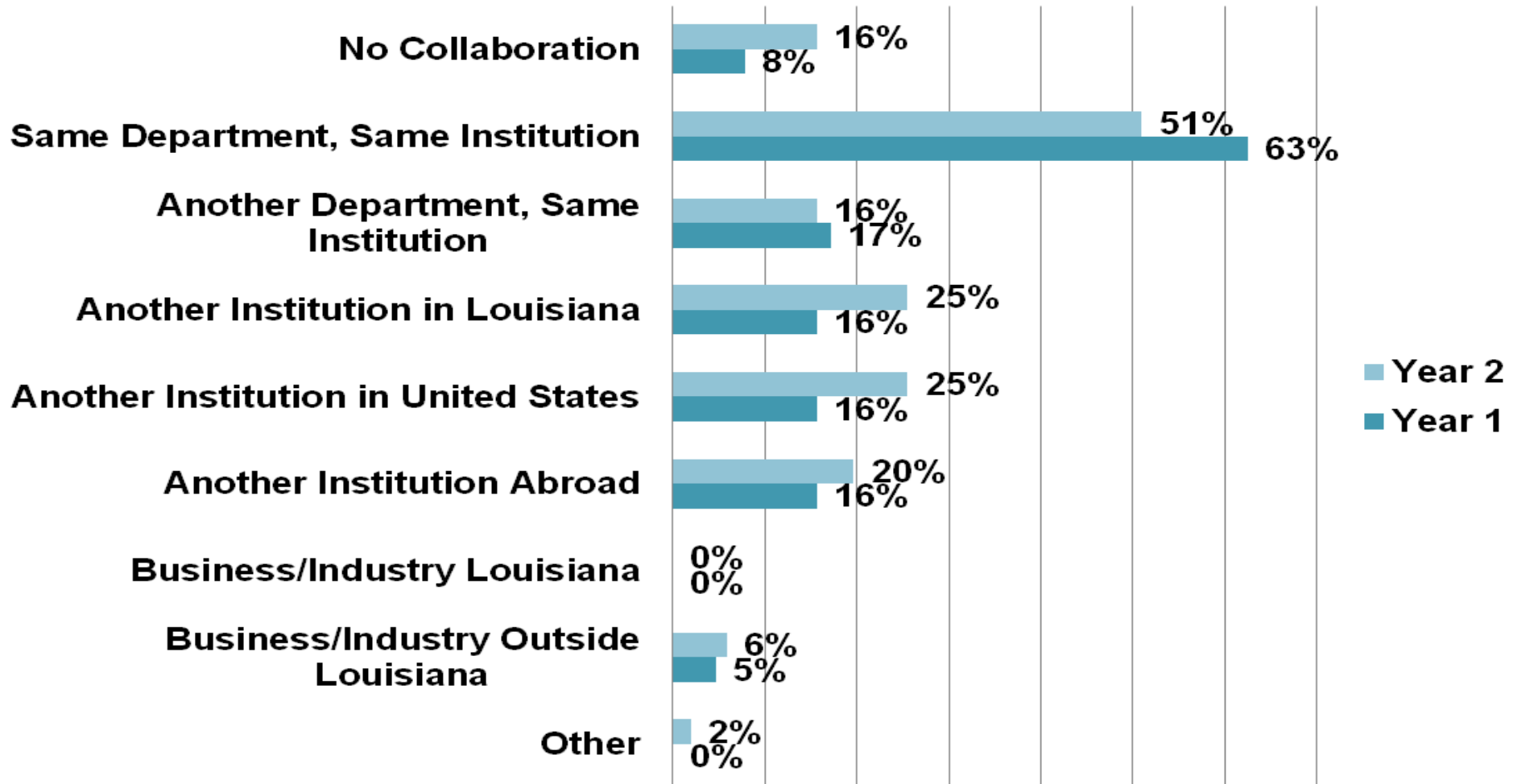
2. How has expanded and enhanced computational tools developed by LA-SiGMA assisted Louisiana researchers and students?

Research Infrastructure Tools and Platforms	Year 2
COMPUTATIONAL TOOLS	
Multi-core computers	48%
Massively parallel	44%
GPU (heterogeneous)	20%
MPI coding	21%
<p>Year 5 goal is 25% of researchers use cyber tools. Year 2 there were 61%.</p>	
PLATFORMS	
TeraGrid	12%
National SC Centers	12%
LONI (local)	38%
LONI (remote)	33%
None of the tools listed	26%



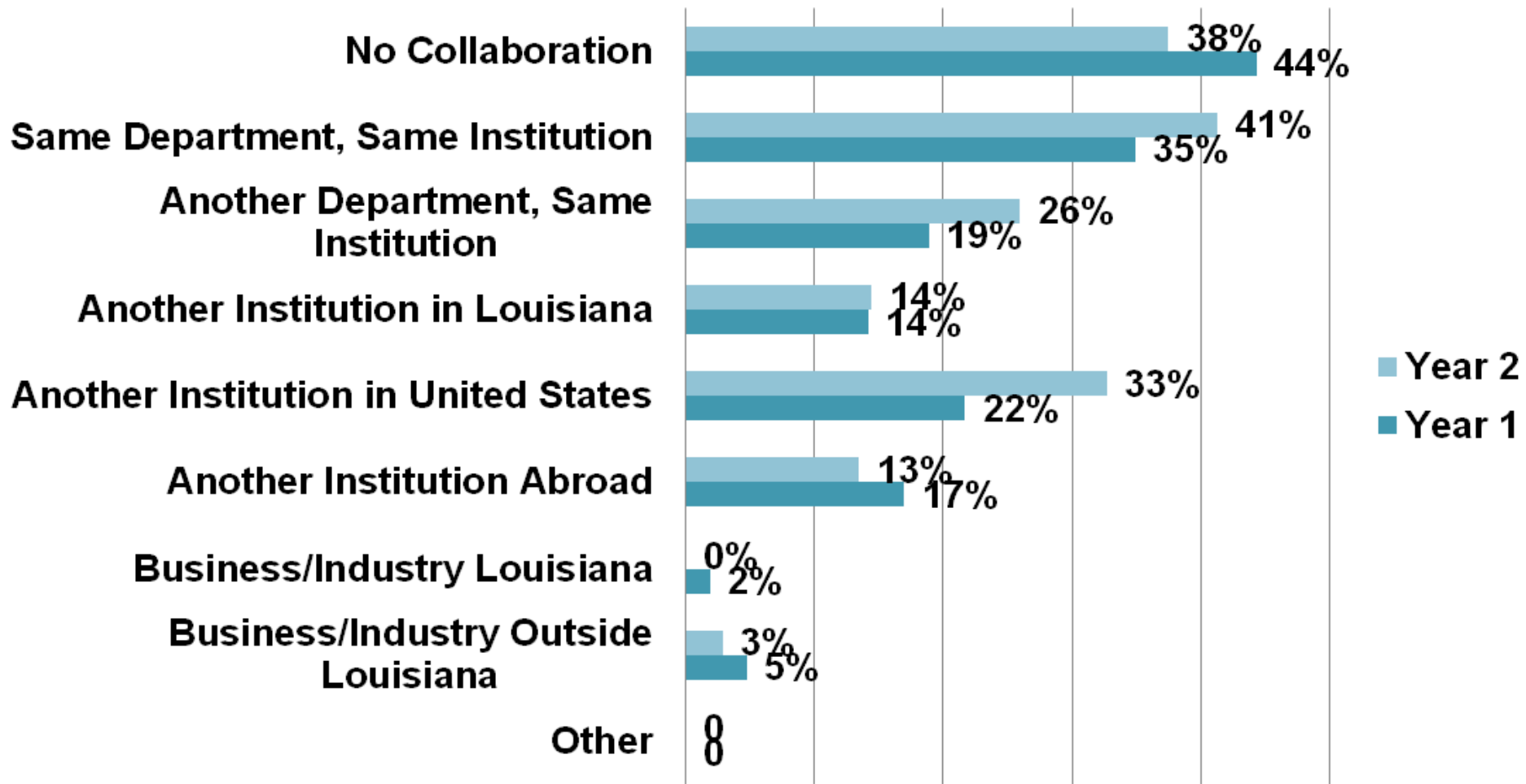
3. To what extent have LA-SiGMA researchers established interdisciplinary and interinstitutional collaborations that enhance the work of the project?

Percent of Joint Publications



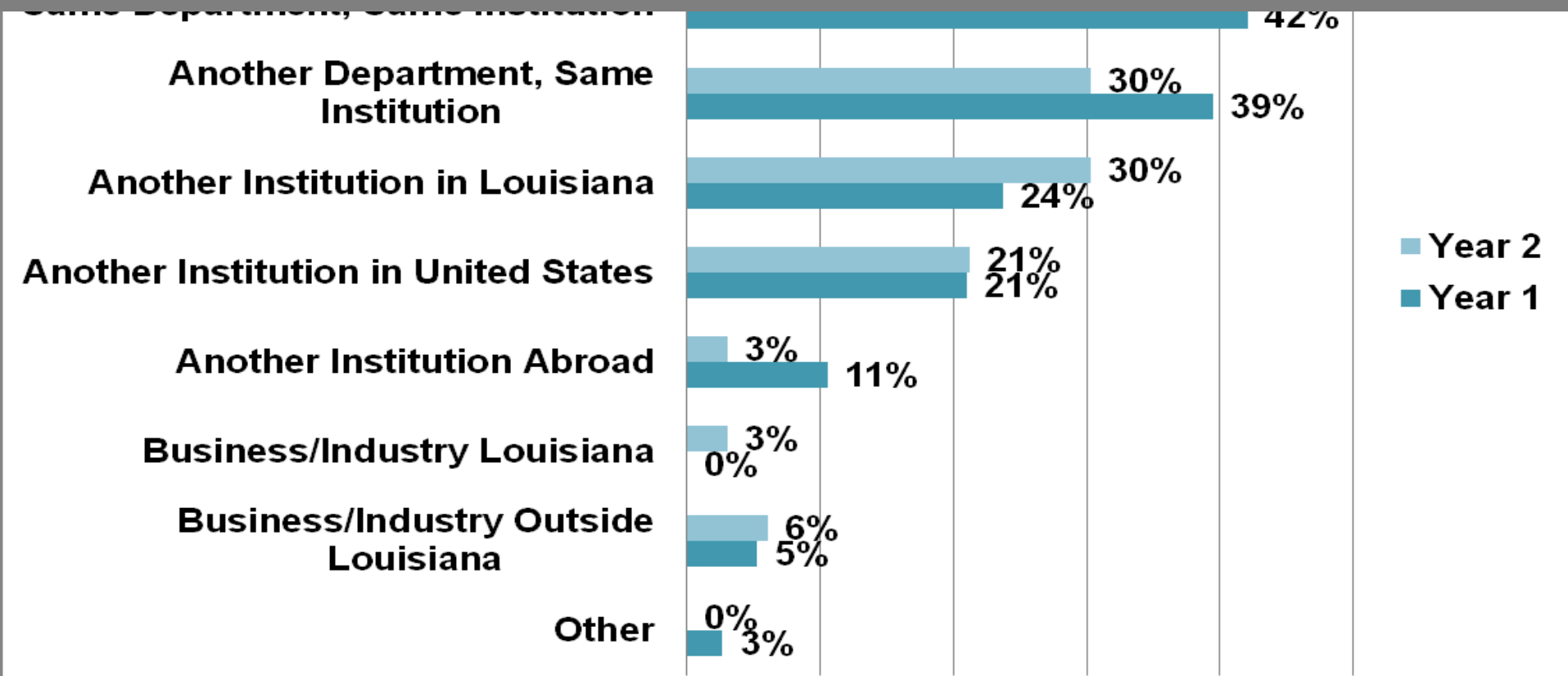
- To what extent have LA-SiGMA researchers established interdisciplinary and interinstitutional collaborations that enhance the work of the project?

Percent of Joint Presentations

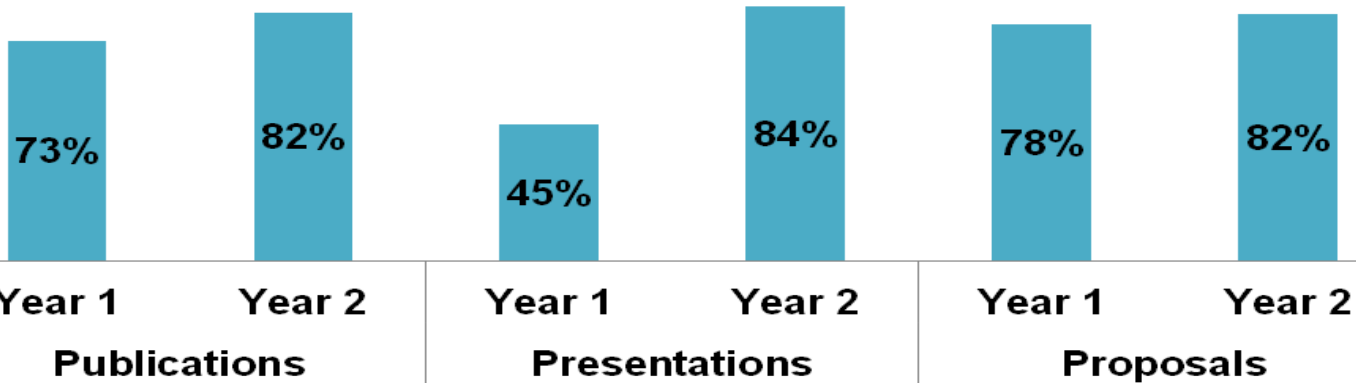


- To what extent have LA-SiGMA researchers established interdisciplinary and interinstitutional collaborations that enhance the work of the project?

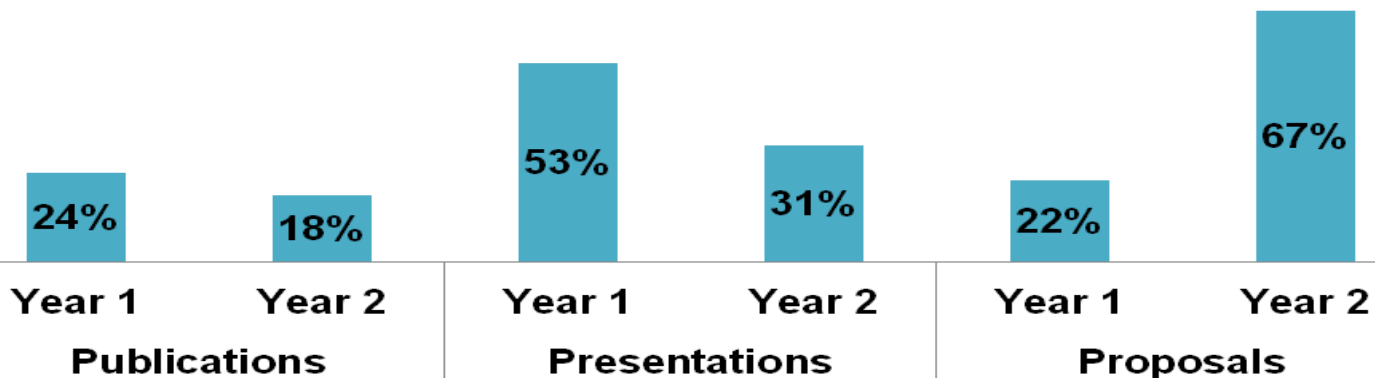
-10 Collaborative grants each year. Year 2 had 18.
-10 Industrial grants by Year 5. Year 2 had 10 Opt-In.
-IGERT submitted.



Percent of Publications, Presentations, and Funded Proposals Representing More than One Discipline



Percent of Publications, Presentations, and Funded Proposals Representing More than One LA-SiGMA Team



4. To what extent has the project contributed to a diverse and technically trained STEM workforce?

Recruitment Strategies	Year 2
Visited other campuses with the explicit intention of recruiting students to graduate programs on my campus.	28%
Recruited graduate students through the summer research/training programs on my campus (REU, RET, workshops, etc.).	28%
Participated in recruiting activities specifically targeted towards minorities.	23%
Volunteered at my department's/campus' information booth at a graduate recruiting fair at a conference or other event.	20%
Participated in recruiting activities specifically targeted towards women.	15%
Served as a mentor to a newly hired woman or URM faculty member.	3%



4. To what extent has the project contributed to a diverse and technically trained STEM workforce?

- 1 graduate and 2 undergraduate degrees

-100% 6-year graduation rate of females and URM are being monitored

-20 students secure NSF Graduate Fellowships

- 5 or more papers from graduate internships in industry or lab each year

- Nine faculty and 7 students worked in international laboratories



RSV Recommendation: How has the project increased and enhanced participation from pre-college, community college, and Historically Black College and University groups?

- Outreach programs reached 1,700 K-12 participants
- Workshop provided by LA Tech for community college faculty

By Year 5, 25% of REU and 15% of RET participants will come from community colleges.

Year 2 reported 12% of REU and RET participants were from community colleges.

5. How has the project engaged the Louisiana community in outreach and dissemination of efforts?

- LA-SiGMA outreach programs served 1,792 participants.
- Over 95% of the participants were from K-12 environments; the remaining participants were from post-secondary institutions.
- All LA-SiGMA institutions contributed to the outreach programs.
- Business participation included Sci-Port, Albemarle, BASF, and ExxonMobil.



La-SiGMA Researchers Engaged in Outreach	Year 2
Participated in Research Experiences for Undergraduate Experiences (REU).	44%
Participated in Research Experiences for Teachers (RET) project.	21%
Visited a K-12 school to talk about my research or science/engineering in general.	16%
Participated in an Open House for middle or high school students.	11%
Participated in a summer workshop for middle or high school students.	10%
Participated in an internship at a National Lab or Industry.	8%
Delivered classroom lectures for a new course developed state-wide.	7%
Taught at least one graduate course that was delivered to another campus through synchronous delivery methods.	7%
Taught or participated in providing short courses and modules for Community College students and teachers.	5%
Assisted in the expansion of 2+2 programs (articulation agreements, etc.)	3%
Taught or participated in providing the Effective Teaching Workshops for Graduate Students.	3%
Participated in the Beowulf Boot Camp.	2%
Taught at least one on-line course that was taken by students at another campus through asynchronous delivery methods.	2%

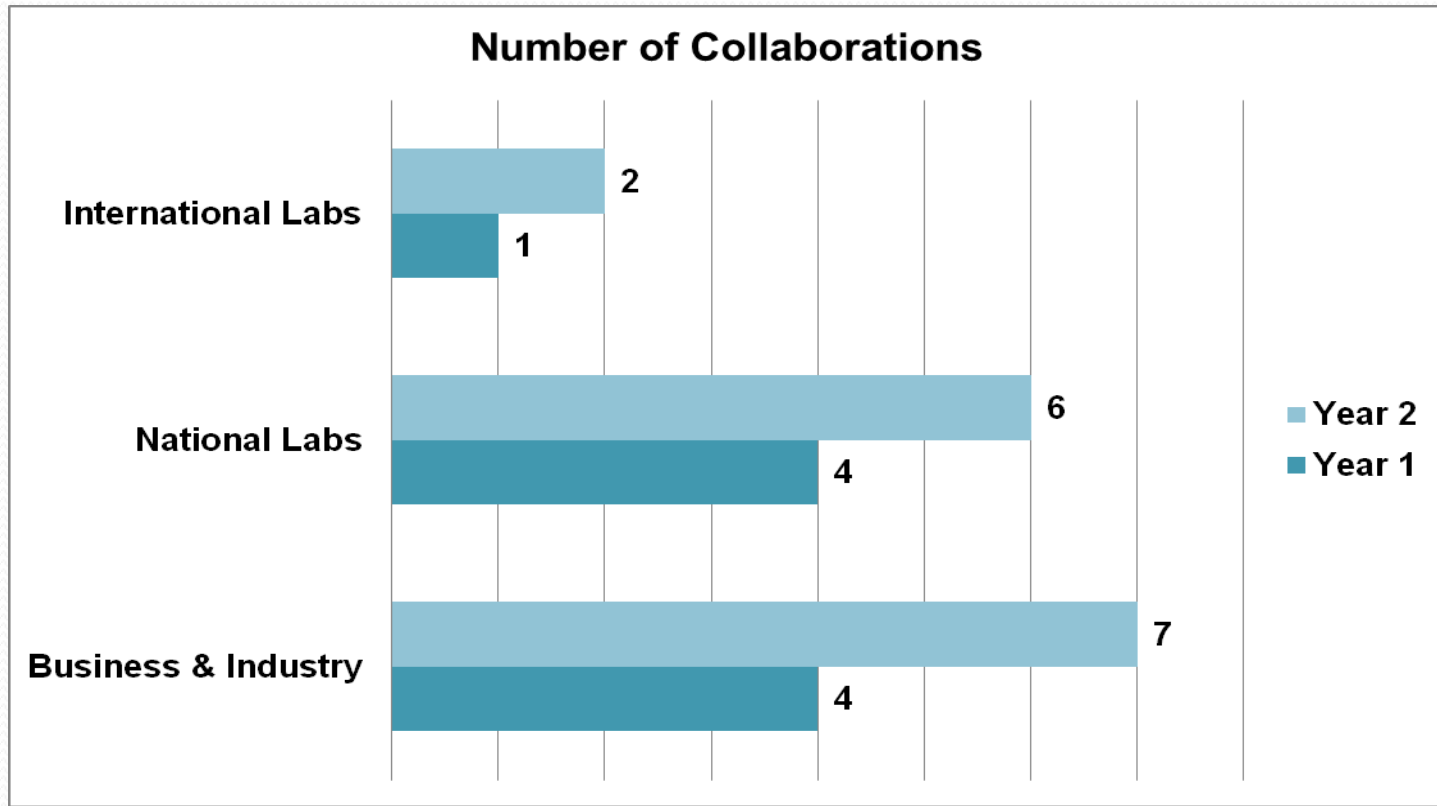
LA-SiGMA Researchers Engaged in Dissemination	Year 2
Participated in the biannual meeting.	39%
Provided a public lecture about science/engineering.	25%
Used video conferencing to communicate	25%
Submitted a researcher highlight	15%
Served as a speaker for the Speaking of Science Speakers Bureau (SoS).	15%
Advised a science museum on their exhibits or events.	7%
Delivered a lecture to an industrial audience.	7%
Used the web portal to distribute project deliverables.	7%
Had a story about my LA-SiGMA work picked up by the regional/national press.	7%
Appeared on local or statewide media (radio, television) to talk about my research or science/engineering in general.	5%
Downloaded code(s) to the repository.	5%
Contribute a highlight to the Louisiana EPSCoR newsletter.	2%

RSV Recommendation: What strategies were effective in strengthening public engagement and what were the outcomes of these strategies?

- 15% of LA-SiGMA researchers participated in Speaking of Science program (52 presentations) as compared to no participation in Year 1
- LA-SiGMA engagement with media increased (radio/TV, public lectures, lectures to industry)
- Four researchers and 1 outreach activity appeared in regional/national press
- LA EPSCoR newsletter shares LA-SiGMA outcomes with over 1,000 stakeholders
- LA EPSCoR Facebook page



6. To what extent have sustainable partnerships with industry and national and international laboratory collaborators been created and expanded?



RSV Recommendation: What strategies were effective in increasing collaborations with industry and what were the outcomes of these strategies?

- LA-SiGMA presentation to patent law firm is establishing connections to clients
- Work with LA Economic Development agency and LA Business & Technology Center establishing connections
- Industry/Academia Workshop: Growing Bioscience Industry
- Use AUTM portal, set up focused meetings, and disseminate information to connect industry and research
- OPT-IN funding provided by BOR in two phases to better respond to industry needs
- SBIR/STRR Phase Zero grants resulted in 3 Phase 1 awards



7. To what extent has Louisiana EPSCoR been successful in enhancing the competitiveness of Louisiana research enterprises?

Number of Submitted Funding Proposals

LA-SiGMA funding rate should meet at least the “US average funding rate of federal proposals submitted.” The Year 1 and 2 rates exceeds the 23% "FY 2010 Report on the NSF Merit Review Process" used for comparison.

Funding Rates for LA-SiGMA Proposals

	Year 1	Year 2
Awarded	37	33
Submitted	79	96
Funding Rate	47%	34%

Year 2 Progress

- What mechanisms have been put in place to ensure continued availability and accessibility to project initiatives?
 - Management structure fully integrated within the LA BOR and BOR programs augment LA-SiGMA
 - Monthly progress update and strategy discussion meetings
 - Growth in research competitiveness (funding, knowledge transfer) and interdepartmental/ interinstitutional collaborations (LA, US, abroad) builds strong infrastructure



Next Steps:

- Metrics are in place to measure long-term outcomes; results are preliminary
 - Update Year 2 data in OASIS
 - Fully report all fields in OASIS
 - Additional focus on impact of research, outreach, and BOR participants
 - Direct use of LA-SiGMA created materials