

# Approved Year 1 Report for SPARCT Program

## Cover

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Project Title:  
SPARCT: STEM Professional Academy for Reinvigorating the Culture of Teaching

PD/PI Name:

- Laura Frost, Principal Investigator
- Tanya Huffman, Co-Principal Investigator
- Brian Johnson, Co-Principal Investigator
- Tanya Kunberger, Co-Principal Investigator
- Linda Serro, Co-Principal Investigator

Recipient Organization:  
Florida Gulf Coast University

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Submitting Official (if other than PD\PI):

- Laura Frost
- Principal Investigator

Submission Date:  
08/02/2014

Signature of Submitting Official (signature shall be submitted in accordance with agency specific instructions)

Laura Frost

## Accomplishments

### \* What are the major goals of the project?

The expected outcomes from the STEM Professional Academy to Reinvigorate the Culture of Teaching (SPARCT) program include

(1) Enhanced scholarship of teaching and learning (SoTL) by SPARCT faculty.

(2) Improvement of evidence-based practices targeting the introductory STEM classroom.

- (3) Development of long-term FLCs in STEM instruction.
- (4) Development of professional peer-observation strategies for the STEM classroom.
- (5) Enhanced student learning in introductory STEM courses as a result of SPARCT faculty development.

**\* What was accomplished under these goals (you must provide information for at least one of the 4 categories below)?**

Major Activities:

**Year 1 (2013-2014):**

**Nov. 2013 - May 2014.** Development and organization of the first SPARCT STEM Summer Academy began in earnest. Monthly two hour meetings with all co-PIs and senior personnel were held and bi-weekly two-hour meetings were held with a smaller planning committee consisting of Drs. Frost (PI, Whitaker Center, Arts and Sciences), Serro (co-PI, College of Ed.), Schmidt (Sr. Personnel, College of Ed.) and Ms. McCulloch (e-learning specialist). This included developing an online registration form, recruiting faculty through department meetings, emails, and website development.

**May 2014.** The first SPARCT STEM Summer academy was held over 10 days with 36 hours of instructional time. All co-PIs and Senior personnel participated in at least one part of the schedule as a presenter. (See attached SPARCT schedule 2014 for a list of topics including evidence-based practices.) There were 16 participants, six of which were co-PIs or senior personnel on the project. Faculty participants completed a pre- and post-survey of their beliefs. The Academy ended May 29.

Specific Objectives:

**Y1-2014**

Specific objectives of Y1 included

1. Develop an intentional framework for the SPARCT Summer Academy with evidence-based practices to allow participants to see 1) what the approach is, 2) published research documenting efficacy of the approach, and 3) personal experiences from faculty who have utilized the approach and their observations.
2. Develop a protocol for selection of individuals who will be teaching introductory classes next academic year.
3. Implement the first year of the SPARCT Summer Academy.
4. Engage in preliminary discussions on academic year structure implementation.

## Significant Results:

### **Y1-2014.**

In reference to the major goals above:

(1) The topic of SoTL was discussed during the SPARCT STEM summer academy on day 9 and the daily feedback responses received indicated that faculty were clearly interested in pursuing SoTL projects in the up-coming year.

(2) On the last day of the SPARCT STEM summer academy, participants were asked to give a five-minute presentation to the group telling us what they want to know about their introductory STEM class (SoTL question), what might they change in their class, and how they intend to measure change. Department Chairs and Deans were invited to this final day of presentation, several key department chairs were in attendance. At this point, the participants are thinking about how the information gained through the academy can change their course to increase student learning and student retention in their courses.

(3) All participants agreed to attend monthly SPARCT FLC sessions during the 2014-2015 academic year.

(4) All participants agreed to peer-observe other participant's classrooms: one in their discipline and one outside of their discipline. A training session using the "Reformed Teaching Observation Protocol"(RTOP) is planned for the first monthly session on August 14, 2014.

(5) Nothing to Report on the goal of enhanced student learning in Y1.

## Key outcomes or Other achievements:

### **Y1-2014 Key outcomes**

Regarding the specific objectives outlined above:

1. **Develop the SPARCT Academy.** During the Academic year 2013-2014 the Planning committee made up of the co-PIs and Senior Personnel met monthly beginning November 2013. A smaller group consisting of Key SPARCT Academy facilitators including the Whitaker Center Director (Frost), Senior Personnel from College of Ed (Schmidt & Greene), e-Learning Staff (McCulloch), and the Teaching and Learning Center Director (Serro) met on a bi-weekly basis beginning Spring 2014. This resulted in the development of the SPARCT Academy Schedule as attached.

2. **Develop a Protocol for Selection of SPARCT Participants.** Recruitment of participants was widespread throughout the Colleges of Engineering and Arts and Sciences. The Whitaker Center director recruited during college-wide meetings and department meetings. Multiple emails were sent to faculty, and personal invitations by

co-PIs and senior personnel were also made. An online registration form was instituted for application ease. Mindful selection included

- Pairing selected participants into course "groups" to facilitate development during the academy. This recruitment resulted in a total of 19 applicants for 10 participants.
- Diversity of participants, specifically with respect to course topic area

The Y1 SPARCT Academy cohort consisted of 16 FGCU faculty: four from the college of engineering and the remainder from STEM disciplines in the College of Arts and Sciences. This is representative of faculty distribution. Introductory courses that were represented included physics, chemistry, statistics, calculus, computer science, engineering, and environmental science. One area we recognize a need to recruit is Biology. We had one participant selected (only applicant) who eventually declined due to reassignment. A full list of the 2014 SPARCT Summer Academy participants, their departments, and course of focus is attached as a supporting file.

**3. Implement the first year of the SPARCT Summer Academy.** The Y1 SPARCT Academy was held May 12-29th, 2014. The SPARCT schedule is included as a supporting document.

During the SPARCT Academy daily feedback was collected from the participants. The daily feedback from participants and daily de-briefing by the planning group (Frost, Greene, McCulloch, and Serro) sessions are used as formative assessment and will be used to plan for Y2 SPARCT Academy. The daily feedback was mostly positive and criticisms were useful to the planning group. Participants were also asked to complete a pre- and post- survey to gauge confidence in their abilities regarding aspects of the Academy. While we saw individual gains in many areas, the only area where there were significant gains pre- vs. post- for participant averages was in understanding how to flip their classroom. This suggests that different individuals took away different parts of the academy, i.e., there was something in it for everyone. This feedback will assist in planning Y2.

**4. Engage in preliminary discussions on academic year structure implementation.** The planning committee has held preliminary discussions during planning sessions regarding the academic year monthly sessions. This will prove challenging as it will be difficult to meet all members at the same time of day due to schedules. To date we have scheduled the first two monthly sessions and will have planning meetings regularly during the year.

### **Other Achievements**

**Enhanced Community Involvement.** The SPARCT STEM Academy hosted one guest speaker, Dr. Lodge McCammon, on May 20, 2014. He held a workshop on Flipping the Classroom for the SPARCT STEM Academy. He also did a session for the public later in the afternoon. There were 93 confirmed attendees at this public event. Our estimates

show about 50% of these attendees were from the K-12 community, with about 40% from the university community and 10% from the general public. This was an overwhelming public response strengthening the bond between the university and K-12 community.

**\* What opportunities for training and professional development has the project provided?**

**Y1-2014.** The 16 faculty participating in the SPARCT program during 2014-2015 have the opportunity to apply for travel funds to present the results of their efforts to examine their classroom. Because we just finished the first summer academy, no funds have been awarded to the participants to date.

**\* How have the results been disseminated to communities of interest?**

Nothing to report.

**\* What do you plan to do during the next reporting period to accomplish the goals?**

(1) Through monthly Faculty Learning Community sessions during the upcoming academic year (2014-2015) we plan on discussing participant progress toward SoTL goals.

(2) Through monthly Faculty Learning Community sessions during the upcoming academic year (2014-2015) we plan on discussing participant progress toward the use of evidence-based practices in their classroom.

(3) All participants agreed to attend monthly FLC sessions. We look forward to building these communities during the 2014-2015 academic year. Additionally, SPARCT faculty will be able to engage with existing FLCs through the Lucas Center for Faculty Development that include topics such as POGIL, SoTL, and Flipped Classroom.

(4) All participants agreed to peer-observe other participant's classrooms: one in their discipline and one outside of their discipline. Faculty will report back to peers during FLC sessions.

(5) At the conclusion of the Spring 2015 semester, year 1 SPARCT faculty will report the results of their efforts in the introductory STEM classroom to the SPARCT planning committee and the other participants. Year 2 participants will also be asked to attend this session to jump-start the year 2 SPARCT STEM summer academy.

**Supporting Files**

	<b>Filename</b>	<b>Description</b>	<b>Uploaded By</b>	<b>Uploaded On</b>
<a href="#">(Download)</a>	SPARCT Schedule 2014.pdf	2014 SPARCT STEM Summer Academy Schedule	Laura Frost	06/06/2014

	Filename	Description	Uploaded By	Uploaded On
<a href="#">(Download)</a>	SPARCT 2014 Participants.pdf	Y1 SPARCT Participant Information	Laura Frost	07/17/2014

## Products

### Websites

- *SPARCT Program*  
<http://www.fgcu.edu/WhitakerCenter/sparct.html>

This website describes the program to the public and during the year held the online registration for the SPARCT STEM Summer Academy.

## Participants/Organizations

### What individuals have worked on the project?

Name	Most Senior Project Role	Nearest Person	Month Worked
<a href="#">Frost, Laura</a>	PD/PI	1	
<a href="#">Johnson, Brian</a>	Co PD/PI	0	
<a href="#">Kunberger, Tanya</a>	Co PD/PI	0	
<a href="#">Meyer, Angela</a>	Co PD/PI	0	
<a href="#">Serro, Linda</a>	Co PD/PI	1	
<a href="#">Huffman, Tanya</a>	Co-Investigator	0	
<a href="#">Greene, Jackie</a>	Faculty	0	
<a href="#">Nichols, Robert</a>	Faculty	0	
<a href="#">Schmidt, Diane</a>	Faculty	0	
<a href="#">Zalewski, Janusz</a>	Faculty	0	
<a href="#">McCulloch, Elspeth</a>	Other Professional	1	

### Full details of individuals who have worked on the project:

#### Laura Frost

**Email:** lfrost@fgcu.edu

**Most Senior Project Role:** PD/PI

**Nearest Person Month Worked:** 1

**Contribution to the Project:** Administrative coordinator for the project: organizing meetings, recruiting and selecting participants, interfacing with office of research, recruiting guest

speakers Planning SPARCT STEM summer academy programming, Delivered several days of SPARCT STEM summer academy programming

**Funding Support:** 9% of 12-month salary January-June

**International Collaboration:** No

**International Travel:** No

**Brian Johnson**

**Email:** bpjohnson@fgcu.edu

**Most Senior Project Role:** Co PD/PI

**Nearest Person Month Worked:** 0

**Contribution to the Project:** Attended the 36 hour SPARCT STEM summer academy and participated in participant selection and larger group planning meetings for SPARCT. Delivered one day of content for the Academy.

**Funding Support:** \$2000 summer stipend

**International Collaboration:** No

**International Travel:** No

**Tanya Kunberger**

**Email:** tkunberg@fgcu.edu

**Most Senior Project Role:** Co PD/PI

**Nearest Person Month Worked:** 0

**Contribution to the Project:** Attended 28 hours of the SPARCT STEM summer academy and participated in participant selection and larger group planning meetings for SPARCT. Delivered one day of content for the Academy.

**Funding Support:** \$2000 summer stipend

**International Collaboration:** No

**International Travel:** No

**Angela O Meyer**

**Email:** ameyer@fgcu.edu

**Most Senior Project Role:** Co PD/PI

**Nearest Person Month Worked:** 0

**Contribution to the Project:** Attended the 36 hour SPARCT STEM summer academy and participated in participant selection and larger group planning meetings for SPARCT. Delivered one day of content for the Academy.

**Funding Support:** \$2000 summer stipend

**International Collaboration:** No

**International Travel:** No

**Linda Serro**

**Email:** lserro@fgcu.edu

**Most Senior Project Role:** Co PD/PI

**Nearest Person Month Worked:** 1

**Contribution to the Project:** Planning the SPARCT STEM Summer Academy, delivering sessions during the STEM Academy, participating in small group planning sessions, reviewing annual reports, assisting with administrative decisions.

**Funding Support:** 4.5% of 9-month faculty salary plus \$1000 summer stipend

**International Collaboration:** No

**International Travel:** No

**Tanya Huffman**

**Email:** thuffman@fgcu.edu

**Most Senior Project Role:** Co-Investigator

**Nearest Person Month Worked:** 0

**Contribution to the Project:** Attended 36 hours of the SPARCT STEM summer academy and participated in participant selection and larger group planning meetings for SPARCT. Delivered one day of content for the Academy. Listed as senior personnel originally, now replacing Angela Meyer as co-PI

**Funding Support:** \$2000 summer stipend

**International Collaboration:** No

**International Travel:** No

**Jackie Greene**

**Email:** jgreene@fgcu.edu

**Most Senior Project Role:** Faculty

**Nearest Person Month Worked:** 0

**Contribution to the Project:** Jackie Greene was one of the facilitators for the SPARCT Academy. She participated in most planning meetings and facilitated several days of the SPARCT Academy.

**Funding Support:** \$1000 Summer salary 2014

**International Collaboration:** No

**International Travel:** No

**Robert Nichols**

**Email:** rnichols@fgcu.edu

**Most Senior Project Role:** Faculty  
**Nearest Person Month Worked:** 0

**Contribution to the Project:** Rob Nichols assisted Diane Schmidt in presenting her portions of the SPARCT Academy due to Dr. Schmidt's illness.

**Funding Support:** None

**International Collaboration:** No  
**International Travel:** No

**Diane Schmidt**  
**Email:** dschmidt@fgcu.edu  
**Most Senior Project Role:** Faculty  
**Nearest Person Month Worked:** 0

**Contribution to the Project:** Did not attend SPARCT STEM summer academy due to illness, however participated in participant selection and larger group planning meetings for SPARCT. Listed as senior personnel.

**Funding Support:** 3% of 12-month salary from January-June 2014

**International Collaboration:** No  
**International Travel:** No

**Janusz Zalewski**  
**Email:** zalewski@fgcu.edu  
**Most Senior Project Role:** Faculty  
**Nearest Person Month Worked:** 0

**Contribution to the Project:** Attended 28 hours of the SPARCT STEM summer academy and participated in participant selection and larger group planning meetings for SPARCT. Delivered half day of content for the Academy. Listed as senior personnel.

**Funding Support:** \$2000 summer stipend

**International Collaboration:** No  
**International Travel:** No

**Elsbeth McCulloch**  
**Email:** emcculloch@fgcu.edu  
**Most Senior Project Role:** Other Professional  
**Nearest Person Month Worked:** 1

**Contribution to the Project:** e-learning specialist who participated in all planning meetings and facilitated daily sessions on technology during the SPARCT Academy

**Funding Support:** supported by the project for 40 hours effort, university supported.

**International Collaboration:** No

**International Travel:** No

**What other organizations have been involved as partners?**

Nothing to report.

**Have other collaborators or contacts been involved? No**

## **Impacts**

**What is the impact on the development of the principal discipline(s) of the project?**

**Y1-2014**

**Impact on Principal Disciplines (STEM).** We expect SPARCT Academy participants to implement strategies gained during the SPARCT Academy during the Academic Year 2014-2015, however, to date, nothing to report.

**What is the impact on other disciplines?**

Nothing to report.

**What is the impact on the development of human resources?**

All SPARCT participants will be developing educational materials or scholarship as a result of their workshop. more will be available after the academic 2014-2015 year.

**What is the impact on physical resources that form infrastructure?**

Nothing to report.

**What is the impact on institutional resources that form infrastructure?**

**Y1-2014**

Most academic chairs attended the final presentations at the SPARCT academy where participants discussed what they were planning to study during their up-coming course. This support suggests interest on the part of departments as we look forward to impacting introductory courses in the represented departments.

## **What is the impact on information resources that form infrastructure?**

### **Y1-2014**

In addition to the webpage which introduces the public to SPARCT, participants have access to all materials from the Summer Academy through a Canvas LMS Group. They can refer back to any of the materials electronically throughout the year. The SPARCT Academy sessions were photographed and several portions were videoed. We will continue to video participants during the monthly FLC sessions so that they can see how far they have come and we can track their progress. These will be accessible to participants for professional purposes (portfolios) and to the evaluator.

## **What is the impact on technology transfer?**

Nothing to report.

## **What is the impact on society beyond science and technology?**

### **Y1-2014**

The success of the SPARCT Academy impacts the full university faculty. Ideas generated through planning the SPARCT Academy can be translated to non-STEM professional development activities for the future.

The SPARCT Academy guest speaker, Dr. Lodge McCammon impacted the local community K-12 teachers through his presentation on Flipping the Classroom. Attendees were multidisciplinary. This public presentation raised public awareness of the Whitaker Center for STEM Education as a resource for K-12 Educators in general.

## **Changes/Problems**

### **Changes in approach and reason for change**

We will be using formative assessments from the 1st SPARCT Academy and feedback from our evaluator visit to inform changes for the 2nd SPARCT Academy.

### **Actual or Anticipated problems or delays and actions or plans to resolve them**

#### **Y1-2014**

The PIs note that we intend to request a no-cost extension for a third year so that two full cycles of the SPARCT program can be implemented finishing August 2016.

### **Changes that have a significant impact on expenditures**

Nothing to report.

**Significant changes in use or care of human subjects**

Nothing to report.

**Significant changes in use or care of vertebrate animals**

Nothing to report.

**Significant changes in use or care of biohazards**

Nothing to report.