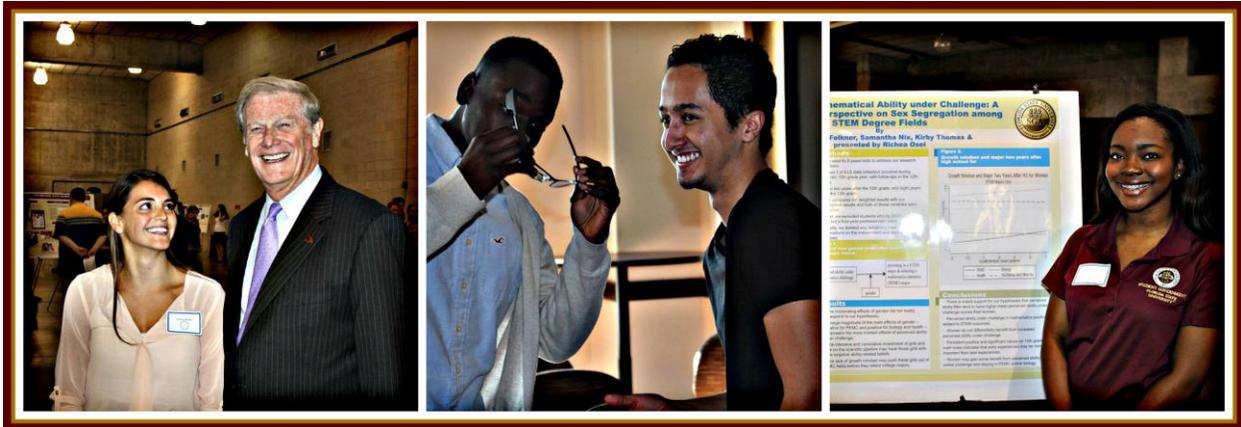


Center for Undergraduate Research  
and Academic Engagement (CRE)  
ANNUAL REPORT 2014-15

**Research. Innovation. Engagement.**



**FSU nationally recognized as an exemplary model for campus-wide undergraduate research by The Council on Undergraduate Research (CUR) in 2015.**



## Director's Message

The challenges of our time demand an educational system that can help young people become citizens of the world. We need our students to be critical and innovative thinkers, but also people of character who use their talents to help others. Helping students develop in this way requires a dynamic educational network that stimulates students to reevaluate how they understand themselves, their relationships, and the world around them, which deepens capacities and perspectives crucial for effective citizenship. The CRE leverage the resources of a major research university like FSU to provide transformational opportunities that help students develop as leaders for the world's future.

We continue to build an educational ecosystem that challenges and develops scholar-citizens through academic, interpersonal, co-curricular, and global engagement. This past year has seen growth in our existing programs, and the launch of four new, exciting initiatives: Academic Engagement and Innovation Grants, Presidential Scholars Program, Social Entrepreneurship and Innovation Initiative, and Florida IT Career Alliance.

Highlighted programs in this report include: The Undergraduate Research Opportunity Program (UROP); FSU's Global Scholars Program; independent student research and scholarship; Social Entrepreneurship and Innovation Initiative; Florida IT Career Alliance, and many more. Our 2014-15 annual report illustrates how CRE has maintained an innovative, accessible, and broad network that supports students' growth by providing opportunities for students to learn, serve, research, and engage in the classroom, on campus, in the community, and around the world. In 2014-15, our continued growth included:

- CRE provided direct support to over **4,000** students throughout its multiple programs in 2014-15
- A **33.3%** increase in UROP student participation (150 to 200) from 2014-15
- Expansion of UROP outreach efforts to provide unique research opportunities for student veterans and transfer students
- We sent **47** Global Scholars overseas, participating in internships in **14** countries, and proudly representing FSU at **28** different nonprofit organizations
- Nearly **\$90,000** distributed across **37** awards to fund undergraduate summer research and creative activity
- Largest undergraduate research symposium in history (15<sup>th</sup> annual) with over **300** student presenters
- Introduced Launch FSU, a social enterprise accelerator exclusively for FSU students.

I want to thank all of our staff and invested partners who support CRE's mission. It is through collaborations with colleges and divisions, community and international partners, and interested faculty and students that we are able to provide high-impact engagement opportunities that prepare a new generation of students to lead productive, fulfilling, and meaningful lives.

Joe O'Shea

Director of the Center for Undergraduate Research and Academic Engagement

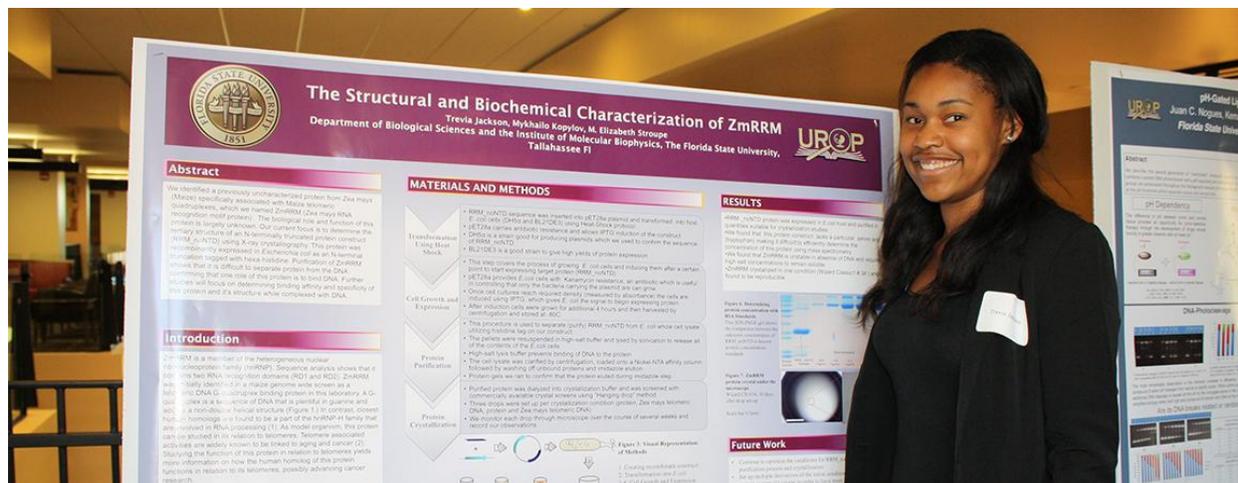


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## Early Engagement in Research

# Undergraduate Research Opportunity Program (UROP)



The Undergraduate Research Opportunity Program (UROP) allows first and second-year students to become a part of what makes Florida State University a world class institution of higher learning—cutting edge research, scholarship, and creative work. Through UROP, freshmen and sophomore students have the opportunity to join a community of hundreds of other likeminded researchers and UROP alumni to explore academic and career interests, gain hands-on experience and research skills, and learn to think in creative and innovative ways—what participants enjoy most of all, the ability to choose from hundreds of projects representing all areas of study across our university. Although these high impact engagement opportunities occur early in a student's collegiate career, the program is designed to sharpen practical skills and knowledge applicable to careers or graduate school.

## Program Components

- **Research assistantship.** The UROP students work closely with a faculty mentor or Ph.D. student between 5-10 hours weekly assisting them in a research project
- **Colloquium course.** Facilitated by a UROP peer leader, participants meet bi-weekly with their leader and fellow UROP students to receive personalized research guidance, explore various research and campus resources, and engage peers about their own research
- **Presentation.** The third part of the UROP program fulfills a vital component of the research process, presentation—student participants are required to present their work as oral or poster presentations at the annual undergraduate research symposium.

Inquiry, investigation, and discovery are at the heart of Florida State's mission. Working closely with our excellent research faculty and peers as research assistants, UROP participants can quickly begin impacting items critical to the continued success of our great research university. 2014-15 was an exciting period of growth for the UROP program, such growth included:

- From our 2013-14 to 2014-15 UROP cohorts, there was over a **33.3%** increase in student participation; 150 to 205, respectively, across 14 UROP sections

- In the program's first year (2012-13) 94 students participated in UROP projects, representing over a **100%** increase in participation in just three years (2012-15)
- All 2014-15 UROP sections had 19 students or less
- Extended involvement opportunities for historically underrepresented populations, including 71 minority students (34.60%), 44 first generation college students (21.46%), and 11 CARE program participants (5.37%)
- Expanded outreach efforts to integrate research opportunities for groups such as the Creative and Performing Arts | Student Veterans | Transfer Students | Center for Hispanic Marketing/Communication
- Between 2014-15 UROP experienced its most diverse representation of **STEM** research sponsors to date, including mentors from the Departments of Earth, Ocean, and Atmospheric Science (EOAS), Biomedical Science, Scientific Computing, and the National High Magnetic Field Laboratory (MagLab), combined with 113 STEM students (55.1%)
- 140 students (68.3%) in UROP were in Honors programs
- Our pool of energetic and talented UROP leaders has grown from 12 in 2013-14 to 23 in 2014-15, representing over a **90%** increase; currently, peer leaders represent nearly all fields of study across our university.



"Becoming involved in research through UROP has allowed me to join a wonderful group of fellow students who are dedicated to engaging with important questions. As a first-year student I did not expect to have the opportunity or the necessary skills to collaborate with accomplished faculty. However, the support I have received has empowered me to distinguish myself by pursuing my passion while in the process, leaving behind a lasting impact."

Quote from Inam Sakinah (pictured on far right), a UROP participant and Class of 2018 Presidential Scholar.



"UROP eased my integration into Florida State University's research community by facilitating conversations with prominent faculty members, encouraging collaboration with peers, and ensuring the success of my pursuits in undergraduate research. As a veteran, a transfer student, and a UROP member, I strongly believe this program has a genuine mission to enrich the education of participating students."

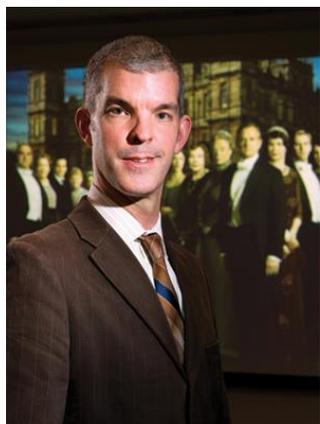
Quote from Daniel Hubbard (pictured on the left), Army medic (Ret.), transfer student, and UROP member. FSU thanks you for your service!


**Early Engagement  
in Research**

## **UROP MENTOR AWARD**

The Center for Undergraduate Research and Academic Engagement is keenly aware of the sacrifices our faculty make to promote undergraduate research. Their levels of commitment, energy, and time are the foundation of support that aid CRE involve students in the highest levels of engagement at FSU, and their hard work and dedication does not go unrecognized. Each year, CRE offers one \$2,000 Undergraduate Research Mentor Award to a faculty member mentoring a UROP student. This annual award is funded by the FSU Student Foundation and presented at the annual FSU faculty awards dinner. This year, we are proud to recognize our 2014-15 UROP mentor award winner:



Charles Upchurch – Associate Professor, Florida State University, Department of History

**Research Interests:** Modern Britain, British Empire, Gender and Sexuality, and the Atlantic World

“Undergraduate research is the future of the humanities at the university level... For my undergraduate research assistants, such as those within the UROP program, my assumption is that they are considering careers in research, and so I design tasks that allow them to see the multiple steps a project goes through, from initial idea to published work.

Nominating Student- Erin Trumble, History and Anthropology Dual Major

“I have benefited immensely from my UROP experience and much of it is due to the efforts of my mentor, Professor Upchurch. My understanding of the research process in our field was clearly important to him... The fact that he asked for and valued my opinion made me feel as if I was more ingrained in the research. Professor Upchurch made sure that I had the mental skills to better understand how to approach research. More, he inspired me to continue doing research by giving me the tools with which to do it and making me realize that doing my own research project was completely within my capabilities.

**Last Year’s Award Winner Dr. Elizabeth Stroupe (Biological Science).**



**Early Engagement  
in Research**



**RESEARCH ENGAGEMENT AREA**

In 2014-15, CRE continued to coordinate the Research Engagement area of the Garnet & Gold Scholar program. This included attending steering committee meetings, evaluating student research area submissions, and advising students.

In 2014-15, **73** students completed the research area, a nearly 75% increase in the research area of completions from 2013-14.

**International and  
Community-based  
Research**



The **FSU Global Scholars** program helps students secure summer internships at nonprofit organizations in developing countries around the world. Global Scholars' placements are **low-cost** and **high-impact**, providing a challenging academic and personal student development experience designed to promote intercultural competency and responsible global citizenry.

We partner with the non-profit organization Omprakash, which provides valuable mentorship, training, and networking support for our participants. The Global Scholars experience consists of three coordinated components, a) enrollment in the Global Scholars training course (INR 3931) during the spring semester before departure, b) overseas summer semester internship (minimum of two months), and c) completion | presentation of a **capstone research project** on an issue facing the overseas community.



## 2014-15 Global Scholars at a Glance....

- **47** students engaged in overseas internships in **14** countries, serving **28** different nonprofit organizations
- **4** Global Scholars Travel Grants Awarded @\$2,000 = \$8,000
- **8** CARE Travel Grants Awarded @\$3,250 = \$26,000
- **\$34,000 Total Awarded in GS Travel Grants.**



## Social Entrepreneurship and Innovation Initiative

**What is social entrepreneurship?** Social entrepreneurs are individuals with innovative solutions to society's most pressing social problems (e.g., civil and human rights, poverty, environment, education, etc.). They are ambitious and persistent, tackling major social issues and offering new ideas for wide-scale change; our entrepreneurs aren't afraid to **THINK BIG, BE BOLD, and DRIVE CHANGE.**

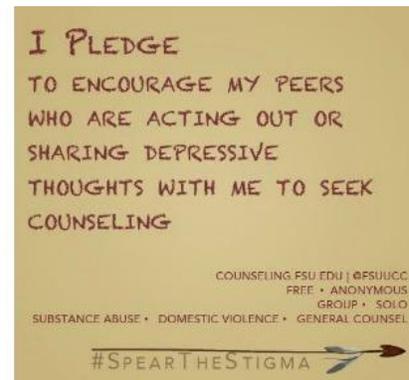
**The initiative.** As part of Florida State University's deep commitment to becoming an "entrepreneurial university," the Division of Undergraduate Studies has partnered with the College of Social Sciences and Public Policy (COSSPP) to formalize and expand the university's current efforts in social entrepreneurship. Utilizing an existing framework of curricular and co-curricular activities, including multidisciplinary course offerings and established student competitions, current efforts seek to expand university-wide and external partnerships to promote local, national, and international internships, travel support funding, research opportunities, Launch FSU—our internal social enterprise accelerator, and other activities that awaken and extend the entrepreneurial spirit of our great university.



CRE's Social Entrepreneur In-Residence Chris Markl leading an investment seminar.

## Launch FSU- Our social enterprise accelerator

Launch FSU is a social enterprise accelerator exclusively for FSU students. Launch FSU's goal is to provide valuable resources and support for an FSU led team to launch a social enterprise in one semester. The program is designed to be challenging; in the course of one semester, teams are expected to bring a product or service to market, acquire users, and develop strategies to maximize consumption. Although the program does not offer any financial investment or funding, students are expected to present projects at the culmination of the experience: Demo Day. At this symposium, each social enterprise has the opportunity to pitch their ideas to the FSU and startup community, gaining valuable presentation skills and acquiring feedback from many like-minded entrepreneurs.



**CRE social entrepreneurs participate in valuable experiential learning that translates into real outreach efforts, products, and services.**

In 2014-15, **12** students are involved in Launch FSU, and some of their high impact, social entrepreneurial initiatives included:

**Unhoused Humanity**  
unhousedhumanity.org

Many homeless have regular employment, and the only obstacle preventing them from getting into their own place are large, required deposits; Unhoused Humanity provides direct support to pay these deposits.

**The Well Ride**  
wellride.org

A 1,000 mile charity bicycle ride from Washington, D.C. to Tallahassee, Florida to raise pledge funds to build water wells in Sub-Saharan Africa.

**Spear the Stigma**  
twitter.com/spearthestigma

A social media campaign aimed to inform participants about mental illness and eradicate stigma surrounding it at our university.



## Other Notable Entrepreneurship Events Include:

### Startup Weekend Tallahassee

[up.co/communities/usa/tallahassee/startup-weekend/5535](http://up.co/communities/usa/tallahassee/startup-weekend/5535)

Startup Weekend was a weekend-long entrepreneurial conference held at FSU's Honors, Scholars and Fellows House from April 3-5, 2015. The event provided collaborative opportunities for entrepreneurs and aspiring entrepreneurs to discuss ideas, and for aspirants to determine viability of ideas. Starting with an open mic pitch on Friday, hopefuls brought their best ideas to inspire others to join their team. Saturday and Sunday allowed teams to cultivate ideas, develop customer acquisition and scalability strategies, practice LEAN startup methodologies, and, build a minimally viable product. The culmination of the event occurred Sunday evening when teams demoed their prototypes and received valuable feedback from a panel of experts.

**50** students participated in our inaugural Startup Weekend Tallahassee.

### 1 Million Cups (1MC) Tallahassee

[tallahassee.sites.1millioncups.com](http://tallahassee.sites.1millioncups.com)

Each week, the 1MC program offers a local entrepreneur the opportunity to present their startups to an audience of mentors, advisors, and other like-minded entrepreneurs.

Presenters prepare a six minute informative presentation and engage in 20 minutes of

feedback and Q & A following their presentation. Entrepreneurs gain insight into possible ways they can improve their businesses, gather real time feedback, connect with a community that truly cares about their progress | success, and are able to leave feeling they have advanced their business. The audience also learns a great deal from the presentations. Whether this is through passive listening, or active engagement with the entrepreneurs, there is much to learn every week from this dynamic, diverse community. **20** students regularly participate with 1MC.

### FSU Shark Tank

[fsusharktank.com](http://fsusharktank.com)

FSU Shark Tank was a one day pitch competition held April 1, 2015 at FSU's Turnbull Conference Center, exclusively for FSU students. Any current FSU student, with an idea for a startup, was eligible to win FSU Shark Tank's \$500 grand prize. FSU Shark Tank is incredibly simple; each student team is provided 2-4 minutes to pitch in the tank. Over **40** students participated in the FSU Shark Tank, and was by far one of our most popular entrepreneurship events this year.



## Summer Undergraduate Research and Creative Activity Awards

In order to promote greater access to undergraduate research opportunities, a wide variety of summer research funding and awards are available to students, made possible by a combination



of CRE and private donor support. These awards reflect the University's commitment to develop our students as scholars and innovators, and serve as a testament to the stimulating educational experiences available at FSU. Participants not only get the opportunity to participate in various research,

creative, and service initiatives, but to exhibit their accomplishments at the annual President's Showcase of Undergraduate Research Excellence. In 2014-15, the number of applicants far exceeded funding availability; funded awards included:

### Undergraduate Research and Creative Activity Awards (URCAA)

CRE and Private Donor Supported Awards:

Helen Louise Lee URCAA | Michael J. Shaara URCAA | David B. Ford URCAA

- 12 URCAAs @\$4,000, Total Awarded = **\$48,000**

### Mentored Research and Creative Endeavors Awards (MRCE)

CRE and Private Donor Supported Awards:

Scott and Ina McNichols MRCE | Stephen Madden MRCE | Phi Eta Sigma MRCE (2) | John W. Day III MRCE

- 18 MRCEs @\$1,000, Total Awarded = **\$18,000**

### Public Service Research Fellowships (PSRF)

CRE with funding support from the Atlantic Coast Conference (ACC) and the Garnet and Gold Scholar Society

- 4 individual students | 1 group awarded for a total of **\$14,000**

## Social Work Undergraduate Research & Creative Activity Awards (SWURCAA)

CRE and The College of Social Work foster directed research and creative activity opportunities for undergraduate students in the field of social work at FSU

- 1 SWURCAA, Total Awarded = **\$4,000**

## ACC Collaborative Summer Research Award

CRE with funding support from the ACC, this award provides a unique opportunity for an FSU undergraduate to conduct research under the mentorship of a faculty member at another ACC university

- 1 award @**\$5,000** which will send an FSU Anthropology student to Duke University

**37 Awards Funded | \$89,000** in Total Summer Undergraduate Research and Creative Activity Awards Funding



## STUDENT COUNCIL FOR UNDERGRADUATE RESEARCH AND CREATIVITY (SCURC)



SCURC is a student organization, funded by the FSU Student Government Association (SGA) and mentored by the CRE. It is comprised of two groups, the first is the editorial board for *The Owl*, Florida State's Undergraduate Research Journal. The second is the **Undergraduate Research Ambassadors**, who volunteer to promote undergraduate research and creativity among their peers campus-wide through a combination of general body meetings, events, and fundraisers.

**The Owl (Vol. 4, Iss. 1 | Spring 2014, pictured on the left)** is both an online and printed, peer-reviewed publication of research articles written by FSU undergraduates presented by the Student Council of Undergraduate Research and Creativity (SCURC), and is sponsored by the Center for Undergraduate Research and

Academic Engagement and the FSU SGA. The journal exhibits the intellectual pursuits of outstanding undergraduates, from all academic disciplines, who have sought answers to new questions within their respective disciplines through undergraduate research. The editorial board is excited to announce the release of the spring 2015 edition of The Owl, coming soon!



**Undergraduate Research Ambassadors (URA).** URAs goal is to advocate research at the university for every field and for every student. They offer one-on-one mentoring, department presentations, and social events to connect like-minded students. Their purpose is to build an intellectual community at Florida State University, and continue to provide peer resources and research support for each other. Applicants are strongly encouraged to apply, with as little as one semester of research experience. In 2014-15, the URAs have expanded accessibility and outreach through several office hours weekly and individual advising sessions.



**2014 President’s Showcase of Undergraduate Research Excellence**



This year’s Showcase was held Tuesday, September 30<sup>th</sup> from 5:30pm-8pm in FSU’s Turnbull Conference Center. Sponsored by the CRE and FSU’s Office of the President, the annual Showcase is the culminating event for the Undergraduate Summer Research Award recipients. At the Showcase, summer award winners are able to share their research and creative projects with an engaged crowd of FSU administrative, faculty, community, and student attendees. Presenters are able to demonstrate their

creative work through poster and oral presentations. These students’ projects promote the University’s mission of nurturing independent thinkers, who are learning to create solutions that enrich both our campus and larger communities. Their Florida State University-funded research and creative activity will continue to flourish through academic conferences, scholarly journals, art showcases, festivals, and competitions.

**Selected profiles for 2014 Summer Research Award Recipients | Showcase Presenters, include:**

MGLUR-MEDIATED  
CALCIUM HOMEOSTASIS  
IN THE AVIAN COCHLEAR  
NUCLEUS

**CODY CALL**

WATER FOR STUDENTS BY  
STUDENTS

**COLE FRIEDES**

MAPPING NEURAL  
NETWORKS IN APLYSIA  
CALIFORNICA USING

HIGH FIELD MAGNETIC  
IMAGING

**GRACE CHRZANOWSKI**

ARTIFICIAL  
CHROMOSOMES FOR  
HUMAN EMBRYONIC  
STEM CELLS

**MOLLY GORDON**

EXPAND PERU CASA DE  
BEBES: A  
COMPREHENSIVE  
EVALUATION OF A

CHILDCARE PROGRAM IN  
RURAL PERU

**LINDSAY GREENE**

THE IRISH QUESTION  
RECONSIDERED:  
EXAMINING NORTHERN  
IRELAND’S PRECARIOUS  
PEACE

**ANNALISE KAPUSTA  
AND KATE MAZZOTTA**

TWO-POINT STANCE

**KELSEY GRILLS**

THE HOUSING CRISIS

**MARI KYLE**

NUTRITION ASSESSMENT  
IN JODHPUR, INDIA

**TAYLOR NEWMAN**

EXAMINING THE OBESITY  
EPIDEMIC THROUGH AN  
ECOLOGICAL LENS

**DAVID G. MILLER**

FRAMING MOVEMENT  
GOALS: MOROCCAN  
WOMEN'S AGENCY IN  
DISCUSSIONS OF GENDER  
EQUALITY

**ALEXANDRA OLSEN**

MECHANOCHEMICAL  
STRENGTHENING OF  
BENZOCYCLOBUTENE  
POLYMER

**ILYA PISKUN**

THE POWER OF MEMORY  
AND MANIPULATION IN  
ANGLO-NORMAN  
DURHAM: SYMEON, ST.  
CUTHBERT, AND  
DURHAM CATHEDRAL

**MICHELLE L. SAUER**

APPLICATION OF  
FEMTOSECOND  
SPECTROSCOPY METHODS  
TO STUDY CONFINED  
FLUIDS IN HOLLOW GOLD  
NANOSPHERES

**RYAN T. RHOADES**

PARTICLE FLOW  
ALGORITHM FOR  
UPGRADED CMS  
CALORIMETER

**AUSTIN VIHNCENT  
SKEETERS**

A COUNTRY IN  
TRANSITION: EXPLORING

COMMUNITY AND  
CULTURE IN SOUTHERN  
INDIA

**HILARY SMITH AND  
TAYELOR VALERIO**

CHARACTERIZATION OF  
THE PROCESSIVITY  
FACTOR PF-8 IN KAPOSI'S  
SARCOMA ASSOCIATED  
HERPESVIRUS

**SARAH TEPPER**

FROM SURREALISM TO  
VISIONARY: AN  
EXPLORATION OF THE  
BEGINNINGS OF THE  
VISIONARY ART  
MOVEMENT

**MARY CHRISTINE  
WILLIAMS**



## Fall 2014 Research Day

The Center for Undergraduate Research and Academic Engagement  
is Proud to Present:

Fall Research Day  
November 18, 2014

All events will be held on the 3rd floor of the Honors, Scholars, and Fellows House

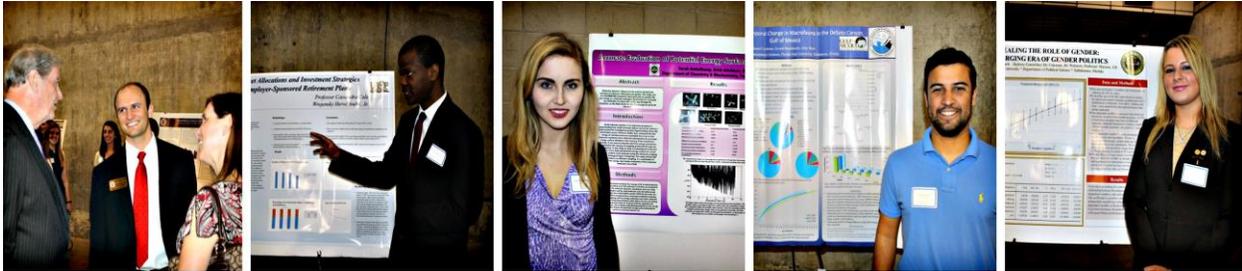
This past fall, CRE sponsored a research symposium on the third floor of the Honors, Scholars and Fellows House, spanning two classrooms. This research 'warm-up' event included eight undergraduate presentations, and presenters also participated in other CRE affiliated and sponsored programs, such as: UROP, Garnet and Gold Scholar Society, and Honors in the Major.



## 15<sup>th</sup> Annual Undergraduate Research Symposium 2015

Hosted by the Center for Undergraduate Research and Academic Engagement (CRE), the Symposium is an annual, interdisciplinary showcase event for undergraduate student researchers from across campus to present their oral, poster, and creative presentations to the university community. Undergraduates have the opportunity to get inspired by their peers and learn about how to get started in research, how to explore funding prospects to conduct their own research, and how to find opportunities to present and publish. Held Tuesday, March 31<sup>st</sup> from 10 am to 3:30 pm at FSU's Donald L. Tucker Civic Center, this year's symposium was our largest yet, with highlights such as:

- Over 300 student presenters, including those from FSU's Undergraduate Research Opportunity Program (UROP)
- Outreach panels with representatives from FSU's Graduate School and the Office of National Fellowships
- Additional tabling set up to share information and promote undergraduate engagement from various expert panels, offices, and organizations across campus
- Incorporated innovative promotional ideas, e.g., sched.org, fully integrated with our CRE site, to display and showcase the symposium to students and the university community.



This year's Undergraduate Research Symposium kicked off the inaugural Student Research and Innovation Week. Running from March 31<sup>st</sup> to April 8<sup>th</sup>, the Week offered eight days of events showcasing the wide range of research and innovation initiatives being undertaken by undergraduate and graduate students here at Florida State.

Some of this year's most popular symposium events, as rated by attendees included:

### ***Creative Presentation Sessions***

**Kate Mazzotta:** Stories from Belfast: Eight Weeks in Northern Ireland

**Jamie L. Klein:** The Development of a Short Film

**Amanda Valdespino:** The Bird Show

### ***Oral Presentation Sessions***

**Taylor Valerio:** Social Change in Southern India

**Kimani M. Hicks & Marlee M. Gil:** Investigation of the Inter-rater Agreement in Identifying Mechanical Diagnosis and Therapy (MDT) Shoulder Interventions

**Megan Sweeney:**  $\beta$ -TrCP1/2: Linking Circadian Rhythms and Metabolism



**Michelle Lorraine Sauer:** The Power of Memory and Manipulation in Anglo-Norman England: Symeon, St. Cuthbert, and Durham Cathedral

**Scarlet F. Encina:** Prevalence of Cancer Cachexia Using Different Diagnostic Criteria

**Poster Presentation Sessions**

**Erica Andrea Elizondo:** Live, Breathe, Crossfit: Lifestyle of the Fitness Elite

**Haley Messer & Krissy Hogeweg:** Eto Perro Experimental Dugout Canoe Project

**Morgan O'Rorke:** Nanotechnology: Continuous Improvement of Buckypaper Manufacturing Process

**James Magi:** Optimizing Zinc Carbon Batteries with Multi Walled Carbon Nanotubes (MWCNT)

**David Balbuena:** Dynamic Legged Robot: Shape Deposition Manufacturing

**Brittany J. Cunnien:** Predictors of STEM Career Aspirations in Elementary School Children

**Daniel Duque:** Corporate Governance and Market Efficiency

**Nicole Ferretti:** The Relation between Parental Involvement and Children's Symptoms of Inattention and Hyperactivity

**Asasia Richardson:** Examination of specific relations between anxiety sensitivity subfactors and obsessive-compulsive symptom dimensions

**Bradley Ringler:** Connectivity Measurements in Pathological Human Brain Tissue

**Summer Bias:** Postcards of Puerto Rico

**Sydney Merriweather Stuart:** The Digital Future of Clay: Wet 3D Ceramic Printing

**Emily Anne Vargas:** Process Optimization and Filtration Model of the Manufacturing of BuckyPaper

**Brittany Morgan:** Turn That Frown Upside Down: Analysis and Detection of Facial Expressions

**Ricardo Canelo III:** Speech Production in Healthy Aging Adults

**Daniel Cardenas:** Sediment Zonation Patterns of Deep-Sea Macrofauna Following the Deepwater Horizon Oil Spill

**Victoria Natalie Clark:** Revealing the Role of Gender: An Emerging Era of Gender Politics

**Taylor Davis:** Monitoring Energy Consumption in the Off-Grid Zero-Emissions Building

**Jeffrey Edelstein & Abigail Wolz:** Autism Spectrum Disorder in Higher Education

**Brianna D. Griffin:** Investigating the Role of G-Quadruplexes (G4) in Maize Gene Regulation

**Dayshon Mathis:** Sensitive Observables of the Strange Quark Parton Distribution Function

**Sylvia A. Ortiz & Chloe I. Pappa Eddy:** Project BLOOM

**Erika Richard:** From what I can gather: Creating handbuilt sculptural forms using Photogrammetry and Laser-Cutters

**Keval Patel:** Scalable Expansion of Adult Human Mesenchymal Stem Cells using Micro Carrier Bioreactor

**Therese M. Vidal:** Immigration Stress, Psychosocial Protective Factors, and Overall Health of Latino-American Subgroups Nationwide

**Information Tables | Workshops & Panels**

Center for Undergraduate Research and Academic Engagement (CRE) Table

Garnet and Gold Scholar Society Table

Office of National Fellowships Workshop

Graduate School Panel

Center for Global Engagement & Global Pathways Certificate Table

FSU Digital Studio Table

International Programs Table



## Conference Travel Funding

**Arts and Sciences Conference Travel and Research Expense Grants.** The College of Arts and Sciences and the Division of Undergraduate Studies supports both conference travel funding and undergraduate research through the administration of these grants. Students from all College of Arts and Sciences disciplines, especially those in the Honors or Honors in the Major programs, are encouraged to apply.

- CRE expanded interdisciplinary undergraduate research opportunity partnerships that included one with the College of Arts and Sciences to award **\$25,000** for conference travel, registration fees, and research-related materials, with emphasis to support active members of Phi Beta Kappa National Honor Society.

### Meeting of the Minds Research Conference Travel Awards

Sponsored by the CRE with funding from the Atlantic Coast Conference (ACC), this award covers all conference costs (including travel, food, and hotel) for students presenting their research at the annual ACC undergraduate research conference, “Meeting of the Minds,” held this year at North Carolina State University from April 10-12th, 2015.

- Seven students represented CRE and FSU in Raleigh, NC this year.



CRE Associate Director Latika Young with students at Meeting of the Minds in Raleigh, NC.

**SCURC Student Conference Travel Grant.** Offered by the Student Council of Undergraduate Research and Creativity (SCURC), with funding support by the Student Government Association, undergraduate students who are presenting research or a creative project at a professional conference may receive up to **\$500** to cover travel | conference expenses.

## Curricular Initiatives

### Academic Engagement and Innovation Grants (AEIG)

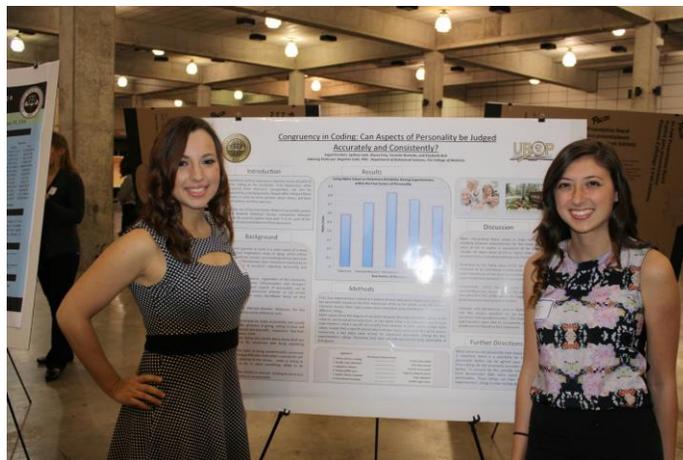


**Undergraduates presenting research projects in PSY 2012 General Psychology, made possible with the support of AEIG funding.**

**About.** Funded by the Office of the Provost, the Academic Engagement and Innovation Grants program supports faculty initiatives to promote student engagement and innovation within new or existing undergraduate courses at any level. The pilot program is part of a larger university "Graduate Success" initiative focused on advancing graduates to the next step along their career path. Examples of AEIG funded engagement projects include, but, are not limited to, **capstone courses, research projects, internship experiences, service-learning opportunities, and integration of social innovations.** In 2014-15, AEIG funding was **\$72,000.** Such funding reached:

- 25 faculty members
- 28 distinctive courses
- 19 departments
- 2,601 students impacted.

Funding was used to support Graduate Research Consultants (GRCs), Academic Engagement Associates (AEAs), and the purchase of research materials.



## Curricular Initiatives

### Graduate Research Consultant (GRC) Program

The GRC program supports faculty who wish to integrate a research project or assignment into certain honors augmented courses by providing a \$1,000 stipend to fund an advanced graduate student (a Graduate Research Consultant) who works with the students (40+ hours throughout the course) to help them design, implement, and share research projects. The GRC is not the same as a TA. GRCs have extensive knowledge in research methodology and their role is to help facilitate the research process and promote undergraduate confidence in conducting and presenting original research.

Collaboration with a GRC provides numerous potential benefits, including:

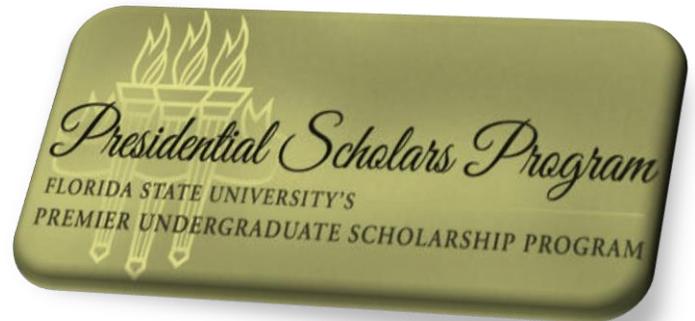
- Logistical support for promoting undergraduate student research
- The opportunity to engage more undergraduate students in the research process
- GRC may provide methodological perspectives that complement faculty research
- Fostering an undergraduate research culture that extends to future faculty.

In 2014-15, GRCs provided research support across **six honors courses**, delivering individual and personalized attention to students in smaller classroom and research environments (18-19 students). Such small group encounters parallel Association of American Colleges & Universities (AAC&U) (2008, 2015) suggestions for high-impact teaching and learning practices that promote small groups of first-year students and faculty or staff collaborating on a regular basis.



## Curricular Initiatives

The Presidential Scholars award is the premier undergraduate merit scholarship at Florida State University. The program provides four years of support and is open to high school seniors who are admitted into the Florida State University Honors Program. Many of our Presidential Scholars are



involved in one or multiple of the other high-impact programs that we oversee, such as Global Scholars, research and creative endeavors, service-learning projects, public service internships, and social entrepreneurship initiatives. *This scholarship is made possible by a generous gift from Linda and Philip Lewis.*

**The 2014 Presidential Scholars and staff with CRE Director Dr. O'Shea.**

2014-15 Cohort Highlights:

- **25** Presidential Scholars
- All scholars also participate in CRE's UROP program
- Faculty from **17** different departments serve as research mentors for our scholars
- Three members also participate in FSU's Global Scholars program.





# FGLSAMP



## FGLSAMP

### FLORIDA-GEORGIA LOUIS STOKES ALLIANCE FOR MINORITY PARTICIPATION at FSU in STEM FIELDS

Founded by the National Science Foundation (NSF), the Florida State University Chapter of the FGLSAMP program is part of a nationwide alliance that began in the fall of 1992. The program's goal is to facilitate the entry of FGLSAMP Science, Technology, Engineering, and Mathematics (STEM) majors into competitive graduate programs, while also increasing the production of career-ready minority graduates in the STEM professional areas. These goals are met through, **RECRUITMENT** (conferences | workshops), **PROGRESSION** (mentoring | internship/research opportunities), and **GRADUATION** (assistance with competitive graduate school attendance and employment).



2014-15 FGLSAMP cohort.

#### 2014-15 Program Highlights:

- 22 undergraduate student participants
- 15 undergraduate student participants shared award funding, in excess of \$13,000
- 5 FGLSAMP Ph.D. graduate student mentors received awards of \$1,500 each
- Total participant funding just over \$20,000
- One FGLSAMP | UROP participant, and one FGLSAMP | Global Scholars participant.



## FLORIDA IT Career --- ALLIANCE

The FITC Alliance was launched in May 2014 with support provided from the Florida Board of Governors to Florida State University and Florida Agricultural & Mechanical University. The Florida IT Career Alliance was established to help recruit, retain, and employ Florida’s next generation technology workforce. To achieve this goal, the Alliance engages academic and industry partners that range from high schools, community colleges, state colleges, universities, and private and public employers. These partnerships will enable academics and industry professionals to work together to attract outstanding technology professionals to Florida communities. The FITC Alliance relies heavily on the efforts of students to build a strong network that helps guide and strengthen their career preparation and encourages others to join the profession. Program goals are met through three, coordinated strategies: **RECRUIT** by traveling to local high schools across the panhandle to promote opportunities a career in a technology field can present, **RETAIN IT**, computer science, and engineering graduates in Florida by creating a career pipeline through partnership with local companies, and **EMPLOY** a qualified workforce by working with North Florida secondary schools and colleges to uphold a higher IT curriculum standard.

### First-year Program Accomplishments:

- 29 student ambassadors regularly participated in recruitment efforts
- 2 students actively engaged in research projects with FITC associated professors
- 8 FITC minority participants are also recipients of FSU undergraduate research and creative activity awards
- 1 participant actively involved in the prestigious 2015 Toyota Co-op Program.



**FITC Alliance members partnering with FSU College of Communication and Information students to talk ‘tech’ with students at a local North Florida high school.**


## Staff Scholarly Contributions

### Books

O'Shea, J. (2013) *Gap Year: How Delaying College Changes People in Ways the World Needs*. Baltimore, MD: Johns Hopkins University Press.

See independent reviews of above book in *Journal of Higher Education*, 2015; *Global Living Magazine*, November 2014; *Library Journal*, February 2014; *Research & Practice in Assessment*, June 2014; *Midwest Book Review*, March 2014; *Short List*, *Mindful Magazine*, April 2014.

### Book Chapters

O'Shea, J. and Young, L. (2014) Supporting Equality of Education through Inquiry-Based Learning, in Patrick Blessinger, John M. Carfora (ed.) *Inquiry-based Learning for Faculty and Institutional Development: A Conceptual and Practical Resource for Educators (Innovations in Higher Education Teaching and Learning, Volume 1)*. Bradford, UK: Emerald Group Publishing, 439-459.

Young, Latika L. (Pending 2015 publication). How one awkward, chubby, bespectacled white boy from New Jersey got all of YouTube dorky dancing and why we should thank him for it. In Jennifer Atkins, Sally Sommer, and Tricia Young (Eds.), *Dance in American culture*. Gainesville: University Press of Florida.

### Articles

Losh, S., Nzekwe, B., O'Shea, J., and Miller, D. (2015) *Constructing a Research Identity: How Background Characteristics and Research Experience Influence Undergraduates*, Submitted.

Oppenheim, W., O'Shea, J., and Sclar, S. (2015) *Interactive Technology for More Critical 'Service-Learning'?: Possibilities for Mentorship and Collaboration within an Online Platform for*

*International Volunteering, Journal of Interactive Technology and Pedagogy*, In Press.

Oppenheim, W., O'Shea, J., and Sclar, S. (2015) *Service-learning, internationalization, and inequality in higher education: Constraints and opportunities for transformative pedagogy*, Submitted.

### Other/Popular Press Publications & Interviews

Interview with Bloomberg EDU Podcast, *The Case for Taking a Gap Year Before College*, Published/Aired February 12, 2015 at: <http://bloomberg.edu/podcasts/bloomberg-edu>

Interview with Credit Union National Association Magazine, *Bridging the Gap Year*, Published September 1, 2014.

Interview with *Organic Connections Magazine*, *A "Gap Year" Rounds Out Education*, Published November 2014.

### Selected Academic & Professional Presentations

Coven, C. (2014, October). *Creative Solutions to Integrating Creative Projects*. Poster presented at the annual Florida Statewide Symposium for Engagement in Undergraduate Research, Orlando, FL.

O'Shea, J. (2015) *Assessment of Undergraduate Research*, Scheduled for Panel Presentation at the Council on Undergraduate Research National Conference, June 2015, Norman, Oklahoma.

O'Shea, J. (2015) *Facilitating International Experiences in Social Entrepreneurship Education*, Panel Presentation at AshokaU International Conference, February 2015, Washington, D.C.

O'Shea, J. (2015) *Making your life easier: Tech tools for program management and automation*,

Scheduled to Present at the Council on Undergraduate Research National Conference, June 2015, Norman, Oklahoma.

O'Shea, J. and Markl, C. (2014) Supporting Students as Social Entrepreneurs and Innovators, Poster Presentation at Reinvention Center National Conference, November 2014, Washington, D.C.

O'Shea, J. and Young, L. (2014) Reimagining International Education: Critical Service Learning Programs, Poster Presentation at Reinvention Center National Conference, November 2014, Washington, D.C.

O'Shea, J., Usher, B., Datta, S., Schneider, E., and Lyon, J. (2015) Starting off in Social Media: Applications for Undergraduate Research Offices, Scheduled to Present at the Council on Undergraduate Research National Conference, June 2015, Norman, Oklahoma.

O'Shea, J., Young, L., and Spears, J. (2015) New Frontiers for Undergraduate Research: Intersections in Academic Engagement, Scheduled to Present at the Council on Undergraduate Research National Conference, June 2015, Norman, Oklahoma.

Wawrzynski, K., O'Shea, J., and Schneider, K. (2015) Campus-wide Undergraduate Research Initiatives: Managing Programs at Large Institutions, Scheduled to Present at the Council on Undergraduate Research National Conference, June 2015, Norman, Oklahoma.

Young, L. (2014, October). Innovative Approaches to Increase Participation in Undergraduate Research. Oral presentation at the annual Florida Statewide Symposium for Engagement in Undergraduate Research, Orlando, FL.



The Council on Undergraduate Research (CUR), a prominent advocacy group supporting high-quality undergraduate research opportunities for members at affiliate universities has recognized **FSU for having one of the top undergraduate research programs in the country**. CUR has recently announced that Florida State University has been identified as a finalist for the inaugural Campus-wide Award for Undergraduate Research Accomplishments (AURA). The award recognizes higher education institutions that have met specific outlined CUR characteristics of excellence in undergraduate research, and has demonstrated a successful track record of implementation of high-quality undergraduate research programs. In our notification letter, CUR states, *we are recommending that only a select few continue to the full portfolio application stage*. The opportunity to proceed in the portfolio process is a combined testament to the joint efforts of FSU and CRE to promote undergraduate research as a core institutional commitment.

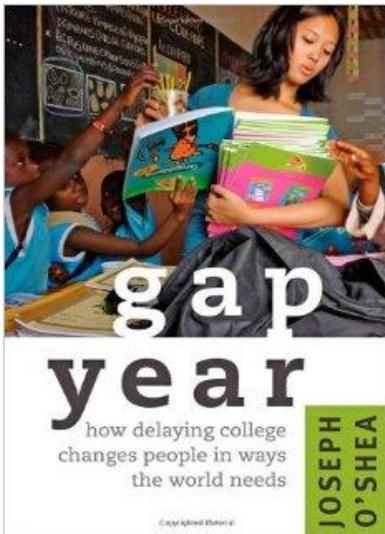
The CUR is also a proud supporter and promoter of *The Owl: The Florida State University Undergraduate Research Journal*, providing online access to our journal for a worldwide viewing audience.



Student Research & Innovation Week, which commenced with CRE’s 15<sup>th</sup> Annual Undergraduate Research

Symposium, received campus-wide attention and exposure via Florida State 24/7: The online news site of FSU, and our symposium received a special in-person visit by our current university President John E. Thrasher.

CRE’s very own **Chris Markl**, Social Entrepreneur in Residence, was interviewed and quoted in an online article of the Tallahassee Democrat to publicize Startup Weekend Tallahassee, which occurred at FSU’s Honors, Scholars and Fellows House April 3-5, 2015. (Waters, T. (2015, April 1). FSU startup bootcamp returns. Tallahassee Democrat: <http://www.tallahassee.com/story/news/money/2015/04/01/fsu-startup-bootcamp-returns/70798654/>).



Gap Year: How Delaying College Changes People in Ways the World Needs, authored by CRE Director Joe O’Shea and published in 2013, recently received a cheering book review by Jennifer Keup (Director, National Resource Center for The First-Year Experience and Students in Transition: University of South Carolina) to appear in the *Journal of Higher Education*, which stated in-part,

“In constructing a theoretical context for gap-year experiences, O’Shea effectively reviews and integrates several theories of ‘meaning-making,’ including self-authorship, transformational learning theory, civic education, and cosmopolitanism to draw connections between student development theory and transformational learning theory and to present a unified construct of meaning-making that has not yet been done in the American literature base.”





*CRE extends our great appreciation and gratitude to*

Division of Undergraduate Studies | Dr. Karen Laughlin, Dean  
Division of Undergraduate Studies | Andrew Myers, Director of Strategic Communications  
Faculty and Graduate Mentors  
FGLSAMP  
Florida State University Libraries  
Offices of the President and Provost  
Omprakash  
Student Council for Undergraduate Research and Creativity (SCURC)  
The Atlantic Coast Conference (ACC)  
The Florida IT Career Alliance (FITC)  
The FSU College of Arts and Sciences  
The FSU College of Social Work  
The FSU Graduate School | Dr. Nancy Marcus, Dean  
The FSU Honors Program | Shelby Huffman, Assistant Director  
The FSU Office of National Fellowships | Dr. D. Craig Filar, Director  
The FSU Student Foundation  
The FSU Student Government Association  
The FSU Turnbull Conference Center  
The Office of Undergraduate Research Advisory Board



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**Dr. Joe O'Shea, Director of CRE**

**Latika Young, Associate Director**

**Chris Markl, Social Entrepreneur In-Residence**

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**Dr. Glenn Walters, CRE Outreach Coordinator**

**Crista Coven, Graduate Assistant**

**Kim Reid, Graduate Assistant**