

Summer Undergraduate Research Experiences

SURE at
Emory University &
Beyond



Questions to Ask

- Why do you want to do research?
- What are my objectives for getting involved in research?
- What type of training do I desire?
- What are my strengths?
- What skills do I need to develop?
- What kinds of research or creative projects will engage me?
- How much independent versus team work do I want to do?
- What type of career do I want to pursue?

Benefits

- Community of scholars
- 16 hours of Ethics education
- Career preparation
- Communicating science

Weekly Meetings: Science Careers

- Mentorship and networking
- Choosing a graduate program: Q&A with grad students and program recruiters (separate sessions)
- Choosing a research mentor and graduate school
- Science careers outside academia
- Preparing and presenting a poster, Chalk talks and elevator talks
- Choosing & Funding graduate school...

Weekly Meetings: Research Ethics

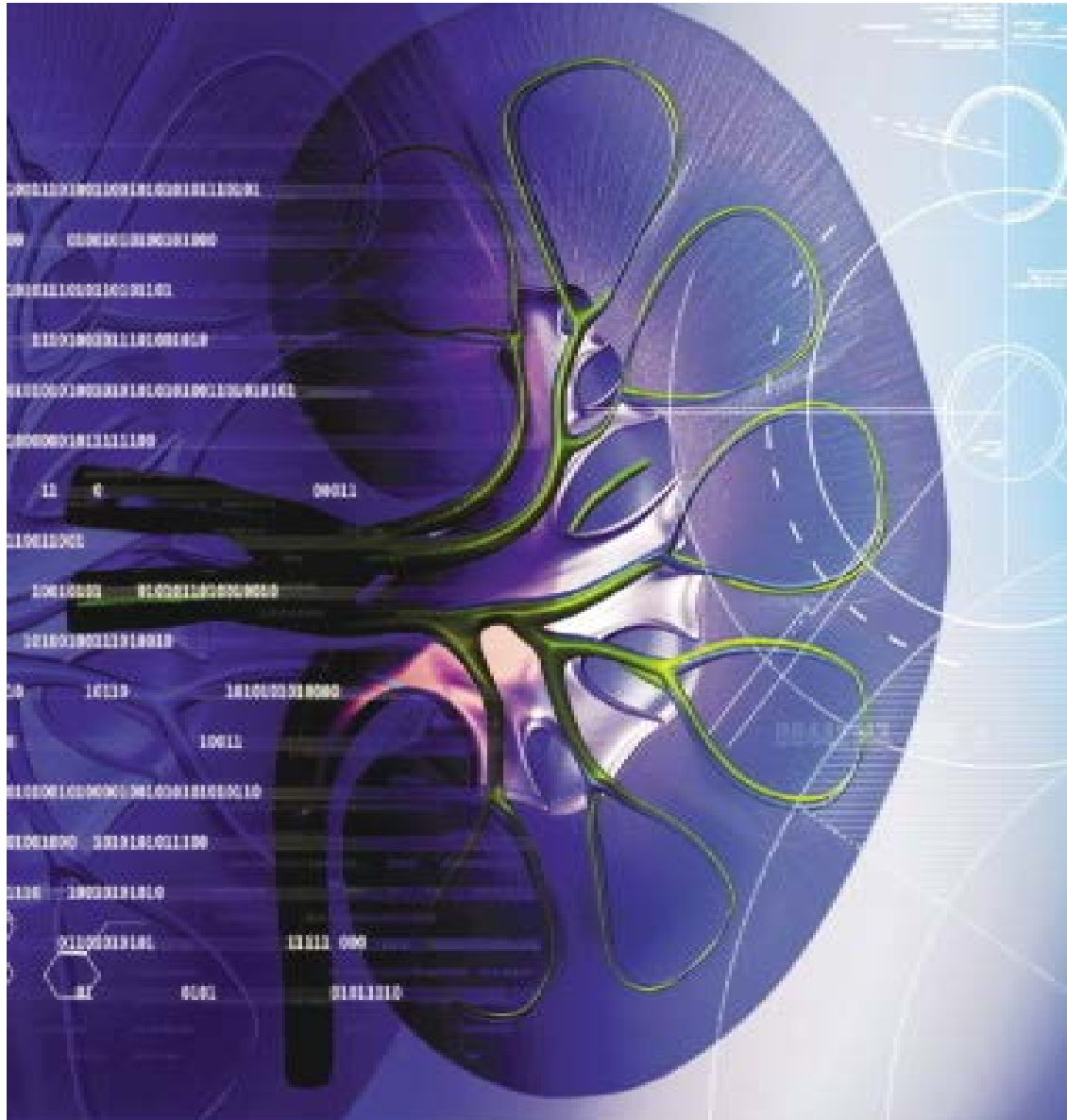
- Day-long ethics role-playing activity
- Weekly small-group meetings feature student- led discussions on:
 - Authorship
 - Moral reasoning
 - Data ownership, secrecy in science, whistleblowing
 - Data choice, research integrity
 - Use of humans and animals in research
 - Mentorship; work environment; romance in the workplace

Other Program Activities

- Welcome picnic; opening and closing banquets
- Social activities planned by Ras
- Volunteering opportunities organized by students
- Poster Session
- Poster Awards
- Funds to travel to research meetings
- MD/PhD lunch
- Lunches with Scientists



Summer
Undergraduate
Program in
Emory
Renal
Research



SUPERR

- NIDDK funded R25. Work in partnership with SURE.
- Sites: Emory, Harvard, Yale, Mayo, UT-Southwestern, Vanderbilt.
- Completed 4 of 5 summers of funding.
- Provides a research and didactic experience in kidney or urology diseases for undergraduate students.
- Following a national recruitment, selected students participate in a 10 week didactic and laboratory or clinical research experience. Emory takes 8-10 students/summer.
- Program culminates with participation in the NIDDK R25 Summer Student Research Symposium. The 2014 symposium was at Vanderbilt, 2015 at Emory, 2016 at Mayo, 2017 at NIH, and 2018 will be at Harvard.

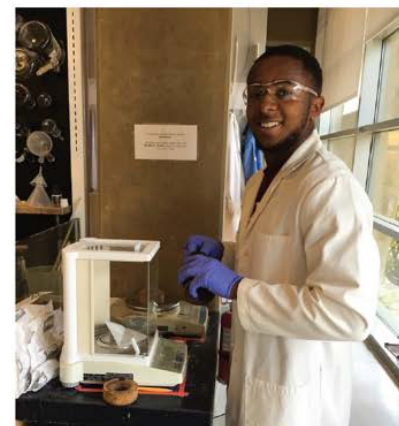
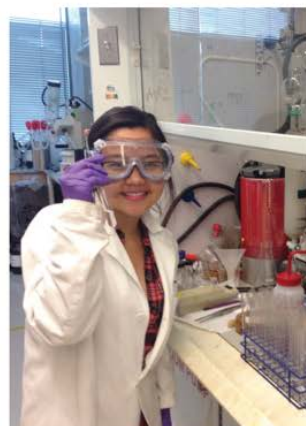
SUPERR

SUPERR students are:

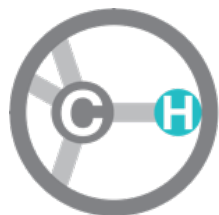
- mentored by research and/or clinical faculty during the entire 10 week program
- provided hands-on training in established research laboratories or clinical programs (minimum of 37 hours of independent research per week)
- provided classroom training in ethical conduct of research
- provided didactic training including journal club and professional development
- provided a forum for presentation of scientific findings (SURE Research Day and NIDDK R25 symposium)

Emory University Pediatric Engineering Research Summer Experience

- <http://www.pedsresearch.org/news/article/pediatric-bioengineering-summer-training-program>
- The PERSE program exposes students to exciting, new areas of research, provide clinical significance with clinician shadowing, educates students in current topics in pediatric engineering literature, and develops presentation skills needed for graduate research. In collaboration with the Emory SURE program, the students will take part in graduate school and career panels, have the opportunity to interface one-on-one with researchers from nearly every avenue, and receive critical ethics training in research with a special session devoted to pediatric medicine.



Chemistry Summer Undergraduate Research Program (CSURP)

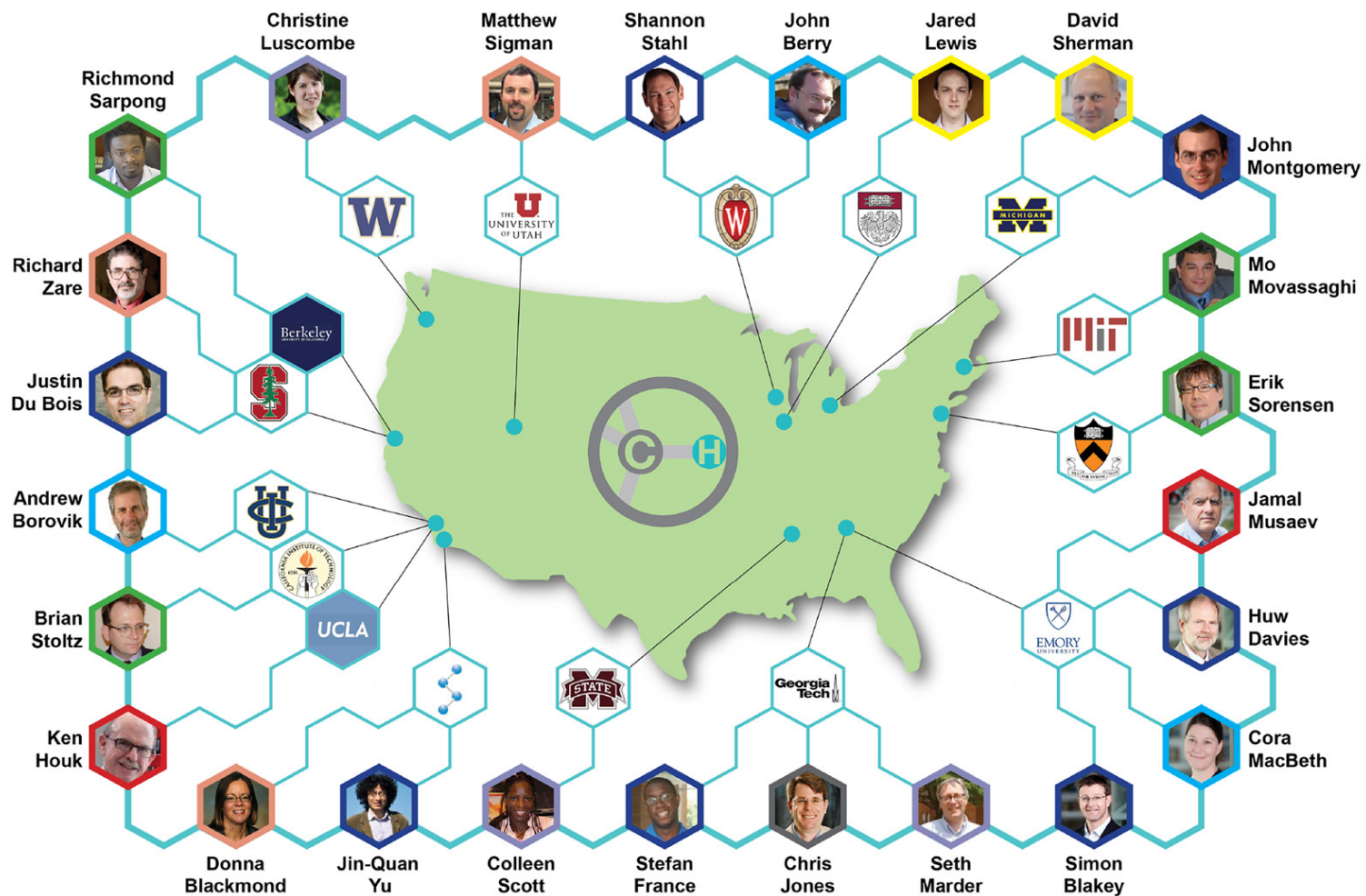


CCHF

CENTER FOR SELECTIVE
C-H FUNCTIONALIZATION

Presented by Lloyd Munjanja, PhD
CCHF Director of Education, Outreach and
Diversity
October 2nd, 2017

NSF Center for Selective C-H Functionalization (CCHF)



**Methodology
Developers**

**Synthetic and Physical
Inorganic Chemists**

**Synthetic
Strategists**

**Physical Organic and
Mechanistic Chemists**

**Computational
Chemists**

**Materials
Scientists**

**Chemical Biologists and
Protein Engineers**

**Chemical
Engineers**

CSURP: Access and Mentorship



- ❑ **43** students over 4 years
- ❑ **80%** from Historically Underrepresented Groups in STEM

- ❑ **>90%** of alumni are in (or plan to attend) PhD or MD programs
- ❑ **100%** of alumni indicated that CSURP had direct impact on their future plans





“CSURP granted me a full summer of research experience at an esteemed R1 university. This experience greatly influenced my development as a scientist and influenced my decision to pursue a Ph.D. in chemistry.”

Jessica Elinburg – *Boston University*



CSURP Fellows will receive funding support to perform their summer research experience including:

- Travel awards to their host institution.
- A stipend of up to \$5,000 for 10 weeks of participation.
- On campus housing, if required.
- Attending seminars, workshops, career planning sessions and other professional development opportunities
- Engaging in innovative, cutting edge research
- Interacting with prominent leaders in the field

Online Application Due - February 9, 2018

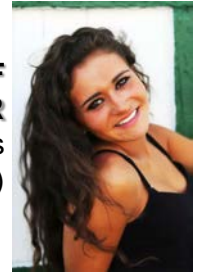


2017 - Fellows

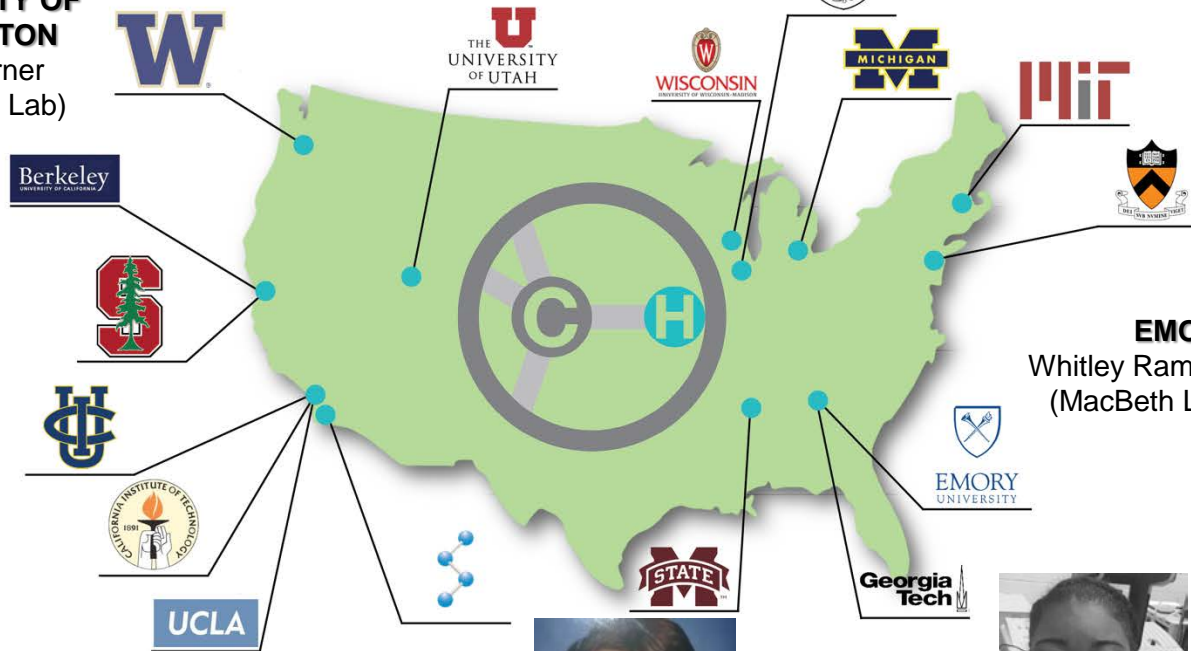
UNIVERSITY OF WISCONSIN-MADISON
Bria Garcia
(Berry Lab)



UNIVERSITY OF MICHIGAN-ANN ARBOR
Natalia Harris
(Sherman Lab)



UNIVERSITY OF WASHINGTON
Nathan Turner
(Luscombe Lab)



EMORY
Whitley Ramirez
(MacBeth Lab)



MISSISSIPPI STATE UNIVERSITY
Sam McKinnon
(Scott Lab)



GEORGIA TECH



Caria Evans
(Marder Lab)



Lanae Davis
(Jones Lab)



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CCHF

CENTER FOR **SELECTIVE**
C–H FUNCTIONALIZATION

Research Beyond Emory

- Think about applying to a program where you might wish to go to graduate school!
- Use Google to search for specific types of research opportunities. If you just use Undergraduate Research you will get 200 million hits, so be more specific!!
- Remember most deadlines for summer research are in February!
- Go to department or school websites and find at least two projects that sound interesting.

Other ways to involve students

- Do you have a RISE or MARC?
- Do you want to send your students off campus?
 - For credit?
 - For pay?

Coming soon, we hope

- Research in Infectious Disease
- Research in Quantitative Social Sciences

Postbaccalaureate Research

Audience: students with long-term PhD* goals who are not *well-suited* for graduate study in the immediate future.

readiness: ability to thrive and excel in graduate school vs. just surviving [maturity, confidence, coping mechanisms, interpersonal and/or professional skills]

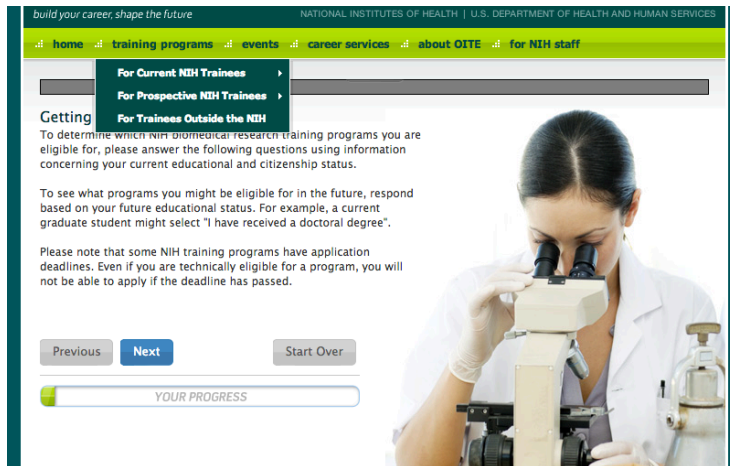
competitiveness: likelihood of securing and successfully completing an interview at a quality graduate program of choice [GPA/research experience/meaningful recommendations/GRE scores/writing skills/interview skills]

The right postbacc research experience can address deficiencies, develop skills, and in general enhance the odds of successfully completing a PhD.

Help your student to (1) identify/acknowledge strengths and weaknesses, (2) pursue experience(s) that address deficiencies, and (3) be prepared to discuss how said deficiencies have been or are being addressed in application statements and interviews.

Postgraduate Research Options

- traditional employment: as a research associate/technician
 - Positions posted online, word of mouth. “Work for hire” nature of the position may lack a mentoring component. Student must communicate long-term goals with PI, be proactive in securing mentoring and pursuing developmental activities.
- mentored training: explicit goal of personal and professional development, retention in the sciences, etc. as well as skill development



- NIH is the likeliest funding source, via
 - » R25 postbaccalaureate grants (to universities)
 - » IRTA (intramural research training awards at NIH laboratories; one award type focuses on training future PhDs, the other focuses on training future research personnel)
- See <https://www.training.nih.gov/>

Resources

WebGuide to Undergraduate Research has program listings from all over!

<http://www.webguru.neu.edu/>

NSF REU sites

<https://www.nsf.gov/crssprgm/reu/>

https://www.nsf.gov/crssprgm/reu/reu_search.jsp

Association of American Medical Colleges

[*https://students-residents.aamc.org/applying-medical-school/article/md-phd-summer-undergrad-research-programs/*](https://students-residents.aamc.org/applying-medical-school/article/md-phd-summer-undergrad-research-programs/)