UAB Medical Student Summer Research Programs

Robin Lorenz, MD, PhD
Associate Dean, Physician Scientist Development

www.uab.edu/medicine/physci
UASOM research experiences

MS1

MS2

MS3 Scholarly Activity

MS4 Elective

Summer

Leave of Absence
Physician Scientist Development Office (PSDO)

Physician Scientist Development Office
• http://www.uab.edu/medicine/physci/medical-students

Medical Student Summer Research Opportunities at UAB: Single PSDO Application Due March 6, 2017)
• CCTS Comparative Effectiveness and Patient-Centered Outcomes Research (10 slots)
• Koopman Medical Student Research Excellence Award (Medicine) (3 slots)
• Functional Neurorehabilitation Research Opportunities (Physical Medicine and Rehabilitation)(2)
• Department of Surgery Summer Research Program
• Diabetes Research Center Summer Research Fellowship (6 slots)
• O’Brien Center for Research in Nephrologic and Urologic Diseases Fellowship (5 slots)
• Short-term Research Training Program (SRTP) (30 slots)

Medical Student Summer Research Opportunities at UAB: Individual Application
• Cancer Research Experiences for Students (CaRES)
• Russell Cunningham Memorial Research Program (Pediatrics)(Application Due January 31, 2017)

Medical Student Summer Clinical Opportunities at UAB
• Summer Genetics Scholar Program (Application Due January 29, 2017)
How to apply (Common Application)

• Select a faculty sponsor
• With the help of your sponsor, draft a project proposal
• Complete the online application
  • Demographic Information
    • Name, address, GPA, MCAT
  • Brief description of any previous research experience
  • Resume (as a PDF)
  • Summer Project Title, type of research
  • Mentor name, department, contact information
  • Project Proposal
Required Project Proposal

• Research Interests and Career Goals (limited 1 page)
  • What type of research are you interested in
  • What are your ultimate career goals
    • How does research fit in with these career goals
• Research Project Proposal (2-5 pages)
  • Introduction
    • Background information relevant to your project
  • Project Objectives and Hypothesis
  • Methods/Approach
• Literature Cited (3-5 relevant papers)
• Project Proposal: 3-6 pages
Center for Clinical and Translational Science (CCTS)
Comparative Effectiveness and Patient-Centered Outcomes Research (CER/PCOR)
Summer Research Program

Director: Kenneth Saag, MD, MSc
Program Administrator: Ryan Outman

Questions? Email: ccts@uab.edu
www.uab.edu/ccts
CCTS Summer Research Program

Overview

• 8-week full-time mentored-research experience in CER/PCOR

• Primary pool of 35 senior mentors to oversee mentored-research experience

• Research related to various diseases and patient populations

• Past outcomes for trainees
  • Abstracts and presentations at conferences
  • Manuscripts
  • Continued research experience as part of future scholarly activities
CCTS Summer Research Program

Training Activities

- Research experience supplemented with weekly seminars/workshops combined with AHRQ-funded T32 pre-doctoral and postdoctoral fellows for expanded learning community

| Week 1: Orientation, How to be a mentee? Developing an IDP | Week 5: Team Science |
| Week 2: Introduction to CER/PCOR | Week 6: Stats 101 |
| Week 3: CER/PCOR Study Design 101 | Week 7: Community/Stakeholder Engagement in PCOR |
| Week 4: Information Finding and Evaluation of CER/PCOR Literature | Week 8: Trainee Presentations |

- Mock Study Section that provides overview of NIH study section’s goals and processes and reviews grant application
Example Projects

LIVE WELL: Barriers to Weight Loss Interventions in Primary Care (Mentor: Dutton)

Association between regular aspirin (ASA) use and long-term rates of sepsis (Mentor: Wang)

Time on Dialysis and Kidney Transplant Survival: A diminishing benefit? (Mentor: Locke)

Do the Outcomes of Indicated Preterm Deliveries Differ by the Indication? (Mentor: Harper)

Corticosteroid Dosing for Acute Exacerbations of COPD (Mentor: Wells)

First row: Michelle Wang (UAB), Macie Enman (UAB), JoAnn Hsu (UAB), Allie Khodadadi (UAB), Carolyn Ellison (Auburn), Ken Saag (UAB); Second row: Alexandra Onyiego (Tulane), Chris Wren (Auburn), Kevin Cofer (UAB), Burke Smith (UAB), Christian Smith (UAB), David Chaplin (UAB); Not pictured: Robert Wood (Tulane), Mallory Youngstrom (UAB)
Questions?

Contact Ryan Outman

routman@uab.edu or 205.996.9672

Want to know the latest? Visit the website to join the CCTS

uab.edu/ccts
2017 Koopman Medical Student Research Excellence Award

- In honor of Distinguished Professor and Chairman Emeritus of the DOM William J. Koopman, MD.
- Dr. Koopman’s insights into rheumatoid arthritis inspired novel treatments still being used today. His distinguished research career is a model and inspiration for young investigators.
- This prestigious award is for medical students with a passion for research and making a lasting impact.

William J. Koopman, MD
Applicant Criteria

• First year medical students with an interest in medical or health-related research are encouraged to apply for this **8 week summer internship program** with a research mentor who has a primary appointment in the DOM.

• The project will be conducted during the summer between the MS1 and MS2 years.

Koopman Medical Student Research Excellence Award
Application Process

- Select a **faculty sponsor** with a primary or secondary appointment in the DOM
- With sponsor, outline a **research project**
- Apply with the **common application form by March 6, 2017 (5pm)**
  [http://www.uab.edu/medicine/mssrp/application/2016-application](http://www.uab.edu/medicine/mssrp/application/2016-application)
- **Research Proposal**: Follow the common Summer Research Project Proposal guidelines
- Koopman-specific: **Interviews** for competitive applicants (March)

*Koopman Medical Student Research Excellence Award*
Successful Applicants

• Awards will be given annually to **three** outstanding medical students in the DOM.
• Includes a stipend of **$4,000** over the course of the 8 week summer training
• Awardees will also be provided with a **$1,500 travel allowance**
• Awardees will present a poster at the **DOM Trainee Research Symposium** and a brief talk at the **DOM Clinical Research Seminar** in Spring the following year (2018)
• **Career peer mentoring** provided by former Koopman Scholars

*Koopman Medical Student Research Excellence Award*
Prior Awardees

2014
Kristin Olson
Christina Muzny, MD
Infectious Diseases

Ynhi Thai
Andrea Cherrington, MD
Preventive Medicine

Timothy Fernandez
Eric Sorscher, MD
Hematology & Oncology

2015
Kelsey Real
Kellie Flood, MD
Gerontology/Geriatrics/Palliative Care

Koushik Kasanagottu
Monika Safford, MD
Preventive Medicine

Salmaan Kamal
Stefan Kertesz, MD, MSc
Preventive Medicine

2016
Stephanie Donaldson
Suzanne Oparil, MD
Cardiovascular Disease

Joshua Jackson
Jessy DeShane, PhD
Pulmonary/Allergy/Critical Care

Benjamin Smood
Palaniappan Sethu, PhD
Cardiovascular Disease

Koopman Medical Student Research Excellence Award
Questions?

Contact us:

Jennifer Pollock Ph.D. - jenniferpollock@uabmc.edu

Chad Hunter Ph.D. - chadhunter@uabmc.edu

Koopman Medical Student Research Excellence Award
Functional Neurorehabilitation Research Opportunities for UAB Medical Students

Victor Mark, MD  
vwmark@uabmc.edu  
934-3499
• **FNR Scholars Program**
  
  Rationale:
  
  • Increase awareness of the field of PM&R and physiatrists among UAB Medical Students.
  
  • Support School of Medicine educational mission—scholarly activity and student research
  
  • Mentor next-generation of leaders in the field, including physician-scientists.
Approach and Timeline

• Provide stipend for UAB 1st year Medical Students to conduct a summer research project mentored by PM&R faculty: ($4,000 stipend + $1,000 travel funds for conference presentation = $5,000/ medical student).

• Students will apply to FNR Scholars Program, and PM&R faculty will evaluate applications, awarding most meritorious.

• Up to two awards will be made for summer 2017 (announce by March 20, 2017)

• Present at MSRD
RREMS option

• “Rehabilitation Research Experience for Medical Students” = RREMS scholarship program
• National program, similar mechanism to UAB PM&R
• Sponsored by the Association of Academic Physiatrists
• UAB PM&R Dept participates annually
• 8-week summertime research
• $4000 stipend
• Deadline for submissions February 1, 2017
• Present findings at annual national meeting Feb 2018
• http://www.physiatry.org/?page=RREMS_students
RREMS option

• Students can apply to either PM&R research program or RREMS national program, or both; however, student can only be awarded from one of the programs (the student may select which one). Note different deadlines for submitting to the different programs.
• Note difference between the programs:
  • PM&R scholarship program is only for neurologic rehabilitation topics
  • RREMS scholarship, in contrast, applies to any rehabilitation research topics
Potential kinds of research projects

• Join on-going research by mentor
• Student-initiated research (must be approved by mentor)
• Database or chart review
• Clinical study proposed by clinical faculty member, with secondary mentorship by research faculty member, OR
• Research study proposed by research faculty member, with secondary mentorship by clinical faculty member
• The following do not qualify: literature review, case report
Current faculty research topics for Scholarly Projects

- Yuying Chen, MD, PhD ([yuyingchen@uabmc.edu](mailto:yuyingchen@uabmc.edu))
  - Spinal cord injury: secondary data analysis, weight control
- Candace Floyd, PhD ([clfloyd@uab.edu](mailto:clfloyd@uab.edu))
  - Rodent models of spinal cord or traumatic brain injury, pain control, nerve regeneration
- Keneshia Kirksey, MD ([kmkirksey@uabmc.edu](mailto:kmkirksey@uabmc.edu))
  - Falls in lumbar stenosis, control of neuropathic pain
- Amy Knight, PhD ([ajk@uab.edu](mailto:ajk@uab.edu))
  - Brain metabolic changes in acute medical trauma
Current faculty research topics for Scholarly Projects

- Victor Mark, MD (vwmark@uabmc.edu)
  - Cognitive effects on neurorehabilitation, visual attention and language effects on recovery
- Amie McLain, MD (ajackson@uabmc.edu)
  - Women’s reproductive and gynecological topics in spinal cord injury
- Danielle Powell, MD (daniellepowell@uabmc.edu)
  - Obesity in spinal cord injury; spina bifida needs in adults
- Ceren Yarar-Fisher, PT PhD (cyarar@uab.edu)
  - Skeletal muscle physiology in spinal cord injury, influence of ketogenic diet on neurologic recovery
- Xiaohua Zhou, MD (zhou@uab.edu)
  - Swallowing management in stroke; bladder training in stroke
UAB Department of Surgery

Summer Research for Medical Students

Program Director: Herbert Chen, MD
Program Administrator: Kristi Herritz
Department of Surgery – Summer Research Overview

• 8-10 week full-time research experience
• Supplemented with:
  • Surgery-specific seminars
  • Clinic/OR observations
• Opportunities in variety of surgical diseases
• Opportunities for abstracts/manuscripts
• Opportunities for team projects (undergrads, h.s.)
Example Projects

• Basic Science
  • Stress on neonatal immune response (Dr. Martin)
  • Mechanisms of action of Roux-en-Y gastric bypass (Dr. Grams)

• Translational
  • Xenotransplantation (Dr. Eckhoff)
  • Drug target characterization (Dr. Bibb)
Example Projects

• Outcomes
  • Recovery of elderly patients after surgery (Dr. Balentine)
  • Attentiveness of post-op care contributing to disparities (Dr. Kennedy/Dr. Richman)
How to Apply

• Find a mentor/project
  • https://www.uab.edu/medicine/surgery/education/medical-students - mentors already volunteering
  • https://www.uab.edu/medicine/surgery - peruse profiles
  • Contact Kristi Herritz (kherritz1@uabmc.edu) with ??s

• Apply through MSSRP Common Application by March 6
Contact Us

• Kristi Herritz, Program Administrator
  • kherritz1@uabmc.edu

• Herb Chen, Program Director
  • hchen@uabmc.edu
Diabetes Research Center
Summer Research Fellowship

- Fellowships for 6 students
- ~$3600/8-week (can do additional weeks)
- Full-time hands-on research
  - Diabetes
  - Obesity
- Required participation in MSRD
- Required training in responsible conduct of research
- Required presentation at Vanderbilt (Nashville, TN) at the end of the summer
- Tim Garvey (garveyt@uab.edu) or Eva Gilliam (evamarie@uab.edu)
O’Brien Center Summer Research Program

• Research in kidney disease
• 8-10 week full-time mentored research experience
• 80% time spent in laboratory
• 20% time leading about clinical and translational research
• Required training in responsible conduct of research
• Contact: Dr. Anupam Agarwal (agarwal@uab.edu)
NIH T35 Short-Term Research Training Program (SRTP)

- Funded since 1980 by the National Heart, Lung, and Blood Institute (NIH) through their Short Term Training for Health Professionals Schools T35 Program
- The goal of this training program is to introduce medical students to the principles of scientific experimentation, the proper methods of data analysis, and the interpretation and application of research results.
- Priority given to projects in NHLBI’s area of interest (but any research focus can be funded)
  - Cardiovascular
  - Pulmonary
  - Blood
  - Sleep
- Required training in responsible conduct of research
- Additional workshops on poster presentations and how to communicate your research
Logistics: SRTP

- Full time research (40+ hours) for 8 or 10 weeks in a laboratory at UAB
  - June-July
- Stipend of ~$1948/month
- Required to present at Medical Student Research Day
- Applications Due by March 6 of your MS1 year
- Can work with any faculty member in any department at UAB
FAQ: SRTP Program

• Can I do part-time research?
  • No, you are required to do research full-time (40 hours/week)

• Can I be an Orientation Leader for incoming MS1 SOM students and participate in summer research
  • Yes, but you need to notify the program that you are participating as an orientation leader and get permission from your faculty mentor

• Can I do full-time research for less than 8-weeks?
  • No
How to Find a Research Project

• Contact faculty members working in an area in which you may have an interest
  • See UAB APSA website
    • https://www.uab.edu/medicine/mstp/academics/mstp/uab-apsa-chapter
  • See Short-term Research Training Program Website
    • www.uab.edu/mssrp
• Look at faculty on UAB department websites
• Search PubMed for Birmingham Alabama and your keywords of interest
• Contact Dr. Lorenz for advice
• Select a faculty sponsor and write a research proposal
# How to Find a Research Project

## Research Opportunities

This table is powered by UAB APSA. Click here to edit your entry or submit a new project.

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Physician Scientist Development Office (PSDO)

Medical Student Summer Research Opportunities at UAB

Individually-Based Application Process

Application information can be found at www.uab.edu/medicine/physci

- Cancer Research Experiences for Students (CaRES)
- Russell Cunningham Memorial Research Program (Pediatrics)
UAB Cancer Research Experiences for Students
Overview of the “CaRES” Program

www.uab.edu/cares

Dr. Peter Smith & Dr. John Waterbor, Directors
Dr. C. Michael Brooks, Evaluation Director

UAB Comprehensive Cancer Center
January 2017
Goals and Rationale of the CaRES Program

**Long-term** goal: motivate participating students to pursue careers in cancer research.

**Short-term** goals: provide each student with the support needed to undertake a mentored cancer research project; provide each preceptor with a capable student who can facilitate his or her research progress.

**Overarching goal:** to become recognized as a model for short-term cancer research education and training.

*Sept. 2016*: CaRES made an invited presentation at NCI
Background of the CaRES Program

- An NCI R25E training grant, first funded in 1999
- Now in its 17th year; renewed in 2015 for 2016-2020
- To date supported over 640 medical and graduate students to do short cancer research projects
- Preceptors are UAB Comprehensive Cancer Center faculty
- Through summer 2015, all projects were done at UAB
- Longitudinal tracking of 1999-2015 CaRES students found:
  1) 15% are actively involved in cancer research
  2) 27% published cancer-related, peer-reviewed papers following CaRES, 401 papers through 07/16
CaRES Application Process

Actually, there is no application to fill out! And no deadline.

• **UAB Cancer Center faculty members** who would like a CaRES student to work with them in the summer post **project descriptions** on our website [www.uab.edu/cares](http://www.uab.edu/cares) in late January and February.

• Students read each **project description** and accompanying thumb-nail sketch of the “**ideal intern,**” and in this way **identify** projects to which they are **best suited,** based on their academic degree programs, qualifications, background, and career interests.

• **Students email** their CV’s to preceptors and request interviews for any and all projects of interest to them for which they feel qualified.

• The first **40-43 preceptor-student matches** are granted funding.

• **Student selection** takes place in late January and February although the projects are not done until the **summer term** (May-August)
Eligible Students and Performance Sites

- **UAB** medical and public health students
- **USA** medical students
- **Auburn** veterinary medicine and pharmacy students
- **Samford** pharmacy and public health students
- **Tuskegee** veterinary medicine students (once approved)

*Each CaRES project must be done at UAB or at HudsonAlpha Institute for Biotechnology, the only approved “Performance Sites” specified in our grant proposal*

- Students must pay for their own housing or (ideally) stay for free with a relative or friend! CaRES can help with housing arrangements (contact Dr. Waterbor).
CaRES Faculty Preceptors’ Research

CaRES preceptors are drawn from **400 UAB Cancer Center faculty** having appointments in one of six research divisions:

1) Immunology, Inflammation, and Immuno-therapeutics
2) Cancer Cell Biology
3) Experimental Therapeutics
4) Neuro-Oncology
5) Cancer Prevention, Control and Population Sciences
6) Chemoprevention
Research Projects Available to CaRES Students

Any type of cancer research project can be funded. Project descriptions are submitted by CCC faculty.

In recent years many CaRES projects have focused on cancers of the breast, ovary, cervix, skin, and brain; or on obesity, diet, and tobacco use; or on cancer survivorship.

CaRES Projects funded over the past 3 years:

- Basic Science (including animal research) – 35%
- Clinical (cancer patients) – 35%
- Community (people at risk for cancer) – 25%
- Statistical and analytical (secondary data) – 5%
Length of Internships, Settings, and Pay

- **8 -15 weeks** in the summer (May through August)
- Each summer a **15-week window** is established (the earliest possible start date and latest possible end date)
- Specific start and end dates for each project are negotiated by preceptor and student, according to their availability and in light of the demands of the project
- **Almost all projects** are done on the **UAB campus**
- Up to 6 CaRES projects (on genomics) can be based at HudsonAlpha Institute for Biotechnology in Huntsville, AL
- Students are paid **$400/week** for full-time effort
Seminar Series and Other Learning Activities

- **CaRES Seminar Series**: 10 hours (in-person and online) on Responsible Conduct of Research (**RCR**) and Career Development

- Additional **RCR** information and videos are available through a link on the CaRES website and from the UAB Graduate School website

- Students present **posters** at a CaRES Seminar in July; CaRES can pay for poster preparation

- **UAB Medical students** can keep their posters and present them at **Medical Student Research Day** in the fall

- **All CaRES students** may present their posters at the **CCC Annual Research Retreat** in the fall; the best poster receives a travel award

- Funds are available for **travel and per diem** for up to 20 CaRES students to present their research at professional meetings
Important Features of CaRES

• Self-matching process of students to projects / preceptors
• Flexible start & end dates within a 15-week window each summer
• Recruitment of students from several professional and biomedical graduate programs: medicine, public health, veterinary medicine, and pharmacy . . . and from several universities
• Up to 6 of 40 projects can be based at HudsonAlpha in Huntsville
• High project completion rate due to Individual Development Plans completed by each student-preceptor pair before summer begins
• Instruction in the RCR and Career Development
• Favorable short-term and longitudinal program evaluation results
CaRES Publications


Reasons for CaRES Program Successes

• Large pool of bright and highly-motivated students of varied backgrounds and disciplines from which to recruit

• Excellent (and numerous) faculty preceptors who are very active in cancer research and enjoy mentoring students

• Dedicated CaRES program faculty: Drs. Waterbor, Smith, Desmond, Brooks, and Litton

• Dedicated CaRES program staff: Internship Coordinator Judy Baker; Website Developer Daniel Camburn

• UAB’s collaborative and student-oriented environment

Questions? Contact Dr. Waterbor at 205-934-7146 or h2obor@uab.edu, Ryals – 227C. Thank you! 01/08/17
The Program

• Established by Dr. Sergio Stagno, Chair Emeritus of the Department of Pediatrics, to honor the memory of Dr. Russell Cunningham, a long time member of the Department of Pediatrics and strong advocate for medical student education.

• Purpose: to introduce students to pediatrics and pediatric research

• Eligibility: First year UASOM Medical Students who have an interest in Pediatrics

• Format: eight week summer internship and research program
  • Work with DOP faculty mentor on a research project
  • Attend clinical activities selected and arranged by your mentor

• Funding for TWO students ($3200 per award), selected by Committee
The Application Process

Phase I – submit the following by January 31, 2017
• CV
• Description of their pediatric research area of interest or an identified project
• A 200-250 word abstract describing your interest in the program

Phase II – submit by February 24, 2017
• By invitation – the Pediatric Review Committee will select the strongest applications (generally 4-6 individuals) and invite them to submit for Phase II
• Submit a 1-2 page description of a specific project idea

Final selection and notification will occur in early March
Application Requirements

Requirements (for specific project ideas):

• Mentors must be a faculty member (not a fellow) in the Department of Pediatrics
• Eligible projects include bench research, clinical research, and quality improvement projects
• Projects must be designed for completion within the 8 week summer time frame (or which can be completed within a subsequent scholarly activity block)
• Projects must be developed in collaboration with the mentor
• Projects must be “owned” by the student – the student is often working on a project related to the mentor’s primary research area, but the student must have his/her own specific project

Recommendations:

• Although details of the project are not required until Phase II, the strongest Phase I applications tend to be those with an identified potential pediatric mentor and preliminary thoughts on potential projects.
• Be practical – Consider analyzing existing data from an ongoing project to answer a new research question, or expanding an existing project to examine a new but related question. New projects can be accomplished within the internship time frame but may require some pre-work (IRB approval, etc.).

Students will not be funded to work as a research assistant on an existing project or with a non-pediatric faculty mentor
Questions and Contacts

Clare Mallette
cmallette@peds.uab.edu
Project Manager
UAB Department of Pediatrics
1600 7th Avenue South
5 Dearth Tower, Suite 5606
Birmingham, AL 35233
(205) 638-6982 - office

Terry Wall, MD, MPH
twall@peds.uab.edu
Professor of Pediatrics
UAB Division of General Pediatrics and Adolescent Medicine
Medical Director of Clinical Informatics, Children’s of Alabama

Department of Pediatrics website:
https://www.uab.edu/medicine/peds/
Summer Genetics Scholar Program

- 6-weeks
- Stipend of $420/week
- Shadow in genetics clinics
- Shadow in genetics clinical laboratories
- Didactic sessions on genetics and research
- Potential for a clinical or lab-based research project
- Application deadline: **January 29, 2017**
- Contact: Dr. Nathaniel Robin
Questions

• Robin Lorenz, MD, PhD, PSDO Director
  • rlorenz@uabmc.edu
  • 934-0676
  • SHEL 121C
• www.uab.edu/medicine/physci/