



February 6, 2012

RE: *Call for Applications – 2012 Summer Research Fellowship Program*

Dear Student:

Due to the generous support of funds made available from the Dr. Kelly Medical Education Research Fund of the Summa Foundation, Summa Health System is proud to announce the "2012 Call for Applications" for our Summer Research Fellowship Program. The program has been developed to offer students a beneficial and educational experience in either basic (laboratory-based) biomedical research, clinical research or behavioral research.

This is a paid Fellowship and requires approximately six weeks (240 hours) of student involvement. The stipend for this year is \$7.50 per hour. Housing and food are not included. The starting and ending date of each fellowship is negotiated with the principal investigator upon hire. However, the earliest date a student can start is **May 21st**. Each Summer Fellow will be expected to present a poster related to their Summer Fellowship research experience at the Summa Health System Community of Research meeting on July 27, 2012.

Students interested in acquiring hands-on medical research training must complete the attached Student Application Packet and return it by the deadline date of **March 16, 2012**. In order for a student to be eligible to apply for the fellowship, the following minimum qualifications must be met:

1. The student must have a minimum 3.25 GPA.
2. The student must currently be at least a junior in an undergraduate degree program and be enrolled in either a pre-medical or bio-medical science related degree.

The following additional requirements need to be submitted for the application to be considered complete:

- **The application** must be completed in its entirety, including selecting the two preferred projects from the list.
- **Official** school transcripts, both undergraduate and graduate, if applicable, must be sent to the below address.
- **Two letters of recommendation.** Each applicant must ask two mentors with whom they have had an academic, scientific or previous work affiliation to submit these letters on their behalf. These recommendation letters must be emailed from the recommender's email address to summafellowship@summahealth.org and arrive by the deadline date of March 16th.
- **Essay**
- **Current CV or resume** (please attach)

The employment offer as a Summer Research Fellowship student is contingent upon a background check, immunization verification and a negative drug test. Summa is a non-smoking facility and all employees are required to be nicotine free.

If you have any questions regarding the fellowship positions or the application process, please call 330-375-3949 or email summafellowship@summahealth.org. Students will be notified of their fellowship award by the first week of May.

Please Note: Employees of Summa Health System are NOT allowed to participate in the Fellowship Program.

Please remember that the completed application forms and eligibility requirements **must** be received no later than **MARCH 16, 2012**. When you are finished filling out your application, please hit the **"submit"** button. Thank you for your interest in the 2012 Summer Research Fellowship Program.

Sincerely,
Donna Hinkle, Summer Research Fellowship Coordinator
Summa Health System
Office of Research Administration, PCS G-1
525 East Market Street
Akron, OH 44304
330-375-3949
summafellowship@summahealth.org

Akron City Hospital
525 East Market St.
P.O. Box 2090
Akron, OH 44309-2090

St. Thomas Hospital
444 North Main St.
P.O. Box 2090
Akron, OH 44309-2090

Phone (330) 375-3000

www.summahealth.org

2012 Summer Research Fellowship Application Form

Applicant's Name: _____
Please print or type *First* *Middle* *Last*

Mailing Address: _____

City *State* *Zip Code*

Home Phone: _____ **Day Time Phone:** _____

Email Address: _____

For International Students: If hired, can you provide citizenship or other appropriate documents that entitle you to work in the United States? Yes No

EDUCATIONAL INFORMATION

High School Attended: _____
Name *City* *State*

Date of Graduation *Grade Point Average*

College/ University Attended: _____
Name *City* *State*

Date of Graduation *Grade Point Average*

Degree

Honors/Awards

Honors/Awards

Graduate Education: _____
Name *City* *State*

Date of Graduation *Grade Point Average*

Degree

Honors/Awards

ADDITIONAL REQUIREMENTS:

(The following also must be submitted in order for your application to be considered complete.)

1. COLLEGE TRANSCRIPTS:

"Official" undergraduate and graduate school transcripts, if applicable, must be sent directly from the universities/colleges attended to the contact address below.

2. LETTERS OF RECOMMENDATION:

- Two letters of recommendation are required from individuals with whom you have had an academic, scientific or previous work affiliation.
- The letters must be submitted by email, from the recommender's email address, to summafellowship@summahealth.org and received by the deadline date of March 16th.
- List the individuals who will be writing the recommendation letters and include their name, title and organization.

3. UPDATED CV/RESUME (Please attach)

4. STUDENT GOALS AND OBJECTIVES ESSAY:

- Please fill out the below space with a single spaced essay of no more than 1200 characters which discusses the following:
 - Your long term career goals.
 - The reasons why you wish to work as a Summer Research Fellow at Summa Health System.

PLEASE NOTE:

- Your completed application must be returned by hitting the **"submit"** button at the top right corner of the application.

COMPLETED APPLICATION FORMS MUST BE RECEIVED NO LATER THAN MARCH 16, 2012 TO BE CONSIDERED FOR THE PROGRAM

Contact Address:

Donna Hinkle
Summer Research Fellowship Coordinator
Summa Health System
Research Administration, PCS G-1
525 East Market Street
Akron, OH 44304
330-375-3949
summafellowship@summahealth.org

2012 SUMMER RESEARCH FELLOWSHIP PROJECTS

Applications are being accepted for the following research projects.

Application deadline is March 16, 2012

Please indicate your preference by marking the box next to the project that you are interested in.
(Limit your choices to **TWO**. Please **prioritize** your choices.)

DEPARTMENT:	ABSTRACT	PROJECT #
Department of Cardiology Cardiac Rehabilitation	<p>The Effect of Adherence of Recording Home Exercise and Intensity of Effort on Select Physiologic and Psychosocial Outcomes in Cardiac Rehabilitation. Jim Rosneck, RN, MS and Donna Waechter, PhD</p> <p>Goals & Objectives: To quantify the effect of adherence of recording of home exercise and intensity of effort on select physiologic and psychosocial outcomes in cardiac rehab.</p> <p>Methods: Patient data entry of exercise minutes and intensity on the 20 point Borg RPE scale (independent of CR training) will be abstracted from patient & DB recorded data and compared to relative improvement in functional work capacity, improvement in work progression curves, SF-36 physical and mental-health domains, Beck depression inventory, achievement of CR-THR range, daily caloric exercise caloric burn and BMI.</p> <p>Student Expectations: Students will work with patients to reinforce the importance of development and adherence of home exercise, accurately recording exercise minutes & Borg ratings, developing exercise goals and achieving criteria.</p> <p>Student Responsibilities: Student will be responsible for data entry and aggregation and actively participate in statistical analysis. Student will develop an abstract and poster presentation for reporting results. Summa Cardiovascular Institute: Cardiac rehab & Cardiovascular research staff will supply resources and supervision to insure project completion.</p>	<p>PROJECT # 1</p> <p><input type="checkbox"/> Preference #1</p> <p><input type="checkbox"/> Preference #2</p>
Department of Emergency Medicine	<p>Effectiveness of Emergency Medicine Medical Education Jennifer A. Frey, PhD and Sharhabeel Jwayyed, MD, MS</p> <p>Goals: Medical Education involves both didactic lectures and hands-on clinical course work. Understanding the benefit of techniques used to educate physicians in both of these arenas is important.</p> <p>Objectives: To determine if providing a rotation dedicated to resuscitation techniques improves resident education and patient care. To determine if using an audience response system for lectures helps to more effectively learn lecture materials.</p> <p>Methodology: To perform a literature review of medical education techniques. Assess effectiveness of learning methods and identify issues associated with the learning methods by reviewing procedure records, resident evaluations, and standard departmental assessments.</p> <p>Student Expectations: The student must have excellent interpersonal skills to be able to work with Emergency Medicine faculty, residents, and staff. The student must be able to collect and record data accurately. Student will also have the opportunity to shadow physicians at Summa Akron City Hospital. Student must be available to attend department lectures and education activities as scheduled.</p> <p>Student Responsibilities: Review literature, maintain confidential information, enter data into database. Will need to analyze data, draw conclusions, and create a poster.</p>	<p>PROJECT # 2</p> <p><input type="checkbox"/> Preference #1</p> <p><input type="checkbox"/> Preference #2</p>
Department of Emergency Medicine	<p>Molecular Basis of Emergency Department Delirium Scott T. Wilber, MD, MPH and Kirk A. Stiffler, MD, MPH</p> <p>Goals: Delirium is an acute condition that occurs in 10% of older emergency department patients, however, it is often undetected and is associated with increased mortality. The purpose of this study to identify delirium in emergency department patients and determine if biological assays can be used to diagnose delirium.</p> <p>Objectives: To learn about delirium in older emergency patients. To learn basic principles of clinical research, including informed consent, data collection.</p> <p>Methodology: We will include ED patients 65 and older who are able to cooperate with testing. Researcher will collect data regarding patient's demographics, delirium status, strength, and mobility. Patient blood will be stored for biological assays. Outcomes will be assessed by a medical record review and a 30-day follow up phone call. Data will be entered into a database, and analyzed using statistical software.</p> <p>Student Expectations: The student must have excellent interpersonal skills to be able to work with patients, their family members, and Emergency Medicine staff. The student must be able to collect and record data accurately. Student will also have the opportunity to shadow physicians at Summa Akron City Hospital. Student must be able to work in the afternoons due to patient volume.</p> <p>Student Responsibilities: Obtain informed consent, enroll patients in the ED, collect and record data, enter data into a database. To analyze data, draw conclusions, and create a poster.</p>	<p>PROJECT # 3</p> <p><input type="checkbox"/> Preference #1</p> <p><input type="checkbox"/> Preference #2</p>

<p>Department of Medicine (Geriatrics)</p>	<p style="text-align: center;">The use of an Electronic Medical Record and other Interactive Strategies in Geriatric Medicine Rotations Natalie Kayani, MD and Maryjo L. Cleveland, MD</p> <p>Goals: Determine perceived value of documentation by medical students using an electronic medical record during medicine rotations Objectives: Design, administer and analyze results of a questionnaire for medical students to measure perceived value of their experience documenting with the electronic medical record. Analyze how electronic medical record use by medical students during their rotations can enhance their learning in such ways as communication skills, collaboration, critical thinking and documentation. Methodology: The research design will consist of survey development, design, and administration. Data will be analyzed to inform future educational practice and innovation in geriatric medicine programs. Survey recipients include third and fourth year medical students in Ohio. Student Expectations and Responsibilities of the summer fellow include an orientation to geriatric medicine through shadowing experiences, training in literature searching, questionnaire design and administration of the questionnaire(s), participation in weekly education conferences, lectures and journal club. The student will participate in research committee meetings and other research duties as assigned. Additional shadowing experiences can be scheduled throughout the summer for specific interests. It is expected that upon successful completion of the summer fellowship the student will be invited to continue with the project as it is written up for publication and/or presentation.</p>	<p>PROJECT # 4</p> <p><input type="checkbox"/> Preference #1</p> <p><input type="checkbox"/> Preference #2</p>
<p>Department of Obstetrics/ Gynecology (Women's Health)</p>	<p style="text-align: center;">Summa Center for Women's Health Research Experience in Safe Obstetrics, Pelvic Pain, Safe Surgery, Endometrial Cancer and Social Media and Health. Michele L. McCarroll, PhD</p> <p>Goals: To experience all aspects of clinical research. To produce quality work in the form of abstracts, posters, and manuscripts. Objectives: To support many clinical trials and clinical research studies such as safe obstetrics, pelvic pain, safe surgery, endometrial cancer and social media and health. For example, we work with our local partners to see how social media can reduce health disparities. We work with NASA on how the mind works when a woman has uncontrolled pain, and we do research for the American Cancer Society on how to help women with endometrial cancer. Methodology: Research to be conducted during the fellowship include (1) Social Media and Health in reducing health disparities in women; (2) Assessing quality and safe obstetrics and surgery; (3) Conducting studies evaluating pain in surgical outcomes as well as chronic pelvic pain; (4) Assist in endometrial cancer survivorship research with emphasis on exercise and nutrition using social cognitive theory constructs. Student Expectations: To complete appropriate literature searches, data collection, human subjects training, and produce quality written abstracts/posters. The student should be willing to shadow faculty physicians on clinical rounds and in the OR. At minimum, the student should be organized, willing to work hard, comfortable to ask questions, work independently at times, experienced with Microsoft Office, general search engines, and Adobe programs. Student Responsibilities: Student responsibilities will include (under supervision) active participation in the scheduled research protocols, assisting staff with literature reviews, protocol preparation, data collection, abstract and poster presentation.</p>	<p>PROJECT # 5</p> <p><input type="checkbox"/> Preference #1</p> <p><input type="checkbox"/> Preference #2</p>
<p>Department of Ophthalmology</p>	<p style="text-align: center;">Understanding the pathogenicity of Pseudomonas aeruginosa in keratitis Rachida Bouhenni, PhD</p> <p>Goals/Objectives: Bacterial keratitis, which is caused by the wearing of the contact lenses, is one of the most visually threatening ocular infectious pathologies. The avascular corneal stroma is particularly susceptible to the infection, and many patients have a poor clinical outcome if aggressive and appropriate therapy is not promptly initiated. The severity of the corneal infection usually depends on the underlying condition of the cornea and the pathogenicity of the infecting bacteria. Pseudomonas aeruginosa is the predominant Gram-negative bacterium that infects the cornea, however, little is known about the mechanisms by which these bacteria reach the stroma after adherence to corneal epithelial cells and how contact lenses increase the incidence of P. aeruginosa infection. This study is designed to investigate bacterial keratitis caused by P. aeruginosa using a genomic approach in order to identify the virulence factors and the effector molecules that may help the bacteria adhere to the contact lens and invade and penetrate the corneal epithelial cells. Methods: Identify the virulence factors of clinical isolates of P.aeruginosa using the transposon mutagenesis. Student Expectations: By the end of the study, we expect to have mutants of P. aeruginosa to be used for further studies. Student Responsibilities: Students are expected to perform the mutagenesis, isolate the mutants and confirm the phenotype.</p>	<p>PROJECT # 6</p> <p><input type="checkbox"/> Preference #1</p> <p><input type="checkbox"/> Preference #2</p>

<p>Department of Psychiatry</p> <p>(CTSTS -- Center for the Treatment and Study of Traumatic Stress)</p>	<p style="text-align: center;">The Relationships Between Life Experiences and Eating Behavior Ellen Harrington, PhD</p> <p>Goals: The purpose of this research study is to investigate how life experiences affect mood, stress, and eating behavior.</p> <p>Objectives: Specifically, the study is aimed at examining the triggers, consequences, and functions of binge eating among women who have experienced a traumatic event. An additional aim is to examine the potential moderating influence of several between-person variables (e.g., race, ethnicity, emotion regulation, social support, cultural socialization).</p> <p>Methodology: This study uses an ecological momentary assessment paradigm, where participants track their mood, PTSD symptoms, and eating behavior for two weeks using a cell phone.</p> <p>Student Expectations: Interest in psychosocial research; strong interpersonal skills; basic computer skills and familiarity with common software applications (e.g., Microsoft Office); organizational skills.</p> <p>Student Responsibilities: The basic responsibilities of the student in this position include but are not limited to: entering study data into an SPSS database; assisting with data analysis; performing administrative duties (e.g., posting recruitment flyers, conducting literature searches); and organization of study materials. There is strong potential for co-authorship in conference and other presentations. The student will also have the opportunity to be trained in using sophisticated research designs (i.e., ecological momentary assessment) and data analysis methods, and will obtain valuable knowledge and experience regarding trauma and eating problems. Finally, the student will have the opportunity to work on a secondary project examining the impact of trauma history on bariatric surgery outcomes; this project, a collaboration with Dr. Shannon Perkins at the Summa Bariatric Care Center, is also IRB-approved.</p>	<p>PROJECT # 7</p> <p><input type="checkbox"/> Preference #1</p> <p><input type="checkbox"/> Preference #2</p>
<p>Department of Surgery</p> <p>(General Surgery)</p>	<p style="text-align: center;">Surgical Research and Training Experience in the Summa Center for Minimally Invasive Therapeutics (CMIT) Mark Pozsgay, DO and Michelle Chapman, BS</p> <p>One of the missions of Summa's Center of Minimally Invasive Therapeutics (CMIT) is to facilitate ongoing research in robotic, endoscopic, and laparoscopic surgery procedures and devices, yielding significant improvements in patient outcomes, reduced costs in providing patient care, and the potential for product commercialization. The current method of chest tube positioning relies on a surgeon's sense and their ability to monitor radio opaque markers on the tube via x-rays to determine placement. Therefore, studies will be structured on a new device made to circumvent the minor complications of thoracotomy tube placement such as unresolved/reaccumulation of pneumothorax or misplacement of the tube (too deep/kinked).</p> <p>Goals: To engage a motivated student interested in a career in surgery in a multi-modal surgical research and training experience within the Summa CMIT.</p> <p>Objectives: The student will integrally participate in the following: 1) data collection (human mannequin models or inanimate animal models) and analysis for pre-clinical medical device evaluations and education protocols developed to improve testing of new medical devices and 2.) incorporating an organized system for collection and analysis, and dissemination of results.</p> <p>Student Expectations: The summer fellowship student is required to complete appropriate IACUC human/animal subjects protection training. In addition, the student should be willing to shadow faculty physicians on clinical rounds and in the OR and PRST lab.</p> <p>Student Responsibilities: include (under supervision), but not limited to, active participation in the scheduled research and education protocols, protocol preparation, data collection, abstract & report preparation, and OR shadowing.</p>	<p>PROJECT # 8</p> <p><input type="checkbox"/> Preference #1</p> <p><input type="checkbox"/> Preference #2</p>
<p>Department of Surgery</p> <p>(Preclinical Research and Skills Training)</p>	<p style="text-align: center;">Surgical Research and Training Experience in the Summa Center for Preclinical Research & Skills Training Michelle Chapman, BS and Richard George, MD</p> <p>Goals: To engage a motivated student interested in a career in surgery in a multi-modal surgical research and surgical skills training experience in the Summa Center for Preclinical Research and Skills Training (PRST).</p> <p>Objectives: The student will integrally participate in the following: 1) in the conduct, data collection and analysis for PRST pre-clinical medical device evaluations and education protocols developed to improve surgical skills and 2.) in incorporating an organized system for survey distribution, collection and analysis, and dissemination of results.</p> <p>Methodology: Research Protocols scheduled to be conducted in the PRST during the fellowship include (1) vascular surgery studies investigating new designs of artificial blood vessels (2) studies related to understanding healing of chronic wounds and 3) studies evaluating new methods and devices for hernia repair. Education programs scheduled to be conducted will focus on the Post Graduate Year 1 Boot Camp experience.</p>	<p>PROJECT # 9</p> <p><input type="checkbox"/> Preference #1</p> <p><input type="checkbox"/> Preference #2</p>

	<p>Student Expectations: The summer fellowship student will be required to complete appropriate IRB/IACUC human/animal subject's protection training. In addition, the student should be willing to shadow faculty physicians on clinical rounds and in the OR. At minimum, the student should be organized, willing to work hard, experienced with Microsoft Office 2007 and Adobe programs.</p> <p>Student Responsibilities: Student responsibilities will include (under supervision) active participation in the scheduled research and education protocols, assisting PRST staff with literature reviews, protocol preparation, data collection, abstract & report preparation, animal monitoring and shadowing in the OR or patient areas.</p>	
<p>Department of Surgery (Trauma Services)</p>	<p style="text-align: center;">Surgical Research in Trauma/Critical Care Gregory M. Beddell, MD and Michelle Chapman, BS</p> <p>Goals: To engage a motivated student interested in a career in surgery in multi-modal surgical research with a specific focus on trauma surgery.</p> <p>Objectives: The student will integrally participate in multiple ongoing projects through the division of trauma services. The student will obtain an understanding of multiple management dilemmas in trauma, become familiar with research methodology, and data collection.</p> <p>Methodology: Research Protocols scheduled to be conducted in trauma services during the fellowship include (1) Incidence of cardiac arrhythmias in the injured patient, possible interventions to affect outcome (2) DVT in the trauma patient, should we be treating more aggressively? (3) Wound healing studies, acellular matrix versus STSG. (4) Rib pain in the trauma patient, what is the most effective treatment modality?</p> <p>Student Expectations: The summer fellowship student will be required to complete appropriate IRB/IACUC human/animal subjects protection training. In addition, the student will work closely with the trauma attending and residents. At minimum, the student should be organized, willing to work hard, experienced with Microsoft Office 2007 and Adobe programs.</p> <p>Student Responsibilities: Student responsibilities will include (under supervision) active participation in the scheduled research and education protocols, assisting PRST staff with literature reviews, protocol preparation, data collection, abstract and report preparation.</p>	<p>PROJECT # 10</p> <p><input type="checkbox"/> Preference #1</p> <p><input type="checkbox"/> Preference #2</p>
<p>Department of Surgery (Virtual Care Simulation Lab)</p>	<p style="text-align: center;">Medical/Surgical Simulation - A Research Experience Rami Ahmed, DO, Scott Atkinson and Michelle Chapman, BS</p> <p>Goal: To develop and incorporate a new methodology for creating, implementing and collecting data on self-assessment and session experience surveys for the Virtual Care Simulation Lab (VCSL) and the Summa Center for Preclinical Research and Skills Training (PRST). The VCSL & PRST provides a year-round simulation medical training program for Medical students, Resident Physicians and Attending Physicians and hosts a Post Graduate Year 1 (PGY 1) Boot Camp programs in July. The program includes first year Emergency, Surgery, OB/GYN, Urology and Orthopedic Residents.</p> <p>Objectives: 1.) To incorporate an organized system for survey distribution and collection that will be used in the PGY 1 Boot Camp experience and year-round in the Summa Center for Preclinical Research and Skills Training Center and 2.) to develop a database for survey results and generate reports analyzing the PGY 1 Boot Camp experience and to prepare educational abstracts.</p> <p>Student Expectations: The summer fellow in this position with the guidance of the staff will evaluate and modify existing surveys and result collection program, develop new processes for efficient survey management and optimize the collection of survey data. The student should be enrolled in a Pre-Professional program or a medical student, organized, experienced with Microsoft Office, and statistics.</p> <p>Student Responsibilities: The summer fellow in this position will manage all PGY 1 Boot Camp session experience surveys. The fellow will also be involved with all Boot Camp sessions throughout the program by participating in the preparation of course materials, lab set-up, clean-up and session follow-up with the instructors.</p>	<p>PROJECT # 11</p> <p><input type="checkbox"/> Preference #1</p> <p><input type="checkbox"/> Preference #2</p>