

**ANNUAL REPORT TO THE FACULTY FORUM  
SCHOOL OF MEDICINE RESEARCH COMMITTEE**

**Fiscal Year 2007 – 2008  
(July 1, 2007 – June 30, 2008)**

I. Background

A. Composition

Committee for Fiscal Year 2007 – 2008

J. Christopher States, Ph.D. (Chair)	Pharmacology & Toxicology
Douglas Dean, Ph.D.	Ophthalmology & Visual Sciences
David Gozal, M.D.	Pediatrics
Michele Kosiewicz, Ph.D.	Microbiology & Immunology
Irene Litvan, M.D.	Neurology
Craig J. McClain, M.D.	Medicine
Matthew Qiu, Ph.D.	Anatomical Science & Neurobiology
Suresh Tyagi, Ph.D.	Physiology & Biophysics

B. Function

The mission of the School of Medicine Research Committee is to advise the Dean as requested concerning research policies and the allocation of research resources. The Research Committee (RC) is a standing committee of the School of Medicine and is composed of eight (8) members, elected by the Executive Faculty to staggered three-year terms. Four members are from preclinical departments and four are from clinical departments.

The School of Medicine Research Committee serves its mission by administering the following programs of the School of Medicine:

- Reviewing and approving School of Medicine Research Grants (Basic, Bridge and Collaborative Matching Grants)
- Reviewing and approving School of Medicine Travel Grants
- Approving summer projects for the medical student's Summer Research Scholar Program (SRSP)
- Assisting in planning Research!Louisville events
- Nomination of candidates for the President's Outstanding Scholarship, Research and Creative Activity Award
- Reviewing letters of intent for periodic extramural requests for proposals
- Providing advice and guidance to the Vice Dean for Research on programs and projects that impact the research environment at the School of Medicine

C. Budget -- FY 2007 -- 2008

Unrestricted Research and Travel Funds	\$ 60,000
Bales Research Fund*	\$361,465
Barkley Research Fund	\$ 7,929
Bridge Grants	\$ 75,000
One Time Allocations	\$ 36,666
Summer Research Scholar Program	<u>\$ 66,000</u>
Carryover base budget from 2006 -- 2007: \$2,155	
Carden & Bohler endowment: \$23,893	
Unexpended Schoenbachler: \$4,441	
Unexpended Row: \$6,360	
Unexpended Vijay: \$1,972	
 Total 2007 -- 2008 Budget	 <u>\$609,215</u>

\*Bales Research Funding is restricted for research in cardiovascular disease, cancer, tuberculosis or multiple sclerosis research.

D. Contact Information

Information about any of the RC programs may be obtained from Karen Goller, Health Sciences Center Research Office, Room 2028, K Building (852-7794)

II. Small Grants Program

A. Description

The RC intramural grants program seeks to enhance the research productivity of medical school faculty funding new projects that may lead to competitive extramural funding (Basic Grants Program and Collaborative Grants Program) or by providing interim support for established investigators who have lost funding (Bridge Grants Program). Funds are distributed to faculty as competitive grants in four cycles per year. Proposals are reviewed by committee members and disposition is made by consensus. Investigators receive detailed, written critiques intended to constructively enhance their projects.

Proposals are sought from executive faculty, which includes full-time instructors, assistant professors, associate professors and professors. This excludes investigators with titles such as Research Scientist. In the Basic Grants Program, investigators are assigned to one of two priority levels:

- Career Status I: Newly appointed (within three years) executive faculty members with an academic rank of associate professor or lower and having no extramural funding
- Career Status II: All other executive faculty without current extramural funding

Approved proposals are given a funding priority (High, Moderate) based on the reviews. The maximum award amount is \$15,000 and, other than faculty salaries and travel, there are no *a priori* budget restrictions. Grants that are approved but not funded can be maintained for additional review cycles up to a maximum of three. The RC uses a “grant review triage system” that if both reviewers do not rate the grant proposal as “approved” for funding, the grant is not discussed, unless an RC member requests discussion and reviews are sent as submitted. Applicants can then either revise and resubmit their proposal or they can submit a new proposal (new title and new specific aims) based on the reviews.

In the Bridge Grant Program, applications are entertained only from investigators who were recent (within two years) principal investigators of national extramural grants and have temporarily lost funding. Examples of grants that confer eligibility for bridge funding are National Institute of Health, American Heart Association, National Science Foundation and Veterans Administration. Investigators are eligible for this program regardless of academic rank, but the program will be self-contained and the investigators will not compete with others in the Basic Grants Program. Proposals are given a funding priority based on the reviews. The maximum award is \$30,000.

The Collaborative Matching Grant Program is to provide initial support to faculty to establish a collaborative research program in new areas of investigations in order to enhance their research productivity. The likelihood that the support will lead to extramural funding will be the major criterion in evaluating the application. Any full-time member of the Executive Faculty of the School of Medicine is eligible to apply as Principal Investigator. Faculty previously supported by this program must have submitted a final report and shown evidence of attempts to secure extramural funding. Applications must involve collaboration between the Principal Investigator and another UofL faculty member(s) as Co-Investigator(s). The proposed research must be in the area of cancer, heart disease, tuberculosis or multiple sclerosis and represent a new area for the investigators utilizing their complementary expertise. Matching support from a Center, Institute, Department or other UofL unit is mandatory. Written evidence of financial commitment must be included as a letter in the appendix. The maximum award is \$20,000 for one year to match equivalent or greater support from the unit.

All grant applications are included in Appendix A.

Web address: <http://research.louisville.edu/medicine/grants/som/>

## B. Activity

From July 2007 through June 2008, the Committee received 18 grant proposals. Eleven were approved at first submission. Eight of the eleven were Bales eligible. One grant proposal was approved contingent upon responding to the weaknesses identified, in addition to applying for a K award and seeking assistance from the Associate Vice President for Translational Research in identifying a suitable mentor. The contingencies were not met and the grant was not awarded. Two grant proposal submissions were asked to revise and resubmit; however neither were resubmitted. Four grants were disapproved upon first submission.

Following is a list of faculty investigators who received an award in fiscal year 2007-2008 and includes the title of their grant proposal:

Jun Cai, M.D., Assistant Professor, Pediatrics, *Phenotype of myelination and myelin architecture in intermittent hypoxia mouse model.* (March 2008)

Matthew Cave, M.D., Assistant Professor, Medicine, *Environmental toxins and non-alcoholic fatty liver disease.* (December 2007)

Barbara Clark, Ph.D., Associate Professor, Biochemistry & Molecular Biology, *StARD5 function in cholesterol transport in kidney.* (September 2007)

Tarq Hamid, Ph.D., Assistant Professor, Medicine, *NF-kB, left-ventricular remodeling and heart failure.* (March 2008)

Chuan Hu, Ph.D., Assistant Professor, Biochemistry & Molecular Biology, *SNARE-mediated exocytosis migration of pancreatic cancer cells.* (September 2007)

Swati Joshi-Barve, Ph.D., Assistant Professor, Medicine, *Mechanisms of alcohol-induced lipid raft disruption and subsequent CD4+ T-lymphocytes dysfunction: Protection by SAmE.* (December 2007)

Richard Li, M.D., Ph.D., Instructor, Pediatrics, *Intermittent hypoxia-induced foam cell formation and atherogenesis.* (March 2008)

Timothy O'Toole, M.D., Assistant Professor, Medicine, *Defining the roles of matrix metalloproteinases and reactive oxygen species in atherosclerotic plaque rupture.* (September 2007)

Walter E. Rodriguez-Alvarez, M.D., Assistant Professor, Physiology, *Oxidative stress induced cardiac failure in Type I diabetes mellitus.* (December 2007)

Silvia M. Uriarte, Ph.D., Instructor, Medicine, *Regulation of neutrophil granule exocytosis in vivo.* (June 2008)

Igor N. Zelko, Ph.D., Assistant Professor, Medicine, *Role of epigenetic factors in cell-specific expression of extracellular superoxide dismutase in vascular wall.* (June 2008)

Data collected from SOM pilot research grants show a remarkable return on investment. During 2000-2005, the SOM awarded 29 Status I grants (for new investigators) totaling \$413,000; this amount subsequently yielded an astonishing \$11.7M in extramural funding. Equally successful were the Status II grants for experienced researchers: \$260,000 to 20 investigators generated extramural income return of more than \$9M. These yields far exceed those reported by the University of Minnesota and those of our benchmark institutions (“Investing in Research: the Impact of One Academic Health Center’s Research Grant Program” *Academic Medicine* 2006 June;81(6):520-6).

	Status I Junior Investigators			Status II Established Investigators (includes Bridge Grants)		
	Number Awarded	Total Amount	Extramural Funding	Number Awarded	Total Amount	Extramural Funding
2000-01	4	\$57,000	\$2,452,000	5	\$72,000	\$2,247,000
2001-02	7	\$106,000	\$5,228,000	2	\$30,000	\$184,000
2002-03	4	\$60,000	\$2,355,000	2	\$19,000	\$1,527,000
2003-04	2	\$30,000	\$66,000	4	\$59,000	\$823,000
2004-05	8	\$120,000	\$1,425,000	2	\$20,000	\$1,165,000
2005-06	4	\$51,000	\$174,000	5	\$60,000	\$3,117,000
<b>Total</b>	<b>29</b>	<b>\$424,000</b>	<b>\$11,700,000</b>	<b>20</b>	<b>\$260,000</b>	<b>\$9,063,000</b>

Much of the success of these programs is attributable to the fact that the School of Medicine Research Committee reviewers recognize quality science, foster talent, and are cognizant of federal/foundation priorities for funding. (*Courtesy of Beverly Daly and the CTSA grant*).

### III. Travel Awards Program

#### A. Description

The RC provides funds to help defray travel costs of medical school investigators who are presenting their work at national or international scientific meetings. A maximum of \$300 is available to the presenting author of each paper, with a limit of one award per investigator per fiscal year. Highest priority applicants are faculty members followed by graduate students and post-doctoral fellows. In cases where the RC has previously funded travel, a peer-reviewed manuscript (published or accepted for publication) deriving from that work must accompany the new travel request. Travel, which can be related to the restricted research areas, can be funded from that source.

See Appendix B for the application to request travel funds.

Web address: <http://research.louisville.edu/medicine/travel>

#### B. Activity

From July 1, 2007, through June 30, 2008, the Committee received 29 travel grant requests; one request was not funded and/or denied. The breakdown for those funded includes:

- Faculty members – 10
- Graduate students – 15
- Postdoctoral fellows – 3

#### IV. Summer Research Scholars Program (SRSP) and Student Research Day

##### A. Description

The RC funds stipends for incoming first year and rising second year medical students to participate in research during the summer months. Entering and rising second year M.D./Ph.D. students are given priority. Project descriptions are solicited from faculty in January of each year. Proposals are reviewed by committee members and offered to students if approved.

Proposals judged as appropriate for M.D./Ph.D. research are offered to those students prior to being offered to other medical students. Students who are interested in participating in the SRSP must submit the online registration form by a designated deadline.

Approved projects are placed on a website for medical students to review and prioritize the projects they are interested in during March and early April. Pairing of students with projects/mentors is accomplished by MD/PhD students who have identified their mentor; students interested in training grants; students who have been identified by a mentor when the project was submitted; students who participated as an incoming student and want to participate a second summer with the same faculty member; and via a lottery system. Students are expected to gain first-hand experience in all aspects of the design, execution and analysis of the work. In addition, students are required to attend the “Bench to Bedside” course (PHCI 501) offered by the School of Public Health and Information Sciences. This one-hour course meets on a weekly basis and introduces the students to the basics of clinical research. Students participating in the SRSP program present their research in poster format at the Annual Student Research Showcase in the fall as part of Research!Louisville.

Student posters are judged by faculty and postdoctoral fellow volunteers, and winners are chosen from medical and graduate student divisions. Students who did not participate in the SRSP but who completed a research project at UofL through other mechanisms are invited to present their research as well. Medical student category winners receive \$500 for first place, \$300 for second place and \$100 for third place. The winners of the first- and second-place awards are provided travel funds to present their research at a national meeting or at the National Student Biomedical Research Meeting in Galveston, Texas.

The Graduate Student Showcase at Research!Louisville is open to all graduate students working in health/life sciences-related areas in departments on the Health Sciences Campus and the Belknap Campus in which medical-related research is being conducted. First- and second-place winners receive \$500 and \$300, respectively, and receive up to \$1,000 to present their work at a national meeting of the mentor's choice within one year of the Student Research Showcase. A third place award of \$100 is presented but without funds to present at a national meeting. The Graduate Student awards are supported by the School of Interdisciplinary and Graduate Studies and travel is supported by the Office of the Executive Vice President for Research.

## B. Activity

Summer of 2008: A total of 96 projects were submitted as potential projects for the SRSP. Upon review, 55 projects were selected by the students. Support for the students was through the: a. SOM Research Committee's SRSP restricted and unrestricted funds (25 students; four of which were Bales); b. Three T-35 training grants and one R-25 training grant (19 students); and c. Faculty mentors (11 students).

Student Research Showcase was held on October 21, 2008, during Research!Louisville. A total of 130 students participated as follows:

- First Year Medical Students – 9
- Second – Fourth Year Medical Students – 56
- Nursing/Public Health Graduate Students – 10
- Dental Students – 11
- Masters Basic Science Students – 10
- Doctoral Basic Science Students – 34

Competition winners are listed in Appendix C.

The Postgraduate Research Showcase was held October 22, 2008, also during Research!Louisville. A total of 57 postgraduates participated as follows:

- Medical Residents – 16
- Clinical Research Fellows – 8
- Postdoctoral Research Fellows – 22
- Research Associates – 11

Winners for these categories are also listed in Appendix C.

V. President's Award for Research, Scholarship and Creative Activity

The RC forwarded the names of Mariusz Z. Ratajczak, M.D., Ph.D., in the category of Distinguished Faculty Award for Research; and James L. Wittliff, Ph.D., in the category of Distinguished Faculty Award of Career Achievement.