

## Brothers, Sheila C

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**From:** Farrell III, Herman D  
**Sent:** Wednesday, April 10, 2013 2:56 PM  
**To:** Brothers, Sheila C; Blonder, Lee  
**Cc:** Bailey, Ernest; Debski, Elizabeth A; Effgen, Susan K; Gross, Don; Jasper, Samuel J; Kilgore, Michael W; Lee, Brian D; Underwood, Emily; Wasilkowski, Greg; Blonder, Lee; Shi, Xianglin  
**Subject:** RE: New Cmte Item (SAOSC)\_Proposed New Ctr for Research on Env Disease

Dear Lee,

The SAOSC met with Professor Shi regarding the proposal for a new Center for Research on Environmental Disease. He answered all of our questions and concerns, including providing follow-up documentation. The SAOSC, noting that this proposal requires 2 votes, one regarding the academic program and the other regarding the academic organization and structure, consulted with Andrew Hippisley, the chair of the SAPC, in order to get his input re the merits of the academic program aspects of the proposal. After reviewing his questions and concerns, the SAOSC determined that it could vote on the proposal. The SAOSC voted unanimously (5-0) in favor of the academic program of this new multidisciplinary research center and voted unanimously (5-0) in favor of the academic organization and structure of the this new MDRC.

Let me know if you have any questions.

Herman Farrell  
Chair, SAOSC

***Herman Daniel Farrell III***  
*Associate Professor - Playwriting  
University of Kentucky  
Department of Theatre  
138 Fine Arts Building  
Lexington, Kentucky 40506*

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**From:** Brothers, Sheila C  
**Sent:** Wednesday, March 13, 2013 12:44 PM  
**To:** Farrell III, Herman D  
**Cc:** Bailey, Ernest; Debski, Elizabeth A; Effgen, Susan K; Gross, Don; Jasper, Samuel J; Kilgore, Michael W; Lee, Brian D; Underwood, Emily; Wasilkowski, Greg; Blonder, Lee; Shi, Xianglin  
**Subject:** New Cmte Item (SAOSC)\_Proposed New Ctr for Research on Env Disease

Good afternoon, Herman. There is a new item ready for review by the Senate's Academic Organization and Structure Committee (SAOSC).

This is for a proposed new Center for Research on Environmental Disease.

The proposal is attached here and can also be found at

[http://www.uky.edu/Faculty/Senate/committees\\_councils/standing\\_committees/academic\\_organization\\_structure.htm](http://www.uky.edu/Faculty/Senate/committees_councils/standing_committees/academic_organization_structure.htm)

Xianglin Shi is your contact for this proposal. This is tentatively scheduled to be reviewed by the SC on Monday, April 1, and by the Senate on Monday, April 8. Therefore, I'll need the results of your committee's deliberations by Wednesday, March 27. If this proposal requires a longer review period, please let me know and I will adjust the agenda scheduling.

If you have any questions or requests, please don't hesitate to let me know.

Thank you,  
Sheila



March 11, 2013

Office of the Provost  
105 Main Building  
Lexington, KY 40506-0032  
859 257-2911  
fax 859 257-1333  
www.uky.edu

Dr. Lee X. Blonder  
Chair, University Senate Council  
201 Main Building  
CAMPUS 0032

Dear Lee,

I am writing concerning the feasibility of establishing the Center for Research on Environmental Disease (CRED), a new multidisciplinary research center. I understand the proposal has been approved by the Faculty Council of the College of Medicine and is being forwarded for consideration by the Senate.

The new center will comprise twenty founding members from five colleges. It will be directed by Xianglin Shi, PhD, Professor in the Graduate Center for Toxicology, and will be housed administratively in the College of Medicine. Letters of support from the chairs of all participating departments accompany the proposal and cite numerous reasons why this new center should be established in the 2012-2013 academic year.

In terms of additional resources required to establish the center, three additional faculty members will be needed. The College of Medicine has committed to provide funding for these positions during the center's initial three years. Recruitment for the new positions is currently underway.

The information provided demonstrates a clear need for the Center for Research on Environmental Disease. Furthermore, I have discussed the contents of this letter with Vice President Jim Tracy and he concurs with my assessment, including the decision to assign administrative responsibility for the proposed educational unit to the College of Medicine. The CRED Director shall have an administrative reporting line directly to the Dean of the College of Medicine.

I certify the administrative feasibility of the proposed unit.

Sincerely yours,

A handwritten signature in black ink, appearing to read "T. Tracy". The signature is fluid and cursive, with a large loop at the end.

Timothy S. Tracy  
Interim Provost

kh



January 7, 2013

Dr. Lee X. Blonder  
Chair,  
University Senate Council  
University of Kentucky  
201 Main Building  
CAMPUS 0032

Dean, College of Medicine  
Vice President for Clinical  
Academic Affairs  
138 Leader Avenue, Room 241  
Lexington, KY 40506-9983  
859 323-6582  
fax 859 323-2039  
[www.uky.edu](http://www.uky.edu)

Dear Dr. Blonder:

I request the consideration and support of the University Senate for the creation of the Center for Research on Environmental Disease, as a multidisciplinary research center at College of Medicine (COM), the University of Kentucky.

This proposal for the creation of the new center and of its academic research program has been endorsed and approved by COM Faculty Council (documentation enclosed). In addition, the COM departments and the several colleges that will contribute to this multidisciplinary program have each offered their strong support (documentation enclosed). The new center will administratively report to the College of Medicine and I enthusiastically commit the needed resources described in the proposal. This unit and program will not require specific resources from the Provost or Vice President for Research.

The goals of the Center are to foster collaboration among clinical and basic scientists, catalyze translational research, stimulate educational activities, enhance the competitiveness of member investigators for extramural funding, and increase national recognition for the University in the field of research on environmental disease. The Center will promote specific research- and education-related initiatives by integrating the activities of various investigators with expertise in chemistry, environmental chemistry, toxicology, pharmacology, nutrition, molecular biology, animal sciences, epidemiology, biostatistics, and clinical and translational sciences from different colleges. Creation of the Center is expected to stimulate development of new institutional grants including program project grants and center grants. The Center will provide a nexus for promoting scientific collaboration and developing translational research. Clinical and basic scientists will work together to address environmental disease-related public health concerns. The Center will promote national and international recognition of the University by its research and educational excellence.

I appreciate your careful evaluation and action on this proposal. I will be pleased to answer any questions and provide clarifications if needed. By copy of this letter I am routing this proposal concurrently to Provost Tim Tracy.

Sincerely,

A handwritten signature in black ink, appearing to read 'Frederick C. de Beer'.

Frederick C. de Beer, M.D.  
Dean, College of Medicine  
Vice President for Clinical Academic Affairs

Cc: Dr. Tim Tracy, Provost

Dean, College of Medicine  
Vice President for Clinical  
Academic Affairs  
138 Leader Avenue, Room 241  
Lexington, KY 40506-9983  
859 323-6582  
fax 859 323-2039  
www.uky.edu

MEMORANDUM

To: Frederick C. de Beer, M.D.  
Dean, College of Medicine  
Vice President for Clinical Academic Affairs

From: John D'Orazio, M.D., Ph.D.  
Chair, COM Faculty Council

Date: September 24, 2012

RE: Proposal to Establish a New Multidisciplinary Research Center

At its Sept. 18, 2012 meeting, the Faculty Council discussed the proposal to create a Center for Research on Environmental Disease initiated by Dr. Xianglin Shi. The proposal contained a great deal of supporting justification for the timeliness of the academic research program and related research education that will be housed in the new multidisciplinary research center. The proposal also contained a number supportive letters from department chairs and colleges whose faculty will be contributing activity to the goals and objectives of the new multidisciplinary research center. Vice Dean Michael Reid contributed a letter that described the administrative support from the Dean's office for both the academic research program to be formed and the start-up resources offered by the Dean to get the activity successfully launched. Dr. Shi presented the proposal to Faculty Council and further elaborated on its merits in response to questions from the Council members.

The Faculty Council was briefed on its role to approve the academic research program in view of the academic requirements of the Board of Trustees for multidisciplinary research centers. It is the Faculty Council's responsibility to render its opinion on the sufficiency and appropriateness of the administrative resources to be provided and of the organizational reporting of the new unit to the Dean of the College of Medicine.

The Faculty Council is very enthusiastic about this proposal. The Faculty Council voted (1) to approve the merit of the proposed new academic research program and its academic content, and (2) to endorse the administrative resources and organizational reporting.

The proposal is hereby submitted to your office for the next steps in the routing process.



**PROPOSAL TO ESTABLISH A NEW EDUCATIONAL UNIT  
MULTIDISCIPLINARY RESEARCH CENTER OR INSTITUTE**

1. Organizational Reporting – show below the level to which the unit will report

Vice President for Research  
 College of College of Medicine

2. Requested Effective Date: February 1, 2013

3. Proposal Contact Person:

Name: Xianglin Shi Phone: 859-257-4054 Email: xianglin.shi@uky.edu

4. Rationale for the Proposed New Educational Unit

Attach a description and justification of the new multidisciplinary research center or institute. Please include information that addresses the (A) academic and (B) infrastructural parameters established by the UK Board of Trustees for such educational units (GR VII):

**A. Academic Parameters:**

1. *The proposed activity is what faculty would judge to be “**primarily research**,” (i.e., it is not primarily “instruction,” “public service,” or “administration”)*
2. *The research activity is organized as a “**program**,” (i.e., it is a goal-coordinated interaction of faculty activity and not a juxtaposition of individual efforts)*
3. *The research program is what faculty would judge to be “**multidisciplinary**,” (i.e., the nature and range of disciplines being coordinated in a program of activity necessitates it be homed at a level above that of a department, school or graduate center)*
4. *The research program is to be exercised by “**faculty**” who are “**associated**” with the unit*
5. *The research program yields outcome that is “**delivered**” (e.g., how will the productive outcome be made accessible to or delivered to the public or government?)*
6. *The unit will **not** be the home of a **credit-bearing** course, certificate, or degree (it can serve as the home of academic appt postdoctoral scholars/fellows and of their training program)*

Please see additional elaboration of academic metrics to be used by the University Senate (click here: [SR 3.3.2.1.B.1](#))

**B. Organizational and Infrastructural Parameters**

1. *The MDRC has a unit administrator (“**Director**”), who has the same responsibilities as a department chair to the unit’s faculty members and staff*
2. *The Director has a **faculty appointment** in a home department, school or college*
3. *The **voting faculty membership** of the unit is comprised of those who have formal DOE assignment for activities of the unit*
4. *The faculty associated with the unit’s program have **cumulatively at least one FTE** of formal time assignment to the unit’s activities (not counting the Director’s DOE).*
5. *The unit is **administratively responsible to** the VP for Research unless responsibility has been delegated to another **academic administrator**.*
6. ***No faculty academic appointments** (primary or secondary) are homed in the unit (provision of funding for faculty salary by the unit does not constitute provision of academic appt).*

Please see additional elaboration of organizational/infrastructural metrics to be used by the University Senate (click here: [SR 3.3.2.1.B.1](#))

**PROPOSAL TO ESTABLISH A NEW EDUCATIONAL UNIT  
MULTIDISCIPLINARY RESEARCH CENTER OR INSTITUTE**

Routing Log

**General Information:**

Proposal Name: Center for Research on Environmental disease

Proposal Contact Person:

Name: Xianglin Shi

Phone: 859 257 4054

Email: xianglin.shi@uky.edu

**INSTRUCTIONS:**

Append to the proposal a letter from each of the following University levels of review:

1. Letters from home department chairs of faculty who will be voting members of the new unit, confirming the willingness of the faculty member(s) to participate and that the chair will assign formal DOE time of the faculty members to activities of the new unit (the letter should include whether the funding to support the salary for the formal DOE time will come from the home unit or from the new unit).

(note: the total of formally assigned DOE time for all faculty to be members of the new unit must sum to at least one FTE, not including the Director of the new unit)

2. Letter from the person who will be the Director of the new unit (if not the proposal contact person)
3. Letter on support and administrative feasibility from the dean of the college that will home the new unit  
or

If the unit will report to the VP for Research, then letters of support from the deans of the colleges from which the voting members of the faculty will be drawn, or whose colleges will directly benefit from the unit

4. Letter on support and administrative feasibility from the Provost
5. Letter on support and administrative feasibility from the VP for Research
6. Letter on support from College Faculty Council, if the unit is to be homed in a college

**UNIVERSITY SENATE AND HIGHER LEVEL REVIEW**

1. Senate Academic Organization and Structure Committee
  - A. Recommendation on whether the new unit meets academic criteria for MDRC/I
  - B. Recommendation on organizational/infrastructural aspects of the new MDRC/I
2. Senate Council
  - A. Recommendation on whether the new unit meets academic criteria for MDRC/I
  - B. Recommendation on organizational/infrastructural aspects of the new MDRC/I
3. University Senate
  - A. Final University decisional vote on whether the new unit meets academic criteria for MDRC/I
  - B. Recommendation to BoT on establishment (organizational/infrastructural aspects) of the new MDRC/I
4. University President  
Recommend to BoT on establishment (organizational/infrastructural aspects) of the new MDRC/I
5. Board of Trustees  
Final decision on establishment (organizational/infrastructural aspects) of the new MDRC/I

**Proposal to Establish the  
University of Kentucky Center for Research on Environmental disease**

Xianglin Shi, PhD

August, 2012

**Executive Summary**

This proposal to form a Multidisciplinary Research Center (MDRC) -- the University of Kentucky (UK) Center for Research on Environmental Disease (the Center) -- is the product of ongoing interactions among working groups of independent investigators with common scientific interests. The goals of the Center are to foster collaboration among clinical and basic scientists, catalyze translational research, stimulate educational activities, enhance the competitiveness of member investigators for extramural funding, and increase national recognition for the University in the field of research on environmental disease. To achieve these goals, the proposed Center will promote specific research- and education-related initiatives by integrating the activities of various investigators with expertise in chemistry, environmental chemistry, toxicology, pharmacology, nutrition, molecular biology, animal sciences, epidemiology, biostatistics, and clinical and translational sciences from different colleges. Creation of the Center is expected to stimulate development of new institutional grants including program project grants and center grants. The Center will provide a nexus for promoting scientific collaboration and developing translational research. Clinical and basic scientists will work together to address environmental disease-related public health concerns. The Center will promote national and international recognition of the University by its research and educational excellence.

**A. Academic Parameters**

**A.1. Goals and Significance**

**A.1-1. Research Goals.** The goals in establishing this new multidisciplinary research center are catalyze innovative research, stimulate educational activities, foster collaboration among basic and clinical scientists, and increase national recognition for the University in the field of research on environmental disease. The primary objective of the Center is to conduct research on the mechanisms by which environmental factors cause or influence human disease and development for methods for early detection, prevention, and control of environmentally-related diseases. This university-wide, interdisciplinary center will build on existing strengths at UK to create a nationally-recognizable program that expands research and promotes educational activities. The proposed center will foster basic and translational research collaborations, expand training opportunities for graduate and professional students, provide an intellectual environment for new programmatic grants, enhance faculty recruitment, and give research on environmental disease at UK an identity for national recognition.

**A.1-2. Significance of Attaching Research Goals.** The Center will benefit the academic units of member investigators, enhancing the success of participating faculty members and expanding the learning opportunities for trainees. This initiative will also complement research activities in established centers at UK by providing environmental disease-specific expertise and new methodologies to address problems of common concern.

**A.2. Justification of the Program of Multidisciplinary Research**

**A.2-1. University Need for This Program of Research.** The University has a large community of research scientists and clinicians working on issues related to environmental disease, ranging from environmental carcinogenesis to nutrient interactions with toxic and carcinogenic effects of

specific environmental contaminants. Research in this area will complement existing programs of Markey Cancer Center. At present, researchers at UK in the area of environmental disease are collaborating informally and their successes are widespread. New basic and translational research projects are underway, papers are being co-authored, and joint grants are being submitted and awarded. It is clear that the strengths in research on environmental disease at UK are considerable. However, the overall impact of this research is compromised by the diffuse nature of individual programs. There is no integrated academic program for training in research on environmental disease now nucleated in any existing department or multidisciplinary research center; therefore, institutional support for this area of biomedicine has been minimal\*.

**A.2-2. Enabling this Research Program through the New Center.** The above concerns can be addressed by establishing an interdisciplinary UK Center for Research on Environmental Disease. Key components including personnel and facilities are largely in place including personnel and facilities. Creation of the Center will not require initiation of new degree programs, as students will matriculate in established degree programs. A majority of investigators will remain in their current laboratories; technical staff and trainees will retain appointments in their current departments.

### **A.3. The Research Program to be Conducted.**

**A.3-1. Securing Extramural Research Funding.** Based on research currently underway, it is to expect that within one or two years, two program project grant (PPG) applications can be developed. One is metal, oxidative stress, and lung cancer in Appalachian Kentucky. The other is prevention of UV-induced carcinogenesis using natural compounds. The latter will be developed for submission to the National Center for Complementary and Alternative Medicine (NCCAM). In addition, NIEHS Core Center grant (P30) can be initiated in a year or two. The P30 center grant is designed to establish leadership and support for programs of excellence in environmental health sciences by providing scientific guidance, technology, and career development opportunities for promising investigators. Even though both UK and the University of Louisville have reasonably large NIEHS grant portfolios, currently, there is no P30 in Kentucky. NIEHS Superfund Research Program grant on metal-induced carcinogenesis and prevention can also be developed within a year or two. A major concern for development of these grants is the need for key research personnel to complement the work already in progress in these areas. Specially we need one researcher who specializes metal carcinogenesis and two who specialize in cancer prevention. For the first a few years of development, the Center requires four faculty lines. More specific details on plans to use the auspices of the Center to obtain the above funding are elaborated below in Section B.29-2. It may be noted that these projects/grant applications require multidisciplinary approaches involving expertise in chemistry, environmental chemistry, toxicology, pharmacology, nutrition, molecular biology, animal sciences, epidemiology, biostatistics, and clinical and translational sciences.

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\*There are two environment studies-related educational units at University of Kentucky. The first one is Department of Preventive Medicine and Environmental Health. Research in this department focuses on the influence of environment on the health of the population and its workforce. There is essentially no wet lab in this department. The second academic unit is the Tracy Farmer Institute for Sustainability and the Environment. The goal of this institute is to use interdisciplinary and transdisciplinary approaches for developing and promoting sustainable development, alternate energy sources and usage, and measures for managing known and emerging environmental contaminants. The Research on Environmental Disease currently proposed focuses on environmental disease. There is no duplication or substantial overlap between these two educational units and the currently proposed new center.

**A.3-2. Additional Program Activities.** The additional activities described here will support the research and education efforts of the Center and also have collateral benefits to the College of Medicine and University by stimulating research collaboration, enhancing graduate education, and increasing the national visibility of biomedical research at UK.

**A.3-2-1. Funding for pilot research.** The Center expects to establish a program for funding small projects needed to generate pilot data for new grant applications. Priority will be given to collaborative projects that link two or more laboratories and to translational research projects in the area of research on environmental disease.

**A.3-2-2. Outside speakers.** The Center will regularly sponsor visits by prominent scientists in the area of environmental disease from other U.S. institutions. These speakers will present public seminars and meet with interested scientists and trainees from across campus. The Center will not establish a new, stand-alone seminar series. Rather, the Center will coordinate with educational units and sister research centers to integrate Center-sponsored visitors into existing seminar series. This strategy will broaden awareness of Center activities within the UK community and will defray the cost of outside speakers to other units.

**A.3-2-3. Education.** The Center will support graduate and professional education in environmental disease by a variety of mechanisms. NIH training grants will be developed to support graduate student and postdoctoral stipends and summer research training. The graduate students will have their academic home within the degree program of their department, but we anticipate that the Center will foster increased opportunities for these students to learn of techniques and research approaches being exercised by the various laboratories of the Center faculty. In coordination with departments of participating faculty, the Center will develop graduate courses (to be homed in those departments) in research on environmental disease to compliment offerings in the current course catalogue. Toward goals in education in translational research, the Center will coordinate with clinical departments so as to make the Center's activities available toward the research training experiences of clinical residents and fellows.

**A.3-2-4. Delivery of research outcome.** The results of the research activities will be delivered to the scientific and public communities by translational venues of scientific publications and scientific conference presentations.

**A.3-2-5. Annual research retreat.** In addition to the above traditional venues of research reporting, every summer, the Center will hold an off-campus research retreat for member investigators, their trainees, outside speakers, and interested members of the University community. Planning and program decisions will be made by the Center membership and participants from outside the Center will be invited to attend. These will include scientists and physicians from UK plus a distinguished visiting lecturer. The latter will be a senior scientist and respected authority in the field of research on environmental disease. This individual will participate in all aspects of retreat activities and will deliver the keynote address. Oral presentations in the morning session will feature selected Center investigators. After lunch, a second oral session will allow presentations by University investigators from outside the training program. Outside speakers will be selected for expertise in areas of clinical or basic research that are of interest to the Center membership. The goal is to foster future collaborations, especially in the area of translational research. The afternoon will conclude with a poster discussion session for trainees, students and postdoctoral fellows working in the laboratories of Center members. Posters will be judged for scientific excellence by a panel of member

investigators and awards will be presented for best posters in the Predoctoral and Postdoctoral categories.

## **B. Organizational and Infrastructural Parameters**

### **B.1. Governance and Membership.**

**B.1-1. Faculty Membership of the Center.** In accordance with the University Governing Regulations, the voting membership of the Faculty body of the Center will be those faculty approved to have a formal DOE assignment of time to the activities of the Center's program (GR VII.A.7). At least during the first several years of the Center, the Center will provide the funding to support the full-time salary of four faculty employees, whose academic appointments are in academic department but who have their DOE assignments expressly to the activities of the Center (hereafter "Core" member). The summative amount of formal DOE assignment to the Core faculty members will easily exceed the 1 FTE equivalent specific by GR VII.

**B.1-2. Faculty Affiliation with the Center.** In addition to the Core faculty, the Center will be enhanced by the contributing activities of affiliated faculty, whose interactions with other Center faculty, facilitated by the Center, will enhance both the Center's and their home departments' programs, but without reaching a formal DOE assignment with the Center. University faculty members who are independent investigators, educators, or practicing clinicians with a specific interest in the field of research on environmental disease, are welcome to apply for affiliation with the Center. The Center will be explicitly multidisciplinary, welcoming the affiliated contribution from both basic and clinical faculty. Affiliates do not automatically possess Faculty membership, but may be afforded the privileges of membership, with or without voting status, by the members of the Faculty body (see B.1-1, B.1-3).

#### **Founding affiliate members of the Center will include:**

Arnold, Susanne, MD, Associate Professor and Rose Carol Shumate Professorship in Cancer Research, Department of Internal Medicine; Associate Director for Clinical Research, Markey Cancer Center, College of Medicine. Dr. Arnold has over twelve years of experience in clinical and translational research in cancer therapeutics. Her recent studies include a Department of Defense awarded (\$1.43 million) project to study the potential contribution of environmental exposure to carcinogenic metals to high lung cancer rates in Appalachian Kentucky.

Atwood, David, PhD, Professor, Department of Chemistry, College of Arts and Sciences. Dr. Atwood's research Atwood group research is focused on fundamental and applied aspects of inorganic and main group metals. This work involves the design and synthesis of ligands with specific affinity for targeted metals and creating a detailed fundamental understanding of the structure, bonding, and reactivity of the metal-ligand combinations. Dr. Atwood uses his expertise for remediation of environmental carcinogenic metals (such as Cd, Hg, Pb, and As) from water. His research in this aspect includes (a) heavy metal remediation; (b) acid mine drainage prevention, such as prevention of the release of iron and other metals from coal; (c) Groundwater arsenic from poultry operations. Arsenic containing feed additives have been used extensively in past decades to improve the weight of poultry and to control intestinal parasites. Dr. Atwood is conducting a study on the arsenic content of the groundwater emanating from these fields; (d) Arsenic filtration columns. Dr. Atwood's lab has created a new filtration unit containing a proprietary set of compounds that effectively removes As(III) from water. (e) Real-time monitoring of environmental contaminants. In collaboration with Quansor, Inc. Dr. Atwood

is developing new sensors for the real time detection of inorganic, biological, and organic contaminants in water.

Bertsch, Paul, PhD, Professor, Department of Plant and Soil Sciences; Director, Tracy Farmer Institute for Sustainability and the Environment, College of Agriculture. DR. Bertsch's research is in the area that has become known as molecular environmental science and focuses on elucidating the mechanisms controlling the fate, transport, and bioavailability/toxicity of contaminants in the environment and on the development of novel minimally invasive remediation strategies for contaminated sites. Most recently, his research has focused on the environmental fate, transport, bioavailability, and toxicity of manufactured nanomaterials.

Chen, Gang, PhD, Assistant Professor, Department of Internal Medicine, College of Medicine. Dr. Chen is interested in molecular mechanisms of ethanol toxicity, metal toxicity and carcinogenesis, and health effects of co-exposure to both ethanol and heavy metals. His study on oxidative stress as the mechanism of arsenic-induced autophagy and tumorigenesis is supported by an American Cancer Society grant (RSG-11-116-01-CNE).

Dignan, Mark, PhD, MPH, Professor and Director of the Prevention Research Center, Department of Internal Medicine, College of Medicine. Dr. Dignan's research addresses cervical cancer screening among low-income and minority populations, including urban African-American women and rural Native American and Caucasian women. His work includes projects that develop and evaluate mass media programs, lay health advisor and navigator interventions for patients and the public, and health care provider programs designed to increase screening and adherence to follow-up recommendations among medically underserved rural and minority populations. Cancers targeted by his research include cervical, breast, prostate, and colorectal. His recent studies include the role of environmental exposure to heavy metals and oxidative stress in the high incidences of lung and colorectal cancers in Appalachian Kentucky. Dr. Dignan's studies are supported by NIH grants (R01CA120606 and U54CA153604).

D'Orazio, John, MD, PhD, Associate Professor, Department of Pediatrics, College of Medicine. Environmental UV exposure is a leading cause of melanoma. Dr. D'Orazio is interested in understanding why certain people have a higher risk of melanoma than others, and what can be done to help those individuals. His laboratory focuses on a melanocyte protein (Mc1r) that seems to protect the body against melanoma in a variety of ways. Persons with poorly functioning Mc1r have a much higher risk of melanoma than those with intact Mc1r. His laboratory is developing new ways to restore Mc1r function by topical application of skin-permeable medications to lessen the risk of melanoma in high-risk individuals. His research is supported by NIH grants (R01CA131075-03 and 3R01CA131075-03S1).

Hennig, Bernhard, PhD, Professor, Department of Animal and Food Sciences, College of Agriculture. Dr. Hennig's research focuses on the injurious effects of individual fats to vascular endothelial cells and protection against such injury by certain vitamins and minerals. Because the nutritional environment of the vascular endothelium can influence cytokine-mediated endothelial activation or dysfunction, vascular effects of inflammatory cytokines also are being studied. In addition, Dr. Hennig is studying molecular mechanisms of nutrient interactions with the cytotoxic effects of specific environmental contaminants, such as persistent organic pollutants, in relation to endothelial cell activation and the pathology of atherosclerosis. Dr. Hennig's recent studies include the toxicology of Superfund chemicals and how health effects of exposure can be modulated by both intrinsic and extrinsic factors, namely genetics and

nutrition, respectively. His research is supported by NIH grants (P42ES007380, P42ES007380, and P42ES007380-13S2)

Huang, Bin, DrPH, Assistant Professor, Department of Biostatistics, College of Public Health. Dr. Huang's research interest focuses on applications of innovative statistical and epidemiological methodologies and study designs to population-based cancer research, including comparative effectiveness analysis, missing data analysis, and geo-spatial data analysis. He is also interested in adaptive design clinical trials and high-throughput data analysis. He has extensive experience in collaboration with researchers in outcome research utilizing publically available datasets from sources such as KCR, SEER, CMS and HINTS. Dr. Huang's research is support by a DHHS/CDC grant (5U48DP001932).

Li, Guo-Min, PhD, Professor and James-Gardner Chair in Cancer Research, Graduate Center for Toxicology, College of Medicine. Dr. Li's laboratory studies molecular mechanisms by which loss of DNA repair functions causes cancer and other human diseases, including neurological and neurodegenerative disorders. Specific projects in Dr. Li's laboratory include: (a) biochemistry of DNA mismatch repair (MMR), (b) cancer etiology, detection, and therapy related to MMR genes, and (c) DNA hairpin repair and neurodegenerative diseases. His recent studies include DNA repair and environmental metal exposure in the high incidence of lung and colorectal cancers. His research is supported by NIH grant (R01GM089684).

Luo, Jia, PhD, Professor, Department of Internal Medicine, College of Medicine. Alcoholism, alcohol abuse, and the medical complications of excessive drinking are major world-wide health problems. Chronic alcohol exposure affects nutrient uptake. Dr. Luo is interested in elucidating cellular/molecular mechanisms underlying ethanol-induced neuronal death, impaired cell cycle kinetics and disrupted cell migration in the developing brain. Alcohol is also a tumor promoter. Epidemiological studies indicate that alcohol consumption is associated with advanced and invasive breast tumors. Dr. Luo is interested in elucidating cellular/molecular mechanisms underlying ethanol-induced tumor promotion, particularly the metastasis of breast cancer cells. Dr. Luo's studies include investigation on molecular mechanisms of metal toxicity and carcinogenesis and health effects of co-exposure to both ethanol and heavy metals and on development of nutritional supplement in preventing/ameliorating cell injuries caused by these exposures. Dr. Luo's research is supported by NIH grants (R01AA015407, R01AA017226, and R21AA019693).

Mannino, David, MD, Professor and Chair, Department of Preventive Medicine and Environmental Health, College of Public Health. Dr. Mannino's research focuses on epidemiology of chronic obstructive pulmonary disease, asthma, and lung cancer caused by exposure to environmental pollutants. His research interests also include health effects of active and passive smoking and heavy metals.

Orren, David, PhD, Associate Professor, Graduate Center for Toxicology, College of Medicine. Dr. Orren's focus of study is how endogenous processes and environmental agents contribute to genetic changes that, in turn, lead to carcinogenesis and other characteristics of human aging. These environmental agents include tobacco smoke particulates, UV, and heavy metals, and co-exposure of these agents. His recent studies involve the role of DNA repair, smoking, and heavy metals in the high incidences of lung and colorectal cancers in Appalachian Kentucky. His study is supported by an NIH grant (R01AG027258).

Saito, Hiroshi, PhD, Associate Professor, Department of Surgery, College of Medicine. Dr. Saito's research focuses on age-associated increase in vulnerability to critical illnesses or systemic inflammation, including sepsis and acute pancreatitis, age-dependent loss of tissue proliferation capability, age-dependent changes in PI3K signaling and its physiological consequences, and alterations of inflammatory and thrombotic responses with aging. His recent studies involve investigation of oxidative stress and heavy metal exposure in the high incidences of lung and colorectal cancers in Appalachian Kentucky. His study is supported by an NIH grant (R01AG039732).

Sanderson, Wayne, PhD, Professor and Chair, Department of Epidemiology, College of Public Health. Dr. Sanderson's primary research focus is on agricultural health and safety and he is the Deputy-Director of the Southeast Center for Agricultural Health and Injury Prevention, which is a national Center for research and education on health and safety problems facing our nation's rural residents. He also conducts research studies on respiratory diseases, cancers, and birth defects associated with a variety of occupational and environmental exposures. The research projects of Dr. Sanderson's students cover a very broad range of topics encompassing both epidemiology and exposure assessment components.

Swanson, Hollie, PhD, Professor, Department of Molecular and Biomedical Pharmacology, College of Medicine. Dr. Swanson's research is focusing on various aspects of the AHR (aryl hydrocarbon receptor) signaling pathway. She has utilized 2,3,7,8 tetrachloro-dibenzo-p-dioxin (TCDD) as a model environmental contaminant that activates the AHR, to understand how environmental exposures alter cell fate decisions relevant to chronic human disease states, such as cancer.

St. Clair, Daret, PhD, Professor and James Graham Brown Foundation Endowed Chair, Graduate Center for Toxicology and Associate Director for Basic Research, Markey Cancer Center, College of Medicine. Dr. St. Clair's laboratory is investigating the fundamental mechanisms by which reactive oxygen species (ROS) and reactive nitrogen species (RNS) contribute to normal tissue injury and cancer formation. The ultimate goal is to develop novel strategies for intervention and improvement of treatment. Several separate, but related areas of research are in progress: (a) Transcriptional regulation of the human MnSOD gene expression; (b) Redox-mediated mechanisms of tumor suppression; and (c) Antioxidant protective mechanisms against cardiac and neuronal injury. Her lab is also interested in toxicity and carcinogenesis induced by environmental factors, such as UV. Her study is supported by NIH grants (P01AG005119, R01CA049797, R01CA073599, R01CA139843, and R01CA143428)

Tucker, Thomas, MPH, Ph.D., Associate Professor, Department of Epidemiology, College of Public Health; Associate Director for Cancer Prevention and Control, Markey Cancer Center. Dr. Tucker's research includes examination of variations in the patterns of care for stage III colorectal cancer in Kentucky, an exploration of human growth factors as they relate to colon cancer, studies of factor related to the high cervical cancer incidence and mortality in Appalachian Kentucky, and exploration of methods for estimating the completeness of case ascertainment in population-based cancer registries. Dr. Tucker's recent studies include roles of environmental exposure to heavy metals and oxidative stress in the high incidences of lung and colorectal cancers in Appalachian Kentucky. His research is supported by a DHHS/CDC grant (5U58DP000810).

Vore, Mary, PhD, Professor and Director, Graduate Center for Toxicology, College of Medicine. Dr. Vore's laboratory is focused on understanding the transport of organic anions, such as bile

salts and the glucuronide and glutathione conjugates of xenobiotics across the hepatocyte. Dr. Vore's lab is characterizing the expression of bile salt transporters *ntcp* and *spgp/bsep*, and the non-bile acid organic anion transporters *oatp1/2* and *mrp2* in pregnancy and the postpartum period. Dr. Vore's lab is also investigating the mechanisms by which estradiol-17-glucuronide, a naturally occurring estrogen metabolite, inhibits bile flow. Dr. Vore's recent studies include mechanistic investigation of arsenic-induced toxicity and carcinogenesis. Dr. Vore's research is supported by NIH grants (R01CA139844-04, T32ES007266-22, R25ES016248-05 and R01HD058299-28).

Yang, Hsin-Sheng, PhD, Associate Professor, Graduate Center for Toxicology, College of Medicine. Dr. Yang's lab focuses on investigation of gene regulation events that occur during multistage carcinogenesis and to targeting these events for cancer prevention and therapeutics. Specifically, Dr. Yang's research focuses on studying the molecular action of a novel tumor suppressor *Pdcd4* in inhibiting tumor promotion and progression. Dr. Yang's recent studies include investigation of the molecular mechanism of arsenic-induced cell transformation. Dr. Yang's findings have shown that chronic exposure to arsenic leads to phosphorylation of AKT, p70S6K, eIF4B, and rapmycin protein S6 but not eIF4E binding protein, indicating that elevating protein translation by increasing eIF4B expression and activity contribute to arsenic-induced cell transformation. Dr. Yang's research is supported by an NIH grant (R01CA129015-04).

Yokel, Robert, PhD, Professor, Department of Pharmaceutical Sciences, College of Pharmacy. Dr. Yokel's research focuses on neurotoxic metals, their toxicokinetics and chelation. Specific interests include entry into and exit from the brain, oral bioavailability, in vitro and biological assessment of chelators, mechanisms of neurotoxicity, and the role of physico-chemical properties of nanoscale materials in their ability to enter the brain. Preparations used include whole-animals and cells in culture. Analytical techniques include atomic absorption spectrometry as well as radiation counting and accelerator mass spectrometric quantification of isotopic tracers.

Zhang, Zhuo, PhD, Assistant Professor, Graduate Center for Toxicology, College of Medicine. Dr. Zhang's research focuses on investigation of mechanisms of metal-induced toxicity and carcinogenesis. Her research interests include mechanism-based prevention and control of environmental disease. Dr. Zhang's laboratory is studying the antioxidant properties of various naturally occurring antioxidants and developing them as chemopreventive agents against metal- or UV-induced carcinogenesis. Dr. Zhang's research is supported by NIH grants (R01ES018883-03, R21ES019249-02, and R03CA171604).

It may be noted from the above list that although their research interests are related to research on environmental disease, they have a broad expertise in chemistry, environmental chemistry, toxicology, pharmacology, nutrition, molecular biology, animal sciences, epidemiology, biostatistics, and clinical and translational sciences from different colleges. Creation of the Center is expected to stimulate interactions and development of new institutional grants including program project grants and center grants (see B.2-9-2).

**B.1-3. New Core Faculty and Affiliate Members of the Center.** University faculty members who are independent investigators, educators, or practicing clinicians with a specific interest in the field of research on environmental disease will continue to be welcomed to apply for membership on the Faculty of the Center after it is established. It is anticipated that as the program of the Center grows and is successful in acquiring sustaining extramural funding,

funding opportunities will become available in which the activities of Affiliate faculty will become more extensive, including funding of some salary time from grants secured through the Center. In such cases, these members who are contributing more formally will become Core members of the Faculty. The Center welcomes faculty in Research Title Series. Although funded grants which are housed directly in the Center pay the full salary of a Research Title Series faculty member. These Research Title Series faculty must have their primary academic home in a department, just like the tenured faculty who are paid by the Center. It is also envisioned that the scope of funding opportunities will increase with the Center's success, and this increased scope will also attract the interest and participation of new Affiliate faculty. The Center will be explicitly multidisciplinary, welcoming members from any educational unit and encouraging the participation of both basic and clinical faculty.

**B.2. Administrative Governance.** Center activities will be overseen by the Director who will have overall administrative responsibility. The Director will be advised by an Executive Council and an External Advisory Board (EAB). The specifics of appointment categories, leadership, and advisory bodies are as follows:

**B.2-1. Director.** The Director will have primary responsibility for administrative oversight of Center activities and finances. The Director, with the consultative input of the faculty, will approve new persons to affiliated membership in the Center (see B.1-1,2 above). The Center designates individuals to serve in leadership positions, including the Executive Council and External Advisory Board. The Director will report on Center activities to the Dean of the College of Medicine, and will represent the Center in external affairs. The Director will be appointed for a six-year term by the Dean of the College of Medicine with confirmation by the Provost, Board of Trustees, and President. The Director will be subject to annual performance reviews by the Dean. Overall performance of the Director will be evaluated externally as part of the formal institutional review of the Center. This information will be made available to the Dean and University leadership for use in deliberations regarding possible re-appointment. The Director will be eligible for reappointment upon recommendation of the Dean with institutional approval as above.

**B.2-1-1. Proposed Director.** Xianglin Shi, Ph.D. (15% effort in years 1 and 2 to oversee Center start-up; 10% in subsequent years) is Professor and William A. Marquard Chair in Cancer Research at UK Graduate Center for Toxicology and Associate Director for Cancer Chemoprevention and Environmental Toxicology at the UK Markey Cancer Center. Before joining University of Kentucky in 2006, he served as Director of the Institution for Nutritional Sciences, Chinese Academy of Sciences, Shanghai, China (2003-2007) and Research Chemist and Team Leader, National Institute for Occupational Safety and Health, Morgantown, WV (1996-2004). He also served as Adjunct Professor in the Department of Basic Pharmaceutical Sciences, West Virginia University (1997-2007). He earned his Ph.D. in chemistry in 1988 at West Virginia University and received his postdoctoral training at the National Cancer Institute.

**B.2-1-2. Proposed Director Qualifications.** The focus of Dr. Shi's research program is on molecular mechanisms of metal toxicity and carcinogenesis and cancer prevention using natural compounds. He is a well recognized leader in the field of metal carcinogenesis. Dr. Shi has authored 381 articles; these articles have received 11,044 citations with an H-index of 56. He has served as guest editor for 8 special journal issues and for 2 book series in his field. He initiated the biennial meeting of Molecular Mechanisms of Metal Toxicity and Carcinogenesis in 2000 and has served as the organizer since then. He has also served as a member or chair of

various review and advisory committees. Since joining the University of Kentucky in 2006, he has been awarded 8 R01 grants (as PI or MPI) by NIH. Four of them are currently active.

**B.2-2. Staff Administrator.** The Center Staff Administrator (100% effort) will assist the Director with finances, record keeping, and coordination of Center activities. Among other duties, this person will maintain Center accounts, oversee expenditures, record minutes of Center committees, monitor the annual budget, represent the Center with administrators in other academic units, assist in the preparation of institutional grant applications, maintain the Center website, distribute notices of Center activities, coordinate itineraries and travel arrangements for visiting scientists, integrate Center speakers with seminar series in other academic units, maintain documentation on the applicant pool for Center trainee programs, and organize the annual research retreat.

**B.2-3. Executive Council.** The Executive Council will be the principal faculty advisory body to the Director concerning the administrative operation of the Center. It will comprise five voting members. The Director (Council chair) will be permanent member. Two core faculty members of the Center and other two affiliate members (B.1-1) will serve three-year terms on a rotating basis. Comprehensive participation will strengthen ties of individual members to Center governance and will promote transparency in Council activities. The Center Staff Administrator will attend Council meetings to consult on financial and administrative issues, take minutes, and record attendance. Minutes of Council deliberations will be vetted by attendees, edited, and archived for access by program participants and the External Advisory Board (B.2-4).

Responsibilities of the Council will be to: (a) evaluate nominees for membership or affiliation of the faculty of the Center, (a) advise the Director on approval of such nominees, (c) provide oversight on Center programs and activities, and (d) advise the Director on new Center initiatives and on resolution of problems. The Council activities will provide an internal mechanism for ongoing improvement of the Center. Council will respond to concerns raised by individual members and will implement changes recommended by the External Advisory Board (see Section B.2-4).

**B.2-4. External Advisory Board (EAB).** The EAB will be charged with providing expert, outside evaluation of Center governance and activities. The EAB will comprise five senior faculty who currently direct successful research unites at the University of Kentucky and other institutions. The EAB will meet annually for on-campus site visits of the Center. Two weeks before each visit, EAB members will receive copies of (1) an executive summary of the year's activities, (2) reprints of publications by Center investigators during the prior year; (3) grant applications submitted by Center investigators and (if available) reviewer comments; and (4) the annual financial report. During the site visit, EAB members will meet on campus with the Director and member investigators as a group and with individual investigators as appropriate. After the visit, EAB members will develop a written report on the status of the Center. The report will include perceived strengths and weaknesses of the Center, suggestions for improvement, and comments on responsiveness of the Center leadership to prior concerns. The EAB will forward this report to the Director and the Dean of the College of Medicine. Results of the EAB report will be used by the Director to improve the Center in the succeeding year.

**B.2-5. Institutional Review.** The Center will be subject to external review by the University at six-year intervals for the purpose of assessing the effectiveness of Center activities and administration. An external review panel will be organized and given its charge by the Dean of the College of Medicine, in accordance with GR1X and AR 1:4. The panel will comprise four

senior faculty from participating colleges plus a minimum of one reviewer from outside the University, all determined with the consultative input of the members of the Faculty. For purposes of evaluation, the panel will have full access to all Center documents, facilities, and personnel. The panel will convene on campus and meet personally with the Director, faculty members and affiliates, and Center supported trainees. The panel will review documents provided to the EAB and prior EAB reports. The panel will also evaluate the Center budget, including financial statements for previous years, and the leadership of the Director, in accordance with criteria identified pursuant to AR 1:4, Part IV.D). After the visit, the panel will prepare a formal report on their findings, including strengths and weaknesses of the Center and its leadership, and will make recommendations for improvement as appropriate. This report will be forwarded to the Director, the Dean of the College, and the Provost. It will be used to redirect and improve Center activities and governance. Continued support of the Center by the institution will be subject to an acceptable outcome from the external review process.

**B.2-6. Reporting Relationships.** All faculty members and faculty affiliates report to the Director on issues pertaining to the Center. The Director reports to the Dean of the College of Medicine. The Director is responsible for evaluating performance of core members. The director is responsible for providing to the Chair of the home unit a substantive assessment of the performance of those faculty members whose salary is provided primarily from the Center.

**B.2-7. Staff and Facilities.** During start-up, the Center will have administrative support from College of Medicine. The lab space and starting package for core faculty members recruited from other institutions will be provided by the College of Medicine similar to those of other regular recruitments in the College. Because the remaining faculty members of the Center from within UK already have adequate research staff, offices, laboratory space, and access to core facilities, no additional staff or facilities are requested for Center start-up. Future increases in on personnel or facilities will derive from new initiatives, e.g. establishment of core facilities, center grants, etc. These will be overseen by the Director in consultation with the Dean of Medicine.

**B.2-8. Equipment and Instrumentation.** Initial requirements are limited to office equipment for administrative support. Future acquisitions of equipment and instrumentation will be funded internally from the Center budget.

**B.2.9. Projected budget.**

**B.2-9-1. Support from College Funding.** The College of Medicine will provide \$200,000 in administrative support for the Center over the next three years. Graduated funding will be made available in FY13 (\$100,000), FY14 (\$65,000), and FY15 (\$35,000). Center funds will reside in dedicated University accounts for exclusive expenditure toward Center-related initiatives. These funds will be administered by the Director through the Center Staff Administrator. Fiscal oversight will be provided by the Office of the Dean. The budget of the Center will be integrated into the annual budget of the College of Medicine for integration with University finances. The Center will manage the indirect cost return and salary reimbursement of its core members similar to an academic department of the College of Medicine. The funding from these sources together that from the College of Medicine will be used at the Director's discretion to pay for administrative staff, administrative effort (DOE) of the Director, faculty searches, visiting speakers, pilot programs, and other research-related activities to enhance the Center.

It should be noted that the Center is “adding to” rather than “competing” with department for resources. For example, if the Center gets a PPG, which supports salaries of persons who are affiliated faculty of the Center, the salary savings and indirect cost return will go back to the

primary home department of these affiliate faculty members. Similarly, if several affiliated and an 'original core' faculty are co-PIs on a simple R01, each at 20% time, the salary saving and indirect cost return of the persons who are affiliate members will go to their home departments.

**B.2-9-2. Potential for extramural funding.** A primary incentive for creating this Center is to enhance the competitiveness of member investigators for extramural funding. Due to current strengths, within one or two years, the following applications can be developed.

**B.2-9-2-1.** An NIEHS center grant (P30) application can be initiated within a year. This P30 grant has 6 components. (a) Center Director (Xianglin Shi): the designated leader of the P30 who provides scientific and administrative leadership for the total program, (b) Administrative Core, which oversees organizational, budgeting and reporting aspects and provides the leadership for scientific and programmatic activities of the P30, (c) Pilot Projects Program, (d) Facility Cores: the major function of the EHS CC through sharing facilities and enhancing research or improving cost effectiveness of services, techniques, or instrumentation used by the member investigators. (e) Career Development Program for Environmental Health Investigators, and (f) Community Outreach and Engagement Core (COEC). Drs. Susanne Arnold, Gang Chen, Mark Dignan, Bernhard, Hennig, Bin Huang, Guo-min Li, David Mannino, Hiroshi Saito, Thomas Tucker, and Mary Vore.

**B.2-9-2-2.** A program project grant (PPG) application can be developed within a year or two. This application will focus on metal, oxidative stress, inflammation, and lung cancer in Appalachian Kentucky. Three projects and three cores will be proposed. Project one will focus on oxidative stress, cell transformation angiogenesis, and tumorigenesis. Dr. Xianglin Shi will be the PI. Project two will focus on inflammation and apoptosis resistance. Dr. Fei Chen will be the PI. Dr. Chen, a former postdoc of Dr. Xianglin Shi, is a faculty member at Wayne State University. Dr. Chen has expertise in the areas of oxidative stress and metal carcinogenesis with more than 100 publications and has two active R01s from NIEHS. Dr. Chen will be recruited to the Center as one of the faculty members whose primary salary funding comes from the Center. Project two will focus on studies at the population level. Drs. Susanne Arnold, Mark Dignan, and Thomas Tucker will be multi-PIs. Drs. Susanne Arnold, Gang Chen, Mark Dignan, Bernhard, Hennig, Bin Huang, Guo-min Li, David Mannino, Hiroshi Saito, Thomas Tucker, Mary Vore, and Zhuo Zhang. Among these faculty, Dr. Arnold will contribute her expertise in clinical and translational research; Dr. Mark Dignan in population studies and public health; Dr. Hung in epidemiology and biostatistics; and Dr. Tucker in cancer prevention and control.

**B.2-9-2-3.** NIEHS Superfund Research Program (SRP, P42) in the area of metal-induced Carcinogenesis and prevention can also be developed. Drs. Susanne Arnold, David Atwood, Paul Bertsch, Gang Chen, Mark Dignan, Bernhard, Hennig, Bin Huang, Guo-min Li, Jia Luo, David Mannino, David Orren, Hiroshi Saito, Thomas Tucker, Hsin-Sheng Yang, Robert Yokel, Mary Vore, and Zhuo Zhang. Among these faculty member, Dr. Atwood will contribute his expertise in detection and removal of carcinogens including heavy metals in drinking water; Dr. Bertsch in remediation strategies for contaminated water and soil; Dr. Bernhard in population-based cancer research and nutritional intervention of toxic chemical; Drs. Chen and Luo on possible synergistic effect of tobacco smoking and carcinogenic metals in Appalachian Kentucky; Dr. Mark Dignan in population studies and public health; Dr. Huang in epidemiology and biostatistics; Drs. Li and Orren in metal-induced DNA damage and repair; Dr. Mannino in cadmium toxicity and carcinogenesis; Dr. Saito in metal-induced colorectal cancer in Appalachian Kentucky; Drs. Swanson, Orren, and Vore in possible synergistic effect of tobacco

smoking and carcinogenic metals in Appalachian Kentucky; Dr. Yokel in protection of natural compounds against metal induced carcinogenesis, including metabolism and pharmacokinetics of these natural compounds; and Dr. Zhang in metal-induced oxidative stress, cell transformation, apoptosis resistance, tumorigenesis, and prevention using plant-derived compound.

**B.2-9-2-4.** A PPG for prevention of UV-induced carcinogenesis using natural compounds will be developed for submission to National Center for Complementary and Alternative Medicine (NCCAM). Dr. Arnold Dr. Arnold will contribute her expertise in clinical and translational research; Dr. D'Orazio in UV-induced skin cancer and prevention; Dr. Huang in epidemiology and biostatistics; Dr. St. Clair in UV-induced cellular injury, Tucker in cancer prevention and control, and Dr. Zhang in UV-induced skin cancer and protection using plant-derived natural compounds.



UNIVERSITY OF KENTUCKY

College of Pharmacy

**Department of Pharmaceutical Sciences**

*789 S. Limestone Street*

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*Fax: (859) 257-7564*

*www.uky.edu/Pharmacy*

July 27, 2012

Frederick C. de Beer, M.D.  
Dean, College of Medicine  
Vice President for Clinical Academic Affairs  
University of Kentucky  
138 Leader Avenue  
Lexington, KY 40506-9983

Dr. de Beer:

I would like to express my support for Dr. Robert Yokel as an affiliate member of the Center for Research on Environmental Disease (the Center). I expect that the Center's existence and Dr. Yokel's affiliate participation will be beneficial to the Department of Pharmaceutical Sciences. The Center will provide access to research and opportunities in the areas of environmental toxicity and carcinogenesis and their prevention for our graduate students that currently do not exist in our department.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Brad Anderson'.

Brad Anderson, Ph.D.  
H.B. Kostenbauder Professor &  
Interim Chair, Pharmaceutical Sciences



UNIVERSITY OF KENTUCKY

College of Medicine  
*Molecular and Biomedical Pharmacology*  
MS-305 UKMC  
Lexington, KY 40536-0298  
Phone: (859) 323-5454  
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August 22, 2012  
Frederick C. de Beer, MD  
Dean, College of Medicine  
Vice President for Clinical Academic Affairs  
University of Kentucky  
138 Leader Avenue  
Lexington, KY 40506-9983

Dear Dr. de Beer,

This letter is being written to express my support that Dr. Hollie Swanson, Department of Molecular and Biomedical Pharmacology, will be engaging in cooperative and synergistic activities with the Center for Research on Environmental Disease as an affiliate member. The Center's existence will benefit Dr. Swanson in her research program. The Center will provide access to areas of environmental toxicity and carcinogenesis and their prevention for graduate students within Dr. Swanson's research program, and thus will benefit training.

Sincerely,

Lisa Cassis, PhD  
Professor and Chair  
Department of Molecular and Biomedical Pharmacology



Animal & Food Sciences  
907 W.P. Garrigus Building  
Lexington, KY 40546-0215  
859 257-2686  
fax 859 257-2534  
www.uky.edu

July 26, 2012

Frederick C. de Beer, MD  
Dean, College of Medicine  
Vice President for Clinical Academic Affairs  
University of Kentucky

RE: Center for Research on Environmental Disease

Dear Dr. de Beer:

I am supportive of the establishment of the Center for Research on Environmental Disease. I am also supportive of Dr. Bernhard Hennig being involved in the Center activities. I suggest that Dr. Hennig's engagement within this new Center be only as a peripheral member, based on his significant commitments within our College of Agriculture and his role as Director of the UK Superfund Research Center. Please note that considering the current fiscal restraint at the state and national level, we cannot foresee future financial support from my department or from funds associated with the NIH-funded Superfund grant.

We appreciate this opportunity and look forward to collaborations with this Center in the future.

Sincerely,

A handwritten signature in black ink that reads 'Robert J. Harmon'.

Robert Harmon  
Chair, Animal and Food Sciences



Department of Preventive Medicine and Environmental Health  
111 Washington Avenue, Suite 220  
Lexington KY 40536-0003  
(859) 257-5678 Ext. 82100  
Fax (859) 257-9862  
[www.mc.uky.edu/PublicHealth](http://www.mc.uky.edu/PublicHealth)

July 25, 2012

Frederick C. de Beer, M.D.  
Dean, College of Medicine  
Vice President for Clinical Academic Affairs  
University of Kentucky  
138 Leader Avenue  
Lexington, KY 40506-9983

Dear Dr. de Beer:

This letter is being written to express my enthusiastic support for the Department of Preventive Medicine and Environmental Health and me to be engaging in cooperative and synergistic activities with the Center for Research on Environmental Disease (the Center) as an affiliate member.

The Center's existence and my faculty's affiliate participation will be a benefit not only my Department and the Center, but also the entire University community. The Center will provide access to areas of environmental toxicity and carcinogenesis and their prevention that currently do not exist in our department. In addition, we hope this will provide a platform for the development of a multidisciplinary PhD program in environmental health that will include basic science and translational components.

Please contact me at [dmannino@uky.edu](mailto:dmannino@uky.edu) or 859-218-2099 if you have any further questions.

Sincerely,

David M. Mannino, M.D.  
Professor and Chair  
Department of Preventive Medicine and Environmental Health  
Director of Graduate Studies, Masters of Science in Clinical Research Design  
University of Kentucky College of Public Health

Department of Pulmonary, Critical Care, and Sleep Medicine  
University of Kentucky College of Medicine

August 3, 2012

Frederick C. de Beer, M.D.  
Dean, College of Medicine  
Vice President for Clinical Academic Affairs  
University of Kentucky  
138 Leader Avenue  
Lexington, KY 40506-9983

Dear Dr. de Beer,

I would like to express my support for inclusion of Professor David Atwood as an affiliate member of the proposed Center for Research on Environmental Disease. Participation in this Center will improve awareness of areas of environmental toxicity and carcinogenesis and their prevention within our faculty and our graduate student body.

It is our understanding that Professor Atwood's DOE would not be affected by his involvement in the Center. We also understand that his affiliation will continued to be listed as the Department of Chemistry on publications and grant proposals, although a secondary affiliation with the Center is encouraged on Center-related publications and grant proposals. We will agree to attribute to the Center 20% of the IDC return on Prof. Atwood's Center-affiliated grants.

Sincerely,



Mark S. Meier  
Professor and Chair  
Department of Chemistry

**David J. Moliterno, M.D.**  
*Jack M. Gill Chair and Professor  
Department of Internal Medicine  
900 S. Limestone Street, 329 Wethington Bldg.  
Lexington, Kentucky 40536-0200  
Email: Moliterno@uky.edu  
Office: 859-323-5843  
Fax: 859-257-3537*

August 16, 2012

Frederick C. de Beer, MD  
Dean, College of Medicine  
Vice President for Clinical Academic Affairs  
University of Kentucky  
138 Leader Avenue  
Lexington, KY 40506-9983

RE: Support for Internal Medicine faculty joining the Center for Research on Environmental Disease

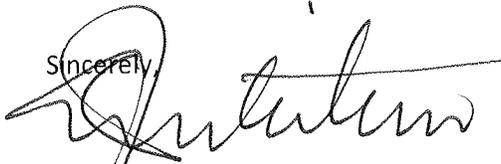
Dear Dr. de Beer,

This letter is to confirm my support that Drs. Susanne Arnold, Gang Chen, Jia Luo, and Mark Dignan, each as faculty within the Department of Internal Medicine, engage in cooperative and synergistic activities within the Center for Research on Environmental Disease as affiliate members. The establishment of this Center and subsequent affiliate participation of the above listed faculty will serve as a resource to the Department of Internal Medicine. The Center will provide access to areas of environmental toxicity and carcinogenesis and their prevention for our own graduate students and provide opportunities that do not currently exist in the Department.

These faculty members will support the goals of collaboration among clinical and basic scientists and will provide insight in addressing environmental disease-related public health concerns.

Thank you for the opportunity to express my support as Chairman of the Department of Internal Medicine for this endeavor.

Sincerely,



David J. Moliterno, MD  
Professor and Chairman  
Department of Internal Medicine



Department of Plant and  
Soil Sciences  
College of Agriculture  
105 Plant Science Building  
Lexington, KY 40546-0312  
[www.ca.uky.edu/PSS](http://www.ca.uky.edu/PSS)

7-25-2012

Frederick C. de Beer, M.D.  
Dean, College of Medicine  
Vice President for Clinical Academic Affairs  
University of Kentucky  
138 Leader Avenue  
Lexington, KY 40506-9983

Dear Dr. Frederick,

I would like to express my support for Dr. Paul M. Bertsch to become engaged in cooperative and synergistic activities as an affiliate faculty member of the proposed Center for Research on Environmental Disease (the Center). The establishment of this Center and the affiliate participation of Dr. Bertsch will benefit our department, as the Center will provide access to collaborative research activities dealing with environmental toxicity and carcinogenesis and their prevention that should enrich our graduate students working in the environmental chemistry and toxicology area.

Sincerely,

A handwritten signature in black ink that reads "Todd Pfeiffer". The signature is written in a cursive style with a large, prominent "T" and "P".

Todd Pfeiffer

Chair

Department of Plant and Soil Sciences



August 2, 2012

Frederick C. de Beer, M.D.  
Dean, College of Medicine  
Vice President for Clinical Academic Affairs  
University of Kentucky  
138 Leader Avenue  
Lexington, KY 40506-9983

Dear Dr. de Beer,

I offer my enthusiastic support for Dr. Thomas Tucker to participate engage in cooperative and synergistic activities with the Center for Research on Environmental Disease (the Center) as Affiliate Members.

The creation of this Center by Dr. Xianglin Shi, its existence and the participation of the Toxicology faculty, including my own participation, as Affiliate Members, will be a significant benefit to the Graduate Center for Toxicology. The Center will provide access to areas of environmental toxicity and carcinogenesis and their prevention for our own toxicology graduate students that currently do not exist in our department. I am also very excited regarding the potential for development of an NIEHS Center Grant at the University of Kentucky, and believe that the development of the Center for Research on Environmental Disease will greatly facilitate the further strengthening of the Graduate Center for Toxicology, the Markey Cancer Center, and the University of Kentucky

Sincerely,

Wayne T. Sanderson, PhD, CIH  
Professor and Chair  
Department of Epidemiology



UNIVERSITY OF KENTUCKY

Frederick C. de Beer, M.D.  
Dean, College of Medicine  
Vice President for Clinical Academic Affairs  
University of Kentucky  
138 Leader Avenue  
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[www.mc.uky.edu/toxicology/](http://www.mc.uky.edu/toxicology/)

July 28, 2012

Dear Dr. de Beer,

This letter serves to express my enthusiastic support for the following faculty, Drs. Guo-min Li, David Orren, Daret St. Clair, Hsin-Sheng Yang, Zhuo Zhang and Mary Vore, to engage in cooperative and synergistic activities with the Center for Research on Environmental Disease (the Center) as Affiliate Members. The development of this Center by Dr. Xianglin Shi, its existence and the participation of the Toxicology faculty, including my own participation, as Affiliate Members, will be a significant benefit to the Graduate Center for Toxicology. The Center will provide access to areas of environmental toxicity and carcinogenesis and their prevention for our own toxicology graduate students that currently do not exist in our department. I am also very excited regarding the potential for development of an NIEHS Center Grant at the University of Kentucky, and believe that the development of the Center for Research on Environmental Disease will greatly facilitate the further strengthening of the Graduate Center for Toxicology, the Markey Cancer Center, and the University of Kentucky.

Sincerely,

Mary Vore, PhD  
Professor and Chair  
Graduate Center for Toxicology



Frederick C. de Beer, M.D.  
Dean, College of Medicine  
Vice President for Clinical Academic Affairs  
University of Kentucky  
138 Leader Avenue  
Lexington, KY 40506-9983

Re: Center for Research on Environmental Disease

Dear Dean de Beer;

This letter is being written to express my support that Dr. John D'Orazio will be engaging in cooperative and synergistic activities with the Center for Research on Environmental Disease (the Center) as an affiliate member. The Center's existence and my faculty's affiliate participation will be a benefit to that my own department. The Center will provide access to areas of environmental toxicity and carcinogenesis and their prevention for our own graduate students that currently do not exist in our department.

Sincerely,

Carmel Wallace, MD  
Chair, Department of Pediatrics

**UKHealthCare**  
**Markey Cancer Center**

July 26, 2012

Frederick C. de Beer, M.D.  
Dean, College of Medicine  
Vice President for Clinical Academic Affairs  
University of Kentucky  
138 Leader Avenue  
Lexington, KY 40506-9983

Dear Dr. de Beer:

This letter is being written to express my support for Dr. Bin Huang to engage in cooperative and synergistic activities with the Center for Research on Environmental Disease (the Center) as an affiliate member. The Center's existence and my faculty's affiliate participation, which will focus primarily on biostatistical and epidemiologic methods applied to cancer-related research conducted within the Center, will be a benefit to the collaborative and research missions of the Biostatistics Shared Resource Facility and Division of Cancer Biostatistics. The Center will provide access to areas of environmental toxicity and carcinogenesis and their prevention for the faculty in our Core and Division.

Dr. Huang is excited about this new affiliation and we look forward to a productive interaction with the Center under Dr. Shi's leadership.

Sincerely,



Heidi L. Weiss, PhD  
Professor and Director  
Biostatistics Shared Resource Facility  
Markey Cancer Center  
800 Rose Street, CC448  
Lexington, KY 40536