University of Kansas NIH COBRE Center for Molecular Analysis of Disease Pathways (CMADP)
Research Project Competition
(see attached RFA for details, or download at http://cmadp.cobre.ku.edu/research_project_RFA)

The Funding Connection
Office of Research & Sponsored Projects
Kansas State University

Good afternoon,

Please find attached information for your faculty announcing a call for Research Project applications. The NIH COBRE CMADP has a research project funding opportunity for tenure track or tenured faculty at KU-Lawrence, KUMC, KSU, and WSU, made possible through an NIH COBRE grant. If you would, please encourage your faculty to apply for the awards. Up to five (5) awards for up to $120,000 direct costs per year for one year, renewable for a second year, will be awarded (anticipated start date 5/1/15). Only projects which address the theme of the Center, molecular analysis of disease pathways, and utilize the grant's Core Facilities will be considered for the awards.

Would it be possible for you to add information about this funding opportunity to The Funding Connection? We would appreciate your help in sharing this with faculty members at your university.

Letters of Intent are due November 24, and those selected to submit full applications will be notified December 15. Please contact Cady Bush, Project Coordinator with any questions (cbush@ku.edu).

Sincerely,
Susan Lunte

Director, COBRE Center for Molecular Analysis of Disease Pathways
Ralph N. Adams Professor of Chemistry and Pharmaceutical Chemistry
R.N. Adams Institute for Bioanalytical Chemistry
University of Kansas
Multidisciplinary Research Building
2030 Becker Avenue
Lawrence, KS 66047-1620
slunte@ku.edu
785-864-3811

SL/cb

KU THE UNIVERSITY OF KANSAS
Center for Molecular Analysis of Disease Pathways

Research Project Call for Applications

Letter of Intent due November 24, 2014

Those selected to submit full applications will be notified December 15, 2014.

Selected full applications due January 20, 2015

Anticipated start date: May 1, 2015

NIH Center of Biomedical Research Excellence
Center for Molecular Analysis of Disease Pathways

(http://cmadp.cobre.ku.edu)

Summary: The Center for Molecular Analysis of Disease Pathways (CMADP) at the University of Kansas provides participating investigators with research support, mentoring and access to Core Lab Services in a collegial, collaborative atmosphere. **We anticipate being able to support up to five (5) new Research Projects at up to $120,000 direct costs per year for one year, renewable for a second year, starting May 1, 2015.** Applications must describe a research project that fits well with the scientific theme of our Center and that will make good use of one or more of the CMADP Core Labs (http://cmadp.cobre.ku.edu/cores). This competition is open to all full time, tenure-track, or tenured faculty at KU-L, KSU, WSU or KUMC whose research embraces the molecular analysis of disease pathways in the broadest sense.

1. Introduction

1.1. **The COBRE program** is an initiative of the NIH-NIGMS. COBRE Centers are intended to:

- Focus on a single research area (e.g., molecular analysis of disease pathways);
- Augment and strengthen biomedical faculty research capability;
- Provide flexible support to build research capacity;
- Enhance research infrastructure;
- Encourage collaborative research **and research grant applications**;
- Foster health-related research.

The official RFA under which our COBRE Center is funded may be found at this URL:
http://grants.nih.gov/grants/guide/pa-files/PAR-09-079.html

The COBRE RFA states: "For the purpose of eligibility, a junior investigator is defined either as (1) an individual who does not have or has not previously had an external, peer-reviewed Research Project Grant (RPG) or Program Project Grant (PPG) from either a Federal or non-Federal source that names that investigator as the PI or (2) an established investigator who is making a significant change to his/her career. The intent of this FOA is to allow promising investigators whose early career support consists of awards geared toward initiating their intended area of research. Support may be provided to an established investigator who

is making a significant change to his/her career goals by initiating a new line of research that is distinctly and significantly different from his/her current investigative program. The current or previous history of independent peer-reviewed research support, which should be indicated in the Biographical Sketch, **in a different investigative area** than that proposed in this application does not disqualify the investigator. Furthermore, this individual can be of any faculty rank. Note that the intent of this initiative is to allow established investigators the opportunity to initiate and develop a new line of research. However, investigators whose current research is already supported by a RPG or PPG and who are not changing their current research program are not eligible."

1.2. COBRE Research Project Leaders are full time, tenure-track, or tenured faculty who are developing a promising new line of research that incorporates a significant emphasis on molecular analysis of disease pathways, and that will take advantage of both the Center's Core Labs and the interactivity among Center participants. Research Project Leaders may be junior faculty, former COBRE awardees, or more established faculty researchers whose active participation will strengthen the Center overall. Research Project Leaders will receive project support of up to $120,000 per year (direct costs) for one year, renewable for a second year.

Research areas eligible for funding. Because COBRE Centers are expected to have a **thematic** scientific focus, research projects must fit the COBRE theme of molecular analysis of disease pathways. Successful applications may incorporate one or more of the following topics in significant depth. More information on the overall goals of the Center are provided on the COBRE website:

- the development of new probes that can be used as probes to study cellular and molecular functions in living model organisms or cells
- new imaging approaches for studying disease pathways
- micro or nanotechnology based methods for studying disease pathways
- new sensing technologies
- development of innovative platforms and devices on which to analyze biological specimens for such things as microscopy and chemical analytics
- the use of next-generation sequencing (e.g. genome sequencing, RNA seq, ChIP seq) to analyze biological pathways relevant to disease in the broadest sense
- investigations involving model organisms for studying disease

1.3. Criteria for evaluation of COBRE applications. The basic criteria for NIH grant review may be found at http://grants.nih.gov/grants/peer/peer.htm.

- Strength of the science and the quality and clarity of its presentation;
- Likelihood of the project becoming competitive for independent R01 funding;
- Likelihood of getting a publishable result within the one-year time frame;
- Relevance to the COBRE theme of molecular analysis of disease pathways (see above and CMADP website);
- A clear, detailed plan for utilization of one or more COBRE Core Laboratories;
- Background, experience and career status of the applicant;
- A track record of past research, research grant applications and research funding.

COBRE Projects must have a single Principal Investigator who will be responsible for the scientific direction and management of the project. Applications may involve collaborators, but only when they bring complementary investigator strengths and approaches to the project. All collaborators receiving COBRE funds **must** be from Kansas institutions. A possible exception is a collaborator who provides specialized research services to PIs/clients on an established fee-for-service basis.

1.4. General Terms and Conditions of COBRE CMADP Research Project Awards:

1. New PIs not previously funded by COBRE are encouraged to apply.
2. In general, priority will be given to projects that make significant use of COBRE Core Labs.
3. Research project investigators must make an initial minimum commitment of 6 person months annually (this may include summer salary).
4. Funds may be used for consumable supplies, services or small laboratory hardware but not for equipment (i.e. items costing > $5000). Personnel costs are allowable but preference will be given to applications that name specific individuals who are assured to be present on-site, eligible to work and ready to begin no later than May 1, 2015. Travel costs may include essential research-related travel and participation in national/regional scientific meetings. Tuition costs are allowable as per standard policies.
5. Investigators who receive COBRE support are **required to participate as fully as possible** in the regular monthly noon-time research meetings of the Center, as well as seminars, workshops and other special activities organized or sponsored by the Center.
6. A standard NIH-type progress report (ca. 2 pages in length) is required from each COBRE project investigator by January 1st of each year.
7. Term and budget adjustments. The COBRE Director reserves the right to make term and budget adjustments in accordance with the intent of the COBRE CMADP program and NIH policies concerning scientific overlap of projects. For example, if a COBRE Investigator receives his/her own NIH R01 grant, the COBRE grant may be reduced to adjust for overlap, up to and including 100% reduction if the scientific overlap is extensive.
8. Unanticipated new requirements: by accepting COBRE funds, awardees agree to comply with any and all requirements not already mentioned that may be imposed on COBRE CMADP by NIH or other institutional authorities.

Prospective applicants with questions about eligibility, program details, or the "fit" of their project to the COBRE theme are encouraged to contact Dr. Susan Lunte (785-864-3811; slunte@ku.edu).

2. The Application Process

Step 1 - Send Email Letter of Intent (These *required* letters help us in planning.)

Letters of intent should be sent as a PDF attached to an email to cmadp@ku.edu, with a copy to cbush@ku.edu. Your letter of intent **must:**

- Be **received** by November 24, 2014;
- Be no longer than one page, sent by email as a PDF attachment **along with** the applicant's NIH biosketch;
- Explain briefly how the applicant meets the eligibility criteria set forth in Section 1 above;
- Explain briefly the nature or focus of the research that will be proposed and, if not obvious, how it fits the scientific theme of COBRE CMADP, and
- Explain briefly how the project will utilize one or more of the COBRE CMADP Core Labs.
- Along with your letter, **please also include** a separate listing of **complete** contact information (including website URL if possible) for five (5) potential reviewers for your application. For convenience and familiarity with NIH grant systems, these individuals **must** be located in the U.S., and must NOT currently be serving on an NIH study section.

Based on your letter, you will be notified by December 15, 2014 if you should prepare and submit a full application.

Step 2 - Prepare and Submit a Complete Application.

Applications should be prepared in general accord with the NIH PHS 398 application guidelines, (06/2009 revision, available from http://grants.nih.gov/grants/funding/phs398/phs398.html). In the Instructions, note particularly Part I, Sections 2.6, 5.5.2, 5.5.3 and 5.5.5. Include:

- Form Page 1: Face Page,
- Form Page 2: Summary, Relevance, Project/Performance Sites, Senior/Key Personnel, Other Significant Contributors, and Human Embryonic Stem Cells (include Senior Key Personnel information),
- Form Page 4: Detailed Budget for Initial Budget Period (and a budget explanation/justification),
- Biographical Sketch Format Page. Omit the Table of Contents page and the Resources page (unless you have something unique to mention),
- Research Plan,
- References,
- Instead of using PHS Other Support pages, use the alternate instructions "D" and "E" below. Appendices are not allowed.
- Checklist Form Page.

In addition, please observe the following COBRE-specific requirements:

A. The research plan **may not exceed five (5) pages** in length including figures and tables but excluding references (which must be complete citations in the NIH style). The Introduction and Specific Aims section must fit entirely on one page. Include sections 5.5.6 through 5.5.15 **only** if applicable to your application. **Limit the number of references cited to 20 (twenty) or fewer, and use NIH style formatting**.
B. Please use 11-point Arial font with **one (1)-inch** margins on all four sides. (Write concisely and limit the amount of general background to the essentials that reviewers will need to be aware of to appreciate the proposed research.)
C. All figures **and their lettering must** be large enough to be clearly legible.
D. Other Support. Provide a listing of all current research support from all sources. For each source listed, please provide the following information: Name of funding source, title of project, project start/end dates, and amount of direct costs available (or available to you if a multi-PI grant), and percent effort. If you are a junior faculty member, please include the following details of your startup package in this list: amount initially provided, current unspent balance, and expiration date or other restrictions if any.
E. Provide a listing of all grant **applications** submitted during the past **two** calendar years (i.e. 2013 and 2014). For each application submitted, please provide the following information: Date of submission, name of granting agency, title of project, project start/end dates requested, and amount of direct costs requested.

You are encouraged to obtain assistance from the appropriate Grant Services agency at your university. Suggested contacts are listed below:

- **KSU** Office of Research and Sponsored Projects
  785-532-6195
  research@k-state.edu
- **KU** Higuchi Biosciences Center Proposal Preparation Office
  785-864-4244 or 785-864-8015
  hbcgrant@ku.edu
- **KUMC** Sponsored Programs Administration
  913-588-1251
  spa@kumc.edu
- **WSU** Office of Research and Technology Transfer
  316-978-3285
  proposals@wichita.edu

3. COBRE Application Package and Checklist

Please type the applicant's name in the upper right hand corner of every page. Number pages consecutively starting with the face page of the NIH PHS 398 form as page 1.

- Please use 11 point Arial font and **one (1)-inch** margins on all four sides.
- Make all copies single-sided.
- Observe the strict five (5)-page limit on the research plan and the limit of 20 references cited.
- No attachments, appendices or reprints.
- The last application page should be the NIH Checklist page.

If selected for funding, applicants will be required to furnish copies of all relevant compliance approvals (radioisotopes, recombinant DNA, vertebrate animals, etc.) to the COBRE CMADP office prior to release of award funds, but **do not** submit these items at this time.

4. Submission of Application Package

- Please submit applications via email on NIH PHS 398 forms, both as a Microsoft Word document AND as a PDF document. Email documents to cmadp@ku.edu, with a copy to cbush@ku.edu.
- Applications must be **received** no later than **5:00 PM CST, Tuesday, January 20, 2015.**

5. Review of Applications

COBRE Research Project applications will be reviewed administratively according to the NIH criteria and the COBRE-specific criteria mentioned above.

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Center for Molecular Analysis of Disease Pathways

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- Applications must describe a research project that fits well with the scientific theme of our Center and that will make good use of one or more of the CMADP Core Labs.

- This competition is open to all full time, tenure-track, or tenured faculty at KU-L, KSU, WSU or KUMC whose research embraces the molecular analysis of disease pathways in the broadest sense.

CMADP Web Site: http://cmadp.cobre.ku.edu
Download RFA: http://cmadp.cobre.ku.edu/research_project_RFA

For additional information, contact:
Cady Bush
COBRE CMADP Project Coordinator
cbush@ku.edu
(785) 864-2342

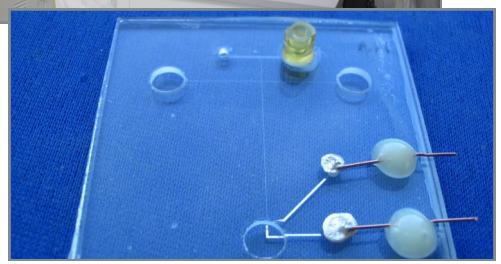
Microfabrication & Microfluidics Core

157 Multidisciplinary Research Building (MRB)
2030 Becker Drive, Lawrence, KS 66047
Susan Lunte Ph.D., Core Leader, slunte@ku.edu, (785) 864-3811
Ryan Grigsby, Core Director, ryan.grigsby@ku.edu, (785) 864-1918
http://microfab.ku.edu

The Ralph N. Adams Institute Microfabrication Facility is a 2400 ft^2 ISO Class 5 and 6 facility that specializes in the manufacture of microfluidic devices. Our equipment versatility can also be utilized for the manufacture and evaluation of a variety of micro-scale devices and materials. We offer our services to KU research groups, as well as research groups from other universities and private institutions.

Services Offered

- Microfluidic Device Fabrication
  - ⇒ Material availability: soda-lime and borosilicate glass, PMMA, and PDMS
  - ⇒ Embedded electrodes: carbon, platinum, nickel, copper, chromium
- Device and material evaluation: step profiling, ellipsometry, image capture
- Consultation
- Photomask design
- Limited open access
  - ⇒ Includes training and support
  - ⇒ Multiple rates available to suit users' needs



Core Equipment

- Amray 1810 Tungsten Filament Scanning Electron Microscope
- Thermionics VE-100 E-beam evaporator
- Lesker DC magnetron sputterer with three Torus guns
- Oxford Plasmalab 80 Plus Plasma-Enhanced Chemical Vapor Deposition System: Silicon Dioxide and Silicon Nitride deposition currently available
- Oxford Plasma Plasmalab System 100 Inductively-Coupled Plasma Reactive Ion Etch System
- HORIBA Jobin Yvon UVISEL Spectroscopic Elipsometer
- ABM, Inc. i-line UV flood source and mask aligner
- WABECO 3-Axis CNC Mill

KU CENTER FOR MOLECULAR ANALYSIS OF DISEASE PATHWAYS

The University of Kansas

AN NIH CENTER OF BIOMEDICAL RESEARCH EXCELLENCE (COBRE)

Core Laboratories

Genome Sequencing Core

for next generation DNA sequencing services

Molecular Probes Core

for design, synthesis and evaluation of novel fluorescent probes of biochemical pathways in model organisms

Microfabrication and Microfluidics Core

for production of unique microfabricated devices for studying genetically modified organisms and biological pathways

supported by the National Institute Of General Medical Sciences of the National Institutes of Health under Award Number P20GM103638
http://cmadp.cobre.ku.edu

Genome Sequencing Core

1030 Haworth Hall
1200 Sunnyside Avenue, Lawrence, KS 66045
Erik A. Lundquist, Ph.D., Core Leader, erikl@ku.edu (785) 864-5853
Xinkun Wang, Ph.D., Core Director, xwang@ku.edu, (785) 864-4589
Jennifer Hackett, M.S., Core Assistant Director, jhackett@ku.edu, (785) 864-7023
http://gsc.ku.edu

The GSC offers next generation DNA sequencing services for researchers at KU and other institutions. As opposed to "standard" Sanger sequencing, next generation sequencing has astronomically higher throughput (billions of reads and hundreds of Gbs of data), allowing whole genome sequencing in a single run and allowing deep, quantitative analysis of genome-wide gene expression (transcriptomics), among others.

Services Offered

- Genome re-sequencing:
  - ⇒ Mutant identification (model organisms, human syndromes)
  - ⇒ Evolutionary comparisons
  - ⇒ Disease tissue sequencing (e.g. cancer)
- Genotyping: single nucleotide polymorphisms (SNPs), copy number variations (CNVs), genome-wide association studies (GWAS), & linkage analysis
- De novo genome assembly: new un-sequenced species
- Expression analysis (transcriptomics): cDNA sequencing (RNA-Seq) for deep and quantitative analysis of genome-wide gene expression
- Epigenomic & gene regulation analyses
  - ⇒ Chromatin immunoprecipitation sequencing (ChIP-Seq) to find binding sites of transcription factors or other DNA-interacting proteins
  - ⇒ Methylated DNA sequencing (Methyl-Seq) to identify methylated regions of the genome
  - ⇒ Small RNA discovery and analysis

Core Equipment

Illumina Hiseq 2500
Next Generation Sequencer

- Normal mode (more data, more time)
  - ⇒ 3-6 billion reads of 100 bp per run of two eight-lane flow cells (600Gb data)
  - ⇒ Single reads or paired end reads (both ends of the DNA fragment)
  - ⇒ ~5-11 day run time
- Rapid Mode (less data, less time)
  - ⇒ 1.2 billion reads of 150 bp per run on two two-lane flow cells (120 Gb data)
  - ⇒ ~27 hour run time

Molecular Probes Core

1053 Structural Biology Center (SBC)
2034 Becker Drive, Lawrence, KS 66047
Blake Peterson, Ph.D., Core Leader, brpeters@ku.edu, (785) 864-8156
Aaron Bender, Ph.D., Core Director, bender.aaron@ku.edu, (785) 864-1435
http://mpc.ku.edu

The MPC provides researchers with access to a wide variety of commercially-available and custom-synthesized fluorescent probes as well as microscopy-based analysis of fluorescent small molecules and proteins in the model organisms *Caenorhabditis elegans* (nematode worm) and *Danio rerio* (zebrafish).

Services Offered

- Design, synthesis, and evaluation of novel fluorescent probes
- Fluorescent probes for studies of biology and models of disease
- Housing, care, and cryopreservation of *C. elegans* and *D. rerio* animals
- Access to models of human disease in *C. elegans* and *D. rerio*
- High-resolution video microscopy imaging of fluorescent probes *in vivo*
- Qualitative and quantitative image and video data analysis
- Structure-activity studies and genotype vs. distribution relationships *in vivo*
- Microinjection for probe administration and generation of transgenic organisms
- Digital archiving of images and video microscopy data

Core Equipment

- Zeiss AxioZoom V16 stereoscope fitted with a Hamamatsu ORCA-Flash4.0 sCMOS camera and Sutter DG5 fast filter switching excitation source
- Pentair Aquatic Habitats ZF0601 zebrafish habitat system