

DESCRIPTION: State the application's broad, long-term objectives and specific aims, making reference to the health relatedness of the project. Describe concisely the research design and methods for achieving these goals. Avoid summaries of past accomplishments and the use of the first person. This description is meant to serve as a succinct and accurate description of the proposed work when separated from the application. If the application is funded, this

Nutritional genomics is an emerging discipline that utilizes genomic tools to investigate the influences of gene-nutrient interactions on physiologic homeostasis and predisposition to disease. This proposal will establish a Center for Nutritional Genomics whose broad objectives are: 1) to promote research in the utilization of genomics for the study of nutrition by developing shared facilities for the nutritional and metabolic research community 2) to assemble comprehensive expression information on nutritional effects in animal models and humans; 3) to develop computational approaches for elucidating and modeling homeostatic networks important in nutrition; and 4) to provide interdisciplinary training and education in nutritional genomics. The specific research goals are: 1) to identify genes involved in metabolic response to macro- and micronutrients; 2) to delineate pathways involved in metabolic regulation; 3) to evaluate altered nutrient metabolism in disease states; and 4) to ascertain genetic variants with atypical gene expression responses to metabolic stimuli. To achieve these goals, the Microarray Resource will assemble collections of cDNA and expressed sequence tags from humans and mice and other model organisms and utilize state-of the art instrumentation for printing microarrays and quantitating hybridization signals. The Informatics Resource will provide statistical and computational support for experimental design, data analysis, and interpretation of results. It will also develop a WWW-based environment to house and mine the data, accelerate development of new algorithms, increase software reliability, allow rapid design, prototyping and application of visualization and analytical tools and disseminate information to the NIDDK and larger scientific communities. The Microarray and Informatics Resources will interact with 3-research oriented units encompassing the areas of Macronutrients, Micronutrients and Metabolic Informatics. As part of its mission, the Center will: 1) make available reagents, experimental protocols and data sets and 2) provide onsite training and consultation in cDNA microarray techniques and metabolic informatics. The Directors of the Resources and Research Units will constitute an Internal Advisory Committee that will advise the Principal Investigator in the oversight of the research program and the allocation of resources. An External Advisory Committee will meet annually and as needed to evaluate the progress of the Center and provide overall guidance.

description, as is, will become public information. Therefore, do not include proprietary/confidential information. **DO NOT EXCEED THE SPACE PROVIDED.**

University of California, Berkeley - Berkeley, Ca.

University of California, San Francisco - San Francisco, Ca

Lawrence Berkeley National Laboratory - Berkeley, Ca.

PERFORMANCE SITE(S) (*organization, city, state*)

KEY PERSONNEL. See instructions on Page 11. Use continuation pages as needed to provide the required information in the format shown below.

Name	Organization	Role on Project
Ron Krauss	LBNL and UCB	Principal Investigator
Hei Sook Sul	UCB	Head, Macronutrients Research
Barry Shane	UCB	Head, Micronutrients Research
Adam Arkin	LBNL and UCB	Head, Informatics Research
Chris Vulpe	LBNL and UCB	Head, Microarray Resource
Saira Mian	LBNL	Head, Informatics Resource

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Budgets Pertaining to Consortium/Contractual Arrangements	_____
Biographical Sketch—Principal Investigator/Program Director (<i>Not to exceed two pages</i>).....	_____
Other Biographical Sketches (<i>Not to exceed two pages for each</i>).....	_____
Other Support	_____
Resources	_____

Research Plan

Introduction to Revised Application (<i>Not to exceed 3 pages</i>)	_____
Introduction to Supplemental Application (<i>Not to exceed 1 page</i>)	_____
a. Specific Aims	} _____
b. Background and Significance.....	
c. Preliminary Studies/Progress Report	
d. Research Design and Methods	
e. Human Subjects.....	_____
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g. Literature Cited	_____
h. Consortium/Contractual Arrangements	_____
i. Consultants	_____
Checklist	_____

*Type density and type size of the entire application must conform to limits provided in instructions on page 6.

Check if Appendix is included

Appendix (*Five collated sets. No page numbering necessary for Appendix.*)

Number of publications and manuscripts accepted or submitted for publication (*not to exceed 10*) _____ >

Other items (*list*): Appendix contains detailed software specifications for ArrayDB and GUACAMOLE.

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed on Form Page 2.
Photocopy this page or follow this format for each person.

NAME	POSITION TITLE
>	>

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
>	>	>	>

RESEARCH AND PROFESSIONAL EXPERIENCE: Concluding with present position, list, in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. If the list of publications in the last three years exceeds two pages, select the most pertinent publications. **DO NOT EXCEED TWO PAGES.**

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Other Support

Name of Individual:

Active/Pending

Project Number (Principal Investigator):

Source:

Title of Project (*and/or Subproject*):

Dates of Approved/Proposed Project:

Annual Direct Costs / Percent Effort:

The major goals of this project are...

Overlap (*summarized for each individual*):

Active/Pending

Project Number (Principal Investigator):

Source:

Title of Project (*and/or Subproject*):

Dates of Approved/Proposed Project:

Annual Direct Costs / Percent Effort:

The major goals of this project are...

Overlap (*summarized for each individual*):

Active/Pending:

Project Number (Principal Investigator):

Source:

Title of Project (*and/or Subproject*):

Dates of Approved/Proposed Project:

Annual Direct Costs / Percent Effort:

The major goals of this project are...

Overlap (*summarized for each individual*):

RESOURCES

FACILITIES: Specify the facilities to be used for the conduct of the proposed research. Indicate the performance sites and describe capacities, pertinent capabilities, relative proximity, and extent of availability to the project. Under "Other," identify support services such as machine shop, electronics shop, and specify the extent to which they will be available to the project. Use continuation pages if necessary.

Laboratory: >

Clinical: >

Animal: >

Computer: >

Office: >

Other: >

MAJOR EQUIPMENT: List the most important equipment items already available for this project, noting the location and pertinent capabilities of each.

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**Competing Continuation Applications
PERSONNEL REPORT**

All Key Personnel for the Current Budget Period

Name	Degree(s)	SSN	Role on Project (e. g. PI, Res. Assoc.)	Date of Birth (MM/DD/YY)	Annual % Effort

