U54 RCMI Center for Health Disparities Research at UCR

Center Overview, Funding Opportunities
Center for Health Disparities Research

- The Center for Health Disparities Research at UCR (HDR@UCR) is a new center funded by the National Institutes of Health (NIH)/ National Institute for Minority Health and Health Disparities (NIMHD)
- Funded by a U54 - Research Centers at Minority Institutions (RCMI) award, ~$16M over 5 years (largest grant to UCR to date), one of 11 funded RCMI
- This center also now joins other RCMI institutions in the RCMI Translational Research Network
Our Mission: Create a rich interdisciplinary, diverse, and collaborative environment for health disparities research, infusing community-engaged research methods into the academic culture, and equipping investigators and community with tools and training to improve their extramural funding success. The Center aims to move UCR toward national leadership in health disparities research, education, and training, and to inform the national dialogue on health disparities.
Center for Health Disparities Research

- Center leadership is drawn from many UCR schools and colleges:
  - David Lo MD PhD, Director, contact PI
    - Distinguished Professor, Sr. Associate Dean Research, SOM
  - Juliet McMullin PhD, Co-Director, Co-PI
    - Professor and Chair, Anthropology, College of Humanities, Arts, and Social Sciences (CHASS)
  - Bruce Link PhD, Co-PI
    - Distinguished Professor, School of Public Policy (SPP)
  - Gerald Maguire MD, Co-PI
    - Health Sciences Clinical Professor, Chair, Psychiatry, SOM
Center for Health Disparities Research

- Center components:
  - Administrative Core
  - Community Engagement and Dissemination Core
  - Investigator Development Core
  - Research Infrastructure Core
  - Recruitment Core
  - Research Project 1: Childhood asthma and environmental exposures
  - Research Project 2: Childhood obesity in low-income families
Center for Health Disparities Research

Principal Core activities (plus Recruitment Core)
Administrative Core

- Led by David Lo, Director, and Juliet McMullin, Co-Director
  - Overall administration of center, leadership, mission objectives
  - Organizes meetings of Internal Steering Committee
  - Organizes External Advisory Board
    - Experts in Health Disparities, Program grants
    - Community stakeholders, Health care organizations
  - Works with other cores to organize seminars, annual research symposium
  - Interdisciplinary Research Working Groups (IRWGs, “earwigs”)
Community Engagement and Dissemination Core

- Led by Juliet McMullin, Jennifer Syvertsen, with Michelle Burroughs
- Provides primary engagement point of contact with community organizations and other stakeholders, with Center for Healthy Communities (CHC) and Health Assessment & Research for Communities (HARC) – “Boundary Spanner”
- Community Engagement Studio
- With the Research Infrastructure Core, delivers training to students and investigators in Health Disparities Research and Community Engagement
Investigator Development Core

- Led by Monica Carson and Bruce Link
- Organizes seminars – Big Feasible and Fundable (BFF)
- Fostering Interdisciplinary Research early STage (FIRST) awards to support training and pilot research for emerging investigators
- Peer/Senior Mentorship Teams
- Pilot Interdisciplinary Collaborative (PIC) research grants
- Priority on Health Disparities research, with interdisciplinary activities, including cultural translation across disciplines
Research Infrastructure Core

- Led by Cecilia Ayon, with Jenna LeComte-Hinely (HARC), Dena Plemmons, Shaokui Ge, Jo Gerrard
- Core services, supporting clinical and research database
- Training and support for human subjects protocol navigation, biostatistics
- Support HARC database and activities
- Didactic training in Research Ethics, Social Stewardship
- Continuity Collaboratory Fellows – support to fill gaps in support of research and database management in community-based research projects
Recruitment Core

- Led by Yolanda Moses with Juliet McMullin
- Primary goal is to recruit and retain previously funded NIH researchers in support of Center activities, and provide mentors for emerging investigators
- Develop partnerships with institutions dedicated to the development and support of URM researchers
- Recruit basic science, clinical, and behavioral researchers with a track record of NIH support
- Nurture retention and success of NIH-funded faculty
Research Project 1: Childhood asthma and environmental exposures

- Led by David Lo, with Ann Cheney, Maria Pozar, Will Porter, Emma Aronson, Tara Nordgren

- Background: Childhood asthma rates are high near Salton Sea, affecting Latino communities - attributed to local dusts
  - Community Advisory Board, build community engagement
  - Identify spatial patterns of aerosol transport in Coachella Valley
  - Collect aerosol particles in Salton Sea region, study components
  - Dissect impact of aerosol components on lung inflammation
Research Project 2: Childhood obesity in low-income families

- Led by Ann Cheney and Tanya Nieri, with Alison Tovar (URI)
- Background: Childhood obesity rates are increasing, especially among Latino populations
  - Study caregiver context of infant feeding in low-income families, influence of feeding practices on infant growth and obesity
  - Develop and test a Randomized Controlled Trial to determine acceptability and efficacy of intervention including nutrition education and other components
Funding Opportunities

- Opportunities on Center website [Application deadline November 15](https://healthdisparities.ucr.edu/funding-opportunities)
- Interdisciplinary Research Working Groups – support for group activities, preparation for proposal preparation
- Continuity Collaboratory Fellowships – support to student or fellow to provide continuity in research and database management in community-based research projects
- Fostering Interdisciplinary Research early STage (FIRST) – support training and pilot research for emerging investigators
- Pilot Interdisciplinary Collaborative (PIC) – research grants
  - First grant-writing workshop Oct 7; other assistance available
- There is no set number of awards each term; awards will depend on the quality of proposals and available funds
Funding Opportunities, cont.

- All funding opportunities require a community engagement statement.
- All awardees are expected to participate in HDR@UCR workshops and conferences.
- The Center’s funding opportunities are primarily NIH focused. We will be providing grant-writing workshops for other funding agencies; other assistance available.
What are your experiences?

- What agencies have people applied to for funding?

- What have some of your biggest challenges been in applying for funding?
Grant writing - Workshop

› Aims, topics covered here
  › Basic rules and format (NIH style grants): (“RTFM”)
    › Side bar: Administrative details/budgets, docs, eCAF/RED
  › NIH institutes and funding priorities
  › Framing a scientific question – not all good research questions are an ideal fit for NIH grant awards
  › Community engaged research
  › A general NIH thing: Hypothesis testing, scientific premise
  › Using the sections of the proposal to create the narrative
  › "Grantsmanship” – tips on what to say and not to say, what to include and what not to include
Basic NIH Format

- Page: One-half inch margins – top, bottom, left, right for all pages, and do not use headers or footers. Different types of grants have page limits for the main proposal section, e.g., 6 or 12 pages.

- Font: Must be 11 point or larger, no more than 15 characters per linear inch. Smaller text in figures is acceptable but must be readable when viewed at 100%. Recommended fonts are Arial (not ArialNarrow), Georgia, Helvetica, and Palatino Linotype.

- Headings within the text to separate sections and improve readability are highly recommended; it helps the narrative flow.

- No rules about text justification or indents, but to help save the reviewers’ eyes, I recommend aligned left so that the eye can follow the irregular right margin; justified looks smooth but is tiring to read.
While the Experimental section of the proposal is on non-form pages, other sections have more specific forms and formats.

For example, the Biographical Sketch pages have a strict format.

HDR applications require an NIH-format biosketch.
**Biosketch**

The NIH-type Biosketch is rather different from the NSF Biosketch

Initial section has basic information including training (everybody must sign up for an eRA COMMONS user name)

A. The customized personal statement is usually written for each specific grant application, indicating the applicant’s background and qualifications for the particular research project

B. Positions and Honors is a listing of relevant employment and experience and

**NAME:** David D. Lo

eRA COMMONS USER NAME (credential, e.g., agency login): DAVIDLO

POSITION TITLE: Distinguished Professor of Biomedical Sciences, Senior Associate Dean for Research

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)

<table>
<thead>
<tr>
<th>INSTITUTION AND LOCATION</th>
<th>DEGREE (if applicable)</th>
<th>Completion Date MM/YYYY</th>
<th>FIELD OF STUDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haverford College, Haverford, PA</td>
<td>BA</td>
<td>05/1980</td>
<td>Biology</td>
</tr>
<tr>
<td>University of Pennsylvania, Philadelphia, PA</td>
<td>MD</td>
<td>06/1986</td>
<td>Genetics</td>
</tr>
<tr>
<td>University of Pennsylvania, Philadelphia, PA</td>
<td>PhD</td>
<td>06/1986</td>
<td>Transgenic mouse models of immune regulation</td>
</tr>
</tbody>
</table>

A. Personal Statement

My research background includes over 30 years of experience in cellular and molecular immunology, confocal microscopy of cells and tissues, and gene discovery methods, as well as developing models of transgenic and knockout mice for studying immune system development and function in vivo. We have used molecular genetics approaches to define the differentiated M cell phenotype, including identification of proteins associated with M cell transcytosis machinery, and the cytokine inducers and signaling proteins associated with the stages of M cell differentiation from crypt stem cell precursors. I have had extensive experience in training, both in the Undergraduate Medical Education and graduate programs. I have also mentored 16 postdoctoral fellows, 3 clinical fellows, 6 PhD students and 1 MS student.

B. Positions and Honors

Positions and Employment

Nov. 1989–March 1994  Asst. Member; Dept. Immunology, Scripps Research Institute, La Jolla, CA

April 1994–June 2000  Asso. Prof., Dept. Immunology, Scripps Research Institute, La Jolla, CA

June 2000–June 2004  Vice President, Integrative Biology, Digital Gene Technologies, La Jolla, CA

June 2004–August 2006  Member, Division of Developmental Immunology, La Jolla Institute for Allergy and Immunology (LIAI), La Jolla, CA. (Adjunct Member, 2006–16). Distinguished Professor of Biomedical Sciences, School of Medicine, UC Riverside Senior Associate Dean for Research, UCR School of Medicine

Oct. 2006–present   Distinguished Professor of Biomedical Sciences, La Jolla Institute for Allergy and Immunology (LIAI), La Jolla, CA. (Adjunct Member, 2006–16). Distinguished Professor of Biomedical Sciences, School of Medicine, UC Riverside Senior Associate Dean for Research, UCR School of Medicine

Other Experience and Professional Memberships


Regular member Gastrointestinal and Mucosal Pathobiology (GMPB) Study Section 2006-2010, Regular member Crohn's and Colitis Foundation of America (CCFA) Senior Award Study Section 2006-2008. Ad hoc reviewer for numerous study sections, program project reviews and site visits since 1990 for NHLBI, NIAID, and NIDDK. Reviewer, NIH Director's New Innovator Awards Program, Pioneer Awards Program, 2008-2019.

Honors

1981-1986  Trainee, Medical Scientist Training Program (M.D.-Ph.D. program) Univ. of Pennsylvania.

1990-1992  American Diabetes Association Research and Development Award.
Biosketch

C. “Contributions to science” is the place to show your impact on your field. For junior investigators it is expected to be relatively brief, though it can indicate future potential

1. Establishing the role of thymic epithelial subsets in positive and negative selection of the T cell receptor repertoire. Early studies demonstrated the role of the thymus as a primary organ in T lymphocyte development, so my work focused on identifying the cellular components of the thymus responsible for selection of the repertoire. By showing that the cortical and medullary epithelium were separately responsible for (1) positive selection for MHC restriction and (2) tolerance to self antigens, respectively, these studies also established the principle that selection of the repertoire could in fact be seen as a two-stage process. While most of this work was designed and performed by myself or my lab, collaborative studies relied on my development of the transgenic mouse models and expertise in thymic stromal components.


2. Identification of the key genes regulating mucosal epithelial M cell development and function, and demonstrating the novel mechanisms used by M cells to capture luminal microparticles. While the existence of M cells and their role in immune surveillance had been known for decades, there was little known about the genes regulating M cell development and function. My lab was the first to apply gene discovery methods to identify genes responsible for M cell differentiation, interaction with other cells, and function. We have used these discoveries to develop a novel (patented) M cell-targeted technology for mucosal vaccine delivery, but also to elucidate the mechanisms of M cell immune surveillance. For example, we showed that the absence of microvilli on M cells is critical to their ability to capture luminal microbial particles; they display a reduced apical electrostatic charge, in contrast to the electrostatic barrier generated by microvilli on normal enterocytes, and so they can readily adhere and endocytose bacterial particles.


URL for list of published work:

D. “Research support” section lists active grants, pending applications, and recently completed projects

D. Additional Information: Research Support and/or Scholastic Performance

Ongoing Support

NIH NIMHD Health Disparities Research at UCR
The major goals of this project are to establish a research center focused on health disparities among Latino/Hispanic communities in Inland Southern California, with a Community Engagement and Dissemination Core, Research Infrastructure Core, Investigator Development Core, Recruitment Core, and two Research Projects
Role: Contact PI (co-PI with J. McMullin, B. Link, G. Maguire)
More of these details are for another time, but be aware that for NIH grant submissions, there are several additional forms including the budget and budget justification, human subjects, etc.

Grants must be submitted through the UC Office of Research and Economic Development. The process includes an initial registration of the proposal submission with RED through the eCAF process, which involves several steps including ethics certifications, department and school/college approvals, etc.

For nearly all grant submissions, the submitter must have “Principal Investigator (PI) status” which usually means full time faculty, but for other cases, you can apply for an exception
Grant writing - Workshop

- Aims, topics covered here
  - Basic rules and format (NIH style grants): (“RTFM”)
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  - NIH institutes and funding priorities
  - Framing a scientific question – not all good research questions are an ideal fit for NIH grant awards
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NIH funding priorities

- NIH funding was created by congressional mandate to serve specific constituencies (i.e., people with specific diseases), so there are NIH Institutes for Aging, Cancer, Child Development, Digestive and Kidney diseases, Allergies and Infectious Diseases, and in our case, a new Institute (as of 2010) for Minority Health and Health Disparities (NIMHD). Thus, while we would like to imagine that funding is just for “good science”, funding by the NIH is in fact based on how the grant application serves the constituency.

- Not all good or great science serves NIH constituencies and the NIH is well within their mandate to focus more on applied research, though sometimes great basic science still manages to happen.
What NIMHD is doing

- The fields of minority health and health disparities research are dynamic and complex, and they demand that we keep up with all biomedical advances. To help meet these demands, NIMHD is redefining, reorganizing, and establishing new research programs and activities to:
  - Strengthen research in minority health and health disparities, from understanding etiology to improving methods and developing interventions
  - Increase opportunities for investigator-initiated research
  - Strengthen the conduct, evaluation, and reporting of minority health and health disparities research
  - Support the expansion of workforce diversity
**National Institute on Minority Health and Health Disparities**  
**Research Framework**

<table>
<thead>
<tr>
<th>Domains of Influence (Over the Life Course)</th>
<th>Levels of Influence*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biological</strong></td>
<td>Individual</td>
</tr>
<tr>
<td>Biological Vulnerability and Mechanisms</td>
<td>Community Illness Exposure Herd Immunity</td>
</tr>
<tr>
<td><strong>Behavioral</strong></td>
<td>Individual</td>
</tr>
<tr>
<td>Health Behaviors Coping Strategies</td>
<td>Community Functioning</td>
</tr>
<tr>
<td><strong>Physical/Built Environment</strong></td>
<td>Individual</td>
</tr>
<tr>
<td>Personal Environment</td>
<td>Household Environment School/Work Environment</td>
</tr>
<tr>
<td><strong>Sociocultural Environment</strong></td>
<td>Individual</td>
</tr>
<tr>
<td>Demographics Limited English Cultural Identity Response to Discrimination</td>
<td>Social Networks Family/Peer Norms Interpersonal Discrimination</td>
</tr>
<tr>
<td><strong>Health Care System</strong></td>
<td>Individual</td>
</tr>
<tr>
<td>Insurance Coverage Health Literacy Treatment Preferences</td>
<td>Patient-Clinician Relationship Medical Decision-Making</td>
</tr>
<tr>
<td><strong>Health Outcomes</strong></td>
<td>Individual Health</td>
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*Health Disparity Populations: Race/Ethnicity, Low SES, Rural, Sexual/Gender Minority  
Other Fundamental Characteristics: Sex/Gender, Disability, Geographic Region
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"Research" versus "NIH Research"

In the context of the NIH mandate, supported research is generally aimed at health-related topics. Basic biological discovery research is supported, but it still has at least some connection to health.

By contrast, the National Science Foundation (NSF) supports many basic biology research projects, and some discoveries may have impact on health, but explicit research on biomedical topics generally does not get funding from NSF.

The NIH is increasingly recognizing the value of humanities and social science research, as well as community-based research so this presents new opportunities for NIH funding, especially in translational research ---
IOM Research Classification

- **T0 Research**: basic biomedical research, including preclinical and animal studies, not including interventions with human subjects;
- **T1 Research**: translation to humans, including proof of concept studies, Phase 1 clinical trials, and focus on new methods of diagnosis, treatment, and prevention in highly-controlled settings;
IOM Research Classification

- **T2 Research**: translation to patients, including Phase 2 and 3 clinical trials, and controlled studies leading to clinical application and evidence-based guidelines;

- **T3 Research**: translation to practice, including comparative effectiveness research, post-marketing studies, clinical outcomes research, as well as health services, and dissemination & implementation research; and

- **T4 Research**: translation to communities, including population level outcomes research, monitoring of morbidity, mortality, benefits, and risks, and impacts of policy and change.
Relevance - What Is Health Disparities Research?

- While a disease may have disparate effects on different groups, to be Health Disparities research, it should focus on the disparity itself.
- It doesn’t quite count if it is just on a topic or disease where a disparity exists. The research plan has to actually address an aspect of the disparity.
  - *Hypothetical Example*: With disproportionate incidence of congenital Toxoplasmosis in low SES families, a proposal to study mechanisms of Toxo infection would not address the disparity. However, it might be relevant to health disparities if the proposal is instead about identifying factors leading to greater transmission of Toxo among low SES moms, or studies on how access to health care affects rates of maternal Toxo.
- When a health disparity is “suspected”, data may be needed to test the hypothesis that there is a health disparity due to a factor such as culture, access, SES, etc. A study to test this (e.g., new epidemiology) might count.
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What is community engaged research?

- “the process of working collaboratively with groups of people affiliated by geographic proximity, special interests, or similar situations with respect to issues affecting their well-being”
- Includes multiple stakeholders
  - Medical centers
  - Community members
  - Community-based organizations
  - Institutes and agencies
Social Determinants of health
## NIMHD Minority Health and Health Disparities Research Framework

Adapted to reflect historic and socio-cultural influences for American Indian and Alaska Native Nations

Spera M. Manson, Ph.D., University of Colorado Denver’s Anschutz Medical Center

### Domains of Influence

#### Biological
- Biological Vulnerability and Mechanisms
  - Metabolic Syndrome

#### Behavioral
- Health Behaviors
  - External locus of Control
  - Drug Preferences
  - Coping Strategies
  - Resilience
  - Spirituality
  - Community-mindedness

#### Physical/Built Environment
- Personal Environment
  - Subsistence Activities

#### Sociocultural Environment
- Sociodemographics
  - Per Capita Payments
  - Limited English
  - Cultural Identity
  - Response to Discrimination
  - Historical Trauma

#### Healthcare System
- Insurance Coverage
- Health Literacy
- Treatment Preferences

### Levels of Influence

#### Individual
- Biological Vulnerability and Mechanisms

#### Interpersonal
- Caregiver-Child Interaction
- Out-of-Indian Home Adoption
- Grandparent/Child Rearing
- Family Microbiome

#### Community
- Community Illness Exposure
- Exxon Valdez Oil Spill
- Gold King Mine Waste Water Spill
- Herd Immunity

#### Societal
- Sanitation
- Immunization
- Pathogen Exposure
- Uranium and Coal Mining

- Community Functioning
  - Collective Resilience
  - Cultural Forms of Social Control
  - Language Revitalization

- Policies and Laws
  - Termination and Relocation 1953
  - Indian Self-Determination & Education Assistance Act 1975
  - American Indian Religious Freedom Act 1978

- Societal Structure
  - Matrilineal, Patrilineal, & Bilateral Systems of Descent and Jural Authority

- Societal Norms
  - Hollywood Indian
  - Firewater Myth
  - Societal Structural Discrimination
  - Sports Mascots

- Quality of Care
  - Healthcare Policies
  - Reimbursement of Tribal Healing Ceremonies
  - Indian Health Care Reauthorization Act

- Availability of Health Services
  - Direct, Contracted, and Compacted Services
  - Safety Net Services

- Cultural Construction of Health

- Patient-Physician Relationship
  - Implicit Bias
  - Medical Decision-Making

- Community Health
- Family/Organizational Health
- Individual Health
- Populations Health

Health Disparity Populations: Race/Ethnicity, Low SES, Rural, Sexual/Gender Minority
Other Fundamental Characteristics: Sex/Gender, Disability, Geographic Region
Community Engaged Research - Goals

- Build trust that accounts for all partners concerns in developing research focus
- Most commonly recognized form is Community-based participatory research (CBPR)
  - Equal partnership with community to create social change and improve health
- Attributes
  - Specific geographic location
  - Shared decision making
  - Development of an Advisory Board (Community and Researchers)
  - Collaboratively disseminates research findings
A Continuum of Research Possibilities

Not all community engagement activities are related to research. Many activities – especially in the initial stages of community engagement – involve trust building, listening, learning, and capacity building. Once the decision has been made to engage the community in research a range of relationships exist:

- **Collaborate fully in all aspects of research:** e.g., defining study questions, designing methods, implementation, analyzing findings, and disseminating results.

- **Assist with implementation of a researcher-designed study:** e.g., participant recruitment, data collection, consulting on aspects of study design or data interpretation. Community partners often serve as sub-contractors.

- **Assist in performing discrete steps in a researcher designed study** such as recruiting participants.

Civic Engagement and Health

Place-based approaches to address multi-leveled health inequities

• We’re not just creating a seat at the table for community. We are dragging the table to the community.

Interdisciplinary research teams that understand how to bridge community-academic boundaries

Civic engagement has been shown to improve health.
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Hypothesis testing and Scientific Premise

› “Hypothesis testing” versus “Discovery-based”/Hypothesis-generating research

› Discovery-based research is built on “unbiased” initial data collection, where an analysis of the data then gives rise to a specific hypothesis. But even data collection relies on a bias on what data is relevant

› NIH reviewers place a strong emphasis on Hypothesis testing; is the proposed research testing a specific hypothesis, especially a mechanistic hypothesis

› The language is now a bit modified to “Scientific Premise”, which retains the need for a Proposed Mechanism
Hypothetical-Deductivism and Experimental Hypothesis Testing

- The “Natural Sciences” initially grew by building systems of **HYPOTHESES** to explain natural laws; testing or validation depended on readily available visible or tangible evidence
  - Hypothesis: “All men are slobs”
  - Evidence: “See, Bob is a slob” – supporting the hypothesis!
- When evidence is limited, we resort to **EXPERIMENT**, which now means developing a method to generate new evidence that might not previously exist, produced specifically in response to the need to test the hypothesis
The design of any good experimental proposal includes an explicit goal to test or challenge a clearly defined hypothesis. It is more efficient than random data collection. It forces you to frame your conclusions in the context of your test of your working hypothesis or scientific premise.

How does experimental design “test” your hypothesis?
What Makes a Good Hypothesis

- The strength of a hypothesis rests on
  - Its ability to withstand experimental tests (falsification), but also
  - Its ability to predict outcomes and consequences
    - That is where “Proposed Mechanisms” are helpful
  - Generalization: application beyond just being a special case
  - There are few (or no) reasonable alternative explanations to this hypothesis
  - Proposed Mechanisms also help satisfy these criteria --
    - Are the explanatory elements both **NECESSARY and SUFFICIENT?**
An Experimental Design

- Hypothesis: “All patient-doctor communication is viewed through a gender-based filter”
  - Here, the proposed “Mechanism” is that communication is biased by gender-specific roles and hierarchies, and that these influences dominate other aspects of communication
  - So how do you test that? Set up a test to challenge this
    - Perhaps by setting up contrasting settings where gender is obvious versus settings where gender is ambiguous but use the same scripted discussion
    - Set up a quantitative measure for the interaction, so that the presence of bias can be detected (I didn’t say it was going to always be easy!)
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Suggested Sections in Your Proposal

- The elements listed here promote a clear narrative and highlight some key review criteria (and also cover a few required elements)
  - Specific Aims
  - Background and Significance
  - Innovation
  - Research Plan (must include a community engagement)
  - Timeline
  - Budget Justification
  - Human Subjects
Specific Aims

- This is a brief summary of your whole proposal. It should have a short introduction to the background of the problem, your research question or hypothesis, and a general description of your approach.

- The experimental approach is best presented as a bullet point list so that reviewers know what to expect, and they can follow the detailed information in the rest of the proposal.
Background and Significance

- This section should present the background of the research problem
  - What is the urgent health need or health disparity problem
  - What is already known about the problem, or what have others done on this subject
    - A relevant overview of this subject is important though it does not have to be overly detailed
  - What remains to be figured out - the goals of your proposal
  - If you have done work on this topic, you can present it here briefly as Preliminary Results
    - Prior related work can help your credibility on the subject
Innovation

- NIH is especially interested in Innovation, sometimes overshadowing conventional thorough research
- Innovation can include many areas
  - Novel hypothesis or proposed mechanism
  - New methodological approach
  - Application of existing models or hypothesis to new subject, or new study population
Research Plan

This is the critical section, where you describe the plan for the research study, based on your Specific Aims

- Clear objectives must be presented, including underlying assumptions, and the application of your methodological approach must be clear, including CBPR
- Data collection should be described so that it is clear what will be measured, with a plan for data integrity and systematic analysis (quantitative or qualitative)
- Expected outcomes should be discussed, and how the results will be interpreted (and how it related to your hypothesis/premise)
- It is especially helpful to describe alternative strategies or plans in case the original approach is not successful
(and the rest...)

Timeline
Grants are for one-year terms (though 18 month projects are possible. How will your plans play out in this term?

Budget justification
Explain what items you want funding for and why they cost as much as they do. It must be clear that the project can be accomplished with the available funds.

Budget guidelines are flexible (~$20k), and salary support can be included, but salary cannot be the main item. Please ask us.

Human Subjects
Is a Human Subjects Protocol required? If so, what will be submitted to the IRB? No human subjects work can start until protocol is approved.
Budgets and Justification

- Typical grant proposals might seek funding of ~$20-25K; we will decide how much would actually be awarded, depending on available funds and the quality of proposals.

- Budget can include some funds for salary and benefits though it would not be used to buy out of teaching.
  - In SOM, the Dean may provide some matching funds for "protected time" from clinical work if an award is likely.

- Budget items should be specific to the research project.
  - Justify the need for specific research supplies and related costs.
  - Don’t request funds for travel to conferences (we may be able to provide that separately in some cases).
Example Budget Justification - I

- **Juliet McMullin, Ph.D., Principal Investigator (.5 Summer Months ~ $6,500).** Dr. McMullin, Professor will serve as PI for the Historical Trauma and Native Diets Project. She has over 20 years of experience in health inequalities research, including serving as PI or co-I for a number of NIH funded grants examining the lived experience of health inequalities and the role of structural vulnerability in creating stigma around chronic and acute illnesses. Dr. McMullin has worked with numerous community-based organizations on developing and implementing community-based participatory research projects to address health inequalities, cultural practices, and subjective wellbeing.

- As PI for the Historical Trauma and Native Diets Project, Dr. McMullin will oversee all aspects of the project from IRB, data collection, analysis, and writeup, and community engagement. She will have responsibility for annual reports to the Administrative Unit of HDR@UCR.

- **TBA Program Manager (.25% calendar mo ~ 10,000).** The Program manager will have expertise working with community organizations in inland southern California. The program manager, under the direction of Dr. McMullin, will review a list of community partners to identify specific groups for data collection and dissemination efforts. The program manager will be jointly responsible with Dr. McMullin for all reporting duties.
Example Budget Justification - II

› **Travel**
› We have budgeted $516 in local travel for Dr. McMullin to attend 2 provider working group meetings and 4 patient working group meetings (6 mtgs x 11 mi x $0.54 in Grand Terrace) and (2 mtgs x 82 mi x $0.54 in Barstow). Travel is also requested for 10 Leadership, working group, and refinement meetings (10 mtgs x 66 mi x $0.54 in Thermal). These cities are the locations of RSBCIHI clinics.

› **Other Direct Costs:**
› **Supplies**
› Data Collection - We have budgeted $2,310 for materials associated with data collection. This cost includes purchase of two audio recorders adequate for playback as podcasts. Printing of preliminary and revised dietary materials, fees for graphic design, editing of audio recordings for podcasts and video interviews.
Example Budget Justification - III

- **Community Consultation Costs:**
  The RSBCIHI diabetes board has emphasized that in keeping with the local culture all events need to include refreshments or meals. We have budgeted a total of $1,660 in this line item.

- **Steering Committee:**
  These are bi-monthly meetings with the twelve members (described below in “other expenses”). The Steering Committee will advise on all aspects of the project. We will provide a light meal for each evening meeting. ($10 X 8 ppl X 6 mtgs) $480.

- **Food for Clinic and Provider Curriculum Assessment Meetings:**
  These are initial project dissemination that will introduce providers to the project and to request preliminary thoughts on topics and directions for the adapted curriculum. The meetings will take place during regularly scheduled provider meetings and be held at each clinic in the RSBCIHI system. We have budgeted for light breakfast at each of these meetings. ($5 x 20 pp x 7 mtgs) $700.
Example Budget Justification - IV

Provider Working Groups:
There will be two sessions with approximately eight health care provider participants at each meeting (described below in “other expenses”). We will provide light snacks for provider participants during each of the facilitated conversations. ($10 X 8 ppl X 2 mtgs) $160.

Patient Working Groups:
There will be four sessions with approximately eight patient participants at each meeting (described below in “other expenses”). We will provide light snacks for patient participants during each of the facilitated conversations. ($10 X 8 ppl X 4 mtgs) $320.

Steering Committee:
We have budgeted $4,500 to compensate Steering Committee members for their time. There will be six meetings per year. Each meeting will last approximately 90 min. There are five people on the SC who will receive a $150 stipend. $150 per meeting is consistent with the compensation that RSBCIHI Board Members receive for attending board meetings. The committee with meet quarterly. ($150 X 5 ppl X 6 mtgs)

Equipment Costs:
None requested.
Other Details For Specific Awards

- FIRST awards –
  - These are for emerging investigators, and involves building a mentorship team in addition to the research proposal itself
  - The proposal should include a proposed mentorship team, and some details on how mentorship will be organized

- PIC grants –
  - These are interdisciplinary research teams, so it will be important to describe the specific contributions of each part of the interdisciplinary team to the research project

- Collaboratory Fellowships –
  - This is a type of bridging fund, so information on past funding or related support, and plans for new support are important
Grant writing - Workshop

- Aims, topics covered here
  - *Basic rules and format (NIH style grants): (“RTFM”)*
    - Side bar: Administrative details/budgets, docs, eCAF/RED
  - NIH institutes and funding priorities
  - Framing a scientific question – not all good research questions are an ideal fit for NIH grant awards
  - Community engaged research
  - A general NIH thing: Hypothesis testing, scientific premise
  - Using the sections of the proposal to create the narrative
  - ”Grantsmanship” – tips on what to say and not to say, what to include and what not to include
Some “Grantsmanship” Advice

▶ The proposal should be clearly feasible within the time and funds available. Try to avoid over-reach on your goals and impact

▶ Illustrations are very useful to the reviewers, such as models describing the hypothesis, mechanisms, and specific aims
  ▶ Color figures are especially nice

▶ Get others to read the (many) drafts of your proposal, especially if they are not expert in the topic, and get an honest critique
  ▶ The reviewers are almost never highly expert in your topic, so you need to aim to a more general audience but also be sophisticated enough for those with familiarity with the topic

▶ The U54 HDR center has staff and resources to support you – take full advantage of these resources even during the grant writing phase!!!
Final comments

- Start early, revise, revise, revise. Be meticulous with editing for grammar and spelling – sloppy grants always do poorly.

- Do not be discouraged if you are not funded the first (or second or third) time. Persistence is the winning strategy.

- Read the relevant literature as often as you can so you are as expert as possible in the context of your subjects of interest.

- Be flexible. There may be other topics that may be just as interesting and you may find surprising ability in a different subject.

- Find collaborators. Interdisciplinary projects are especially fun.
Contacts

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