Project Number:	5R01HL101196-04	**Contact PI / Project Leader:**	SHIFERAW, YOHANNES
Title:	MULTI-SCALE MODELING OF CALCIUM MEDIATED TRIGGERED ACTIVITY IN THE HEART	**Awardee Organization:**	CALIFORNIA STATE UNIVERSITY NORTHRIDGE

Abstract Text:

DESCRIPTION (provided by applicant): Cardiac arrhythmias are responsible for more than 300,000 deaths per year in the US alone. Despite extensive research over many decades the underlying mechanisms for these arrhythmias are not completely understood. A common mechanism, believed to underlie a wide variety of arrhythmias, is the presence of ectopic focal excitations in the heart. These ectopic foci disrupt the normal sinus rhythm, and can produce triggered excitations which can lead to reentry and/or wave fractionation in the heart. Remarkably, it is not understood what determines the timing, location, and morphology of these focal excitations. Many experimental studies have shown that abnormal calcium cycling, at the single cell level, plays an essential role in the formation of these focal excitations. These studies are corroborated by gene based studies showing that specific mutations of Ca cycling proteins are found in hearts prone to ectopic activity and fibrillation. However, the detailed mechanisms linking subcellular Ca and focal excitations at the tissue and whole heart level is not known. In this project we propose to develop a multi-scale computational framework that can be used to describe the properties of Ca mediated ectopic foci. Our aim is to explore how abnormal Ca cycling at the subcellular level can summate over thousands of cells to form ectopic foci in tissue. Our computer models will shed light on the underlying mechanisms by bridging the gap between ion channels, cell electrophysiology, and tissue scale electrical activity.

Public Health Relevance Statement:

PUBLIC HEALTH RELEVANCE: In this project we apply multi-scale mathematical modeling to understand the underlying mechanisms for ectopic focal excitations in the heart. Insight into these mechanisms will help cardiac researchers develop gene based, or pharmacological treatments, of a wide variety of cardiac arrhythmias.

NIH Spending Category:

Bioengineering; Cardiovascular; Heart Disease; Networking and Information Technology R&D

Project Terms:

Accounting; Action Potentials; Address; adrenergic; Adrenergic Agents; Anatomy; Anisotropy; Arrhythmia; base; Calcium; Calcium Oscillations; Calcium Signaling; Cardiac; Cell model; Cells; Cessation of life; Characteristics; Complex; computer framework; Computer Simulation; computer studies; Coupled; Coupling; Data; Dependence; Dimensions; Ectopic beats; Electrophysiology (science); Event; Evolution; Fiber; Fibrosis; Fractionation; Genes; Heart; Heart Atrium; Image; Individual; insight; Ion Channel; Ions; L-Type Calcium Channels; Lead; Length; Light; Link; Location; Magnetic Resonance Imaging; mathematical model; Mediating; Membrane; millimeter; millisecond; Modeling; Morphology; multi-scale modeling; Muscle Cells; Mutation; Myocardium; novel strategies; Oryctolagus cuniculus; Pharmacological Treatment; Play; Probability; Property; Proteins; public health relevance; Pulmonary veins; receptor; Research; Research Personnel; research study; Role; Simulate; simulation; Sinus; Site; Spatial Distribution; spatiotemporal; Structure; Structure of purkinje fibers; System; Testing; Time; Tissue Model; Tissues; tool; Variant; Ventricular Tachycardia; voltage

Project Number:	2R15NS060099-02A1	**Contact PI / Project Leader:**	DE BELLARD, MARIA ELENA
Title:	ROLE OF SLIT MOLECULES IN NEURAL CREST DELAMINATION	**Awardee Organization:**	CALIFORNIA STATE UNIVERSITY NORTHRIDGE

Abstract Text:

DESCRIPTION (provided by applicant): The neural crest provides a unique population of migratory stem cells with which to study a variety of cell and neural developmental processes. Neural crest cells emerge from the neuroepithelium in development and transform into a mesenchymal/migratory population. Several inhibitory molecules have been shown to play important roles in neural crest migration including the chemorepulsive molecules Slit 1-3. Slit molecules were initially discovered as axonal guidance molecules and the cartoon below depicts what is currently known about the expression of Slit chemorepellants, the expression of Slit receptors (Robo) and their effect on neural crest migration. Neural crest cell migration has been repeatedly likened to the process of cancer metastasis and cell invasion. Slit molecules attenuate cancer progression by regulating beta-catenin expression and are also able to negatively regulate metastasis. Results from our previous grant demonstrated that Slit chemorepellant molecules impair neural crest cell migration and alters neural crest cells cytoskeletal organization towards a non-migratory phenotype. However, we still do not know the precise role that Slit molecules play on pre-migratory neural crest cells. Do Slit molecules prevent neural crest delamination in a manner analogous to the way Slits prevent tumor metastasis? If so, what are the molecular mechanisms that allow Slit molecules to prevent the delamination of the pre- migratory neural crest cells? The significance of this proposal is that it will determine whether or not Slits have an effect on neural crest delamination during the epithelial-to- mesenchymal transition (EMT) via their "tumor suppressor mechanisms". The approach of this new proposal is to study of the role of Slit molecules in neural crest cell delamination using cell biology and genomic methods. The findings from this project will: 1) expand the current knowledge on the role of the tumor suppressor Slits in neural crest migration; 2) determine if neural crest cells expressing Slits are unable to delaminate; and, 3) provide insight into tumor suppressor activity by elucidating the role of Slits in cell migration. Public Health Relevance Statement: The outcomes from this research will help us understand how we may be able to harness the metastatic aggressiveness of crest derived-cancers because it will look into the role that a tumor suppressor molecule, Slit, have on its progenitor population and correlate it with cancer aggressiveness. PUBLIC HEALTH RELEVANCE: Neural crest cell migration has been repeatedly likened to the process of metastasis and invasion. However, although there is a wealth of research on the mechanisms that govern the process of cell motility of neural crest cells we still do not know the precise role that Slit molecules play on pre-migratory neural crest cells. The proposed research will study the role of Slit molecules in neural crest cell delamination using cell biology and genomic methods. The outcomes from this research will enhance our understanding of how Slit molecules affect the EMT process of neural crest migration and will determine if these processes are similar to the processes occurring when tumor cells become metastatic.

Public Health Relevance Statement:

Neural crest cell migration has been repeatedly likened to the process of metastasis and invasion. However, although there is a wealth of research on the mechanisms that govern the process of cell motility of neural crest cells we still do not know the precise role that Slit molecules play on pre-migratory neural crest cells. The proposed research will study the role of Slit molecules in neural crest cell delamination using cell biology and genomic methods. The outcomes from this research will enhance our understanding of how Slit molecules affect the EMT process of neural crest migration and will determine if these processes are similar to the processes occurring when tumor cells become metastatic.

NIH Spending Category:

Cancer; Neurosciences; Prevention; Stem Cell Research; Stem Cell Research - Nonembryonic - Non-Human

Project Terms:

Address; Affect; Attenuated; axonal guidance; beta catenin; Biological Assay; cancer cell; Cartoons; cell motility; Cells; Cellular biology; cellular imaging; Cytoskeletal Modeling; Development; Developmental Process; Dorsal; Embryo; Epithelial; epithelial to mesenchymal transition; gain of function; Genetic Transcription; Genomics; Grant; Immunofluorescence Immunologic; In Situ; insight; Knowledge; Label; Life; loss of function; Malignant Neoplasms; Measures; Mesenchymal; Methods; migration; migratory population; Molecular; Molecular Biology; MSX1 gene; Neoplasm Metastasis; neoplastic cell; Neural Crest; Neural Crest Cell; Neural tube; Neuroepithelial; neuroepithelium; Neurons; novel strategies; Outcomes Research; Pattern; Phenotype; Play; Population; prevent; Process; progenitor; public health relevance; receptor; Research; research study; Role; slug; Stem cells; Techniques; transcription factor; tumor; tumor progression; Tumor Suppressor Proteins; Work

Project Number:	5P20MD003938-05	**Contact PI / Project Leader:**	HELLENBRAND, HAROLD L.
Title:	CSUN - SAN FERNANDO VALLEY CENTER TO REDUCE HEALTH DISPARITIES	**Awardee Organization:**	CALIFORNIA STATE UNIVERSITY NORTHRIDGE

Abstract Text:

DESCRIPTION (Provided by the Applicant): The goal of the proposed CSUN-San Fernando Valley (SFV) Center to Reduce Health Disparities is to develop a research center to reduce health disparities for vulnerable populations from several disciplinary and methodological perspectives. The Center will serve three areas of emphasis: (a) faculty support - to train CSUN faculty from many disciplines, primarily Psychology, along with community activists, to conduct culturally competent, relevant, and valid research with underserved populations and to disseminate that information to the academe, to the lay public, and to policy-makers, (b) student support - to develop workplace diversity by developing a cadre of undergraduate and graduate students who have been traditionally underrepresented in health disparities research by providing coursework, training, research experiences, and resources to enter and succeed in graduate programs, and (c) ecologically valid health disparities research and dissemination - to develop a center for excellence in ecologically valid research that will explore alliances between university researchers and community organizations, schools, and other institutions to ensure greater ecological validity in health-related research and community research. The CSUN-SFV Center to Reduce Health Disparities will serve as a hub for future collaborative work that supports health disparities researchers by developing EcoLab, a modifiable laboratory that can be made into environments that are representative of a home with kitchen and living room to study family interactions and to conduct interviews, focus groups, and community meetings; a restaurant to study eating behaviors; or a medical examination room to study health care issues such as communication, expectations, and stereotyping. Thus far, we have collaborative agreements with 7 departments spanning three colleges, with 28 RIMI faculty members, an advisory board consisting of Drs. Steven Lopez, Raymond Buriel, Michele Cooley, and Mayra Bamaca and Ms. Stephanie Saliger of the community. We have also enlisted the assistance of 8 trainers and mentors. We intend to support 10 RIMI students by providing them with coursework, travel and GRE support and research experiences in the laboratory and in community agencies.

Public Health Relevance Statement:

We designed a program intended to be of greater relevance to health disparities than is typically the case by working with community agencies who deliver health and mental health services and by designing a laboratory environment that may be seen as more authentic to real-world situations. In addition, we include faculty from 7 different disciplines and 9 community agencies with varying missions to attack the problem of health disparities using sophisticated methods and relevant measures.

NIH Spending Category:

Basic Behavioral and Social Science; Behavioral and Social Science

Project Terms:

Active Learning; Address; Administrator; Age; Agreement; American; American Indians; Anniversary; Area; Arts; Asians; Award; Behavior; Businesses; California; Cities; Climate; Collaborations; college; Communication; Communities; community college; community organizations; Country; Creativeness; Curiosities; design; Development; Discipline; dissemination research; Eating Behavior; Economics; Educational aspects; Educational process of instructing; Enrollment; Ensure; Environment; Ethics; expectation; experience; Faculty; Family Study; field study; Focus Groups; Fostering; Freedom; Future; Goals; Government; graduate student; Health; health disparity; Healthcare; high reward; high standard; Home environment; improved; In-Migration; Individual; innovation; Institution; Interview; Laboratories; Laboratory Study; Latin America; Leadership; Learning; Life; Los Angeles; Measures; medical examination; meetings; member; Mental Health; Mental Health

Services; Mentors; Methods; Mexico; Mission; Neighborhoods; Pacific Island Americans; Performance; Persons; Policies; Policy Maker; Population; Positioning Attribute; programs; Psychology; Race; Research; Research Personnel; Research Support; Research Training; Resources; Restaurants; Rewards; Risk; Scholarship; Schools; Science; Services; skills; social; Social Welfare; Societies; Stereotyping; Students; System; Training; Travel; trend; undergraduate student; Underserved Population; United States; Universities; Vulnerable Populations; Work; Workplace

Project Number:	2T37MD001368-17	**Contact PI / Project Leader:**	TOLMASKY, MARCELO E
Title:	LA BASIN CSU MHIRT PROGRAM	**Awardee Organization:**	CALIFORNIA STATE UNIVERSITY FULLERTON

Abstract Text:

DESCRIPTION (provided by applicant): A consortium of seven California State University campuses proposes to continue an international research training program at prestigious Universities and Research Institutes in Thailand, Argentina and Great Britain. The different locations provide outstanding opportunities for training in public health, clinical, and basic research on subjects relevant to health disparities and global health, focusing on issues related to cancer, HIV/AIDS, cardiovascular disease, or multi-resistant infections. The objectives of this program are: 1. To increase the numbers of students belonging to groups underrepresented in biomedical, behavioral, clinical and social sciences research that pursue advanced degrees in basic sciences, biomedical or clinical research fields. Our training program is committed to developing a cadre of researchers that develop deep understanding and a passion for health disparities issues which could potentially produce future leaders in this field; 2. To make these students aware of minority and international health problems and to prepare them to seek novel approaches to address them; 3. To inculcate in these students the importance and opportunities of international collaboration in research to address health issues and health disparities from a global perspective; and 4. To contribute to the reduction, and eventual elimination of health disparities among racial and ethnic minority groups in the U.S. To achieve these objectives 8 to 10 students/year will participate in 10-12 weeks summer research experiences in which they will: a. receive training in experimental research, design, data collection, analysis and interpretation of data, use of current literature and the different venues to publish results; b. become familiar with the cultural characteristics affecting the scientists and population in the foreign location; c. be provided with opportunities to communicate their research results in the form of publications or submissions to scientific conferences (oral or poster presentations), as well as to orally present their research in laboratory meetings at the foreign site and the consortium campuses; d. be mentored to ensure that they complete the degree they are pursuing at the time the training takes place and pursue advanced degrees or other health-related careers. The foreign laboratories have been carefully selected to ensure the highest quality research training in subjects relevant to the goals of NIMHD, and to place them in environments with different kinds of health disparities and ethnic and racial mixes. The typical trainee will have completed at least 2 years of coursework in an appropriate major, a GPA of 3 or higher, high interest in a scientific research career, and will not have completed a terminal degree. At least 75 percent of the students selected will be undergraduates.

Public Health Relevance Statement:

PUBLIC HEALTH RELEVANCE: Students belonging to groups under-represented in biomedical, behavioral, clinical, and social sciences research will receive training in public health, basic, or clinical research on subjects related to health disparities and global health. These students will be part of the future cadre of researchers that thoroughly understand health disparities issues.

Project Terms:

Address; Affect; AIDS/HIV problem; Argentina; Basic Science; Behavioral Sciences; Biomedical Research; California; Cardiovascular Diseases; career; Clinical; Clinical Research; Clinical Sciences; Collaborations; Commit; Cultural Characteristics; Data; Data Collection; Ensure; Environment; experience; Future; global health; Goals; Great Britain; Health; health disparity; Infection; interest; International; International Health Problems; Laboratories; Literature; Location; Malignant Neoplasms; meetings; Mentors; Minority; Minority Groups; Minority Health and Health Disparities International Research Training; novel strategies; Oral; Population; posters; programs; public health medicine (field); Publications; Publishing; racial and ethnic; Research; Research Design; Research Institute; Research Personnel; research study; Research Training;

Resistance; Scientist; Site; social science research; Students; symposium; Thailand; Time; Training; Training Programs; Universities

Project Number:	5U54CA153458-04	**Contact PI / Project Leader:**	TANJASIRI, SORA P
Title:	WINCART: WEAVING AN ISLANDER NETWORK FOR CANCER AWARENESS, RESEARCH AND TRAINING	**Awardee Organization:**	CALIFORNIA STATE UNIVERSITY FULLERTON

Abstract Text:

DESCRIPTION (provided by applicant): Weaving an Islander Network for Cancer Awareness, Research and Training (WINCART): The overarching goal of the proposed Center is to contribute to the reduction of cancer health disparities among Pacific Islanders (PIs) in Southern California through an integrated program of research, training, and community education utilizing a multi-level, interdisciplinary, approach that is driven by community based participatory research (CBPR) principles. Building upon the successes of our first Community Network Program (CNP) WINCART: Weaving an Islander Network for Cancer Awareness, Research and Training (U01CA114591/WINCART1), this new Center's programs and cores incorporate the themes of reducing chronic disease mortality and morbidity through lifestyle change (Research Program; Intervention Project), exploring cultural and ethical issues around biobanking to enhance the promise of personalized medicine (Research Program: Pilot Project), increasing prevention and early detection through assessment and community education (Community Outreach Program), and training of early career investigators in CBPR methods (Training Program). Experienced community leaders and researchers will facilitate integration across all Center components (Administrative Core). The overarching CBPR principles and processes in WINCART2 derive from those established in WINCART1, and include: 1) shared participation by both community and academic researchers in the planning, development, implementation and evaluation of community education, research, and training activities; 2) co-learning between all academic and community partners via joint activities in the Center's core, programs, and projects; 3) collaboration mechanisms, through the Center Steering Committee and Community Advisory Groups, that ensure fidelity to CBPR tenets among center partners and trainees; and 4) promotion of lasting community benefits across multiple levels of factors associated with PI cancer health disparities. WINCART2 incorporates the multilevel population health approach to address cancer health disparities, and employs new technologies (including distance learning, electronic surveys and intervention systems) for communication within the Center, dissemination to external audiences, and/aci7ztarion of state-of-the-science research, all in the service of reducing cancer health disparities among PIs.

Public Health Relevance Statement:

Cancer health disparities remain significant among Pacific Islanders in the United States. The proposed center aims to understand and address the multilevel factors associated with prevention, early detection, and personalized care through CBPR principles and processes involving collaborations between 7 community based organizations and 2 universities. Understanding how to apply CBPR to increase the use of beneficial biomedical and behavioral procedures is essential to ameliorating enduring cancer health disparities in Pis.

Project Terms:

Address; Area; Awareness; base; Behavioral; biobank; California; cancer health disparity; career; Caring; Chronic Disease; Collaborations; Communication; Communities; community based participatory research; Community Health Education; Community Networks; Community Outreach; County; design; Development Plans; Distance Learning; Early Diagnosis; Electronics; Ensure; Ethical Issues; Evaluation; experience; Goals; Health Promotion and Education; Institution; interdisciplinary approach; Intervention; Intervention Studies; Joints; Learning; Life Style; Los Angeles; Malignant Neoplasms; Medicine; Morbidity - disease rate; Mortality Vital Statistics; new technology; Oranges; outreach program; Pacific Island Americans; Pilot Projects; population health; Prevention; Procedures; Process; programs; Research; Research Methodology; Research Personnel; Research Training; Science; Services; Staging; success; Surveys; System; Training; Training Activity; Training Programs; Training Support; United States; Universities

Project Number:	5R21DA033874-02	**Contact PI / Project Leader:**	WASHINGTON, THOMAS ALEX
Title:	EXPLORING AN HIV TESTING INTERVENTION MODEL (TIM PROJECT)	**Awardee Organization:**	CALIFORNIA STATE UNIVERSITY LONG BEACH

Abstract Text:

DESCRIPTION (provided by applicant): Exploring an HIV Testing Intervention Model (TIM project) Among Black Men Who Have Sex with Men Ages 18 to 30 The rate of new HIV infections across the U.S. remained relatively stable (approximately 50,000 per year) from 2006 to 2009; yet, the rate of new infections for young Black men who have sex with men (BMSM), those 13 to 29, actually increased. Thus, the impact of HIV/AIDS on Black/African American residents has been large in the U.S., and the state of California. Because of the elevated risk of infection and prevalence of new HIV infections among BMSM aged 18 to 29, it is critical to ensure that sexually active young BMSM get tested for HIV every 3-6 months. In addition to the known risk factors associated with HIV among young BMSM, recent findings suggest that poly-drug use (e.g., methamphetamine, cocaine) has increasingly become common among young BMSM. The synergy that exists between drug use, and the concentrated levels of HIV in the young BMSM population, makes the development of HIV prevention and intervention programs tailored for BMSM a priority for the National Institute on Drug Abuse (NIDA). Hence, in-line with a priority of NIDA, reducing racial/ethnic disparities in HIV testing, access, and utilization of treatment and services, the proposed project seeks to increase HIV testing uptake among BMSM. The goal of this proposed research is to develop and pilot test an intervention to increase HIV testing among young BMSM. More specifically, findings from a recently completed formative research study will be used to inform the development of the HIV testing video intervention. Next, feedback will be received from focus groups with BMSM. Then, a randomized control pilot study will be conducted to examine the feasibility of using social networking to host discussions among the intervention group to enhance the intervention videos for increasing HIV testing. Participants will use Facebook "Like" feature, for discussions about HIV testing uptake and testing sites, drug use and sexual risk behavior, and view intervention videos. Findings from this study may offer new eHealth information, and support the use of using social networking to enhance HIV interventions, and encourage HIV testing uptake among young BMSM. Additionally, the intervention may be useful for reaching more BMSM who may not otherwise consider testing because of stigma or limited access to knowledge about the importance of HIV testing uptake.

Public Health Relevance Statement:

Exploring an HIV Testing Intervention Model (TIM project) among Black Men who Have Sex with Men ages 18 to 30. The goal of this proposed research, Exploring an HIV Testing Intervention Model (TIM project), is to develop and pilot test an intervention to increase HIV testing among young Black men who have sex with men (BMSM). Participants will use Facebook "Like" feature for discussions about HIV testing uptake and testing sites, drug use and sexual risk behavior, and view intervention videos. This study has public health relevance as the findings may offer an innovative intervention to motivate frequent HIV testing uptake among sexually active BMSM.

NIH Spending Category:

Behavioral and Social Science; Clinical Research; Clinical Trials; Drug Abuse (NIDA only); HIV/AIDS; Infectious Diseases; Prevention; Substance Abuse

Project Terms:

Address; Adopted; African American; Age; aged; AIDS prevention; AIDS/HIV problem; arm; Behavior; Behavioral; Belief; California; Characteristics; Cocaine; community organizations; Development; Drug usage; Enrollment; Ensure; experience; Feedback; Focus Groups; Geographic state; Goals; group intervention; Health behavior change; Health Services Accessibility; high risk; HIV; HIV Infections; HIV risk; Human immunodeficiency virus test; Infection; innovation; Institution; Intervention; intervention program; Intervention Trial; Knowledge; men; men who have sex with men; Methamphetamine; Modeling;

National Institute of Drug Abuse; Online Systems; Participant; Patient Self-Report; Perception; Pilot Projects; Population; Prevalence; Prevention program; public health relevance; Published Comment; Publishing; racial and ethnic disparities; Randomized; Reaction; Reading; Recording of previous events; Research; research study; response; Risk; Risk Factors; Self Efficacy; Services; sex; sex risk; sexually active; Site; Social Network; social networking website; social stigma; Surveys; Testing; theories; Update; uptake; Washington; web site; web-based social networking; Work

Project Number:	1SC2AI109500-01	**Contact PI / Project Leader:**	VEY, JESSICA
Title:	ENGINEERING ISOBUTYLAMINE N-HYDROXYLASE FOR APPLICATIONS IN ANTIBIOTIC BIOSYNTHES	**Awardee Organization:**	CALIFORNIA STATE UNIVERSITY NORTHRIDGE

Abstract Text:

DESCRIPTION (provided by applicant): With the emergence of bacterial resistance, identification of new diseases, and the need for new therapeutics with different efficacies, our ability to design drugs to battle bacterial infections is becoming a more urgent priority. Natural products are often useful as therapeutics for humans, though problems such as side effects and production difficulties can preclude their successful development. This proposal seeks to address the need for new antibiotics by studying structure-function relationships in the valanimycin biosynthetic pathway. This naturally available antibiotic has efficacy against gram positive and gram negative bacteria, and shows some promise as an anticancer therapeutic. With this research we hope to make valanimycin amenable to a new drug development strategy, synthetic biology, in which the drug's biosynthetic pathway is engineered to allow introduction of diversity into the product. The research described here focuses on a biosynthetic step common to multiple antibiotics - flavin-dependent hydroxylation of a primary amine. The enzyme responsible for this step in the valanimycin biosynthetic pathway will be structurally and biochemically characterized. The structure activity relationships identified by those studies will be verified by bioinformatics and biochemical techniques, including mutagenesis combined with enzymatic activity and binding studies. The data yielded will enable rational design of vlmH to alter its substrate binding specificity. Such studies can be pursued on other steps of the pathway; in this way, we can introduce diversity into the valanimycin final structure. Given enough time and research, this molecule could be developed into a useful therapeutic.

Public Health Relevance Statement:

PUBLIC HEALTH RELEVANCE: It is difficult to overstate the importance of drug design in today's climate of increasing incidence of bacterial antibiotic resistance, the rapid spread of infectious disease, and the prevalence of negative side effects. Synthetic biology is a new drug development technique in which naturally available small molecules with therapeutic activity are altered via engineering of their biosynthetic pathways. The research proposed here aims to expand our ability to apply this technique to more naturally available drugs by beginning the engineering process on an enzyme in the biosynthetic pathway of the antibiotic valanimycin.

NIH Spending Category:

Antimicrobial Resistance; Bioengineering; Biotechnology; Emerging Infectious Diseases; Infectious Diseases

Project Terms:

Active Sites; Address; Adverse effects; Amines; Amino Acids; Anabolism; anti-cancer therapeutic; Antibiotics; Bacterial Antibiotic Resistance; Bacterial Infections; bacterial resistance; Binding (Molecular Function); Biochemical; Bioinformatics; Biological Factors; California; Catalysis; Climate; Communicable Diseases; Communities; Computer Simulation; Data; design; Development; dimethylaniline monooxygenase (N-oxide forming); Disease; Drug Design; drug development; Engineering; Environment; Enzymes; experience; Faculty; Family; Family member; Flavins; Foundations; Goals; graduate student; Gram-Negative Bacteria; Human; Hydroxylation; Incidence; infectious disease treatment; interest; Knowledge; Learning; Literature; member; Metabolic Pathway; Mixed Function Oxygenases; Multi-Drug Resistance; Mutagenesis; mutant; Mutation; novel therapeutics; One-Step dentin bonding system; Organism; Pathway interactions; Pharmaceutical Preparations; Positioning Attribute; Prevalence; Process; Production; Protein Engineering; Proteins; public health relevance; Research; Site-Directed Mutagenesis; skills; small molecule; Specificity; Streptomyces; structural biology; Structure; Structure-Activity Relationship; Students; Substrate Specificity; synthetic biology; Techniques; Therapeutic; Time; tool; Universities; valanimycin; Work; X-Ray Crystallography

Parent Project Number: 5P50HL105188-05 **Sub-Project ID:** 6098		**Contact PI / Project Leader:**	BELIN, THOMAS R
Title:	RESEARCH METHODS	**Awardee Organization:**	UNIVERSITY OF CALIFORNIA LOS ANGELES

Abstract Text:

Drawing together scientists with years of experience in public-health research support, including extensive experience with methodological support in a center-grant context, we propose a Research Methods Core to support the research activities of the proposed UCLA-USC Center for Population Health and Health Disparities (CPHHD). Reflecting the multiple areas of expertise covered by the interdisciplinary Research Methods Core team, we aim to deliver wide-ranging metiiodological support to the broader CPHHD research effort, including: (1) providing support of biostatistical design and analysis, with capabilities of developing biostatistical innovations; (2) incorporating expertise in field-survey research frameworks and techniques into CPHHD projects; (3) contributing insight into modern laboratory measurement, particularly as related to identifying biomarkers appropriate to investigating mechanisms through which public-health interventions function and analyzing biomarker data; (4) integrating consideration of policy implications into all components of CPHHD research; (5) linking with CPHHD training programs to provide the best possible training for students emerging as scientists; and (6) working with the Administrative Core to implement a center-wide data safety monitoring plan and a center-wide effort to harmonize measurement and data collection to ensure comparability with published results. Through these elements, the Methods Core will offer expertise throughout the activities of the CPHHD, offering efficiencies for center operations and serving to enhance a sense of unity among different research components, thereby ensuring that the CPHHD is able to benefit from the synergies that derive from being part of a research center.

Public Health Relevance Statement:

Methodological needs arise in a variety of contexts in community-based public-health research. We anticipate needs in experimental design and analysis, biomarker measurement, accommodating correlated measurements, small-sample inference, handling missing data, culturally appropriate field survey techniques, and policy analysis. The Research Methods Core aims to be responsive in all of these areas.

Project Terms:

Address; Area; base; Behavioral; Biological; Biological Markers; Biometry; cardiovascular disorder risk; career development; Centers for Population Health; Communities; Consultations; Data; Data Analyses; Data Collection; data management; design; Development; Discipline; Elements; Ensure; experience; experimental analysis; Experimental Designs; Family; field survey; Foundations; Future; Grant; health disparity; heart disease risk; innovation; insight; Interdisciplinary Study; Intervention; Laboratories; Link; Measurement; member; Methodology; Methods; Mission; Monitor; Neighborhoods; operation; Outcome; Policies; Policy Analysis; policy implication; Population; Population Heterogeneity; programs; Protocols documentation; public health medicine (field); public health research; Publishing; Questionnaires; Research; Research Activity; Research Design; Research Methodology; Research Support; Safety; Sampling; Scientist; Students; Techniques; Tissue Sample; TNFRSF5 gene; Training; Training Programs; Work