



HSRI EXECUTIVE COMMITTEE MEMBERS



UC MERCED
Health Sciences
RESEARCH INSTITUTE

**FACULTY RESEARCH
INFORMATION
GUIDE 2017**



Dr. Paul Brown

**Professor, Public Health
School of Social Sciences,
Humanities & Arts**

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Home Town: Torrance, CA

B.A.: UC Santa Barbara

PhD: Wisconsin (Economics)

Joined UC Merced: 2011

Current Research Focus:

Much of his work evaluates the effectiveness and cost effectiveness of interventions aimed at improving health for vulnerable populations, including people who have suffered a traumatic brain injury or stroke, the frail elderly, and disabled members of the community. Research areas include:

- Prevention of Chronic Conditions
- Valley Fever
- Behavioral Economics of Sugar Consumption
- Role of Public Health Departments post ACA
- Return on Investment from Behavioral Interventions

Health Economics

Areas of expertise:

- Return on Investment
- Behavioral Economics
- Health Policy
- Translational research

Graduate Student Research:

- Maternal and child hospitalizations
- Use of ROI in Public Health Departments
- Peer support to control childhood asthma
- ROI from Chronic Disease Prevention
- Rocky Mountain Spotted Fever
- Attitudes toward Sugar Tax
- Using research to advance healthcare providers

Current Grad Students: 7

Community Affiliations:

- Mariposa Rotary Club
- Member of HSRI Executive Committee

Teaching Responsibilities:

Undergrad courses: *Intro to the US Healthcare System, Research Methods*

Grad courses: *Health Economics. Health Services Research, Foundations of Public Health*

Current Funding Needs:

- Graduate student research
- Policy Events for the SJV
- Community based research

Recent Success:

- Director, Health Sciences Research Institute
- Award: Community Engagement



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Dr. Nancy Burke

**Professor, Public Health
School of Social Sciences,
Humanities & Arts**

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Home Town: Nashville, TN
B.A.: UT Knoxville
M.A.: University of Oregon
PhD: University of New Mexico
Joined UC Merced: 2015

Current Research Focus:

Organizational health literacy, innovative models and care for the structurally vulnerable; Understanding and promoting oral health literacy; Tobacco cessation interventions for LEP groups; Breast cancer screening and survivorship

Past Research Topics:

Oral health disparities; cancer clinical trial recruitment; Filipina breast cancer survivorship

Graduate Student Research:

Health effects of immigration policy; Social capital and networks among rural African Americans; Breast cancer screening disparities; Family networks and long term care in Merced, Co.; Refugee oral health; Ethnography of behavioral health court

Teaching Responsibilities: Public Health

Undergrad courses: *Qualitative Research Methods*

Grad courses: *Grant writing, Professional Seminar, Qualitative Research Methods, Mixed Methods, Health Behavior Theory*

Medical Anthropology

Areas of expertise:

- Global health
- Cancer
- Oral health
- Social inequalities
- Health literacy
- Clinical trials recruitment
- Survivorship
- Tobacco cessation

Current Grad Students: 4

Community Affiliations:

- Shanti Breast Cancer Program
- Pilipino Senior Resource Center
- Member of HSRI Executive Committee

Current Funding Needs:

- Funding to support community led research partnerships
- Graduate student funding for health literacy and cancer disparities research

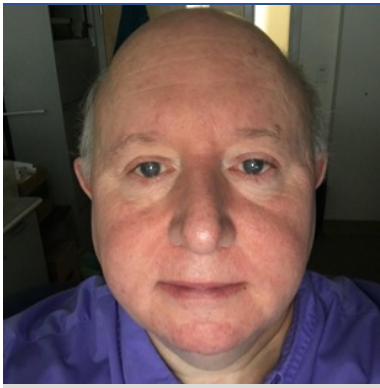
Recent Success:

Principal Investigator of National Institute of Nursing Research R01 (*Health literacy systems in the safety-net: Lessons from complex care management.*)



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Dr. Ariel L. Escobar

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School of Engineering**

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ariel-l-escobar](http://ucmerced.edu/content/ariel-l-escobar)

Home Town: Chubut, Argentina

B.S.: Universidad Tecnologica
Nacional. FRBA. Buenos Aires

PhD: Universidad de la
Republica. Uruguay

Post Doc: UCLA, School of
Medicine

Joined UC Merced: 2008

Current Research Focus:

Cardiovascular diseases are the leading cause of human death all over the world. My laboratory have been focused in understanding molecular and cellular mechanisms involved in the development of cardiac arrhythmias during an increase in the heart rate (tachycardia) and after a cardiac infarction (ischemia). Controlling the development of this cardiac arrhythmias will dramatically improve the rate of survival after a cardiac episode.

- Bioelectricity
- Physiological engineering
- Molecular and cellular cardiology

Past Research Topics: Calcium Signaling

Graduate Student Research:

- Role of Calsequestrin in the development of catecholaminergic polymorphic ventricular tachycardia.

Teaching Responsibilities:

Undergrad Courses: *Physiology for Engineers*

Graduate Courses: *Molecular and Cellular cardiology*

Cardiovascular Physiology

Areas of expertise:

- Cardiovascular Physiology
- New Microscopies
- Cellular Biophysics

Current Grad Students: 1

Community Affiliations:

- Member of HSRI Executive Committee

Current Funding Needs:

Funding for research support graduates students and postdoctoral fellows.

Recent Success:

Editorial Board Physical Biology



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Dr. Eva De Alba

**Acting Associate Professor,
Bioengineering
School of Engineering**

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NEW FACULTY

Home Town: Madrid, Spain

BSc & MS: University
Complutense, Madrid

PhD: Spanish National
Research Council

Post Doc: NIH

Joined UC Merced: 2017

Current Research Focus:

Applying our research findings to engineer proteins with altered functionality to serve as templates for potential therapeutic targets, and to the biotechnological application of protein molecular platforms and ultra-structures.

- Molecular mechanisms that control cellular processes essential to life from a biochemical and biophysics perspective
- Regulation of inflammation & programmed cell death
- Autoimmune disorders, cancer, neurological and cardiovascular diseases

Past Research Focus:

Molecular bases of Inflammation and programmed cell death NMR Spectroscopy

Bioengineering

Areas of expertise:

- Structural Biology
- Biochemistry
- Protein Engineering and Design
- Nuclear Magnetic Resonance
- Electron Microscopy
- Inflammation
- Programmed Cell Death

Graduate Student Research:

- Application of biophysical techniques to the study of bio-macromolecular assemblies

Teaching Responsibilities:

Undergrad Courses: *Biochemistry for Bioengineers*

Graduate Courses: *Potentially: Macromolecular Assemblies in Biology; Advanced Nuclear Magnetic Resonance Spectroscopy*

Current Grad Students:

Currently accepting graduate students for the 2018-2019 academic year

Community Affiliations:

- Red Cross
- Member of HSRI Executive Committee

Current Funding Needs:

Funding for research on the structure, function and biotechnological applications of biomacromolecular assemblies

Recent Success:

Watch this space



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Dr. Sidra Goldman-Mellor

**Assistant Professor, Public Health
School of Social Sciences,
Humanities & Arts**
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Home Town: Tucson, AZ
B.A.: Cornell
MPH: UC Berkeley
PhD: UC Berkeley
Post Graduate: UNC/Duke
Joined UC Merced: 2014

Current Research Focus:

The majority of work focuses on understanding how the social environment can affect risk for psychological problems like depression, anxiety, and suicidal behavior – and, in turn, how those psychological problems affect our risk for other kinds of poor health outcomes. Current research examines the causes and long-term health consequences of suicidal behavior.

Past Research Topics:

- Social factors as causes of psychological disorder
- Effects of psychological disorder on physical health and economic outcomes

Graduate Student Research:

- Access to and quality of behavioral health care in rural California.
- Use of technological innovations in improving elders' health and quality of life.

Teaching Responsibilities:

Undergrad courses: *Intro to Epidemiology; Research Seminar: Analysis of Epidemiologic Data.*

Grad courses: *Epidemiology; Research Methods.*

Current Funding Needs:

- Research funding for graduate students
- Staff funding for HSRI Biostatistics & Data Support Core to better support medical research being conducted by healthcare providers within the San Joaquin Valley

Mental Health / Epidemiology

Areas of expertise:

- Suicide epidemiology
- Depression & anxiety
- Links between mental and physical health problems, including violence
- Economy & mental health

Current Grad Students: 2

Community Affiliations:

- Involved in Fresno County Suicide Prevention Collaborative.
- Serves as Director of HSRI Biostatistics & Data Support Core.
- Member of HSRI Executive Committee

Recent Success:

- Awarded \$750,000 NIH grant in 2017 to evaluate health outcomes of suicidal behavior in CA



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Dr. Ajay Gopinathan

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Home Town: Novi, MI
B.A.: Vanderbilt University
PhD: University of Chicago
Post Doc: UC Santa Barbara
Joined UC Merced: 2012

Current Research Focus:

Translating mathematical and computational understanding of biological systems to predict strategies for controlling or optimizing processes such as transport within cells, metastasizing tumors, division & growth in bacteria to aid development of therapeutic interventions.

Past Research Topics:

- Actin based Motility
- Polymer transport
- Elasticity of thin sheets
- Colloidal dynamics

Graduate Student Research:

- Cargo transport in complex intracellular environments
- Foraging in networks and in groups
- Disordered proteins transport

Teaching Responsibilities:

Undergrad Courses: *Biophysics, Physics for Biological Sciences*

Graduate Courses: *Statistical Mechanics*

Theoretical and Computational Biological Physics

Areas of expertise:

- Intracellular Transport
- Bacterial cell growth, division and shape maintenance
- Protein Biopolymer Structure and Dynamics
- Collective dynamics of flocks and swarms

Current Grad Students: 5

Community Affiliations:

- Member of HSRI Executive Committee

Current Funding Needs:

Graduate student funding for research:

- Collective motility in cellular clusters, flocks and swarms
- Mechanisms of bacterial growth, division and shape

Recent Success:

- Director, NSF-CREST Center for Cellular and Biomolecular Machines
- James S. McDonnell Foundation. Grant awarded for research on complex systems that "breaks new ground or challenges common assumptions".



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Dr. Sachin Goyal

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School of Engineering

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<http://me.ucmerced.edu/research-areas/biomechanics-and-mechano-biology>

Home Town: Agra, India

B.Tech.: IIT-Varanasi, India

M.S.: University of Michigan

PhD: University of Michigan

Joined UC Merced: 2012

Current Research Focus:

The Biomechanics and Mechano-biology program focuses on research in core areas of Mechanics, Dynamics or Controls with applications to Biology and Medicine:

- Deformations of Biological Filaments
- Constitutive Modeling from Atomistic Details
- Understanding Motor Symptoms of Parkinson's Disease (PD) from Controls Theory
- Early Diagnosis of Parkinson's Disease
- Effect of Deep-Brain Stimulation on PD
- Management of Motor Symptoms of PD from the Perspective of Human Biomechanics

Biomechanics

Areas of expertise:

- Dynamics and Controls
- Mechanics of Biological Filaments
- Human Biomechanics

Graduate Student Research:

- Inverse Methods for Mapping Constitutive Law of Biological Filaments
- Dynamics of Active Filaments

Current Grad Students: 3

Teaching Responsibilities:

Undergrad courses: *Strength of Materials, Introduction to Multi-body Dynamics*

Grad courses: *Introduction of Multi-body Dynamics, Continuum Mechanics*

Community Affiliations:

- Member of HSRI Executive Committee

Current Funding Needs:

- Graduate student, post-doc research
- Collaborative research on Parkinson's disease

Recent Success:

- ILTI grant for development of Online course on Strength of Materials



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Dr. Nestor Oviedo

Associate Professor
Molecular Cell Biology
School Natural Science

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Home Town: Caracas

B.S.: Univ. Centroccidental

PhD: IVIC/University of Utah

Post Doc: Harvard

Medical School

Joined UC Merced: 2009

Current Research Focus:

Stem cells are undifferentiated cells critical for embryonic development, adult tissue maintenance and injury repair. Stem cells play essential role in cancer and degenerative diseases, but the molecular basis regulating their behavior remains poorly understood. Our group investigates the fundamental mechanisms of stem cell regulation to gain insights on the process of regeneration, malignant cell transformation and the renewal of adult tissues.

Research Topics:

- Tissue regeneration
- Cancer
- Adult tissue maintenance

Graduate Student Research:

- Repair of DNA damage
- Host-pathogen interactions
- Electrophysiology

Teaching Responsibilities:

Undergraduate and graduate courses in biology

Undergrad courses:

Introduction Molecular Biology; Cancer Genetics and Tumor Biology Cells; Tissues and Organs

Biomolecular Research

Areas of expertise:

- Stem Cells
- Cancer
- Planarian biology
- Cell signaling
- Developmental Biology

Current Grad Students: 7

Community Affiliations:

- Member of HSRI Executive Committee
- Chair Educational Policy QSB Graduate Program

Current Funding Needs:

- Funding to support graduate students
- High-throughput sequencing

Recent Success:

- Principle investigator in grants from the NIH to support research in cancer and tissue regeneration



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Dr. Alexander Petersen

Assistant Professor, Management
of Complex Systems

School of Engineering

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Home Town: Salt Lake City

B.Sc.: University of Utah

M.A.: Boston University

PhD: Boston University

Joined UC Merced: 2016

Current Research Focus:

Current research is primarily data-oriented, focusing on the evolution of large multiscale socio-economic systems by applying concepts and methods from complex systems, statistical physics, and management and innovation science. Current interests include:

- Career growth, longevity, output, collaboration in science
- Growth, life-cycles, and coevolution in complex systems
- Spatial mobility and innovation networks
- Team science, organization
- Innovation and management science

Past Research Topics:

- Consensus model / Econophysics / Sociophysics

Graduate Student Research:

Impact of “brain drain” on scientific integration of Europe

Teaching Responsibilities:

Undergrad courses: *Data analytics, Network science, Visualization*

Graduate Courses: *Quantitative Analysis for Management*

Management Science

Areas of expertise:

- Analysis of large multi-level data
- Stochastic and agent-based modeling
- Econometrics
- Network science
- Data science
- Science of science
- Biomedical innovation
- Science careers
- Collaboration
- Mobility

Current Grad Students: 0

Community Affiliations:

- MIST / CITRIS
- Member of HSRI Executive Committee

Current Funding Needs:

Funding to support Post-doctoral student on large-scale biomedical innovation project

Recent Success:

Co-Primary Investigator NSF EAGER Grant (1738163, SciSIP program), *From Genomics to Brain Sciences: What makes researchers tick in transdisciplinary initiatives*



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Dr. Mark Sistrom

**Assistant Professor, Life and
Environmental Sciences**

School of Natural Science

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Home Town: Sydney, Australia

B.S.: Macquarie University

M.S.: Victoria University

PhD: University of Adelaide

Post Doc: Yale University

Joined UC Merced: 2015

Current Research Focus

Understanding the evolutionary processes which drive the emergence of antibiotic resistant pathogens and develop new strategies to combat them:
Examining how microbes evolve over time and space using a broad range of organismal systems, with a focus on microbiome studies, multi-drug resistant bacteria and RNA viruses. Utilizing high throughput genetic sequencing to provide genomic scale data, which is then analyzed to test developed hypotheses.

Past Research Topics:

- Molecular ecology
- Phylogenetics
- Comparative genomics of trypanosomes

Graduate Student Research:

- Microbial symbioses and venom production
- Antibiotic resistance evolution and transfer

Teaching Responsibilities:

Undergrad courses: *Genetics, Evolutionary Medicine*

Grad courses: *Evolutionary Dynamics*

Bioinformatics and Genomics

Areas of expertise:

- Genomics
- Comparative genomics
- High throughput sequencing
- Evolutionary biology
- Antibiotic resistance
- Microbiomes

Current Grad Students: 2

Community Affiliations:

- Society for the Study of Evolution
- Society of Systematic Biologists
- Member of HSRI Executive Committee

Current Funding Needs:

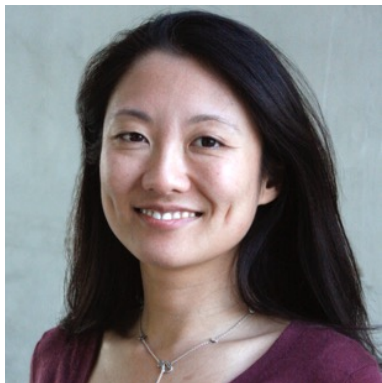
Funding to support research staff and generate sequence data for antimicrobial resistance studies.

Recent Success:

- 2017 Hellman Fellowship
- 2017 Mexus Award
- 2016 JGI CSP Grant
- 2016 UC Merced Faculty Research Award
- 2016 JGI Director's Grant



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Dr. Anna Song

**Associate Professor, Psychology
School of Social Sciences,
Humanities & Arts**

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Home Town: West
Bloomfield, MI

B.A.: University Michigan

M.A.: UC Davis

PhD: UC Davis

Post Doc: UCSF

Joined UC Merced: 2008

Current Research Focus:

Understanding processes and developing the means to inform individuals, from teens to policy makers, to make better decisions that impact their health.

Current research focuses specifically on:

- Adolescent and Young Adult Risk Behaviors
- Health Disparities in Health Behavior

Past Research Topics:

Personality Profiling

Graduate Student Research:

- Smoking risk perceptions in adolescents and young adults
- Eating and exercise behaviors

Teaching Responsibilities:

Undergrad Courses: *Health Disparities and Personality Psychology*

Graduate Courses: *Health Disparities and Health Risk Behaviors*

Health Psychology; Psychological Epidemiology

Areas of expertise:

- Tobacco Use
- E-Cigarettes
- Poly-Substance Use
- Unhealthy Eating Patterns
- Beliefs on risks, benefits, and consequences associated with behaviors
- Cultural factors affecting health disparities

Current Grad Students: 2

Community Affiliations:

- American Public Health Association
- HSRI's Translational Research Group
- Member of HSRI Executive Committee

Current Funding Needs:

Funding to support research staff to facilitate participant recruitment and data collection

Recent Success:

- Co-Primary Investigator on \$3 Million grant NCI Grant Examining the Effect of Tobacco Advocacy at the State Level
- Author for the last Surgeon General's report on adolescent tobacco use (2012)



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Dr. Deborah Wiebe

**Professor, Psychological Sciences
School of Social Sciences,
Humanities & Arts**

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www.faculty.ucmerced.edu/dwiebe/bio

Home Town: Beatrice, NE
B.A.: Bethel College, Newton, KS
MPH: University of Alabama
MS: University of Alabama
PhD: University of Alabama
Joined UC Merced: 2013

Current Research Focus:

Health and illness occur in the context of daily family life; by understanding these processes, we have the potential to promote better health, better illness management, and better family relationships.

- Parent-child relationships and diabetes management
- Ethnic disparities in diabetes management
- Managing diabetes during adolescence
- Executive functions and illness management; Depression and diabetes.

Past Research Topics: Family interventions to promote HPV vaccine uptake in pediatric care; stress, coping and health; couples coping with prostate cancer

Graduate Student Research:

- Socioeconomic and ethnic disparities in pediatric disease management
- Resilience, stress, and health
- Social support and diabetes management

Teaching Responsibilities:

Undergrad Courses: *Health Psychology; Clinical Psychology*

Graduate Courses: *Relationships and Health; Teaching Practicum*

Health Psychology; Pediatric Psychology

Areas of expertise:

- Clinical Psychology
- Pediatric Psychology
- Health Psychology
- Adolescent Health
- Emerging Adulthood

Current Grad Students: 3

Community Affiliations:

- UCM Alliance for Child & Family Health and Development
- Member of HSRI Executive Committee

Current Funding Needs:

Funding to support research staff to facilitate participant recruitment and data collection in health clinics and hospital settings

Recent Success:

Scholarly lead on a special issue of the *American Psychologist* to inform a wide audience (patients, providers, researchers, clinicians) about the central role of psychology in diabetes.



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