

Nevada Institute of Personalized Medicine

University of Nevada, Las Vegas
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Las Vegas, NV 89154

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www.unlv.edu/nipm



@nipmatunlv

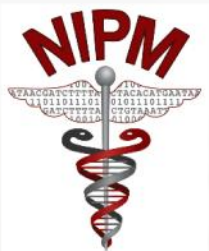
MISSION



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- The Nevada Institute of Personalized Medicine (NIPM) at the University of Nevada, Las Vegas is working to improve individual and systemic healthcare through translational clinical scientific research, education and workforce training, commercialization of technologies, and job creation.*

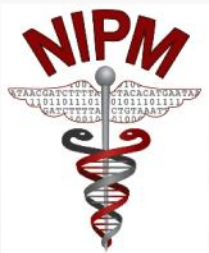


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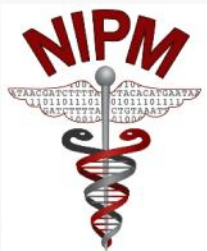
- ❖ UNLV VPRED, Provost, President
- ❖ College of Sciences
- ❖ School of Nursing
- ❖ School of Community Health
- ❖ School of Medicine
- ❖ Department of Psychology
- ❖ School of Life Sciences
- ❖ School of Business
- ❖ Advisory Boards
- ❖ National Supercomputing Institute
- ❖ Office of Economic Development
- ❖ NIPM Program Coordinator
- ❖ Cleveland Clinic Lou Ruvo Brain Center for Health



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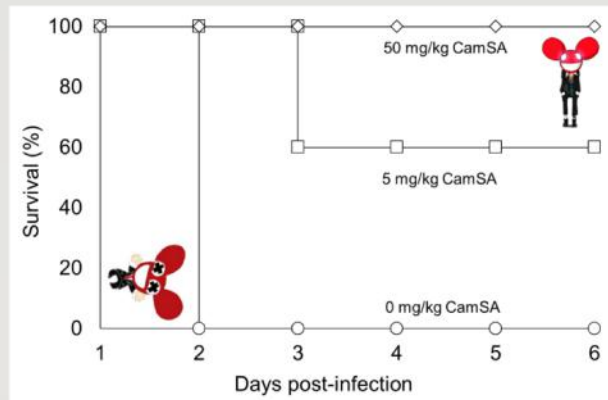
Ernesto Abel-Santos-Affiliate Faculty



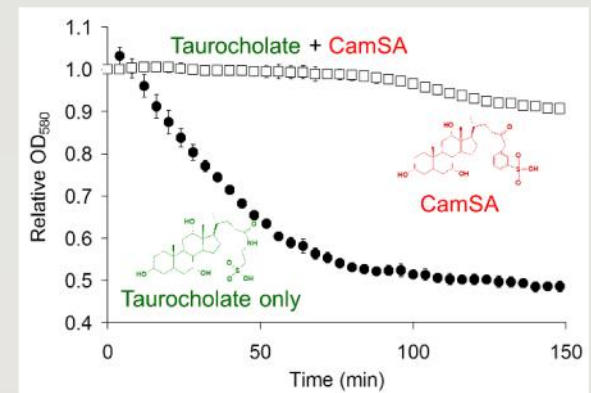
Professor
Chemistry and Biochemistry
ernesto.abelsantos@unlv.edu
702-895-2608
CHE 218B

The Abel-Santos Laboratory is working on a compound that could aid your intestinal tract when antibiotics have wiped out much of the “good” bacteria. This anti-germinant compound, known as CamSA, works by stopping the germination of *Clostridium difficile* (C. diff). While C. diff can be a normal component of bacteria in the human gut, it also can become a problem when competing bacteria are wiped out by antibiotics. That is particularly dangerous for patients with suppressed immune systems, many of whom have been in hospitals, nursing homes, surgery centers and other environments where C. diff thrives. This work has been patented.

CamSA protects mice from CDI

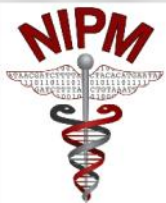


CamSA inhibits Cdiff spore germination

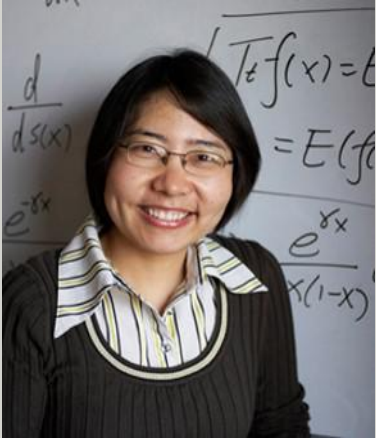


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Amei Amei - Affiliate Faculty

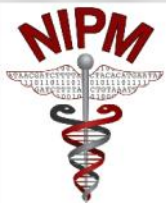


Associate Professor of
Statistics
Mathematical Sciences
amei.amei@unlv.edu
702-895-5159
CBC B422

- Solving scientific problems raised in areas of population genetics and mathematical biology using probability theory and statistics methodology
- Developed a time-inhomogeneous Poisson random field to model genetic differences within and between two related species using diffusion approximation to discrete time discrete state Markov chains.
- Working on the application of the model to DNA alignments of two cancer patients to identify possible genes that are related to the cancer

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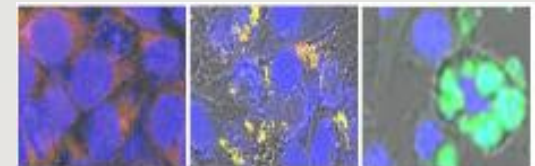
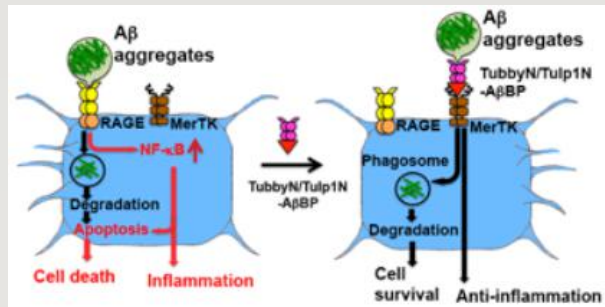
Nora Caberoy- Affiliate Faculty



Lincy Assistant Professor of
Life Sciences
School of Life Sciences
nora.caberoy@unlv.edu
702-774-1501
SEB 3170

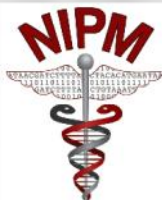
Areas of Research:

- Retinal Degeneration
- Study the role of retinal pigment epithelium (RPE) cell phagocytosis in photoreceptor death that leads to retinal dysfunction
- Obesity
- Exploration of the physiological and pathological roles of tubby in the development of obesity. Multidisciplinary approaches including animal models, molecular, cellular, genetic, biochemical and functional proteomics by phage display in combination with next generation DNA sequencing (NGS) technology to investigate the above diseases.

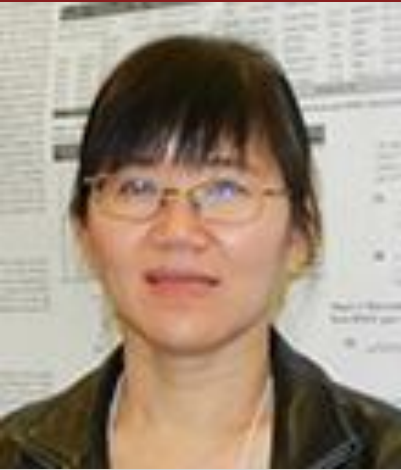


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Jingchun Chen – NIPM Faculty



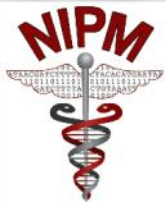
Research Assistant
Professor, Nevada Institute
for Personalized Medicine
Division of Research and
Economic Development
jingchun.chen@unlv.edu
702-895-1196
[HRC 183A](#)

Area of Research interests:

- Data management
- Genetics, Genome-wide association studies (GWAS),
- Imputation, Meta-analysis, Polygenic analysis,
- Next generation sequencing analysis, and most of the molecular biological techniques

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Xiangning Chen – NIPM Alumni



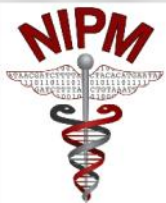
Professor, Nevada Institute
of Personalized Medicine
and Department of
Psychology
Department of Psychology
xiangning.chen@unlv.edu
702-895-1186
[HRC](#) 183 C

Research Expertise

- Human genetics study
- Genetics of schizophrenia
- Genetics of smoking and nicotine dependence
- Genomics and genomic technology
- Bioinformatics and sequencing analysis
- Molecular biology

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Christopher Cochran - Affiliate Faculty



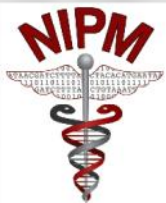
Associate Professor & Chair
Health Care Administration
& Policy, School of
Community Health Sciences
chris.cochran@unlv.edu
702-895-1400
BHS-512

Research Interests

- Enhancing patient safety through electronic medical records
- Using information technology to reduce/eliminate medical errors and improve costs of care
- Using real time hospital data for surveillance to prevent outbreaks of infectious diseases.
- The role of predictive analytics in personalized medicine

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Shawn Gerstenberger- Affiliate Faculty



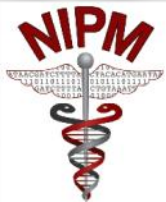
Dean,
School of Community
Health Sciences
and
Professor,
Environmental and
Occupational Health
shawn.gerstenberger@unlv.edu
702-895-1565
BHS 514

Research Interests:

- Childhood Lead Poisoning and Healthy Homes
- Asthma Triggers and Home Interventions
- Heavy Metal Contamination of food items: candy, hot sauce, fish, etc.
- Currently have several HUD, US FWS and Dignity Health Funded Projects
- Metals analysis, Lead and Mercury
- Portable XRF
- GC-MS
- AA
- Spectrophotometry
- Microwave Digestion

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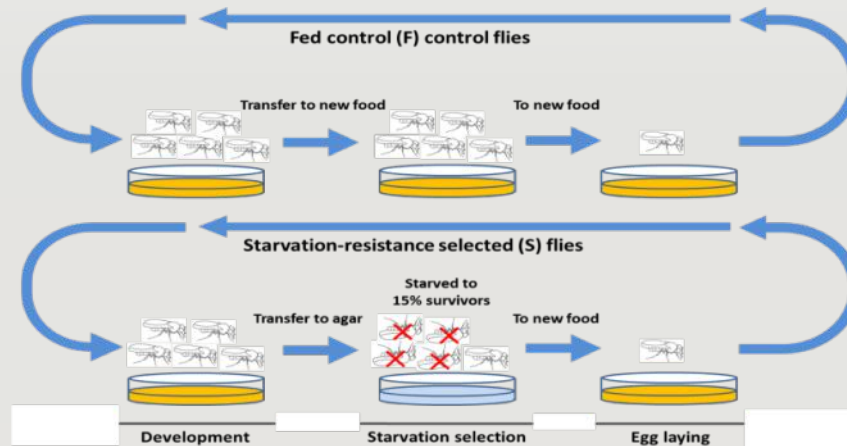
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Allen Gibbs - Affiliate Faculty



- Functional genomics of desert *Drosophila*
- Experimental evolution of *Drosophila melanogaster*



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SEB 3172

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Joseph Greenway - Affiliate Faculty

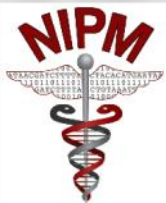


Director
Center for Health
Information Analysis
joseph.greenway@unlv.edu
702-895-4389
CSB-203

- Greenway is the Director and co-founder of UNLV's Center for Health Information Analysis. His recent projects examine readmission rates, Potentially Preventable Conditions (PPC) and healthcare quality measures.
- His latest efforts include advancing health data transparency in Nevada, including the collection, analysis and public posting of hospital and ambulatory surgery center data.

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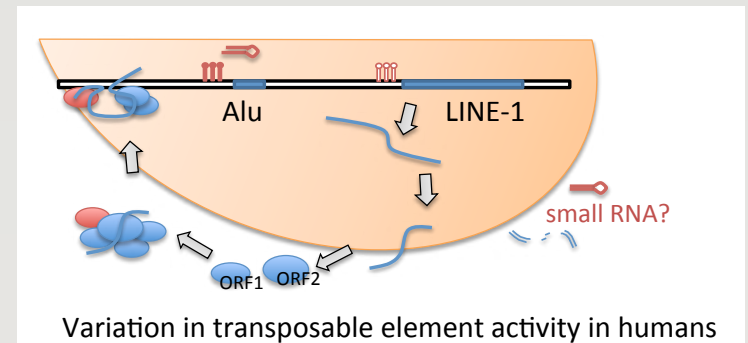


Mira Han - Affiliate Faculty



Assistant Professor
School of Life Sciences
mira.han@unlv.edu
702-774-1503
SEB 3178

- Evolution of genome structure using bioinformatics to investigate how genomes change through gene duplication, loss and gene transpositions.
- Phenotypic effects of Copy Number Variations (CNVs), indels and transposable element polymorphisms.



Brian Hedlund - Affiliate Faculty



Greg Fullmer Associate
Professor of Life Sciences
School of Life Sciences
brian.hedlund@unlv.edu
702-895-0809
WHI 101

- “Microbial dark matter”: Environmental genomics, systems biology, cultivation & systematics
- Ecology of thermophiles: Nitrogen biogeochemical cycle & temperature-energy relationships
- Human microbiome: Effects of genetics, drugs, and diet on gut microbial community composition & function

Jennifer Kawi - Affiliate Faculty



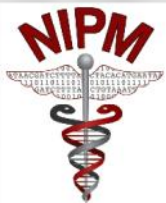
- Chronic Pain
- Chronic Low Back Pain
- Chronic Illnesses
- Self-management
- Self-management Support
- Biomarkers

Assistant Professor
School of Nursing
jennifer.kawi@unlv.edu
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BHS 417



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Jefferson Kinney - Affiliate Faculty



Associate Professor
Psychology
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CBC B426

Research interests:

- Alzheimer's disease-
 - We are currently investigating several candidate targets involved in the development and progression of Alzheimer's disease pathological features and behavioral impairments. These include genetic, immune, molecular, and cellular targets.
- Alterations in inhibitory signaling with relevance to schizophrenia-
 - We are investigating alterations in GABA signaling as it relates to behavioral, cellular, and protein level changes associated with schizophrenia.
- Neurobiology of Learning and Memory-
 - We are examining the role of GABA and glutamate signaling in learning and memory. These projects are directed at understand the interplay between excitation and inhibition in normal learning.

Hyunhwa Lee - Affiliate Faculty



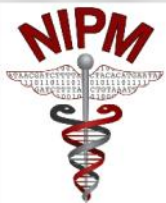
Research interests:

- (a) early life adversity and its effect on adulthood mental health (e.g., depression, posttraumatic stress disorder [PTSD]) and disease progress for post-concussive syndrome (e.g., sports concussion)
- (b) the role of genetic factors and epigenetic regulation in these health outcomes, using improved methods for evaluating molecular-genetic mechanisms and immune system activation. Especially, the purpose of my project is to better understand the mechanisms involved in the development and perpetuation of persistent post-concussive syndrome, PTSD, and psychological resilience, as compared with traumatized controls without negative mental health outcomes.
- Board Certified Psychiatric and Mental Health Nurse Practitioner

Assistant Professor
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Joseph Lombardo - Affiliate Faculty



Executive Director, National
Supercomputing Center
(Cherry Creek)
Lombardo@nscee.edu
702-895-4153
SEB 1218

- Full-service supercomputing facility
- Mission for excellence in education and research in supercomputing and its applications
- Provides supercomputing training and services to academic and research institutions, government and private industry
- Supports medical informatics and health care
- Serves researchers at the University of Nevada Las Vegas and other statewide, nationwide and global research

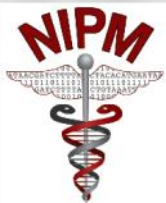


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Sarah Love- NIPM Staff



Program Coordinator, NIPM
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WHI 117

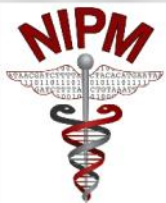
- Day-to-day operations: budgets, events, human resources related functions, meetings, purchasing, reporting, scheduling, travel

Sarah Love is a true rebel as she received her degree in psychology in 2011 from UNLV and began working in the Student Affairs Division at UNLV in 2012. She later transitioned to the Nevada Institute of Personalized Medicine in 2017.

Sarah Love is the Program Coordinator for NIPM and assists the Executive Director with daily operations. She is experienced at managing complex accounts and confidential records, and comes to NIPM from the UNLV financial aids office.

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Sheniz Moonie - Affiliate Faculty

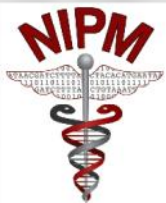


- The Southern Nevada Director for the CDC-funded Behavioral Risk Factor Surveillance System survey, which tracks chronic disease risk factors and rates, Moonie specializes in pediatric asthma. She has an active research study with the University of Nevada School of Medicine investigating the relationship between asthma and obesity among children.

Associate Professor
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Michael Nasiak – NIPM Alumni



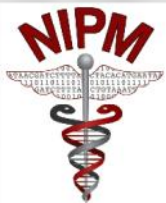
Associate Professor,
NIPM/School of Medicine
michael.nasiak@unlv.edu
702-895-1187
[HRC](#) 183G

Areas of interest:

- Clinical Genetics
- Performance Genetics
- Connective Tissue Disorders
- Traumatic Brain Injury Genomics
- Rare and Undiagnosed Diseases
- Genetics of Common Complex Disorders
- Genetics of Hearing Loss

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Edwin Oh – NIPM Faculty



Areas of interest:

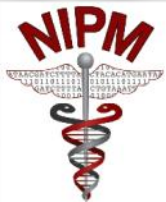
- Genomic interpretation
- Neurological genetic disease
- Ph.D. in Neuroscience, University of Michigan

Following his postdoc at Johns Hopkins University, Ed served as an Assistant Professor in the Department of Neurology at Duke University. The primary questions for his research program are 1) what are the genetic and structural variants that contribute to human health and disease, 2) how do we interpret such variation to improve the cellular and molecular diagnosis of genetic diseases, and 3) how do we enable the development of therapeutic paradigms. Ed is expert at a variety of molecular and genomic technologies, and animal modeling systems.

Associate Professor,
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edwin.oh@unlv.edu
SEB 1176
Phone: (702) 895-0509

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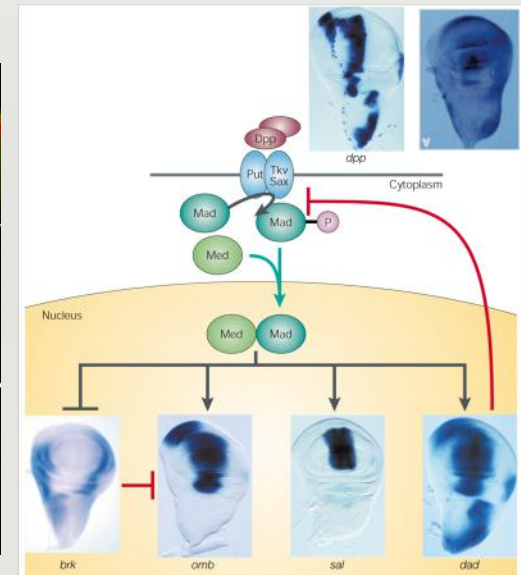
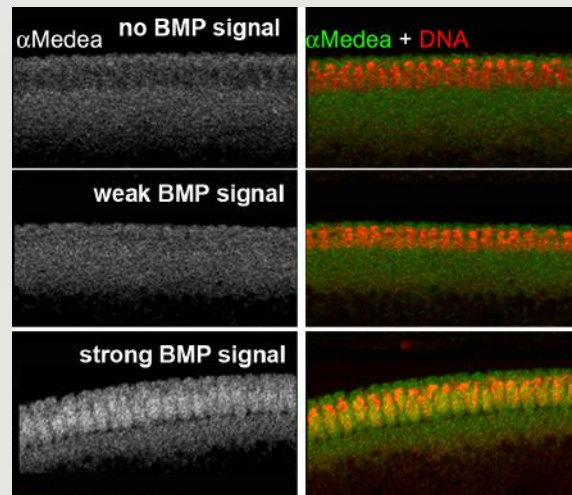


Laurel A. Raftery - Affiliate Faculty



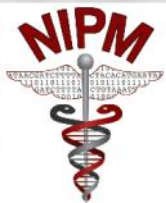
- The Raftery laboratory investigates how cells work together to build and maintain functional tissues.
- We use a model organism, *Drosophila*, for genome-wide functional screening and gene discovery.
- ~75% of known human disease genes have fly functional homologs
- We study signaling networks involved in human cancer, fibrosis, hereditary hypertension, neuropathies, and bone growth.

Professor
Associate Director
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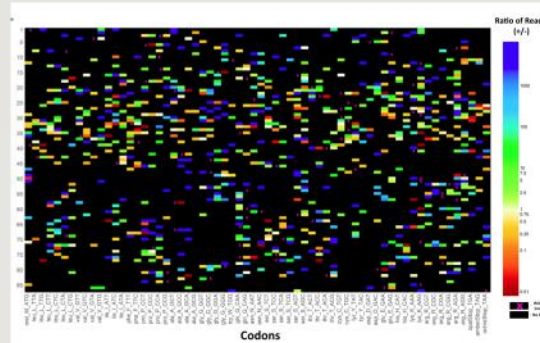


Martin R. Schiller – NIPM Director



- Minmotifs in proteins and human diversity
- HIV virology
- Bioinformatics software tools
- New biotechnologies
 - (gene editing for HIV, chimeric minimotif decoy screen, and GigaAssay)

Executive Director, NIPM
and
Professor, School of Life
Sciences
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WHI 118



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Guogen Shan - Affiliate Faculty



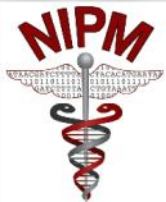
Assistant Professor,
Biostatistics
Environmental and
Occupational Health
School of Community
Health Sciences
guogen.shan@unlv.edu
BHS 510

Research Interests:

- Adaptive clinical trials (Proposed the first practically usable one-arm two-stage design after the work of Simon's optimal designs)
- Exact statistical inference ($p\text{-value} < 0.05$ VS $p\text{-value} > 0.05$)
- Biostatistician of the CTR-IN for UNLV

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Jay Shen - Affiliate Faculty



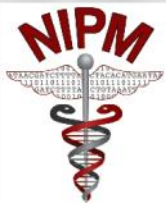
Associate Dean, School of
Life Sciences
and
Professor, Healthcare
Administration & Policy
jay.shen@unlv.edu
702-895-5830
BHS 519

Research areas of focus and interest:

- Access to care and outcomes/quality of care of racial/ethnic groups, uninsured and socioeconomically disadvantaged populations
- Health services delivery including comparative effectiveness research, effects of EHR adoption on hospital's financial performance, clinical outcomes and patient safety
- Reduction in medication errors among hospitals in Southern Nevada
- ED-based hospitalization among patients with severely mentally illness
- Improvement in communication skills among internationally educated nurses in the Las Vegas valley
- Economic effects of the Clean Air Act in Nevada
- Diabetic complications, maternal outcomes, and palliative care models in Nevada
- Chinese health system and policy

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Shirley Shen – NIPM Staff



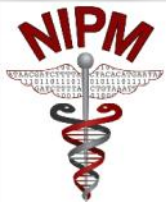
- Manages the NIPM Sequencing Lab day-to-day operations
- Ensures compliance with UNLV, state, and federal regulations
- Prepares and conducts training sessions for students and faculty.

Shirley joined UNLV in 2001 as a research associate in the department of mechanical engineering and has worked in the University of Nevada School of Medicine's surgery department, the department of chemistry, and the genomics core laboratory. She earned her Master of Science in medical studies from Nanjing Medical University in China, and has earned awards for her work in research including the UNLV Merit Award for Outstanding Research Performance.

Laboratory Manager
shirley.shen@unlv.edu
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HRC 422

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James Timmins – NIPM Alumni



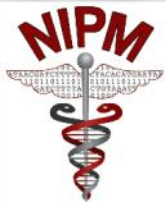
Business Development
Officer
james.timmins@unlv.edu
702-895-1363
HRC 183

James Timmins has been the Health Sciences Business Development Officer at UNLV since July 2016, with a focus on supporting the clinical and commercial advancement of the Nevada Institute of Personalized Medicine. Timmins was one of the first scientists and technically-trained MBAs (MIT Sloan School) in the biotech field, with startup roles for Promega and the biotech units of Upjohn, Amoco, and W.R. Grace, resulting in commercialized products and spinoff ventures. His recent career has focused on repeating this process for large nonprofit entities and/or scientists that have biotech assets to license or commercialize into new ventures.

Expert Area: Intellectual Property Assessment and Commercialization, Regulatory Lab Management and Services

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Ai Sun Tseng - Affiliate Faculty

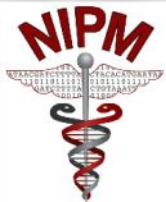


Assistant Professor
School of Life Sciences
kelly.tseng@unlv.edu
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SEB 3176

- Studying injury response in regenerative animals. Understanding these processes have important implications for developing regenerative therapies for damaged tissues and aging.
 - Use powerful and well-characterized vertebrate model, the South African clawed frog, *Xenopus laevis*. Using interdisciplinary approaches (including molecular, chemical-genetic physiological, and in vivo imaging tools), seek to elucidate and integrate the biochemical and bioelectrical control of animal regeneration.
- Goal is to build a blueprint for organ regeneration and to apply this knowledge towards developing novel therapeutics for regenerative medicine.

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Philippos Tsourkas - Affiliate Faculty



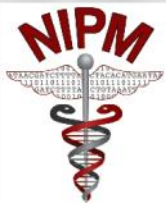
Assistant Professor
School of Life Sciences
philippos.tsourkas@unlv.edu
702-895-3385
WHI 107

Research interests:

- Computational modeling of immunological processes
- Comparative genomics and proteomics of Bacteriophage
- Gene regulatory network inference from gene expression data
- Agent-based modeling and simulation

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Qing Wu – NIPM Faculty



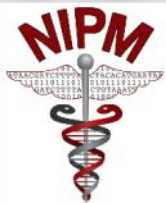
Associate Professor of
Biostatistics
Nevada Institute of
Personalized Medicine
School of Community
Health Sciences
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702-895-1439
HRC 183F

Area of Research interests:

- Development and validation of personalized clinical normative values
- Meta-analyses of epidemiologic studies, clinical trials and genome-wide association studies
- Statistical methodology development in meta-analysis, clinical trials and analysis of “big data”
- Bone density and osteoporosis research
- Statistical consulting in biomedical research

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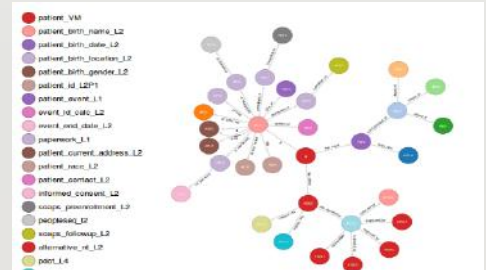
Xiaogang Wu- NIPM Staff



Building a personalized medicine database

Area of Research Interests and Skills:

- Next-generation sequencing (NGS) data analysis
- Systems biology and systems medicine
- Network modeling and pathway analysis
- Medical informatics and text mining
- Computational microbiome
- Image processing and computer vision
- Artificial intelligence and machine learning
- Complex systems and nonlinear dynamics



Data Curator, NIPM

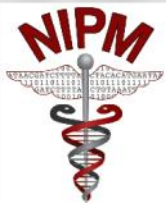
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Hui Zhang - Affiliate Faculty



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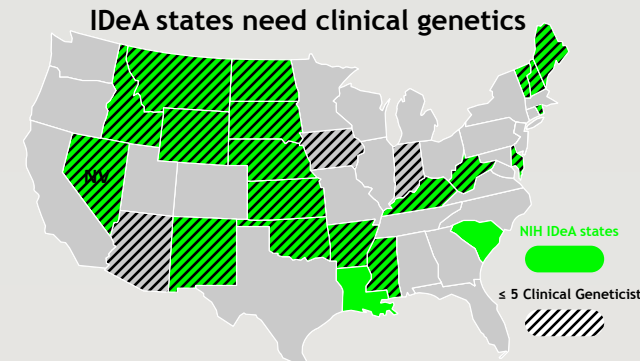
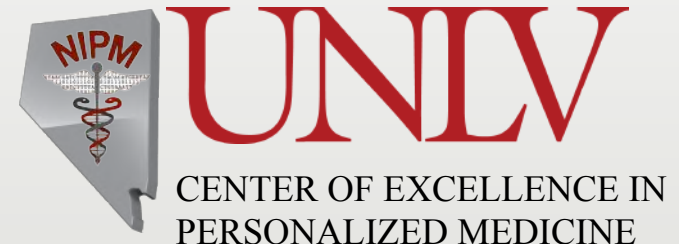
Research interests:

- Biochemistry of cell division at the molecular level
- Identification of new molecules that are part of the cell division machine, and investigation of how different proteins work together to make a cell divide.
 - This research not only helps answer how and why our body can develop from a single fertilized egg but also addresses the mechanisms of diseases such as cancer. Cancer cells can divide under conditions that a normal cell cannot. Identifying the molecular mechanism that promotes cancer cell division can help us develop chemical inhibitors to treat the disease.

NIPM wins \$11.4M NIH COBRE award

This peer-reviewed center award has 45 UNLV and national contributing partners, and received support letter from 60 individuals and organizations

COBRE Component	Impact on Health
Overall/Administrative Core <i>(Martin R. Schiller)</i>	Advance the use of genomics and genetics in personalized medicine through cutting-edge research discovery and use of genetic markers, building a center of excellence that fosters new investigator independence, and collaborating with the UNLV School of Medicine and other partners in basic and translational research
GASP and HuGE Data cores <i>(Xianging Chen and Joe Lombardo)</i>	Build computational and genomics research capacity, providing expert analysts to enable population-level genomics research for COBRE researchers, for scientists at UNLV, and for the IDeA network
Research project 1 <i>(Mira Han)</i>	Develop a new method using multi-omics profiling to identify the tissue of origin for cancers of unknown primaries to increase the accuracy of diagnosis and treatment
Research project 2 <i>(Qing Wu)</i>	Increase the accuracy of osteoporosis diagnosis by using individualized clinical reference ranges based on individual genetic makeup and environment
Research project 3 <i>(Jingchun Chen)</i>	Understand the functional role of microglia and immune system dysfunction in schizophrenia etiology to help identify new genetic markers for subtyping schizophrenia and to develop new therapeutic strategies



NIH grant number: P20 GM121325

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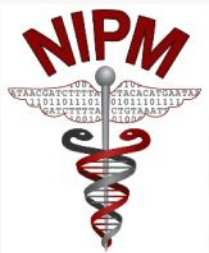


NIPM Goals

The Nevada Institute of Personalized Medicine (NIPM) at UNLV is working to improve individual and community health in Nevada through research, education, workforce training, technology commercialization, and job creation.

Modern healthcare relies largely on an expensive “one-size-fits-most” model for diagnosis and treatment that often fails to account for biological differences between people. Personalized medicine is different. Your unique genetic makeup – your DNA – already encodes the blueprint for effective treatment and disease prevention.

NIPM will help move Nevada from the trial-and-error medicine of today to the data-driven decision-making of tomorrow by decoding the human genome to predict disease susceptibility, sift through treatment options, and fine-tune drug dosages to minimize adverse effects, and help Nevadans lead longer and healthier lives.



Nevada Institute of Personalized Medicine
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www.unlv.edu/nipm

UNLV

NIPM Webpage (unlv.edu/nipm)

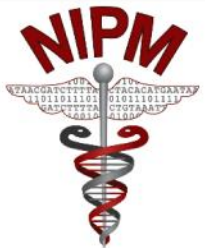
UNLV UNIVERSITY OF NEVADA, LAS VEGAS TOPICS AUDIENCES

≡ Nevada Institute of Personalized Medicine 🔍



Welcome

The Nevada Institute of Personalized Medicine (NIPM) is working to improve individual and systemic health care through translational clinical scientific research, education and workforce training, commercialization of technologies, and job creation.



Nevada Institute of Personalized Medicine
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