

## 2009 Independent Study Projects - BIOL 1960

PROJECT TITLE	SPONSOR	NAME	DEPARTMENT
The effects of sodium citrate on blood lactate, pH, heart rate, RPE and performance in college athletes	Leon	Goldstein	Molecular Pharmacology, Physiology and Biotechnology (MPPB)
Determining the key players in a pathway that is crucially affected during pharmacologically induced extension using the recently discovered drug, necrosatin-1	Stephen	Helfand	Molecular, Cellular Biology (MCB)
The effect of water column dissolved organic matter on coral microbial populations	Mark	Bertness	Ecology and Evolutionary Biology (EEB)
LepA and its effects on antibiotic production in streptomyces coelicolor	Jason	Sello	Chemistry
Aging & differential food conditions in thor and fox-O mediated pathways	Stephen	Helfand	Molecular, Cellular Biology (MCB)
Antimicrobial properties of bioactive silver by delivery via novel metal-polymer hybrid surface coatings	Jeffrey	Morgan	Molecular Pharmacology, Physiology and Biotechnology (MPPB)
The role of natural selection in structuring clinal variation in the distribution of <i>fundulus heteroclitus</i>	David	Rand	Ecology and Evolutionary Biology (EEB)
Investigating the functions of CNE 12 and 19; conserved nucleotide elements present in the rRNA of all eukaryotes	Susan	Gerbi	Molecular, Cellular Biology (MCB)
RNA editing of synaptotagmin I in <i>D. melanogaster</i>	Robert	Reenan	Molecular, Cellular Biology (MCB)
Variation in growth, reproduction and abundance of <i>Semipalanus Balamoides</i> in Narragansett Bay	Heather	Leslie	Ecology and Evolutionary Biology (EEB)
Effect of school based mindfulness training on learning	Willoughby	Britton	Psychology
Upregulation of basic fibroblast growth factor in Alzheimer's disease	Edward	Stopa	Pathology
Correlation of LAT-1 gene expression and placental implantation disorders	James	Padbury	Pediatrics
Caregiver/parent influences on learning to speak	Anne	Fausto-Sterling	Molecular, Cellular Biology (MCB)
Interspecific and intraspecific competition between two invasive freshwater snails	David	Rand	Ecology and Evolutionary Biology (EEB)
Hypoxic/ischemic brain injury in the infant	Barbara	Stonestreet	Pediatrics
Crystal structure of thermus Hartmophilus rRNA modifying enzymes 1387 and 1353 with cofactor as substrate	Gerwald	Jogl	Molecular, Cellular Biology (MCB)
The crosstalk between beta-adrenergic receptors and PI3K signaling pathway in the heart	Yi-Tang	Tseng	Pediatrics
Exploiting co-evolution in a computational screen for the discovery of HAP2 related genes	Mark	Johnson	Molecular, Cellular Biology (MCB)
Structural study of spine-associated rap GTP-ase-activating protein (SPAR)	Rebecca	Page	Molecular, Cellular Biology (MCB)
Does Epstein-Barr virus activate natural regulatory T-cells?	Paul	Knopf	Molecular Microbiology and Immunology (MMI)
Human bocavirus in infants at high risk for severe respiratory disease	Penelope	Dennehy	Pediatrics
Computational modeling of biological sonar: determining which model produces images of the targets that resemble bats' own perceived images	James	Simmons	Neuroscience
Bioacoustic analysis of bullfrog ( <i>Rana Catesboiana</i> ) drowsing activity	Andrea	Simmons	Psychology
Temporal activation of the PI(3)K signaling pathway and the proliferation of cardiac myocytes in a newborn murine animal model	Yi-Tang	Tseng	Pediatrics
Refuges and top down control in the Galapagos Marine Reserve	Mark	Bertness	Ecology and Evolutionary Biology (EEB)
RNA thermometers: effects of temperature & other environmental factors on RNA editing in fruit flies	Robert	Reenan	Molecular, Cellular Biology (MCB)

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Transient long-term potentiation in the rat hippocampus	Julie	Kauer	Molecular Pharmacology, Physiology and Biotechnology (MPPB)
fMRI in clinical populations: cardiovascular disease's affect on	Lawrence	Sweet	Psychology
Trajectories of swimming caulobacter crescentus and their effect on fluid flow	Jay	Tang	Physics
Impact of stress in pregnant mothers on maternal prenatal cortisol and fetal neurobehavior	Laura	Stroud	Psychiatry & Human Behavior
Investigation into neCL-5 microvesicle suppression of hepatic nk cytotoxic killing	David	Mills	Medicine
Effect of natriuretic peptide on endothelial cell calcium	Gaurav	Choudhary	Medicine
The role of plio in purple sea urchin (stronglyocentrotus purpciatius) germ line development	Gary	Wessel	Molecular, Cellular Biology (MCB)
Behind the Science: presenting current research techniques and medical implications on the topic of cell biology	Marjorie	Thompson	Molecular, Cellular Biology (MCB)
Specificity of gene activation by MYB transcription factors in Arabidopsis	Judith	Bender	Molecular, Cellular Biology (MCB)
The role of responder in segregation distortion	Robert	Reenan	Molecular, Cellular Biology (MCB)
Inhibition of stat3 signaling by rkip in breast cancer	Devasis	Chatterjee	Medicine
Investigating the characteristics of male swarms at female emergence sites of texanus alabagrus	Douglass	Morse	Ecology and Evolutionary Biology (EEB)
Development of illness beliefs questionnaire	Thomas	Roesler	Psychiatry & Human Behavior
Goldstein: The treatment of depression in athletes Hai: Formation of podosomes in vascular smooth muscle cells	Chi-Ming Hai	Leon Goldstein	Molecular Pharmacology, Physiology and Biotechnology (MPPB)
Zinc-finger nuclease-mediated homologous recombination	Susan	Gerbi	Molecular, Cellular Biology (MCB)
RGS protein association with vascular remodeling in pulmonary hypertension	Gaurav	Choudhary	Medicine
Project LINK: assessing acceptability of vaginal mienbicides and translating development to an African context	Kathleen	Morrow	Psychiatry & Human Behavior
Analyzing the pro and anti-arrhythmic effects of estradiol, progesterone, and testosterone in long QT THPE 2 (LQT2) transgenic rabbits	Katja	Odening	Medicine
fMRI as a tool for measuring attention in students under environmental stress versus those in a meditative environment	Lawrence	Sweet	Psychiatry & Human Behavior
The bioprospecting effects on traditional medical knowledge and the domestication of medicinal plants	Fred	Jackson	Ecology and Evolutionary Biology (EEB)
Expression of aquaporin-4 and endothelial cell tight junction proteins following over expression or loss of agrin	Edward	Stopa	Pathology
A new approach for quantitative phosphoproteomic dissection of signaling pathways a;;lied to T cell receptor activation	Arthur	Salomon	Molecular, Cellular Biology (MCB)
Defining the role of foxo1 in MKP-3-induced gluconeogenesis	Haiyan	Xu	Medicine
Imaging colonial development of hydractinia symbiolongicarpus using the scanner electron microscope	Casey	Dunn	Ecology and Evolutionary Biology (EEB)
The prevalence of mental illness in correctional institutions and services provided to this population: A decomposition analysis	Josiah	Rich	Medicine
Determination of the extent of which endothelial cell achrahen/injury are antecedent or consequential to the achvahen/injury of epithelial cells following shock	John	Sedivy	Molecular, Cellular Biology (MCB)

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Glycobiology of pollen tube growth: investigating pollen tube elongation and guidance with a focus on proteins involved in carbohydrate biology	Mark	Johnson	Molecular, Cellular Biology (MCB)
Crystal structure of the zinc-binding transport protein ZnuA from <i>thermus thermophilus</i>	Gerwald	Jogl	Molecular, Cellular Biology (MCB)
The role of turmeric in Alzheimer's disease	Fred	Jackson	Ecology and Evolutionary Biology (EEB)
Investigating the negative regulation of DPP in response to BMP signaling in <i>Drosophila melanogaster</i> wing development	Kristi	Wharton	Molecular, Cellular Biology (MCB)
The effects of beta-flucan on sepsis	Jonathan	Reichner	Medicine Surgery
Determining the specificity of linamerin's toxic effect in photoreceptors selectively expressing linamarase in <i>D. melanogaster</i>	Stephen	Helfand	Molecular, Cellular Biology (MCB)
Development of a novel fly model of human severe myoclonic epilepsy	Robert	Reenan	Molecular, Cellular Biology (MCB)
Barriers to self-care: Examining provider-patient relationships in American Samoa	Stephen	McGarvey	COMM
The role of myocardial infarction and congestive heart failure in development of ventricular fibrillation	Gideon	Koren	Medicine
Neutrophil function in nerve injury	Carl	Saab	Medicine Surgery
The integration into care of HIV-infected refugees in Rhode Island	Curt	Beckwith	Medicine
Evaluating the stability of n-terminally tagged wori during the white-opaque switch in <i>candida albicans</i>	Jeffrey	Laney	Molecular, Cellular Biology (MCB)
Role of the ecdysone hormone receptor in DNA amplification in the fungus fly <i>Sciara coprophila</i>	Susan	Gerbi	Molecular, Cellular Biology (MCB)
Lifespan extension through up-regulation of <i>nfk-deta</i> related pathways in <i>D. melanogaster</i>	Stephen	Helfand	Molecular, Cellular Biology (MCB)
Contribution of the homeobox factor GBX 2 to embryonic spinal cord development in mice	Mark	Zervas	Molecular, Cellular Biology (MCB)
Vertical flight performance and load carrying in short eared dog-faced fruit bats	Sharon	Swartz	Ecology and Evolutionary Biology (EEB)
Substrate type, crab density and consumer control of salt marsh primary production in Cape Cod	Mark	Bertness	Ecology and Evolutionary Biology (EEB)
Clinical experience in substance abuse treatment	Molly	Magill	Community Health
Structural and kinetic analysis of ribosomal methyltransferase <i>prmA</i>	Gerwald	Jogl	Molecular, Cellular Biology (MCB)
The effects of RMRP mutations on chondrocyte differentiation	Cynthia	Jackson	Pathology
HIV-1 genital tract shedding and asymptomatic HSV-2 infection among HIV-sero positive women on haart	Susan	Cu Uvin	Obstetrics - Gynecology
Barriers to healthcare for the homeless of Providence, RI and surrounding areas: access to healthcare information	Roberta	Goldman	Medicine
Factors in rate of invasive plant species spread in the Pacific Northwest	Dov	Sax	Ecology and Evolutionary Biology (EEB)
Nuclear hormone receptors role in regulating ovarian cancer cell growth and death	Alexander	Brodsky	Molecular, Cellular Biology (MCB)
Promoter methylation of <i>FANCF</i> and its role in human head and neck squamous cell carcinoma	Carmen	Marsit	Pathology
Neurological development in zabrafish exposed to <i>pcps</i>	Jill	Kreiling	Molecular, Cellular Biology (MCB)
Role of insulin producing cells in <i>p53</i> dependent life span extension	Stephen	Helfand	Molecular, Cellular Biology (MCB)
Mapping changes in chromatin modification with age and caloric intake in <i>D. Melanogaster</i>	Stephen	Helfand	Molecular, Cellular Biology (MCB)

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The effects of maternal communicative effectiveness and maternal stress on behavioral outcomes of children with congenital hearing loss	Betty	Vohr	Pediatrics
Characterization of putative PP4 regulatory and catalytic subunits in <i>arabidopsis thaliana</i>	Alison	DeLong	Molecular, Cellular Biology (MCB)
Increase in BK virus infection of HEK293A and verd cells: possible transcriptional effect of the drug cyclosporine A through AP-1 binding to viral promoter in dunlop strain in the presence of ionomycin	Walter	Atwood	Molecular, Cellular Biology (MCB)
Adolescent stress lab: Characterizing influence of pubertal status of physiological and affective response to academic and social stress over the adolescent transition	Laura	Stroud	Psychiatry & Human Behavior
Investigating local communication between two cell types in the heart-fibroblasts and myocytes	Ulrick	Mende	Medicine
Role of G proteins and GAB in interperson signalling	John	Marshall	Molecular Pharmacology, Physiology and Biotechnology (MPPB)
Child stress lab: characterizing influence of pubertal status on responses to academic and social stress over the adolescent transition	Laura	Stroud	Psychiatry & Human Behavior
Stress and depression in children and adolescents	Laura	Stroud	Psychiatry & Human Behavior
Crafting an effective environmental science education	Mary	Hixon	Pathology
Social rejection sensitivity in body dismorphic disorder	Megan	Kelly	Psychiatry & Human Behavior
Barriers and facilitators to HIV testing in primary care settings	Emma	Simmons	Medicine
What is the role of autonomic dysregulation in refractory chronic neuropathic pain?	Bonnie	O'Connor	Pediatrics
Investigate genetics of sexual differentiation and behavior in <i>D. melanogaster</i>	Michael	McKeown	Molecular, Cellular Biology (MCB)
Role of endosomes in hepadnavirus entry	Jisu	Li	Medicine
Testing the preference-performing hypothesis in <i>D. melanogaster</i>	Marc	Tatar	Ecology and Evolutionary Biology (EEB)
Maternal behaviors and fetal to infant behavioral development	Laura	Stroud	Psychiatry & Human Behavior
Listeria monocytogenes activation of NKT cell in the immune system	Stephen	Gregory	Medicine
Role of G-protein-mediated signaling and RGS proteins in epac & periostin expression and localization in neonatal and adult rat cardiac myocytes and fibroblasts	Ulrick	Mende	Medicine
Using dynamic systems to examine the emergence of sexuality differentiated behaviors in infants	Anne	Fausto-Sterling	Molecular, Cellular Biology (MCB)
Purification and characterization of doubly membrated intracellular herpes virus	Elaine	Bearer	Pathology
Comparison of the quality and ease of cardiopulmonary resuscitation with mechanical vs manual chest compressions: A simulation study	Kenneth	Williams	Emergency Medicine
Genetic neuroanatomy of dopamine neurons	Mark	Zervas	Molecular, Cellular Biology (MCB)
Observations of a la Nina 2007-08 bleaching event: the fate of discrete Pocillopora coral colonies and their associated megafauna at three Galapagos upwelling sites	Jon	Witman	Ecology and Evolutionary Biology (EEB)
The effects of stressors on children at risk for depression and children of smoking mothers	Laura	Stroud	Psychiatry & Human Behavior
The use of theater in health and biology education	Celia/Don	Lescano/Operario	Psychiatry & Human Behavior
Immunosuppressive characteristics of wound macrophages	Jorge	Albina	Medicine Surgery
Early detection of cognitive impairment by menas of Alberta Smell Test	Paul	Malloy	Psychiatry & Human Behavior

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RPL 32 in cell cycle control	Susan	Gerbi	Molecular, Cellular Biology (MCB)
Diagnosis of clostridium difficile-associated diseases	Anubhav	Tripathi	Engineering
A study on the diagnosis and treatment of nonepileptic seizures	W. Curt	LaFrance, III	Psychiatry & Human Behavior
Determinants of muscle length changes during contraction	Thomas	Roberts	Ecology and Evolutionary Biology (EEB)
Role of TCF-4C exon 4 on TCF-4 transcriptional activity	Miran	Kim	Medicine
The mindful female organ: role of mindfulness in sexual dysfunction	Willoughby	Britton	Psychiatry & Human Behavior
The effect of MCMV on e-cadherin expression	Laurent	Brossay	Molecular Microbiology and Immunology (MMI)
Molecular population genetics of clinal variation in killifish, <i>fundulus lateroclitis</i>	David	Rand	Ecology and Evolutionary Biology (EEB)
Neuron-microglial interaction in spinal cord inflammation	Carl	Saab	Surgery
Lessening gender disparity in Hmong-American families and its effects on the family decision-making process with respect to health care compliance	Patricia	Symonds	Anthropology
Ultrastructural study of germ line development in <i>Gridaria</i> ; BIOL 1960-Techniques in Bioimaging:mastering the theory and practice of bioimaging	Casey/Robbert	Dunn/Creton	Ecology and Evolutionary Biology (EEB) - Molecular, Cellular Biology (MCB)
Computational genetic analysis of microarray data in the aging fly	Stephen	Helfand	Molecular, Cellular Biology (MCB)
High throughput analysis of RNA splicing factors	William	Fairbrother	Molecular, Cellular Biology (MCB)
Modification of the association between alpha-linoleic acid and hypertension by genetic variation in the delta-6 desaturase gene	Ana	Baylin	Chemistry
Role of harmonics in target ranging by bats	James	Simmons	Neuroscience
Role of MiR-146 in placenta	Carmen	Marsit	Pathology
Hormonal profiling of American Samoan women suffering from menstrual irregularity and infertility	Geralyn	Messerlian	Pathology
Oscillatory induction & detection of apoptosis in bovine tracheal smooth muscle through cytochrome C	Chi-Ming	Hai	Molecular Pharmacology, Physiology and Biotechnology (MPPB)
Object discrimination in bats using electronic echoes	James	Simmons	Neuroscience
Inhibition of RKIP function by activated STAT3 in gastric cancer	Devasis	Chatterjee	Medicine
Cytotoxicity comparison between commensal and disease-associated isolates of <i>candida</i>	Joseph	Bliss	Pediatrics
Functional study of beta-galactosidases 11 and 13 in <i>arabidopsis thaliana</i> pollen	Mark	Johnson	Molecular, Cellular Biology (MCB)
Risk factors for repeat ED visits for wheezing illnesses without prescription of long term asthma controller medicine	Thomas	Roberts	Emergency Medicine
Screening for severity of drug misuse among an emergency department population	Roland	Merchant	Community Health
Resistance and persistence in <i>E. coli</i>	Daniel	Weinreich	Ecology and Evolutionary Biology (EEB)