

**Scientific Activities of the
California Pacific Medical Center Research Institute**

A Compendium of Peer-Reviewed Publications

Fall 2001 through 2002

Scientists at the California Pacific Medical Center Research Institute are involved in a variety of laboratory and clinical research projects. This report includes a brief description of some of the recent manuscripts published in the peer-reviewed literature that describe their activities.

For convenience, we have listed work by the relevant laboratory, research group, or Principal Investigator (PI). We appreciate the contributions of many other scientists (including post-doctoral fellows and technicians) in the Research Institute.

PI: Mary Abood, PhD (mabood@cooper.cpmc.org)

Dr. Abood's laboratory studies cell-surface receptor function. A recent project, led by Sean McAllister, PhD, a post-doctoral fellow in the lab, identified which amino acids in the cannabinoid receptor are essential for receptor function.

Kinard TA, Goforth PB, Tao Q, **Abood ME**, Teague J, Satin LS. Chloride channels regulate HIT cell volume but cannot fully account for swelling-induced insulin secretion. *Diabetes* 2001;50(5):992-1003.

McAllister SD, Tao Q, Barnett-Norris J, Buehner K, Hurst DP, Guarnieri F, Reggio PH, Nowell Harmon KW, Cabral GA, **Abood ME**. A critical role for a tyrosine residue in the cannabinoid receptors for ligand recognition. *Biochem Pharmacol* 2002;63(12):2121-36.

PI: John Astin, PhD (jastin@cooper.cpmc.org)

Dr. Astin joined us last year from the University of Maryland. He is a health psychologist, whose work involves an examination of barriers to the integration of psychosocial factors in medical training and practice. He studies whether treatments involving complementary and alternative medicines are effective in common medical conditions, such as headache and rheumatoid arthritis.

Astin JA, Ernst E. The effectiveness of spinal manipulation for the treatment of headache disorders: a systematic review of randomized clinical trials. *Cephalalgia* 2002;22(8):617-23.

Astin JA, Beckner W, Soeken K, Hochberg MC, Berman B. Psychological interventions for rheumatoid arthritis: a meta-analysis of randomized controlled trials. *Arthritis Rheum* 2002;47(3):291-302.

Astin JA, Astin AW. An integral approach to medicine. *Altern Ther Health Med* 2002;8(2):70-5.

Astin JA. Complementary and alternative medicine and the need for evidence-based criticism. *Acad Med* 2002;77(9):864-8; discussion 869-75.

Pelletier LR, **Astin JA**. Current trends in the integration and reimbursement of complementary medicine by managed care organizations (MCOs) and insurance providers: 2000 update. *Altern Ther Health Med* 2002;8:38-48.

Pelletier KR, **Astin JA**. Integration and reimbursement of complementary and alternative medicine by managed care and insurance providers: 2000 update and cohort analysis. *Altern Ther Health Med* 2002;8(1):38-9.

PI: Eric Beattie, PhD. (beattie@cooper.cpmc.org)

Dr. Beattie studies the regulation of receptors in nerve cells (neurons). His research focus involves determining how a particular chemical messenger, called tumor necrosis factor (TNF)-alpha, affects the strength of the “connection” between neurons.

Beattie EC, Stellwagen D, Morishita W, Bresnahan JC, Ha BK, Von Zastrow M, et al. Control of synaptic strength by glial TNFalpha. *Science* 2002;295(5563):2282-5.

PI: Luiz Bermudez, MD (luiz.bermudez@oregonstate.edu)

Dr. Bermudez studies how mycobacteria (like *M. tuberculosis* and *M. avium*) and other organisms can penetrate the body to cause disease. Dr. Bermudez’ primary appointment is as a Professor in the Department of Biomedical Sciences at Oregon State University. Mary Petrofsky and Peter Kolonoski are CPMC research associates working with Dr. Bermudez.

Bermudez LE, Sangari FJ, **Kolonoski P**, **Petrofsky M**, Goodman J. The efficiency of the translocation of *Mycobacterium tuberculosis* across a bilayer of epithelial and endothelial cells as a model of the alveolar wall is a consequence of transport within mononuclear phagocytes and invasion of alveolar epithelial cells. *Infect Immun* 2002;70(1):140-6.

Broxmeyer L, Sosnowska D, Miltner E, Chacon O, Wagner D, McGarvey J, Barletta RG, **Bermudez LE**. Killing of *Mycobacterium avium* and *Mycobacterium tuberculosis* by a mycobacteriophage delivered by a nonvirulent mycobacterium: a model for phage therapy of intracellular bacterial pathogens. *J Infect Dis* 2002;186(8):1155-60.

Li YJ, **Petrofsky M**, **Bermudez LE**. *Mycobacterium tuberculosis* uptake by recipient host macrophages is influenced by environmental conditions in the granuloma of the infectious individual and is associated with impaired production of interleukin-12 and tumor necrosis factor alpha. *Infect Immun* 2002;70(11):6223-30.

McGarvey JA, **Bermudez LE**. Phenotypic and genomic analyses of the *Mycobacterium avium* complex reveal differences in gastrointestinal invasion and genomic composition. *Infect Immun* 2001;69(12):7242-9.

McGarvey J, **Bermudez LE**. Pathogenesis of non-tuberculous mycobacteria in Catanzaro A, Daley C (ed). Lung Disease due to a mycobacteria other than tuberculosis. *Clinics in Chest Medicine* 2002;23:569.

McGarvey J, **Bermudez LE**. Pathogenesis of nontuberculous mycobacteria infections. *Clin Chest Med* 2002;23(3):569-83.

Samrakandi MM, Cirillo SL, Ridenour DA, **Bermudez LE**, Cirillo JD. Genetic and phenotypic differences between *Legionella pneumophila* strains. *J Clin Microbiol* 2002;40(4):1352-62.

Wagner D, Sangari FJ, Kim S, **Petrofsky M**, **Bermudez LE**. *Mycobacterium avium* infection of macrophages results in progressive suppression of interleukin-12 production in vitro and in vivo. *J Leukoc Biol* 2002;71(1):80-8.

PI: Kenneth Binmoeller, MD (binmoek@sutterhealth.org)

As a gastroenterologist, Dr. Binmoeller has earned national and international distinction through his contributions to both research and clinical care, particularly in advanced endoscopic techniques.

Schafer TW, **Binmoeller KF**. Argon plasma coagulation for the treatment of colonic varices. *Endoscopy* 2002;34(8):661-3.

Binmoeller KF, Rathod VD. Difficult pancreatic mass FNA: tips for success. *Gastrointest Endosc* 2002;56(4 Suppl):S86-91.

Brand B, Oesterhelweg L, **Binmoeller KF**, Sriram PV, Bohnacker S, Seewald S, et al. Impact of endoscopic ultrasound for evaluation of submucosal lesions in gastrointestinal tract. *Dig Liver Dis* 2002;34(4):290-7.

Kamler JP, Borsatto R, **Binmoeller KF**. Circumferential endoscopic mucosal resection in the swine esophagus assisted by a cap attachment. *Gastrointest Endosc* 2002;55(7):923-8.

PI: Warren Browner, MD, MPH (warren@cooper.cpmc.org)

Dr. Browner studies the association between osteoporosis and cardiovascular disease, as well as factors that affect the outcomes of care in patients with cardiovascular disease.

Browner, WS, Lui LY, et al. (2001). "Associations of serum osteoprotegerin levels with diabetes, stroke, bone density, fractures, and mortality in elderly women." *J Clin Endocrinol Metab* 86(2): 631-7.

Hosmer WD, Genant HK, **Browner WS**. Fractures before menopause: a red flag for physicians. *Osteoporos Int* 2002;13(4):337-41.

Savino JS, Ley C, Boisvert D, Friedman A, Mathew J, Koch C, Starr N, Mangano CM, Herskowitz A, **Browner W S**, et al. Practice pattern variability for myocardial revascularization: impact on resource use across 24 centers. *J Cardiothorac Vasc Anesth* 2002;16(2):149-56.

Shlipak MG, Heidenreich PA, Noguchi H, Chertow GM, **Browner WS**, McClellan MB. Association of renal insufficiency with treatment and outcomes after myocardial infarction in elderly patients. *Ann Intern Med* 2002;137(7):555-62.

Beattie MS, Shlipak MG, Liu H, **Browner WS**, Schiller NB, Whooley MA. C-reactive protein P and ischemia in users and non-users of beta blockers and statins: Data from the Heart and Soul Study. *Circulation*; 2003; 107: 245-250.

PIs: Harry Buncke, MD and Greg Buncke, MD (See Microsurgical Laboratory.)

PI: Natalie Bzowej, MD (See Hepatology Research.)

PI: Ling-Chun Chen, PhD (ling@cooper.cpmc.org)

Dr. Chen's lab studies the intracellular events in the development and progression of tumors.

Gupta A, **Yang LX, Chen L**. Study of the G2/M cell cycle checkpoint in irradiated mammary epithelial cells overexpressing Cul-4A gene. *Int J Radiat Oncol Biol Phys* 2002;52(3):822-30.

PI: Shanaz Dairkee, PhD (shanaz@cooper.cpmc.org)

Dr. Dairkee's lab studies changes in breast cancer cells. A recent report from her laboratory showed that the risk of local recurrence of breast cancer was greater in women in which apparently normal cells around the tumor had evidence of genetic changes.

Chandrasekaran Raman, PhD and Zhenhang Meng, MD are research associates in her lab.

Li Z, **Moore DH, Meng ZH**, Ljung BM, Gray JW, **Dairkee SH**. Increased risk of local recurrence is associated with allelic loss in normal lobules of breast cancer patients. *Cancer Res* 2002;62(4):1000-3.

Li Z, **Meng ZH, Chandrasekaran R**, Kuo WL, Collins CC, Gray JW, **Dairkee, SH**. Biallelic inactivation of the thyroid hormone receptor beta1 gene in early stage breast cancer. *Cancer Res* 2002;62(7):1939-43.

Li Z, **Meng ZH**, Sayeed A, Shalaby R, Ljung BM, **Dairkee SH**. Genome-wide allelotyping of a new in vitro model system reveals early events in breast cancer progression. *Cancer Res* 2002;62(20):5980-7.

Parmar H, Young P, Emerman JT, Neve RM, **Dairkee S**, Cunha GR. A novel method for growing human breast epithelium in vivo using mouse and human mammary fibroblasts. *Endocrinology* 2002;143(12):4886-96.

PI: Robert Debs, MD (debs@cooper.cpmc.org)

Dr. Debs' laboratory studies how to deliver genes to specific cells and tissues. The laboratory is particularly interested in what controls the efficiency of this process, known as "transfection." Yong Liu, MD, Chak Handumrongkul, PhD and Sylvia Fong PhD are post-doctoral fellows in the laboratory.

Handumrongkul C, Zhong W, **Debs RJ**. Distinct sets of cellular genes control the expression of transfected, nuclear-localized genes. *Mol Ther* 2002;5(2):186-94.

Kashani-Sabet M, **Liu Y, Fong S, Desprez PY**, Liu S, Tu G, Nosrati M, **Handumrongkul C**, Liggitt D, Thor AD, **Debs RJ**. Identification of gene function and functional pathways by systemic plasmid-based ribozyme targeting in adult mice. *Proc Natl Acad Sci U S A* 2002;99(6):3878-83.

Liu Y, Liggitt HD, Dow S, **Handumrongkul C**, Heath TD, **Debs RJ**. Strain-based genetic differences regulate the efficiency of systemic gene delivery as well as expression. *J Biol Chem* 2002;277(7):4966-72.

Mounkes LC, Zhong W, de Silva HV, **Handumrongkul C**, Desai B, Tse E, Taylor JM, **Debs RJ**. Evaluation of the role of lipoprotein metabolism genes in systemic cationic liposome-mediated gene transfer in vivo. *Hum Gene Ther* 2001;12(16):1939-54.

PI: Pierre Desprez, PhD (pdesprez@cooper.cpmc.org)

The Desprez laboratory studies the late changes that occur in breast cancer cells, in particular the effects of a group of proteins, called Id-1 and Id-2, and how they are involved in the regulation of invasion and metastasis. Jarnail Singh was a post-doctoral fellow in the laboratory. Yoko Itahana is a research assistant.

Itahana K, Dimri GP, Hara E, **Itahana Y**, Zou Y, **Desprez PY**, et al. A role for p53 in maintaining and establishing the quiescence growth arrest in human cells. *J Biol Chem* 2002;277(20):18206-14.

Singh J, Murata K, **Itahana Y, Desprez PY**. Constitutive expression of the Id-1 promoter in human metastatic breast cancer cells is linked with the loss of NF-1/Rb/HDAC-1 transcription repressor complex. *Oncogene* 2002;21(12):1812-22.

Kashani-Sabet M, **Liu Y, Fong S, Desprez PY**, Liu S, Tu G, Nosrati M, **Handumrongkul C**, Liggitt D, Thor AD, **Debs RJ**. Identification of gene function and functional pathways by systemic plasmid-based ribozyme targeting in adult mice. *Proc Natl Acad Sci U S A* 2002;99(6):3878-83.

PI: Daryl Drummond, PhD (See Liposome Laboratory.)

PI: Deborah Gelinas, MD (See Neuroscience Clinical Research.)

PI: Robert Gish, MD (See Hepatology Research.)

PI: William Goodson, MD (whg3@cooper.cpmc.org)

Dr. Goodson studies better ways to diagnose and treat women with breast cancer. Along with biostatistical support from Dan Moore, PhD, he investigated factors associated with a delay in the diagnosis of breast cancer.

Goodson WH, 3rd, **Moore DH**, 2nd. Causes of physician delay in the diagnosis of breast cancer. Arch Intern Med 2002;162(12):1343-8.

Goodson WH, 3rd, **Moore DH**, 2nd. Overall clinical breast examination as a factor in delayed diagnosis of breast cancer. Arch Surg 2002;137(10):1152-6.

Heart Failure Research. PIs: J. Donald Hill, MD (jdhill@cooper.cpmc.org) and Steven Reichenbach, PhD (reichen@thoratec.com)

Drs. Hill and and Reichenbach study heart failure, especially the use of artificial heart devices.

Hill JD. Systems Approach to Mechanical Support of the Circulation. J Cong Heart Failure and Circ Sup 2001;1(4):437-442.

Reichenbach SH, Farrar DJ, **Hill JD**. A versatile intracorporeal ventricular assist device based on the thoratec VAD system. Ann Thorac Surg 2001;71(3 Suppl):S171-5; discussion S183-4.

Reichenbach SH, Egrie GD, Marinache SM, Gustafson KJ, Farrar DJ, **Hill JD**. Sustained skeletal muscle power for cardiac assist devices: implications of metabolic constraints. Asaio J 2001;47(5):541-7.

Stevenson LW, Kormos RL, Barr ML, Costanzo MR, Desvigne-Nickens P, Feldman AM, **Hill JD**, et al. Mechanical Cardiac Support 2000: Current Applications and Future Trial Design : June 15-16, 2000 Bethesda, Maryland. Circulation 2001;103(2):337-342.

Hepatology Research. PIs: Natalie Bzowej, MD (bzowej@sutterhealth.org) and Robert Gish, MD (gishr@sutterhealth.org)

This group studies the virology of hepatitis, which can be caused by several different viruses that may interact in some patients. They are also actively involved in identifying new treatments for patients with hepatitis infections.

Kato H, Orito E, **Gish RG**, **Bzowej N**, Newsom M, Sugauchi F, et al. Hepatitis B e antigen in sera from individuals infected with hepatitis B virus of genotype G. Hepatology 2002;35(4):922-9.

Gish RG, Leung NW, Wright TL, Trinh H, Lang W, Kessler HA, et al. Dose range study of pharmacokinetics, safety, and preliminary antiviral activity of emtricitabine in adults with hepatitis B virus infection. Antimicrob Agents Chemother 2002;46(6):1734-40.

Kato H, Orito E, Sugauchi F, Ueda R, **Gish RG**, Usuda S, et al. Determination of hepatitis B virus genotype G by polymerase chain reaction with hemi-nested primers. J Virol Methods 2001;98(2):153-9.

PI: J Donald Hill, MD (See Heart Failure Research.)

PI: Steve Katznelson, MD (katznes@sutterhealth.org)

Dr. Katznelson's research involves the prevention of vascular disease in transplanted organs.

Gregory CR, **Katznelson S**, Griffey SM, Kyles AE, Berryman ER. Fluvastatin in combination with rad significantly reduces graft vascular disease in rat cardiac allografts. *Transplantation* 2001;72(6):989-93.

PI: Dmitri Kirpotin, PhD (See Liposome Laboratory.)

PI: Kenneth Laxer, MD (laxer@cooper.cpmc.org)

Dr. Laxer studies the diagnosis and treatment of epilepsy and other brain disorders.

Alsaadi TM, **Laxer KD**, Barbaro NM, Marks WJ, Jr., Garcia PA. False lateralization by subdural electrodes in two patients with temporal lobe epilepsy. *Neurology* 2001;57(3):532-4.

Knowlton RC, **Laxer KD**, Klein G, Sawrie S, Ende G, Hawkins RA, et al. In vivo hippocampal glucose metabolism in mesial temporal lobe epilepsy. *Neurology* 2001;57(7):1184-90.

Alsaadi TM, **Laxer KD**, Barbaro NM, Marks WJ, Jr., Garcia PA. Vagus nerve stimulation for the treatment of bilateral independent temporal lobe epilepsy. *Epilepsia* 2001;42(7):954-6.

Baranzini SE, **Laxer K**, Saketkhoo R, Elkins MK, Parent JM, Mantegazza R, et al. Analysis of antibody gene rearrangement, usage, and specificity in chronic focal encephalitis. *Neurology* 2002;58(5):709-16.

Baranzini SE, **Laxer K**, Bollen A, Oksenberg JR. Gene expression analysis reveals altered brain transcription of glutamate receptors and inflammatory genes in a patient with chronic focal (Rasmussen's) encephalitis. *J Neuroimmunol* 2002;128(1-2):9-15.

Capizzano AA, Vermathen P, **Laxer KD**, Ende GR, Norman D, Rowley H, et al. Temporal lobe epilepsy: qualitative reading of 1H MR spectroscopic images for presurgical evaluation. *Radiology* 2001;218(1):144-51.

Capizzano AA, Vermathen P, **Laxer KD**, Matson GB, Maudsley AA, Soher BJ, et al. Multisection proton MR spectroscopy for mesial temporal lobe epilepsy. *AJNR Am J Neuroradiol* 2002;23(8):1359-68.

Chung SS, McEvoy LK, Smith ME, Gevins A, Meador K, **Laxer KD**. Task-related EEG and ERP changes without performance impairment following a single dose of phenytoin. *Clin Neurophysiol* 2002;113(6):806-14.

Mueller SG, Suhy J, **Laxer KD**, Flenniken DL, Axelrad J, Capizzano AA, et al. Reduced extrahippocampal NAA in mesial temporal lobe epilepsy. *Epilepsia* 2002;43(10):1210-6.

Suhy J, **Laxer KD**, Capizzano AA, Vermathen P, Matson GB, Barbaro NM, et al. 1H MRSI predicts surgical outcome in MRI-negative temporal lobe epilepsy. *Neurology* 2002;58(5):821-3.

Vermathen P, Ende G, **Laxer KD**, Walker JA, Knowlton RC, Barbaro NM, et al. Temporal lobectomy for epilepsy: recovery of the contralateral hippocampus measured by (1)H MRS. *Neurology* 2002;59(4):633-6.

Wong ST, Hoo KS, Jr., Knowlton RC, **Laxer KD**, Cao X, Hawkins RA, et al. Design and applications of a multimodality image data warehouse framework. *J Am Med Inform Assoc* 2002;9(3):239-54.

PI: Nancy M Lee, PhD (nml@cooper.cpmc.org)

Dr. Lee does research in opiate receptors in the brain in order to understand how pain and pain-relievers work. Andrew Smith, PhD works in her lab and Yong Ben, MD is a post-doctoral fellow there.

Lee NM, Smith AP. Opioid receptor polymorphisms and opioid abuse. *Pharmacogenomics* 2002;3(2):219-27.

Riba P, **Ben Y, Smith AP, Furst S, Lee NM.** Morphine tolerance in spinal cord is due to interaction between mu- and delta-receptors. *J Pharmacol Exp Ther* 2002;300(1):265-72.

Riba P, Nguyen T, Furst S, Schiller PW, **Lee NM.** DALDA: A potent systemically-active analgesic peptide acting at delta opioid receptors. *Current Medicinal Chemistry* 2002;9:31-39.

PI: Ellen Levine, PhD (elevine@cooper.cpmc.org)

Dr. Levine studies psychosocial influences on well-being in patients with severe illness, especially breast cancer. Several of her studies were done in collaboration with Dr. Elisabeth Targ, who passed away July 18, 2002.

Levine E. The efficacy of a retreat for low-income women with breast cancer. *Health Promotion Practice* 2001;2:125-132.

Levine E, Targ EF. Spiritual correlates of functional well-being in women with breast cancer. *Integrative Cancer Therapies* 2002;1(2):166-174.

Mohr DC, Boudewyn AC, Likosky W, **Levine E, Goodkin DE.** Injectable medication for the treatment of multiple sclerosis: the influence of self-efficacy expectations and injection anxiety on adherence and ability to self-inject. *Ann Behav Med* 2001;23(2):125-32.

Targ EF, Levine EG. The efficacy of a mind-body-spirit group for women with breast cancer: a randomized controlled trial. *Gen Hosp Psychiatry* 2002;24(4):238-48.

Liposome Laboratory. PI's: Dmitri Kirpotin, PhD (dkirpo@cooper.cpmc.org), and Daryl Drummond, PhD (drummond@cooper.cpmc.org)

The Liposome Laboratory develops new ways to package medications and genes to avoid toxicity and improve delivery. The liposomes (for drugs) or lipid-DNA complexes (for genes and oligonucleotides) are targeted to growth factor receptors that are overexpressed on the surface of certain cancer cells. This enhanced selectivity may result in reduced toxicity and increased efficacy, as described in several recent papers.

Banerjee M, **Drummond DC, Srivastava A, Daleke D, Lentz BR.** Specificity of soluble phospholipid binding sites on human factor Xa. *Biochemistry* 2002;41(24):7751-62.

Zhai X, Srivastava A, **Drummond DC, Daleke D, Lentz BR.** Phosphatidylserine binding alters the conformation and specifically enhances the cofactor activity of bovine factor Va. *Biochemistry* 2002;41(17):5675-84.

Nielsen UB, **Kirpotin DB, Pickering EM, Hong K, Park JW, Shalaby R, et al.** Therapeutic efficacy of anti-ErbB2 immunoliposomes targeted by a phage antibody selected for cellular endocytosis. *Biochim Biophys Acta* 2002;1591(1-3):109-118.

Park JW, Hong K, **Kirpotin DB, Colbern G, Shalaby R, Baselga J, et al.** Anti-HER2 immunoliposomes: enhanced efficacy attributable to targeted delivery. *Clin Cancer Res* 2002;8(4):1172-81.

PI: Jian Liu, PhD (jjliu@cooper.cpmc.org)

Dr. Liu, who recently joined CPMCRI from the University of California San Diego, studies the causes of ALS (Lou Gehrig's disease).

Howland DS, **Liu J**, She Y, Goad B, Maragakis NJ, Kim B, et al. Focal loss of the glutamate transporter EAAT2 in a transgenic rat model of SOD1 mutant-mediated amyotrophic lateral sclerosis (ALS). *Proc Natl Acad Sci U S A* 2002;99(3):1604-9.

Kato S, Nakashima K, Horiuchi S, Nagai R, Cleveland DW, **Liu J**, et al. Formation of advanced glycation end-product-modified superoxide dismutase-1 (SOD1) is one of the mechanisms responsible for inclusions common to familial amyotrophic lateral sclerosis patients with SOD1 gene mutation, and transgenic mice expressing human SOD1 gene mutation. *Neuropathology* 2001;21(1):67-81.

Subramaniam JR, Lyons WE, **Liu J**, Bartnikas TB, Rothstein J, Price DL, et al. Mutant SOD1 causes motor neuron disease independent of copper chaperone-mediated copper loading. *Nat Neurosci* 2002;5(4):301-7.

PI: Robert Miller, MD (See Neuroscience Clinical Research.)

PI: John Mendelson, MD (jmendel@cooper.cpmc.org)

Dr. Mendelson studies the pharmacokinetics and toxic effects of drugs of abuse. Matt Baggott is a research associate in Dr. Mendelson's lab.

Harris DS, **Baggott M**, **Mendelson JH**, Mendelson JE, Jones RT. Subjective and hormonal effects of 3,4-methylenedioxymethamphetamine (MDMA) in humans. *Psychopharmacology (Berl)* 2002;162(4):396-405.

Jacob P, 3rd, Wilson M, Yu L, **Mendelson J**, Jones RT. Determination of 4-hydroxy-3-methoxyphenylethylene glycol 4-sulfate in human urine using liquid chromatography-tandem mass spectrometry. *Anal Chem* 2002;74(20):5290-6.

Lester L, Uemura N, Ademola J, Harkey MR, Nath RP, Kim SJ, Jerschow E, Henderson GL, Mendelson, J, et al. Disposition of cocaine in skin, interstitial fluid, sebum, and stratum corneum. *J Anal Toxicol* 2002;26(8):547-53.

Mello NK, Bowen CA, **Mendelson JH**. Comparison of plasma cocaine levels during a "binge" pattern of cocaine administration in male and female rhesus monkeys. *Psychopharmacology (Berl)* 2002;164(1):19-26.

Mendelson JH, Mello NK, Sholar MB, Siegel AJ, Mutschler N, Halpern J. Temporal concordance of cocaine effects on mood states and neuroendocrine hormones. *Psychoneuroendocrinology* 2002;27(1-2):71-82.

Mutschler NH, Stephen BJ, Teoh SK, **Mendelson JH**, Mello NK. An inpatient study of the effects of buprenorphine on cigarette smoking in men concurrently dependent on cocaine and opioids. *Nicotine Tob Res* 2002;4(2):223-8.

Siegel AJ, **Mendelson JH**, Sholar MB, McDonald JC, Lewandrowski KB, Lewandrowski EL, et al. Effect of cocaine usage on C-reactive protein, von Willebrand factor, and fibrinogen. *Am J Cardiol* 2002;89(9):1133-5.

Microsurgical Laboratory. PIs: Harry Buncke, MD (bunckeh@sutterhealth.org) and Greg Buncke, MD (bunckeg@sutterhealth.org)

The Buncke Clinic specializes in microsurgery, especially to the hand and other extremities. They are particularly well-known for their toe-to-thumb transplantation.

Brooks D, **Buncke GM, Buncke HJ**. Distraction osteogenesis after toe-to-thumb transplantation. *Plast Reconstr Surg* 2002;109(7):2434-8.

Brooks D, Buntic R, **Buncke HJ**. Use of a venous flap from an amputated part for salvage of an upper extremity injury. *Ann Plast Surg* 2002;48(2):189-92.

Buncke HJ, Buncke GM, Kind GM, Buntic RF, Brooks D, Chin BT. Cross-facial and functional microvascular muscle transplantation for longstanding facial paralysis. *Clin Plast Surg* 2002;29(4):551-66.

Buntic RF, **Buncke HJ**, Kind GM, Chin BT, Ruebeck D, **Buncke GM**. The harvest and clinical application of the superficial peroneal sensory nerve for grafting motor and sensory nerve defects. *Plast Reconstr Surg* 2002;109(1):145-51.

Komorowska-Timek E, Zhang F, Shi DY, Lineaweaver WC, **Buncke HJ**. Effect of cryopreservation on patency and histological changes of arterial isogeneic and allogeneic grafts in the rat model. *Ann Plast Surg* 2002;49(4):404-9.

Zhang F, Pang Y, Buntic R, Jones M, Cai Z, **Buncke HJ**, et al. Effect of sequence, timing of vascular anastomosis, and clamp removal on survival of microsurgical flaps. *J Reconstr Microsurg* 2002;18(8):697-702.

PI: David Minor, MD (minord@sutterhealth.org)

Dr. Minor has been studying new treatment for patients with kidney cancer.

Minor DR, Monroe D, Damico LA, Meng G, Suryadevara U, Elias L. A phase II study of thalidomide in advanced metastatic renal cell carcinoma. *Invest New Drugs* 2002;20(4):389-93.

Statistician: Dan Moore, PhD (moore@cooper.cpmc.org)

Dr. Moore works with many scientists in the Research Institute to provide advanced statistical assistance.

Li Z, **Moore DH**, Meng ZH, Ljung BM, Gray JW, **Dairkee SH**. Increased risk of local recurrence is associated with allelic loss in normal lobules of breast cancer patients. *Cancer Res* 2002;62(4):1000-3.

Jackson CE, Rosenfeld J, **Moore DH**, Bryan WW, Barohn RJ, Wrench M, et al. A preliminary evaluation of a prospective study of pulmonary function studies and symptoms of hypoventilation in ALS/MND patients. *J Neurol Sci* 2001;191(1-2):75-8.

Goodson WH, 3rd, **Moore DH**, 2nd. Causes of physician delay in the diagnosis of breast cancer. *Arch Intern Med* 2002;162(12):1343-8.

Goodson WH, 3rd, **Moore DH**, 2nd. Overall clinical breast examination as a factor in delayed diagnosis of breast cancer. *Arch Surg* 2002;137(10):1152-6.

Jackson CE, Rosenfeld J, **Moore DH**, Bryan WW, Barohn RJ, Wrench M, Myers D, Heberlin L, King R, Smith J, **Gelinas D, Miller RG**. A preliminary evaluation of a prospective study of pulmonary function studies and symptoms of hypoventilation in ALS/MND patients. *J Neurol Sci* 2001;191(1-2):75-8.

Miller RG, Moore DH, Dronsky V, Bradley W, Barohn R, Bryan W, et al. A placebo-controlled trial of gabapentin in spinal muscular atrophy. *J Neurol Sci* 2001;191(1-2):127-31.

PI: John Muschler, PhD (muschler@cooper.cpmc.org)

Dr. Muschler and his associates study how breast cancer cells interact with their local environment.

Muschler J, Levy D, Boudreau R, Henry M, Campbell I, Bissell M. A role for dystroglycan in epithelial polarization: loss of function in breast tumor cells. *Cancer Res* 2002;62(23):7102-9

Neuroscience Clinical Research. PI's: Robert Miller, MD (rmiller@cooper.cpmc.org) and Deborah Gelinias, MD (dgelinas@cooper.cpmc.org)

Drs. Miller and Gelinias study how to care for and treat patients with neuromuscular disorders such as ALS (Lou Gehrig's disease).

Borasio GD, **Miller RG**. Clinical characteristics and management of ALS. *Semin Neurol* 2001;21(2):155-66.

Borasio GD, Voltz R, **Miller RG**. Palliative care in amyotrophic lateral sclerosis. *Neurol Clin* 2001;19(4):829-47.

Bradley WG, Anderson F, Bromberg M, Gutmann L, Harati Y, Ross M, **Miller RG**. Current management of ALS: comparison of the ALS CARE Database and the AAN Practice Parameter. *The American Academy of Neurology. Neurology* 2001;57(3):500-4.

Bromberg MB, Anderson F, Davidson M, **Miller RG**. Assessing health status quality of life in ALS: comparison of the SIP/ALS-19 with the ALS Functional Rating Scale and the Short Form-12 Health Survey. ALS C.A.R.E. Study Group. Clinical Assessment, Research, and Education. *Amyotroph Lateral Scler Other Motor Neuron Disord* 2001;2(1):31-7.

Jablecki CK, Andary MT, Floeter MK, **Miller RG**, Quartly CA, Vennix MJ, et al. Practice parameter: Electrodiagnostic studies in carpal tunnel syndrome. Report of the American Association of Electrodiagnostic Medicine, American Academy of Neurology, and the American Academy of Physical Medicine and Rehabilitation. *Neurology* 2002;58(11):1589-92.

Jackson CE, Rosenfeld J, **Moore DH**, Bryan WW, Barohn RJ, Wrench M, Myers D, Heberlin L, King R, Smith J, **Gelinias D**, **Miller RG**. A preliminary evaluation of a prospective study of pulmonary function studies and symptoms of hypoventilation in ALS/MND patients. *J Neurol Sci* 2001;191(1-2):75-8.

Mandler RN, Anderson FA, Jr., **Miller RG**, Clawson L, Cudkovicz M, Del Bene M. The ALS Patient Care Database: insights into end-of-life care in ALS. *Amyotroph Lateral Scler Other Motor Neuron Disord* 2001;2(4):203-8.

Miller RG, **Moore DH**, Dronsky V, Bradley W, Barohn R, Bryan W, et al. A placebo-controlled trial of gabapentin in spinal muscular atrophy. *J Neurol Sci* 2001;191(1-2):127-31.

Miller RG. Examining the evidence about treatment in ALS/MND. *Amyotroph Lateral Scler Other Motor Neuron Disord* 2001;2(1):3-7.

Miller RG. Role of fatigue in limiting physical activities in humans with neuromuscular diseases. *Am J Phys Med Rehabil* 2002;81(11 Suppl):S99-107.

Miller RG. Pharmacotherapy and Clinical Trials. *Continuum in Neurology - Amyotrophic Lateral Sclerosis. AAN* 2002;8(4):56-81.

Schuff N, Rooney WD, **Miller R**, **Gelinias DF**, Amend DL, Maudsley AA, et al. Reanalysis of multislice (1)H MRSI in amyotrophic lateral sclerosis. *Magn Reson Med* 2001;45(3):513-6.

Suh J, **Miller RG**, Rule R, Schuff N, Licht J, Dronsky V, et al. Early detection and longitudinal changes in amyotrophic lateral sclerosis by (1)H MRSI. *Neurology* 2002;58(5):773-9.

Trojan DA, Collet J, Pollak MN, Shapiro S, Jubelt B, **Miller RG**, et al. Serum insulin-like growth factor-I (IGF-I) does not correlate positively with isometric strength, fatigue, and quality of life in post-polio syndrome. *J Neurol Sci* 2001;182(2):107-15.

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Fisher M, **Yang LX**. Anticancer effects and mechanisms of polysaccharide-K (PSK): implications of cancer immunotherapy. *Anticancer Res* 2002;22(3):1737-54.

Gupta A, **Yang LX**, **Chen L**. Study of the G2/M cell cycle checkpoint in irradiated mammary epithelial cells overexpressing Cul-4A gene. *Int J Radiat Oncol Biol Phys* 2002;52(3):822-30.

Yang LX, Pan X, **Wang HJ**. Novel camptothecin derivatives. Part 1: oxyalkanoic acid esters of camptothecin and their in vitro and in vivo antitumor activity. *Bioorg Med Chem Lett* 2002;12(9):1241-4.

Yang LX, Pan XD, **Wang HJ**. Novel nitroimidazole ester analogs and therapeutic applications. U. S. Patent 2002;US 6,423,707 B1.