Medical and Health Sciences
NMSU scientists contribute new knowledge in the biomedical disciplines through creative research and scholarship. In 2011, NMSU had more than $20 million in current funding from 35 sponsors in support of medical and health sciences research. Several faculty research programs also support NMSU medical and health researchers, including three programs funded by the National Institutes of Health, the New Mexico IDEA Network of Biomedical Research Excellence Program, the Partnership for the Advancement of Cancer Research (a partnership with the Fred Hutchinson Cancer Research Center), and the Support of Competitive Research Program (SCORE).

Foci of Faculty Research Efforts

- Emerging Pathogens: Synthesis of antiviral drugs and biology and gut ecosystem of mosquitoes
- Vector-Borne Diseases: Dengue, malaria, West Nile, and yellow fever
- Cancer Research: Cancer therapies, breast cancer, cell cycle and signaling, and tumor genesis and growth patterns
- Genetics: Evolutionary insect-plant interactions, population genetics, and evolutionary biology
- Neuroscience: Nervous system and sensory organs, hearing and balance, and neuroscience and motor systems
- Public Health: Obesity, health behavior, health psychology, health communications, and medicinal plants
- Cell and Developmental Biology: Selector genes and cell regulation during early development
- Biomedical Applications: Computing applications, intracellular drug delivery, and metal chemistry applications
- Biomedical Education and Training

NMSU Resources

- Center for Bio Security and Food Safety
- Core University Research Resources Laboratory
- Southern Area Health Education Center

Major Programs

PROGRAMS SUPPORTING FACULTY RESEARCH

- NM-INBRE: New Mexico IDEA Network of Biomedical Research Excellence Program
- Fred Hutchinson Cancer Research Center  PI: Mary O. Connell, (575) 646-5172, moconnel@nmsu.edu

PROGRAMS SUPPORTING STUDENT RESEARCH

- MBRS-RISE to Excellence Program
- Howard Hughes Medical Institute
- Minority Access to Research Careers (MARC)
- Bridges to the Baccalaureate
• Building Research Achievement in Neuroscience (BRAiN)

Major Projects

• New Mexico Border Communities Healthy Marriage and Relationship Project PI: Esther Devall, (575) 646-1161, edevall@nmsu.edu
• Infant Cortisol Reactivity and its Relationship to Learning and Memory PI: Laura Thompson, (575) 646-4024, thompson@nmsu.edu
• Selection of Host Specific Genes in an Environmentally Transmitted Mutualism PI: Michele Nishiguchi, (575) 646-3721, nish@nmsu.edu
• Mob1 Localization and Function During Mitosis PI: Charles Shuster, (575) 646-1325, cshuster@nmsu.edu
• Novel Furan Cycloaddictions for Preparation of Medicinally Important Compounds PI: James Herndon, (575) 646-2487, jherndon@nmsu.edu
• Molecular Mechanisms of Neuronal Dependent Muscle Plasticity PI: Graciela Unguez, (575) 646-7963, gunguez@nmsu.edu
• Fluorescence Lifetime in our Lifetime: Discovery of Approaches to Measure Molecular Excited State Kinetics and Fluorescence Day by Flow Cytometry PI: Jessica Houston, (575) 646-5563, jph@nmsu.edu
• CIF Medium Assessment and Modeling of Temporal Variation in Perceived Audio and Video Quality Using Direct Brainwave Measurement PI: Charles Creusere, (575) 646-3919, ccreuser@nmsu.edu
• Structure and Function of Bacterial RecN Protein PI: Shelley Lusetti, (575) 646-6016, slusetti@nmsu.edu
• Cationic Amino Acid Transport in Mosquitoes PI: Immo Hansen, (575) 646-7719, immoh@nmsu.edu
• Exploring Mosquito Larval Immunity upon Exposure to Larvicidal Bacillus Sphaericus PI: Jiannong Xu, (575) 646-7713, jwu@nmsu.edu

Major Units

• College of Health and Social Services
• Department of Chemistry and Biochemistry
• Department of Biology
• Department of Family and Consumer Sciences, Human Nutrition and Dietetic Science Program
• NMSU’s Center for Bio Security and Food Safety
• Core University Research Resources Laboratory
• Southern Area Health Education Center
Researchers

EMERGING PATHOGENS

- Jeffrey Arterburn (Chemistry and Biochemistry – synthesis of antiviral drugs and radiopharmaceuticals)
- Immo Hansen (Biology, reproductive biology of mosquitoes)
- Kathryn Hanley (Biology – molecular biology, evolution and ecology of RNA virus)
- Maria G. Castillo (Biology – immunological aspect of symbiotic relationships)
- Jiannong Xu (Biology – metagenomics of mosquito gut ecosystem)
- Michele Nishiguchi (Biology – Evolution and marine symbiosis)

GENETICS

- Brook Milligan (Biology – interference between population genetics, ecology, evolutionary biology)
- William J. Boecklen (Biology – ecological and evolutionary insect-plant interactions)

NEUROSCIENCE

- Elba Serrano (Biology – nervous system, sensory organ systems, hearing and balance)
- Graciela Unguez (Biology – developmental biology, neuroscience, motor systems)

CELL AND DEVELOPMENTAL BIOLOGY

- Jennifer Curtiss (Biology – selector genes)
- Charles (Brad) Shuster (Biology – cell regulation during early development)

PUBLIC HEALTH

- James Robinson (Public Health Sciences – Health Behavior and Substance Abuse)
- Rebecca Palacios (Public Health Sciences – Health Psychology, Fast Food Marketing, Community Health, Obesity, Aging, HIV/AIDS populations, Risk Behavior, etc.)
- Cindy Kratzke (Public Health Sciences – Health Administration, Culture and Health)
- Satya Rao (Public Health Sciences – Violence, Substance Abuse, Minority Mental Health)
- Charles Kozel (Public Health Sciences – Health Advocacy and Policy, Aging)
- Anup Amatya (Public Health Sciences – Biostatistics and Pharmacoepidemiology)
- Sue Forster-Cox (Public Health Sciences – Community Gardening)
- Susan Wilson (Public Health Sciences – Social Determinants of Health, Health Administration and Policy, Rural Health, Health Disparities, Preparedness & Response, and International Health)
- Joseph Gladstone (Public Health Sciences – Health Facility Administration)
- Rebeccaa Palacios (Public Health Sciences – Health Psychology, fastfood marketing, obesity)
- Collin Payne (Marketing – Public Health Marketing)
- Mary Alice Scott (Anthropology – Medical Anthropology, Public Health)
- Miriam Chaiken (Anthropology – Rural Health)
- Christopher P. Brown (Geography – Applications of GIS to Public Health Issues)
- Anne Hubbell (Communications – Health Communication)
- Kathleen W. Huttlinger (Nursing – Culture and Health Care, Diabetes in the Native American Population)
• **Geri L. Schmotzer** (Nursing – Public Health and Promotion, Health Disparities, Border Health, Women’s Health in Cancer Prevention and Control, Access to Care)
• **Kevin Lombard** (Plant and Environmental Sciences – Horticulture and Public Health to Address Diabetes)
• **April Ulery** (Plant and Environmental Sciences – Metal Exposure Assessment)
• **Hugo Vilchis** (Public Health Sciences – Border Epidemiology and Environmental Health Center)
• **Margaret Ann Book** (Family and Consumer Sciences – Obesity Prevention, Human Nutrition, and Nutrition Bioavailability)
• **Wanda Eastman** (Family and Consumer Sciences – School Based Nutrition Interventions, Diabetes)
• **Ron Byford** (Food Safety, Biosecurity)
• **Nancy Flores** (Cooperative Extension Service – Food Safety)
• **Lisa McKee** (Family and Consumer Sciences – Food Safety)
• **Jill McDonald** (Public Health Sciences)
• **Frances Nedjat-Haiem** (Social Work)
• **Ernesto Moralez** (Public Health Sciences – The impact of chronic illness on depression treatment)
• **Natalie P. Goldberg** (Plant Pathology & Extension Plant Sciences – Food Safety, Biosecurity)
• **Satya Rao** (Public Health Sciences – Violence, substance use and abuse)

**MENTAL HEALTH, DEVELOPMENT, AND BEHAVIOR**

• **David G. LoConto** (Sociology – Developmental Disabilities)
• **Jim Kroger** (Psychology – Biopsychology)
• **Laura Thompson** (Psychology – Developmental Psychology)
• **Pamela Schultz** (Nursing – Cancer Survivorship and Violence Against Women)
• **Marilyn Pase** (Nursing – Stress, Violence, Drug Abuse, and Medication Compliance)
• **Anita Reinhardt** (Nursing – Leadership and Work Environments)
• **Wanda J. Borges** (Nursing – Chronic Disease Self-Management)
• **Esther Devall** (Extension/Family and Consumer Sciences – Parenting and Family Health Education, Child Development)
• **Marcel Montañez** (Family and Consumer Sciences – Equine Assisted Psychotherapy, Family, Adolescents, Aging)

**MEDICINE**

• **Martha Loustaunau** (Sociology – Medical Sociology, Medical Ethics, Aging and Society)
• **Marilyn Pase** (Nursing – Cancer, Pressure Ulcers, and TB)
• **Anita Reinhardt** (Nursing – Critical Care and Pharmacology)
• **Wanda J. Borges** (Nursing – Type 2 Diabetes, Access to Care)
• **Mary Hoyte Sizemore** (Nursing – Surgical Nursing, Health Assessment, Critical Care, Border Health Issues)
• **Mary O’Connell** (Plant and Environmental Sciences – Medicinal Plants)

**BIOMEDICAL APPLICATIONS**

• Jessica Houston (Chemical Engineering – Flow Cytometry and Biophotonics Techniques)
• **Kevin Houston** (Chemistry and Biochemistry – Molecular Function of Ovarian Hormones)
• **Barbara Lyons** (Chemistry and Biochemistry – Protein Structures)
• **Aaron Rowland** (Chemistry and Biochemistry – Toxicology, Drug Metabolism Enzymes)
• **Joe Song** (Computer Science – Computing Applications in Biological and Medical Sciences)
Wayne van Voorhies (Molecular Biology – Metabolism and Genetic Stability)
Michael Johnson (Chemistry and Biochemistry – Biomedical Applications of Metals Chemistry)
Shelley L. Lusetti (Chemistry and Biochemistry – Cellular Processes Underlying Chromosomal Maintenance)
William A. Maio (Chemistry and Biochemistry – Chemotherapeutics and Small-Molecule Inhibitors)
Sergei N. Smirnov (Chemistry and Biochemistry – Intracellular Drug Delivery and Cell Transfection)

BIOETHICS

Mark Walker (Philosophy – Medical and Bio-Ethics)

BIOMEDICAL EDUCATION AND TRAINING

Michele Shuster (Biology – Biomedical Sciences Undergraduate and K-8 Education)
Elba Serrano (Biology – NMSU RISE to Excellence Program and Building Research Achievement in Neuroscience Program (BRAiN))
Michael Johnson (Chemistry and Biochemistry – NMSU MARC Program)
Mary O’Connell (Plant and Environmental Sciences – Medicinal Plants of the Southwest Program (archived), Partnership for the Advancement of Cancer Research Project)
Barbara Lyons (Chemistry and Biochemistry – Bridges to the Baccalaureate Program)