DOE Energy Biosciences Projects Supported in FY 2002

(NOTE: Dollar amounts are for a twelve-month period using FY 2002 funds unless otherwise stated)

U.S. Department of Agriculture

Urbana, IL 61801

Biochemical and molecular analysis of a new control pathway in assimilate partitioning
Daniel R. Bush, USDA-ARS and Department of Plant Biology, University of Illinois at Urbana-Champaign
$72,666 (FY 01 funds – 21 months)

U. S. Department of Agriculture

Raleigh, NC 27695-7631

Molecular Analysis of the Role of Sucrose Synthase in Sugar Sensing and Assimilate Partitioning
Steven C. Huber, USDA/ARS and Departments of Crop Science and Botany, NCSU
$100,000

U.S. Department of Agriculture

Urbana, IL 61801-3838

Consequences of Altering Rubisco Regulation
Archie R. Portis, Jr., USDA/ARS and Departments of Crop Sciences/Plant Biology, University of Illinois
$66,368

U.S. Department of Agriculture

Madison, WI 53706-1108

What is the Extent of Metabolic Plasticity in the Lignification Process, and Can it be Exploited?
John Ralph and Ronald Hatfield, USDA Agricultural Research Service; US Dairy Forage Research Center
$96,000

University of Alabama

Tuscaloosa, AL 35487-0336

A Combined Genetic, Biochemical, and Biophysical Analysis of the A1 Phylloquinone Binding Site of Photosystem I from Green Plants
Kevin Redding, Department of Chemistry
$87,000

Arizona State University

Tempe, AZ 85287-1604

Structure, Function and Reconstitution of Antenna Complexes of Green Photosynthetic Bacteria
Robert E. Blankenship, Department of Chemistry and Biochemistry
$246,000 (FY 01 funds - two years)

Arizona State University

Tempe, AZ 85287-1601

Regulation of Chlorophyll a and b Biosynthesis
Willem F.J. Vermaas, Department of Plant Biology
$122,000

Arizona State University

Tempe, AZ 85287-1601

An Integrative Approach to Energy Carbon and Redox Metabolism in the Cyanobacterium Synechocystis sp. PCC 6803

Willem F.J. Vermaas and Robert W. Roberson, Department of Plant Biology; in collaboration with Kym F. Faull (University of California, Los Angeles)
$734,001 (Microbial Cell two years)

Arizona State University
Tempe, AZ 85287
Excitation energy transfer in the photosystem I core antenna
Andrew N. Webber, co P.I. Neal W. Woodbury, Department of Plant Biology
$200,000 (two years)

University of Arizona
Tucson, AZ 85721-0036
Role of Root Tip Polysaccharide Solubilizing Enzymes in Root Development Structure and Function
Martha C. Hawes; co P.I. Ho-Hyung Woo, Department of Plant Pathology
$104,000

University of Arizona
Tucson, AZ 85721-0036
Systemic RNA silencing paramutation and epigenetic control of gene expression patterns
Richard A. Jorgensen, Department of Plant Sciences
$98,000

University of Arizona
Tucson, AZ 85721-0036
Dissection of Molecular Mechanisms Regulating Protein Body Formation in Maize Endosperm
Brian Larkins, Department of Plant Sciences
$104,000 (FY 00 funds)

University of Arizona
Tucson, AZ 85721-0036
Regulation of DNA Endoreduplication in Maize Endosperm
Brian Larkins, Department of Plant Sciences
$205,000

University of Arizona
Tucson, AZ 85721-0036
Molecular Characterization of the Role of a Calcium Channel in Plant Development
Karen S. Schumaker, Department of Plant Sciences
$94,000 (FY 01 funds)

University of Arizona
Tucson, AZ 85721-0036
Manipulation of Phytoalexin Biosynthesis: Effects on Plant-Microbe Interactions
Hans D. VanEtten, Department of Plant Pathology
$102,000

University of Arizona
Tucson, AZ 85721
Cytosolic HSP100 Proteins and Stress Tolerance in Plants
Elizabeth Vierling, Department of Biochemistry
$200,000 (two years)

University of Arizona
Tucson, AZ 85721
Sequencing Rice Chromosomes 3 and 10 - Rice Genome Sequencing Project
Rod A. Wing, Department of Plant Sciences
$200,000 (two years)

University of Arkansas
Fayetteville, AR 72701
Protein Targeting to the Chloroplast Thylakoid Membrane: Structure and Function of a Targeting Complex
Ralph L. Henry, Department of Biological Sciences
$95,995

Boston College
Chestnut Hill, MA 02467
Osmoregulation in Methanogens
Mary F. Roberts, Department of Chemistry
$101,000

Boyce Thompson Institute for Plant Research
Ithaca, NY 14853
Post-transcriptional Gene Regulation in Chloroplasts
David B. Stern, Plant Molecular Biology Program
$191,000 (FY 02 funds - two years)

Brookhaven National Laboratory
Upton, NY 11973
Molecular Plant Genetics
Benjamin Burr and Frances Burr, Biology Department
$340,000

Brookhaven National Laboratory
Upton, NY 11973
Regulation of Energy Conversion in Photosynthesis
Geoffrey Hind, Biology Department
$314,000

Brookhaven National Laboratory
Upton, NY 11973
Modification of Plant Lipids
John Shanklin, Biology Department
$602,000

Brown University
Providence, RI 02912
The Magnesium Branch of the Chlorophyll Biosynthetic Pathway
Samuel I. Beale, Division of Biology and Medicine
$114,000 (FY 00 funds)

California Institute of Technology
Pasadena, CA 91125-0001
Molecular and Genetic Analysis of LEAFY, a Gene Controlling Floral Induction and Flower Development in Arabidopsis thaliana
Elliot Meyerowitz, Division of Biology
$149,000

California Institute of Technology
Pasadena, CA 91125-0001
Elucidating Mechanisms of Protein Folding and Enzyme Assembly in Lipid Bilayers
Jay R. Winkler, Beckman Institute
$334,409 (two years)

University of California
Berkeley, CA 94720-3102
Determinants of Environmental Stress Tolerance by Bacteria on Leaves
Steven E. Lindow, Department of Plant and Microbial Biology
$83,586 (FY 99 funds)

University of California
Berkeley, CA 94720
A Chloroplast Immunophilin and Its Targets in the Electron Transport Chain
Sheng Luan, Department of Plant and Microbial Biology
$99,000

University of California
Berkeley, CA 94720
Phytochrome from Green Plants: Properties and Biological Function
Peter H. Quail, Department of Plant and Microbial Biology
$110,000

University of California
Berkeley, CA 94720-3102
Molecular Analysis of Bacterial Disease Resistance in Arabidopsis thaliana
Brian J. Staskawicz, Department of Plant and Microbial Biology
$115,000

University of California
Davis, CA 95616
The Phosphate Starvation Response Pathway in Arabidopsis thaliana
Steffen Abel, Department of Vegetable Crops
$91,000

University of California
Davis, CA 95616
Developmental Genetics of Nectaries in Arabidopsis and Gossypium
John L. Bowman, Section of Plant Biology
$104,000

University of California
Davis, CA 95616-8535
The Role of Rub (Related to Ubiquitin) Family of Proteins in the Auxin Response
Judy Callis, Section of Molecular and Cellular Biology
$102,000

University of California
Davis, CA 95616-8535
Nodulation genes of Medicago truncatula
Douglas Cook, Department of Plant Pathology; in collaboration with Kathryn A. VandenBosch (University of Minnesota)
$121,000 (two years)

University of California
Davis, CA 95616
The Mechanism and Regulation of Cellulose Syntheses in Plants
Deborah P. Delmer, Section of Plant Biology
$120,000 (FY 01 funds)

University of California
Davis, CA 95616-8535
Structure, Function and Assembly of the Clostridium cellulovorans Cellulosome
Roy H. Doi, Section of Molecular & Cellular Biology
$126,000

University of California
Davis, CA 95616-8537
Regulation of Embryonic Development in Higher Plants
John J. Harada, Section of Plant Biology
$105,000

University of California
Davis, CA 95616-8537
Cytoskeletal Organization in Cotton Fiber Growth: Roles of Microtubule-Based Motor Enzymes
Bo Liu, Section of Plant Biology
$186,000 (two years)

University of California
Davis, CA 95616-8537
Cellular and Molecular Characterization of Vascular Plasmodesmata
William J. Lucas, Section of Plant Biology
$130,000

University of California
Davis, CA 95616-8665
Physiology and Genetics of Energy Conservation in Chemoautotrophic Sulfur-oxidizing Bacteria
Douglas C. Nelson, Section of Microbiology
$182,000 (FY 01 funds - two years)

University of California
Davis, CA 95616-8665
Genetic Control of Nitrate Assimilation in Klebsiella oxytoca
Valley Stewart, Section of Microbiology
$90,000 (FY 01 funds – two years)

University of California
Davis, CA 95616-8537
Energetics of Protein Transport Across Chloroplast Membranes
Steven M. Theg, Section of Plant Biology
$101,000

University of California
Irvine, CA 92697
Membrane Bioenergetics of Salt Tolerant Organisms
Janos K. Lanyi, Department of Physiology and Biophysics
$200,000

University of California
La Jolla, CA 92093-0116
The Signal Transduction Pathway of the Unfolded Protein Response
Maarten J. Chrispeels, Department of Biology
$109,000

University of California

La Jolla, CA 92093-0116
Physiology and Regulation of Calcium Channels in Stomatal Guard Cells
Julian I. Schroeder, Division of Biology
$135,000

University of California
La Jolla, CA 92093-0116
Analysis of the Localization and Function of TANGLED a Protein Required for Spatial Control of Cytokinesis in Plant Cells
Laurie G. Smith, Division of Biology
$102,000

University of California
Los Angeles, CA 90095-1606
An Integrative Approach to Energy Carbon and Redox Metabolism in the Cyanobacterium Synechocystis sp. PCC 6803
Kym Francis Faull, Department of Chemistry and Biochemistry; in collaboration with Willem F.J. Vermaas and Robert W. Roberson (Arizona State University)
$424,325 (Microbial Cell two years)

University of California
Los Angeles, CA 90095-1606
Suspensor Differentiation During Early Plant Embryogenesis
Robert B. Goldberg, Department of Molecular, Cell and Developmental Biology
$111,000

University of California
Los Angeles, CA 90095-1489
Molecular Biology and Genetics of the Acetate-Utilizing Methanogenic Bacteria
Robert P. Gunsalus, Department of Microbiology and Molecular Genetics
$113,000

University of California
Los Angeles, CA 90095-1606
Sensory Transduction of the CO2 Response of Guard Cells
Eduardo Zeiger, Department of Biology
$105,000

University of California
Riverside, CA 92521-0124
Biogenesis of plant vacuoles in Arabidopsis
Natasha V. Raikhel, Department of Botany & Plant Sciences
$240,000 (two years)

University of California
Riverside, CA 92521-0124
Growth and Development Regulation by Rop GTPase Signaling in Arabidopsis: A Genome-Wide Study
Zhenbiao Yang, Department of Botany and Plant Sciences
$89,000

University of California
Santa Cruz, CA 95064
Regulation of Vacuolar pH in Citrus limon
Lincoln Taiz, Department of Molecular, Cellular and Developmental Biology
$106,000 (FY 00 funds)

Carnegie Institution of Washington
Stanford, CA 94305-4101
Genetic Engineering of Biomaterials
Chris Somerville, Department of Plant Biology
$485,427

Carnegie Institution of Washington
Stanford, CA 94305-4150
Powdery Mildew Disease Resistance
Shauna C. Somerville, Department of Plant Biology
$104,000

University of Chicago
Chicago, IL 60637
Cell-cell Interactions pollen tube growth in Arabidopsis
Daphne Preuss, Department of Molecular Genetics and Cell Biology
$198,544 (two years)

Colorado State University
Fort Collins, CO 80523
Functional Analysis of Novel Serine/Arginine-rich Proteins that Interact with U1-70K in Basic and Alternative Splicing of Pre-mRNAs
A.S.N. Reddy, Department of Biology
$191,000 (two years)

University of Colorado
Boulder, CO 80309-0215
Microbial Production of Isoprene
R. Ray Fall, Department of Chemistry and Biochemistry
$95,000

University of Connecticut
Storrs, CT 06269-3125
Molecular characterization of catabolite repression by succinate in the nodulating symbiotic bacterium Sinorhizobium meliloti
Daniel J. Gage, Department of Molecular and Cell Biology
$189,949 (two years)

University of Connecticut
Storrs, CT 06269-3125
Genetic Analysis of Sugar Nucleotide Interconversions in Arabidopsis
Wolf-Dieter Reiter, Department of Molecular and Cell Biology
$105,000

Cornell University
Ithaca, NY 14853
Molecular Regulatory Mechanisms of Two Senescence-Specific Genes in Arabidopsis
Susheng Gan
$281,000 (two years)

Cornell University
Ithaca, NY 14853-2703
Intracellular Dynamics of Energy-Transduction Organelles
Maureen R. Hanson, Department of Molecular Biology and Genetics
$112,000

Cornell University
Ithaca, NY 14853-8101
Regulation of Denitrification in Rhodobacter sphaeroides
James P. Shapleigh, Department of Microbiology
$100,934

Cornell University
Ithaca, NY 14853
Studies of the Genetic Regulation of the Thermomonospora fusca Cellulase Complex
David B. Wilson, Section of Biochemistry, Molecular and Cell Biology
$194,000 (two years)

Dartmouth College
Hanover, NH 03755
Comparative Investigation of Physiological Features of Cellulose Utilization by Two Anaerobic Bacteria: Clostridium thermocellum and Ruminococcus flavefaciens
Lee R. Lynd, Molecular and Cell Biology Program
$199,999 (two years)

University of Delaware
Lewes, DE 19958
Plant Growth with Limited Water
John S. Boyer, College of Marine Studies
$110,004 (FY 01 funds)

Donald Danforth Plant Science Center
St. Louis, MO 63105
Regulating Expression of Cell and Tissue-Specific Genes by Modifying Transcription
Roger N. Beachy, President, Donald Danforth Plant Science Center
$210,000 (two years)

Emory University
Atlanta, GA 30322
Engineering Functional Scaffolds by Supramolecular Self-Assembly"
David G. Lynn, Department of Chemistry
$495,000 (33 months)

Florida State University
Tallahassee, FL 32306-4370
Role of Sucrose in Modulating Stomatal Aperture
William H. Outlaw, Jr., Department of Biological Science
$84,000 (FY 00 funds)

University of Florida
Gainesville, FL 32611
Genetic Improvement of Escherichia coli for Fuel Ethanol Production
Lonnie O. Ingram, Department of Microbiology and Cell Science
$100,000

University of Florida
Gainesville, FL 32611-0690
Genetic Control of Abscisic Acid Biosynthesis in Plants
Donald R. McCarty, Horticultural Sciences Department
$109,000

University of Georgia

Athens, GA 30602-7229
The Metabolism of Hydrogen by Hyperthermophilic Microorganisms
Michael W. W. Adams, Department of Biochemistry & Molecular Biology
$119,000

University of Georgia
Athens, GA 30602-4712
Structures and Functions of Oligosaccharins
Peter Albersheim, Complex Carbohydrate Research Center
$165,000

University of Georgia
Athens, GA 30602-4712
Center for Plant and Microbial Complex Carbohydrates
Peter Albersheim and Alan Darvill, Complex Carbohydrate Research Center
$625,000

University of Georgia
Athens, GA 30602-4712
Structural Studies of Complex Carbohydrates of Plant Cell Walls
Alan Darvill, Complex Carbohydrate Research Center
$380,000

University of Georgia
Athens, GA 30602-2152
Jeffrey F.D. Dean, School of Forest Resources
Structure-Function Relationships in Plant Laccases
$93,000

University of Georgia
Athens, GA 30602-7229
Fermentation of Cellulose and Hemicelluloses by Clostridia and Anaerobic Fungi
Lars G. Ljungdahl, Center for Biological Research Recovery
$173,000

University of Georgia
Athens, GA 30602-2605
Roles of the Metal-Binding Protein Nickelin in Symbiotic Nitrogen Fixation
Robert J. Maier, Department of Microbiology
$135,000 (FY 01 funds - fifteen months)

University of Georgia
Athens, GA 30602-7271
Genetic Analysis of Polyamine Synthesis in Arabidopsis
Russell L. Malmberg, Department of Botany
$110,000

University of Georgia
Athens, GA 30602-7223
Mechanisms and Determinants of RNA Turnover: Plant IRESs and Polycistrons for Metabolic Engineering
Richard B. Meagher, Department of Genetics
$218,000 (two years)

University of Georgia
Athens, GA 30602-7271
Identification of Novel Cell Wall Components

Michelle Momany, Department of Botany
$89,000

University of Georgia
Athens, GA 30602-7271
Molecular and Physiological Studies of Photosynthetic Adaptation in Nitrogen Deficiency
Gregory W. Schmidt and Brigitte U. Bruns, Department of Botany
$200,000 (FY 99 funds)

University of Georgia
Athens, GA 30602-7223
Structure, Regulation and Evolution of the R transcriptional activators from maize and rice
Susan Wessler, Department of Botany
$112,000 (FY 00 funds)

University of Georgia
Athens, GA 30602-2605
Biochemistry and Genetics of Autotrophy in Methanococcus
William B. Whitman, Department of Microbiology
97,000

University of Georgia
Athens, GA 30602-2605
Global Regulation in the Methane-Producing Archaeon Methanococcus maripaludis
William B. Whitman, Department of Microbiology; in collaboration with John Leigh (University of Washington) and Dieter Soll (Yale University)
$418,082 (Microbial Cell FY 01 funds - two years)

University of Georgia
Athens, GA 30602-2605
Novel Reversible Phenolic Carboxylase Family Shared by Members of the Domains Bacteria and Archaea
Juergen Wiegel, Department of Microbiology
$200,000 (FY 01 funds - two years)

University of Hawaii
Honolulu, HI 96822
Mechanisms regulating blue light-activated psbD transcription in plant chloroplasts
David A. Christopher, Department of Molecular Biosciences and Biosystems Engineering
$93,324

University of Hawaii
Honolulu, HI 96822
Xanthophyll Cycle and Photoprotective Systems in Higher Plants
Harry Y. Yamamoto, Department of Molecular Biosciences and Biosystems Engineering
$112,000

University of Illinois
Chicago, IL 60612-7344
Molecular Genetics of the Arsenite Oxidase of Alcaligenes faecalis strain NCIB8687
Simon Silver, Department of Microbiology & Immunology
$116,000

University of Illinois
Urbana, IL 61801-3364
Studies on Cytochrome bo_3 from *Escherichia coli*

Robert B. Gennis, Department of Chemistry
$272,000 (FY 01 funds - two years)

University of Illinois
Urbana, IL 61801-3364
Genetic Analysis of Hydrogenotrophic Methanogenesis by Methanosarcina Species
William W. Metcalf, Department of Microbiology
$230,000 (two years)

Indiana University
Bloomington, IN
Function of the Ubiquitin Protein Ligase SCF-TIR1 During Auxin Response
Mark Estelle, Department of Biology
$117,000

Indiana University
Bloomington, IN 47405-3700
Regulation of Plastid Development During Embryo Maturation and Seed Germination
Roger P. Hangarter, Department of Biology
$191,000 (FY 01 funds - two years)

Integrated Genomics, Inc.
Chicago, IL
Energy, carbon, and redox metabolism in the cyanobacterium Synechocystis sp. PCC 6803
Ross Overbeek
$149,556

Iowa State University
Ames, IA 50011-2010
Analysis of a signal transduction pathway involved in maize epidermis and aleurone differentiation
Philip W. Becraft, Zoology and Genetics and Agronomy Department
$98,000

Iowa State University
Ames, IA 50011-3211
Mechanism of Methane Oxidation in Cells Expressing the Membrane-Associated Methane Monooxygenase
Alan A. DiSpirito, Department of Microbiology
$94,999

Iowa State University
Ames, IA 50011
Function of the Maize Starch Synthase zSSIII/DU1 in Amylopectin Biosynthesis
Alan M. Myers, co P.I. Martha G. James, Department of Biochemistry, Biophysics and Molecular Biology
$87,000

Iowa State University
Ames, IA 50011-1020
Acetyl-CoA: precursor for an alternative biotic source of hydrocarbons
Basil J. Nikolau, Department of Biochemistry, Biophysics & Molecular Biology
$104,000

Iowa State University
Ames, IA 50011-1020
Regulation of Carotenoid Biosynthesis: The *immutans* Mutant of *Arabidopsis*
Steven R. Rodermel, Department of Botany

$92,000

University of Iowa
Iowa City, IA 52242-1109
Molecular Biology of Anaerobic Aromatic Biodegradation
Caroline S. Harwood, Department of Microbiology
$97,000

KAIROS Scientific Inc.
Santa Clara, CA 95054
Macromolecular Scaffolds for Energy Transfer
Douglas C. Youvan
$138,000 (FY 01 funds)

Keck Graduate Institute of Applied Life Sciences
Claremount, CA 91711
Regulation of Gene Expression by Methanol in the Yeast *Pichia pastoris*
James M. Cregg
$85,000 (FY 01 funds)

University of Kentucky
Lexington, KY 40506-0055
Acetyl-CoA cleavage and synthesis in methanogens: Mechanistic, enzymological, and metabolic studies
Edward DeMoll, Department of Chemistry
$61,000

University of Kentucky
Lexington, KY 40546-0091
Mechanism and Significance of Post-Translational Modifications in the Large and Small Subunits of Ribulose Bisphosphate Carboxylase/Oxygenase
Robert L. Houtz, Department of Horticulture
$88,808 (FY 01 funds)

Lawrence Berkeley National Laboratory
Berkeley, CA 94720
CAM Biomolecular Materials Program
M.D. Alper; A.P.A. Alivisatos, C.R. Bertozzi, J. Clarke, J.M.J. Fréchet, J.T. Groves, P.G. Schultz, R.C. Stevens, Materials Sciences Division
$147,000

Lawrence Berkeley National Laboratory
Berkeley, CA 94720
Energy Conversion in Photosynthesis - Photosynthetic Light Reactions
Kenneth Sauer and Vittal K. Yachandra, Physical Biosciences Division
$247,000

Lawrence Berkeley National Laboratory
Berkeley, CA 94720
Vanadium Haloperoxidase: Functional organization and regulation of catalysis in Fucus zygote adhesion
Valerie Vreeland, Division of Materials Science
$132,000

Louisiana State University

Baton Rouge, LA 70803-1715
Identification of Chloride-Binding Domains in Photosystem II
Terry M. Bricker, co P.I. Laurie K. Frankel, Department of Biological Sciences
$194,000 (FY 01 funds - two years)

Marquette University
Milwaukee, WI 53201-1881
K. Dale Noel, Department of Biology
Lipopolysaccharide structures and genes required for root nodule development
$97,000

University of Maryland
Baltimore, MD 21202
Physiology and Genetics of Aceticlastic Catabolism in the Methanogenic Archaea
Kevin R. Sowers, Center of Marine Biotechnology
$196,000 (FY 01 funds - two years)

University of Maryland
College Park, MD 20742-5815
Suppressors and enhancers of an Arabidopsis ethylene receptor mutant
Caren Chang, Department of Cell Biology and Molecular Genetics
$99,000 (FY 01 funds – 18 ½ months)

University of Maryland
College Park, MD 20742
Isoprenoid Synthesis in Cyanobacteria and Plants: Pathway to Isopentenyl Diphosphate and Dimethylallyl Diphosphate
Elisabeth Gantt and Francis X. Cunningham, Jr., Department of Cell Biology and Molecular Genetics
$100,045

University of Maryland
College Park, MD 20742-5815
Investigating the molecular mechanism of TSO1 function in Arabidopsis cell division and meristem development
Zhongchi Liu, Department of Cell Biology and Molecular Genetics
$98,000

University of Maryland
College Park, MD 20742-5815
Regulating Intracellular Calcium in Plants: From Molecular Genetics to Physiology
Heven Sze, Department of Cell Biology and Molecular Genetics
$207,999 (two years)

University of Massachusetts
Amherst, MA 01003-5720
Impacts of Biofilm Formation on Cellulose Fermentation
Susan B. Leschine, Department of Microbiology
$100,000

Michigan State University-DOE Plant Research Laboratory
East Lansing, MI 48824
$3,600,000

Molecular Mechanisms That Regulate the Expression of Genes in Plants
Pamela J. Green

Molecular biology of plant-bacterial interactions
Sheng Yang He

Molecular and Biochemical Basis of Induced Resistance
Gregg A. Howe

Plastid Biogenesis
Kenneth Keegstra

Studies on Hormone Action in Vegetative Growth
Hans Kende

Photoperiodic Induction and the Floral Stimulus
H. Kende, L. McIntosh, J.A.D. Zeevaart

Interaction of Nuclear and Organelle Genomes
Lee McIntosh

Molecular Mechanisms of Protein Trafficking Through the Secretory System
N. V. Raikhel

Cell Wall Metabolism
N. V. Raikhel, K. Keegstra, H. Kende, J. Walton

Molecular Basis of Environmental Stress Tolerance
M. F. Thomashow

Biochemical and Molecular Aspects of Plant Pathogenesis
J. D. Walton

Developmental Biology of Nitrogen-Fixing Cyanobacteria
C. Peter Wolk

Environmental Control of Plant Development and Its Relation to Plant Hormones
Jan A.D. Zeevaart

Michigan State University
East Lansing, MI 48824-1319
Regulation of the Biosynthesis of Non-Phosphorus Membrane Lipids in Plants
Christoph Benning, Department of Biochemistry
$100,000

Michigan State University
East Lansing, MI 48824-1312
Biosynthesis of Triacylglycerol in Developing Oilseeds
John B. Ohlrogge, Department of Botany and Plant Pathology
$107,000

Michigan State University
East Lansing, MI 48824-1319
Structure-Function Relationships of ADP-Glucose Pyrophosphorylase and Branching Enzyme
Jack Preiss, Department of Biochemistry and Molecular Biology
$96,000

Michigan State University
East Lansing, MI 48824-1101

Molecular Biology and Biochemistry of Basidiomycete Laccases
C. A. Reddy, Department of Microbiology
$92,997 (FY 01 funds)

Michigan Technological University
Houghton, MI 49931
Regulation of Guaiacyl and Syringyl Monolignol Biosynthesis
Vincent L. Chiang and Laigeng Li, Plant Biotechnology Research Center, School of Forestry
$102,000

University of Michigan
Ann Arbor, MI 48109-1048
CLV Signaling in Meristem Development
Steven E. Clark, Department of Biology
$95,000 (FY 01 funds)

University of Minnesota
Minneapolis, MN
Understanding the Role of the O-GlcNAc Transferases in Plant Development
Neil E. Olszewski, Lynn M. Hartweck
$200,000

University of Minnesota
St. Paul, MN 55108
Metabolic Regulation of the Plant Hormone Indole-3-acetic acid
Jerry D. Cohen, Department of Horticultural Sciences
$97,000

University of Minnesota
St. Paul, MN 55108-1022
Biochemistry of Ammonia Monoxygenase of Nitrosomonas
Alan B. Hooper, Department of Biochemistry, Molecular Biology and Biophysics
$218,000 (FY 01 - two years)

University of Minnesota
St. Paul, MN 55108
Mutants of the Legume Medicago truncatula Defective in Root Hair Development and Infection by Rhizobium
Kathryn A. VandenBosch, Department of Plant Biology; in collaboration with Douglas Cook (University of California)
$131,000 (FY 01 funds - two years)

University of Minnesota
St. Paul, MN 55108-1095
Growth and development of maize that contains mutant tubulin genes
Susan M. Wick, Department of Plant Biology
$110,000 (FY 01 funds)

University of Missouri
Columbia, MO 65211-7411
Cellulose and the control of growth anisotropy
Tobias I. Baskin, Division of Biological Sciences
$99,000

University of Missouri
Columbia, MO 65211-7400
Dosage Analysis of Gene Expression in Maize

James A. Birchler, Division of Biological Sciences
$108,000 (FY 01 funds)

University of Missouri
Columbia, MO
Plant recognition of rhizobial Nod factors
Gary Stacey, Department of Plant Microbiology and Pathology
$122,768

University of Missouri
Columbia, MO 65211
Genetics and Molecular Biology of Hydrogen Metabolism in Sulfate-Reducing Bacteria
Judy Wall, Biochemistry Department
$193,999

University of Montana
Missoula, MT 59812
Controls on production, incorporation and decomposition of glomalin -- a novel fungal soil protein important to soil carbon storage
Matthias C. Rillig, Division of Biological Sciences (Note: see U.S. Dept. of Agriculture, S. Wright)
$130,039 (FY 99 funds)

Mount Sinai School of Medicine
New York, NY 10029
The Respiratory Chain of Alkalophilic Bacteria
Terry Ann Krulwich, Department of Biochemistry
$115,000 (FY 00 funds)

NASA Ames Research Center
Moffett Field, CA 94035-1000
The molecular basis of hyperthermophily: the role of HSP60/chaperonins in vivo
Jonathan Trent, Astrobiology and Technology Branch
$100,000 (FY 01 funds)

National Renewable Energy Laboratory
Golden, CO 80401
The Water-Splitting Apparatus of Photosystem II
Michael Seibert, Photoconversion Research Branch
$133,000

National Renewable Energy Laboratory
Golden, CO 80401
Regulation of H_2 and CO_2 Metabolism: O_2 Sensor Involvement in Partitioning of Photosynthetic Reductant in Green Algae
Maria L. Ghirardi and Michael Seibert, Photoconversion Research Branch
$164,000

University of Nebraska
Lincoln, NE 68588-0665
Regulation of nuclear response to mitochondrial dysfunction
Sally A. Mackenzie, Professor, Plant Genetics, Department of Agronomy
$97,000

University of Nebraska
Lincoln, NE 68588-0664
Plant Formate Dehydrogenase

John Markwell and John Osterman, Department of Biochemistry
$94,000

University of Nebraska
Lincoln, NE 68588-0118
The Role of a Host Protein (TIP) in the Resistance Response of Arabidopsis to Turnip Crinkle Virus Infection
T. Jack Morris, School of Biological Sciences
$201,000 (two years)

University of Nebraska
Lincoln, NE 68588-0664
Enzymology of Methane Formation from Acetate
Stephen W. Ragsdale, Department of Biochemistry
$111,000

University of Nebraska
Lincoln, NE 68588-0664
Role of the Rubisco Small Subunit
Robert Spreitzer, Department of Biochemistry
$97,000

New York University
New York, NY 10003-6688
Asparagine Synthetase Gene Expression and Plant Nitrogen Metabolism
Gloria M. Coruzzi, Department of Biology
$229,000 (FY 01 funds - two years)

New York, State University of
Buffalo, NY 14260
Effects of RNA-protein Complexes on ATP Synthase Gene Expression in the Chloroplast
Margaret Hollingsworth, Department of Biological Sciences
$83,000

New York State University of
Stony Brook, NY
A Novel, Photosynthesis-Associated Thioredoxin-Like Gene
Jackie L. Collier, Department of Biology
$135,251 (two years)

New York State University of
Syracuse, NY
The Effect of Cellulose Crystal Structure and Solid-State Morphology on the Activity of Cellulases
Arthur J. Stipanovic
$229,686 (two years)

North Carolina State University
Raleigh, NC 27695-7612
Coordination of endoplasmic reticulum (ER) signaling during maize seed development
Rebecca S. Boston, co P.I.s Wendy F. Boss and Ralph E. Dewey, Department of Botany
$97,000

North Carolina State University
Raleigh, NC 27695-7905
Proteolysis in Hyperthermophilic Microorganisms
Robert M. Kelly, Department of Chemical Engineering
$100,000

North Carolina State University
Raleigh, NC 27695-7905
Self-Assembly of Phospholipids in Nanoscale Confinements
Alex I. Smirnov
$280,988 (two years)

University of North Carolina
Chapel Hill, NC 27599-3280
Functions of the Pseudomonas syringae avrRpm1 Gene During Disease Resistance and as a Virulence Factor in Arabidopsis thaliana Cell
Jeffery L. Dangl, Department of Biology
$292,000 (two years)

University of North Carolina
Chapel Hill, NC 27599-3280
Characterization of Arabidopsis Genes Involved in Gene Silencing
Sarah R. Grant, Department of Biology
$97,000 (FY 00 funds)

University of North Carolina
Chapel Hill, NC 27599-3280
The role of the celC gene product in cellulose synthesis by *A. tumefaciens*
Ann G. Matthysse, Department of Biology; in collaboration with Alan R. White (North Dakota State University)
$62,000

North Dakota State University
Fargo, ND 58105-5517
The role of the celC gene product in cellulose synthesis by *A. tumefaciens*
Alan R. White, Department of Biological Sciences; in collaboration with Ann G. Matthysse (University of North Carolina)
$62,000

Ohio State University
Columbus, OH 43210
The Role of Multiple TBP and TFB in Archaeal Gene Expression
Charles J. Daniels, Department of Microbiology
$109,000

Ohio State University
Columbus, OH 43210
Transmethylation Reactions During Methylotropic Methanogenesis in *Methanosarcina barkeri*
Joseph A. Krzycki, Department of Microbiology
$107,000

Ohio State University
Columbus, OH 43210
Regulation of Methane Genes and Genome Expression
John N. Reeve, Department of Microbiology
$248,000 (two years)

Ohio State University
Columbus, OH 43210-1292
A Model System to Probe the Biochemistry and Molecular Control of a Globally Significant Alternative Mechanism to Sequester and Metabolize Carbon Dioxide

F. Robert Tabita, Department of Microbiology
$112,000

Ohio State University
Columbus, OH 43210-1292
The Rhodospeudomonas palustris Microbial Cell Project
F. Robert Tabita, Department of Microbiology; in collaboration with Drs. Janet L. Gibson & Thomas E. Hanson (Ohio State University), Caroline S. Harwood (University of Iowa), James C. Liao (UCLA), J. Thomas Beatty (University of British Columbia), Frank W. Larimer, Joe (Jizhong) Zhou and Dorothea Thompson (Oak Ridge National Laboratory), and Richard Smith (Pacific Northwest National Laboratory)
$130,000 (Microbial Cell FY 01 funds)

Oklahoma State University
Stillwater, OK 74078-3035
The Structure of Pectins from Cotton Cell Walls
Andrew Mort, Department of Biochemistry and Molecular Biology
$107,000

University of Oklahoma
Norman, OK 73019-0245
Initial Steps Involved in Syntrophic Benzoate Metabolism
Michael J. McInerney, Department of Botany and Microbiology
$96,999

Oregon Health and Science University
Beaverton, OR 97006-8921
Biochemical Genetics of Lignin Degradation by Phanerochaete chrysosporium
Michael H. Gold, Department of Biochemistry and Molecular Biology.
$135,000 (FY 01 funds)

Oregon Health and Science University
Beaverton, OR 97006-8921
Cloning and Expression of Cellobiose Dehydrogenase
Michael H. Gold, Department of Biochemistry and Molecular Biology.
$94,000 (FY 01 funds)

Oregon State University
Corvallis, OR 97331-2902
Regulation of the Genes Involved in Nitrification
Daniel J. Arp, Department of Botany and Plant Pathology
$99,000

University of Oregon
Eugene, OR 97403-1229
Genetic Analysis of Chloroplast Translation in Maize
Alice Barkan, Institute of Molecular Biology
$101,000 (FY 01 funds)

Pacific Northwest National Laboratory
Richland, WA
The Rhodospeudomonas palustris Microbial Cell Project
Richard Smith (Pacific Northwest National Laboratory); in collaboration with F. Robert Tabita, Janet L. Gibson & Thomas E. Hanson (The Ohio State University), Caroline S. Harwood (University of

Iowa), James C. Liao (UCLA), J. Thomas Beatty (University of British Columbia), Frank W. Larimer, Joe (Jizhong) Zhou and Dorothea Thompson (Oak Ridge National Laboratory)
$125,001 (Microbial Cell FY 01 funds)

Pennsylvania State University
University Park, PA 16802-4500
The Characterization of Psychrophilic Microorganisms and Their Potentially Useful Cold-Active Glycosidases
Jean E. Brenchley, Department of Biochemistry and Molecular Biology
$112,000

Pennsylvania State University
University Park, PA 16802-4500
Light-Energy Transduction in Green Sulfur Bacteria
Donald A. Bryant, Department of Biochemistry and Molecular Biology
$120,000

Pennsylvania State University
University Park, PA 16802
The control of lignin synthesis
John E. Carlson, School of Forest Resources
$92,000

Pennsylvania State University
University Park, PA 16802
Molecular Mechanisms of Plant Cell Wall Enlargement
Daniel J. Cosgrove, Department of Biology
$111,000

Pennsylvania State University
University Park, PA 16802-5301
Elongation Factor 1Alpha and the Plant Cytoskeleton
Richard J. Cyr, Department of Biology
$98,000

Pennsylvania State University
University Park, PA 16802-4500
Biochemistry and Genetics of Acetate Conversion to Methane in Methanosarcina thermophila
James G. Ferry, Department of Biochemistry and Molecular Biology
$268,000 (FY 01 funds - two years)

Pennsylvania State University
University Park, PA 16802
Electron Transfer Cofactors in Type I Reaction Centers of Anoxygenic Bacteria
John H. Golbeck, co P.I. Ilya Vassiliev, Department of Biochemistry and Molecular Biology
$217,000 (FY 01 and FY 02 funds - two years)

Pennsylvania State University
University Park, PA 16802-5807
Molecular-Genetic Analysis of Maize Starch Branching Enzyme Isoforms: Modulation of Branching Enzyme Activities in Maize to Produce Starch with Novel Architecture
Mark Guiltinan, co P.I.s Jack Shannon, Donald Thompson, Department of Horticulture
$98,001

Pennsylvania State University
University Park, PA 16802
Function of a Putative Receptor-linked Protein Kinase in Male Fertility

Hong Ma, Department of Biology
$101,000

Pennsylvania State University
University Park, PA 16802-4500
Characterization of Lignin and Mn Peroxidases from Phanerochaete chrysosporium
Ming Tien, Department of Biochemistry and Molecular Biology
$121,000

University of Pennsylvania
Philadelphia, PA 19104-6018
Light Responses and Photoperiodism in Arabidopsis thaliana
Anthony R. Cashmore, Plant Science Institute, Department of Biology
$140,000

University of Pennsylvania
Philadelphia, PA 19104-6018
Membrane-Attached Electron Carriers in Photosynthesis and Respiration
Fevzi Daldal, Department of Biology
$118,000

University of Pennsylvania
Philadelphia, PA 19104-6018
The function of the EARLY TRICHOMES gene in Arabidopsis in maize
Scott Poethig, Department of Biology
$204,000 (two years)

University of Pennsylvania
Philadelphia, PA 19104-6018
Genetic and Biochemical Analyses of an Archael Protein Translocation System
Mechthild Pohlschroder, Department of Biology
$99,000

University of Pennsylvania
Philadelphia, PA 19104-6018
AVP1-type and AVP2-type Pyrophosphate-energized Proton Pumps
Philip A. Rea, Department of Biology
$110,000

Princeton University
Princeton, NJ
Probing Interactions at the Nanoscale: Sensing Protein Molecular and Protein Networks In Vivo Using on-Chip Electronic Nanosensors
Lydia L. Sohn
$500,523

Purdue University
West Lafayette, IN 47907-1155
Mechanisms of bioynthesis of cereal mixed- linkage $-glucans
Nicholas C. Carpita, Department of Botany and Plant Pathology
$104,000

Purdue University
West Lafayette, IN 47907-1153
Ferulate-5-hydroxylase: requirements for expression and activity
Clinton C. S. Chapple, Department of Biochemistry
$100,000

Purdue University
West Lafayette, IN 47907-1165
Engineering Plant One-Carbon Metabolism
David Rhodes, Department of Horticulture and Landscape Architecture
$38,364 (FY 01 funds)
Collaborators, Institutions and their Support: Andrew Hanson [University of Florida] NSF; Hans Bohnert [University of Arizona] NSF; Douglas A. Gage [Michigan State University] NSF; Yair Shachar-Hill [New Mexico State University] NIST.

Purdue University
West Lafayette, IN 47907-1392
The Impact of Environmental Stress on the Regulation of Photosynthesis
Louis A. Sherman, Department of Biological Sciences
$200,000 (two years)

Purdue University
West Lafayette, IN 47907-1392
Identification of Actin-Binding Proteins from Maize Pollen
Christopher J. Staiger, Department of Biological Sciences
$98,000 (FY 01 funds)

Purdue University
West Lafayette, IN 47907-1392
A Functional Analysis of Actin-Dependent Growth in Plant Cells
Daniel B. Szymanski
$200,000 (two years)

Rice University
Houston, TX 77005-1892
Complex Regulatory Controls of TCH Gene Expression
Janet Braam, Department of Biochemistry and Cell Biology
$101,999 (FY 01 funds)

Rice University
Houston, TX 77005-1892
Characterization and Cloning of Sugar Insensitive (sis) Mutants of Arabidopsis
Susan I. Gibson, Department of Biochemistry and Cell Biology
$102,000

University of Rochester
Rochester, NY 14627-0166
The Structure-Function Relationship of the Clostridium thermocellum Cellulosomal Dockerin
J.H. David Wu, Department of Chemical Engineering
$90,000

The Rockefeller University
New York, NY 10021-6399
Function of Rac GTPases in Plants
Nam-Hai Chua, Lab of Plant Molecular Biology
$104,000

Rutgers University
New Brunswick, NJ 08901-8521
Molecular Bases and Photobiological Consequences of Light Intensity Adaptation in Photosynthetic Organisms

Paul G. Falkowski, Environmental Biophysics and Molecular Ecology, Institute of Marine and Coastal Sciences
$92,552 (FY 01 funds)

Rutgers University
Piscataway, NJ 08854-8020
Corn Storage Protein - A Molecular Genetic Model
Joachim Messing, Waksman Institute
$118,000

The Salk Institute for Biological Studies
La Jolla, CA 92037
Signal Transduction Pathways that Regulate CAB Gene Expression
Joanne Chory, Plant Biology Laboratory
$122,000

The Salk Institute for Biological Studies
La Jolla, CA 92037
Molecular and Genetic Analysis of Hormone-Regulated Differential Cell Elongation in Arabidopsis
Joseph R. Ecker, Plant Biology Laboratory
$110,000

The Salk Institute for Biological Studies
San Diego, CA 92186-5800
Regulation of the floral homeotic gene AGAMOUS
Detlef Weigel, Plant Biology Laboratory
$38,000

The Scripps Research Institute
La Jolla, CA 92037
Membrane Targeting of P-type ATPases in Plant Cells
Jeffrey F. Harper, Department of Cell Biology
$124,000

The Scripps Research Institute
La Jolla, CA 92037
Nuclear Genes Regulating Translation of Organelles mRNAs
Stephen P. Mayfield, Department of Cell Biology
$101,000

Smith College
Northampton, MA 01063
Functional Analysis of Chloroplast Early Light Inducible Proteins (ELIPs)
Carolyn M. Wetzel, Department of Biological Sciences
$33,000 (two years)

University of South Carolina
Columbia, SC 29208
Regulatory role of ANT in organ initiation and growth
Beth A. Krizek, Department of Biological Sciences
$206,000 (two years)

Southern Illinois University
Carbondale, IL 62901-6508
Regulation of Alcohol Fermentation by Escherichia coli
David P. Clark, Department of Microbiology

$109,000

Stanford University
Stanford, CA 94305-5020
R. meliloti-Medicago nodulation genes and signals: genetic and genomic approaches
Sharon R. Long, Department of Biological Sciences
$277,000

Stanford University
Stanford, CA 94305-5020
Global Characterization of Genetic Regulatory Circuitry Controlling Adaptive Metabolic Pathways
Harley H. McAdams
$255,000 (Microbial Cell FY 01 funds - 15 months)

University of Tennessee
Knoxville, TN 37996
Rubisco Mechanism: Dissection of the Enolization Partial Reaction
Fred C. Hartman, Department of Biochemistry and Cell & Molecular Biology
$200,000 (FY 99 funds)

University of Tennessee
Knoxville, TN 37996-1100
Mechanism of Regulated Protein Transport between Nucleus and Cytoplasm
Albrecht G. von Arnim, Department of Botany
$104,000

Texas A&M University
College Station, TX 77843-1114
Novel Biomaterials: Genetically Engineered Pores
Hagan P. Bayley, Health Science Center
$160,000 (Jointly funded with the DOE Division of Material Sciences and Engineering)

Texas A&M University
College Station, TX 77843-3258
Regulation of Development and Nitrogen Fixation in Anabaena
James W. Golden, Biology Department
$197,000 (FY 01 funds - two years)

Texas A&M University
College Station, TX 77843
Post-transcriptional Components of psbA Expression and D1 Biosynthesis in Synechococcus
Susan Golden, Biology Department
$199,000 (FY00 funds – three years)

Texas A&M University
College Station, TX 77843-3255
Genetic Probes of Acetyl-CoA Synthase Cluster Assembly Mechanisms
Paul A. Lindahl, Department of Chemistry
$211,000 (FY 01 funds - two years)

Texas A&M University
College Station, TX 77843-2128
Regulation of Chloroplast Division in Higher Plants
John E. Mullet, Department of Biochemistry/Biophysics
$97,000 (FY 00 funds)

Texas Tech University
Lubbock, TX 79409-3131
The *Dictyostelium discoideum* Cellulose Synthase: Structure/Function Analysis and Identification of Interacting Proteins
Richard L. Blanton, Department of Biological Sciences
$102,000 (FY 01 funds)

Texas Tech University
Lubbock, TX 79409-1061
Ferredoxin-Dependent Plant Metabolic Pathways
David B. Knaff, Department of Chemistry and Biochemistry
$190,000 (two years)

University of Texas
Austin, TX 78712
Structural and Functional Analysis of the Cellulose-synthesizing Complex in Vascular Plants
R. Malcolm Brown, Jr., co P.I. Inder M. Saxena, Department of Botany
$104,000

University of Texas
Austin, TX 78712-1167
Phosphorylation of Plant Protein Synthesis Initiation Factors
Karen S. Browning, Department of Chemistry and Biochemistry
$98,000

University of Texas
Austin, TX 78712
Regulation of Chloroplast Group I Intron Splicing
David L. Herrin
$200,000 (two years)

The Institute for Genomic Research
Rockville, MD 20850-3319
Sequencing of Chromosome 10 of Rice and Validation of Annotation Methods for Rice
C. Robin Buell
$300,000 (FY 99 funds)

The Institute for Genomic Research
Rockville, MD 20850-3319
Structural and Functional Analysis of a Minimum Plant Centromere
C. Robin Buell; in collaboration with Jiming Jiang (University of Wisconsin)
$310,436 (two years)

The Institute for Genomic Research
Rockville, MD 20850-3319
Regulation of Methane Genes and Genome Expression
Najib M. El-Sayed
$22,549

Uniformed Services University of the Health Sciences
Bethesda, MD 20814-4799
Acetyl-CoA cleavage and synthesis in methanogens: biochemistry of acetyl and carbonyl group transformations
David A. Grahame, Department of Biochemistry and Molecular Biology
$41,000

Virginia Polytechnic Institute & State University
Blacksburg, VA 24061-0308
Enzymology of Acetone-Butanol-Isopropanol Formation
Jiann-Shin Chen, Department of Biochemistry
$107,000

University of Virginia
Charlottesville, VA 22903-2477
Protein Structure in Catalytic Function of NADPH: Protochlorophyllide Oxidoreductases
Michael P. Timko, Department of Biology
$210,001 (FY 01 funds - two years)

Washington State University
Pullman, WA 99164-6340
Lipid Signaling and Membrane Function in Mutants of Arabidopsis
John A. Browse, Institute of Biological Chemistry
$135,000 (14 months)

Washington State University
Pullman, WA 99164-6340
Regulation of Terpene Metabolism
Rodney Croteau, Institute of Biological Chemistry
$120,000

Washington State University
Pullman, WA 99164-4234
Functional Analysis of Vegetative Storage Protein Proteolysis in Specialized Leaf Vacuoles
Howard D. Grimes, co P.I. Andreas M. Fischer, Department of Genetics and Cell Biology
$94,000

Washington State University
Pullman, WA 99164-6340
Carbon Metabolism and Electron Flow in Symbiotic Nitrogen Fixation
Michael L. Kahn, Institute of Biological Chemistry
$200,000 (two years)

Washington State University
Pullman, WA 99164-6340
The Energy Budget for Steady-State Photosynthesis
David M. Kramer, co P.I. Gerald E. Edwards, Institute of Biological Chemistry
$99,000

Washington State University
Pullman, WA 99164-6340
Deciphering the Complex Networks in Monolignol Formation, Phenylpropanoid Coupling and Lignin Assembly: An Integrative Approach
Norman G. Lewis, Institute of Biological Chemistry
$109,500

Washington State University
Pullman, WA 99164-6340
Enhancement of Photoassimilate Utilization by Manipulation of ADPGlucose Pyrophosphorylase
Thomas Okita, Institute of Biological Chemistry
$101,000

Washington State University
Pullman, WA 99164-6340
Targeting and Processing of the Thiol Protease Aleurain
John C. Rogers, Institute of Biological Chemistry
$100,000

University of Washington
Seattle, WA 98195-1750
Global Regulation in the Methane-Producing Archaeon Methanococcus maripaludis
John A. Leigh, Department of Microbiology; in collaboration with William B. Whitman (University of Georgia) and Dieter Söll (Yale University)
$623,723 (Microbial Cell FY 01 funds – two years)

University of Washington
Seattle, WA 98195-1750
Genetics in Methylotrophic Bacteria
Mary E. Lidstrom, Department of Chemical Engineering
$212,000 (two years)

Washington University
St. Louis, MO 63130-4899
Molecular genetic characterization of OBP3 and its involvement with photomorphogenesis
Michael M. Neff, Department of Biology
$200,000 (two years)

Washington University
St. Louis, MO 63130-4899
Biogenesis of Photosystems in Synechocystis 6803, a cyanobacterium
Himadri B. Pakrasi, Department of Biology
$188,000

Wisconsin, Medical College of - Milwaukee
Milwaukee, WI 53226
Enzyme Regulation and Catalysis in Carbon Fixation Metabolism
Henry M. Miziorko, Department of Biochemistry
$102,000

University of Wisconsin
Madison, WI 53706-1569
Characterization of distinct membrane fusion pathways at the plane of division during plant cytokinesis
Sebastian Y. Bednarek, Department of Biochemistry
$180,000 (two years)

University of Wisconsin
Madison, WI 53706
Structure-Function Studies of the LRR Domain in Plant Disease Resistance Gene Products
Andrew Bent, Department of Plant Pathology
$200,000 (two years)

University of Wisconsin
Madison, WI 53706
Genetic Analysis of Ethylene Perception and Signal Transduction in Arabidopsis
Anthony B. Bleecker, Department of Botany
$104,000

University of Wisconsin
Madison, WI 53706-1567
Molecular Genetics of Ligninase Expression
Daniel Cullen, Department of Bacteriology
$113,000

University of Wisconsin
Madison, WI 53706
Microbial Formaldehyde Oxidation
Timothy J. Donohue, Department of Bacteriology
$100,000

University of Wisconsin
Madison, WI 53706
The Molecular Basis for Metabolic and Energetic Diversity
Timothy J. Donohue, Department of Bacteriology
$125,000 (Microbial Cell FY 01 funds - 15 months)

University of Wisconsin
Madison, WI 53706-1567
One-electron oxidative mechanisms for lignocellulose decay by fungi
Kenneth E. Hammel, Department of Bacteriology
$88,000

University of Wisconsin
Madison, WI 53706-1567
Structural and Functional Analysis of a Complete Plant Centromere
Jiming Jiang, Department of Horticulture; in collaboration with C. Robin Buell (The Institute for Genomic Research)
$273,836 (FY 01 funds - two years)

University of Wisconsin
Madison, WI 53706-1544
The Biochemistry, Bioenergetics, and Physiology of the CO-Dependent Growth of Rhodospirillum rubrum
Paul W. Ludden, Department of Biochemistry
$105,000

University of Wisconsin
Madison, WI 53706
Global Regulatory Pathways in the alpha-proteobacteria
Michelle R. Rondon
$202,000 (two years)

University of Wisconsin
Madison, WI 53706-1381
Starch Conversion to Sucrose in Plant Leaves
Thomas Sharkey, Department of Botany
$110,000 (18 months)

University of Wisconsin
Madison, WI 53706-1580
Molecular Mechanism of Energy Transduction By Plant Membrane Proteins
Michael R. Sussman, Director, Biotechnology Center
$116,000

University of Wisconsin
Madison, WI 53706-1590
Post-Translational Regulation of Phytochrome Action
Richard Vierstra, Department of Horticulture
$114,000

University of Wisconsin
Milwaukee, WI 53211
Anaerobic Fe(III) reduction by Shewanella putrefaciens: Analysis of the electron transport chain
Daad Saffarini, Department of Biological Sciences
$93,979

University of Wyoming
Laramie, WY 82071-3165
Analysis of genes that regulate cell division and expansion patterns during maize leaf morphogenesis
Anne W. Sylvester, Department of Botany
$98,000

Xavier University of Louisiana
New Orleans, LA 70125
Molecular Characterization of Bacterial Respiration on Minerals
Robert Blake II, College of Pharmacy
$108,568 (FY 01 funds)

Yale University
New Haven, CT 06520-8114
Asapargine and Cysteine Metabolism in Bacteria and Archaea
Dieter Söll, Department of Molecular Biophysics and Biochemistry
$234,600 (FY 01 funds - two years)

Yale University
New Haven, CT 06520-8114
Global Regulation in the Methane-Producing Archaeon Methanococcus maripaludis
Dieter Söll, Department of Molecular Biophysics and Biochemistry; in collaboration with William B. Whitman (University of Georgia) and John Leigh (University of Washington)
$178,194 (Microbial Cell FY 01 funds - two years)

CONFERENCES

Keystone Symposia – Specificity and Crosstalk in Plant Signal Transduction, January 22-27, 2002, Tahoe City, California

Gordon Research Conferences – Reversible Associations in Structural and Molecular Biology, February 10-15, 2002, Ventura, California

Gordon Research Conference – Biochemical Aspects of Photosynthesis, June 16-21, 2002, Bristol, Rhode Island

Gordon Research Conferences – Moelcular Basis of Microbial One-Carbon Metabolism, July 7-12, 2002, New London, Connecticut

Marine Biological Laboratory – Investigations into the Metabolic Diversity of Microorganisms as Part of Microbial Diversity, Summary 2002, Woods Hole, Massachusetts

Michigan State University – Minority Summer Research Program in the Plant Sciences, Summer 2002, East Lansing, MI

Michigan State University – Twenty-Second Fungal Genetics Conference, Asilomar, March 18-23, 2003

National Academy of Sciences – The National Plant Genome Initiative: Objectives for 2003-2008, Washington, DC

University of California, Riverside – 22nd Symposium in Plant Biology, January 15-19, 2003, Riverside, CA