



NATIONAL SCIENCE FOUNDATION

4201 Wilson Boulevard, Arlington VA 22230

Division of Earth Sciences
Instrumentation and Facilities Program

Summary of All FY-1999 Actions Leading to AWARDS

Institution/PI	Title of Proposal	Proposal #	\$'s Requested/ months	FY99 Funding by IF/months	Comments
Alabama LYONS, William B.	"MRI: Acquisition of a Gas-Source Mass Spectrometer Facility for Geological, Hydrological and Ecological Research at The University of Alabama"	EAR9977326	311,696/36	- 0 -	standard grant for EA; split-funded w/ OIA/MRI = 106,000 and EHR/EPSCoR = 106,000
Alaska STONE, David B.	"Collaborative Research: Geomagnetic Field for the Last 5 Ma"	EAR9943700	6,000/12	6,000/12	IF split-funding for EA on PH grant
Alaska WYSS, Max	"Mapping Magma Chambers and Asperities by B-Values"	EAR9902717	4,000/12	4,000/12	IF split-funding for EA on PH grant
Arizona CHESLEY, John T.	"The Os Isotopic Record of Himalayan Paleorivers: A New Tool for Understanding Regional Himalayan Tectonic History and Influence on Ocean Chemistry"	EAR9903278	2,000/12	2,000/12	IF split-funding for EA on GE grant
Arizona COHEN, Andrew S.	"Development of an REU Site for Tropical Limnology Associated With the International Decade of East African Lakes (IDEAL) Program"	ATM9844067	128,250/12	42,750/12	IF split-funding for EA on ATM/PC suppl
Arizona DETTMAN, David L.	"Upgrade of a Stable Isotope Mass Spectrometer by the Addition of an Automated Carbonate Preparation Device"	EAR9905887	58,630/12	58,630/24	standard grant for EA
Arizona DONAHUE, Douglas J.	"NSF-Arizona Accelerator Mass Spectrometry Facility: Operations and Research Applications"	EAR9730699	1,248,306/36	300,015/12	2nd yr incr on 3-yr cont grant for FS; split-funded w/ OPP/ARCSS = 37,500, OPP/AGG = 10,000, OPP/ANS = 5,000 and SBER/AAS = 65,000
Arizona RUIZ, Joaquin	"MRI: Acquisition of Multicollector Inductively Coupled Plasma Mass Spectrometer for the Use in Geosciences"	EAR9976676	559,600/24	- 0 -	standard grant for EA; split-funded w/ OIA/MRI = 489,600
Arizona State BUSECK, Peter R.	"Oxidation State of Mantle Minerals"	EAR9903735	26,499/12	26,499/12	IF split-funding for EA on CH grant
Arizona State HERVIG, Richard L.	"Development of a Technique for Quantitative Hydrogen Analyses of Geological Materials Using SIMS"	EAR9975549	86,953/24	86,953/24	standard grant for ITD
Berkeley Geochronology Cen RENNE, Paul R.	"Reduction of Systematic Errors in ⁴⁰ Ar/ ³⁹ Ar Geochronology"	EAR9814378	142,491/24	134,991/24	standard grant for ITD

Institution/PI	Title of Proposal	Proposal #	\$'s Requested/ months	FY99 Funding by IF/months	Comments
Brigham Young MILLER, Wade E.	"Late Cenozoic Vertebrate Biostratigraphy Across the TransMexican Volcanic Belt, Central Mexico"	EAR9902989	15,000/12	15,000/12	IF split-funding for EA on GE grant
Brown TULLIS, Terry E.	"Laboratory Experiments on Rock Friction Focused on Understanding Earthquake Mechanics"	EAR9814660	472,674/12	8,425/12	IF suppl to PH grant for EA
Brown TULLIS, Terry E.	"Understanding processes of Rock Friction Relevant to Earthquake Mechanics"	EAR9842443	5,375/12	5,375/12	IF suppl to PH grant for EA
California - Berkeley ROMANOWICZ, Barbara A.	"MRI: Collaborative Research: Integrated Instrumentation for Broadband Observations of Plate Boundary Deformation"	EAR9977823	1,999,643/36	377,783/36	standard grant for EA; split-funded w/ OIA/MRI = 322,217
California - Berkeley ROMANOWICZ, Barbara A.	"Technical Support for the Geophysics Computer Laboratory at U.C. Berkeley: Phase II"	EAR9809735	100,000/24	50,000/12	2nd yr incr on 2-yr cont grant for TS
California - Berkeley VALENTINE, James W.	"Characterizing Metazoa of the Neoproterozoic by Investigating the Taphonomy and Phylogeny of Modern Animals"	EAR9814845	8,600/12	8,600/12	IF split-funding for EA on GE grant
California - Berkeley WENK, Hans-Rudolph	"Development of Anisotropy in Deformed and Recrystallized Rocks"	EAR9902866	11,000/12	11,000/12	IF split-funding for EA on PH grant
California - Davis CARLSON, Sandra J.	"Investing Heterochrony in the Fossil Record: A Geochemical, Morphometric, and Phylogenetic Study of Thecideidina (Brachiopoda), Triassic-Recent."	EAR9902984	4,900/12	4,900/12	IF split-funding for EA on GE grant
California - Davis CASEY, William H.	"Rates of Oxygen Exchanges in the AlO ₄ Al ₁₂ (OH) ₁₂ (H ₂ O) ₂₄ + ₂ (aq) Complex From 17O-NMR: A Guide to Mineral Surfaces"	EAR9814152	17,000/12	17,000/12	IF split-funding for EA on CH grant
California - Davis KELLOGG, Louise H.	"CSEDI Collaborative Research: Investigation of Thermo-Chemical Heterogeneity in the Deep Mantle"	EAR9905632	11,500/12	11,500/12	IF split-funding for EA on PH grant
California - Davis NAVROTSKY, Alexandra	"Workshop on Mineral Physics and Earth Materials Research"	EAR9907269	15,000/12	15,000/12	standard grant for Other
California - Los Angeles HARRISON, T. Mark	"Support of an Ion Microprobe Facility"	EAR9806639	1,130,626/60	209,999/12	2nd yr incr on 3-yr cont grant for FS
California - Los Angeles McKEEGAN, Kevin D.	"Acquisition of a Scanning Electron Microscope"	EAR9816264	85,698/12	75,232/24	standard grant for EA; co-funded w/ NASA = 75,232
California - San Diego BOCK, Yehuda	"Collaborative Research: Integration of Synthetic Aperture Radar Interferometry, Continuous GPS and GPS Meteorology for Crustal Deformation and Earthquake Monitoring"	EAR9619201	681,452/36	64,631/12	3rd yr incr on 3-yr cont grant for ITD; split-funded with interagency transfer from NASA/SENH = 64,632

Institution/PI	Title of Proposal	Proposal #	\$'s Requested/ months	FY99 Funding by IF/months	Comments
California - San Diego BOCK, Yehuda	"Collaborative Research: Integration of Synthetic Aperture Radar Interferometry, Continuous GPS and GPS Meteorology for Crustal Deformation and Earthquake Monitoring [supplement]"	EAR9619201	23,700/12	23,700/12	suppl for ITD on IF grant; split-funded w/ NASA-SENH = 76,115
California - San Diego ROY, Kaustuv	"Collaborative Research: Paleobiology of Latitudinal Turnover Gradients: Transoceanic Comparative Analyses"	EAR9903177	7,000/12	7,000/12	IF split-funding for EA on GE grant
California - San Diego SHEARER, Peter M.	"Technician Support for computing at IGPP (Phase II)"	EAR9814320	80,000/24	80,000/24	standard grant for TS
California - San Diego VERNON, Frank L.	"Collaborative Proposal: Analysis of Broadband Seismic Measurements from the Ocean Seismic Network Pilot Experiment"	OCE9819615	47,115/12	13,180/12	IF split-funding for Other on OCE grant
California - San Diego ZUMBERGE, Mark A.	"Collaborative Research: Gravity Measurements to Bound Intrusive Density at Long Valley Caldera"	EAR9902799	2,000/12	2,000/12	IF split-funding for EA on PH grant
California - Santa Barbara LAVALLEE, Daniel	"Study and Modeling of Nonlinearity in Earthquake Strong Ground Motion"	EAR9972987	3,000/12	3,000/12	IF split-funding for Other on PH grant
California - Santa Cruz COE, Robert S.	"Analysis of Geodynamo Simulations and Comparison with Paleomagnetic Data"	EAR9903194	2,400/12	2,400/12	IF split-funding for EA on PH grant
California - Santa Cruz GLATZMAIER, Gary A.	"Geodynamo Simulations: New Physics and Comparison with Experiment"	EAR9902969	6,000/12	6,000/12	IF split-funding for EA on PH grant
California Acad Sci ROOPNARINE, Peter D.	"Patterns and Rates of Evolution in Two Lineages of Lower Devonian Conodonts"	EAR9814354	6,700/12	6,700/12	IF split-funding for EA on GE grant
Caltech AHRENS, Thomas J.	"Dynamic Properties of Earth Materials"	EAR9903806	13,000/12	13,000/12	IF split-funding for EA on PH grant
Caltech CLAYTON, Robert W.	"Upgrading of the SCEC Data Center Mass Storage Facility"	EAR9816156	233,199/12	233,199/24	standard grant for EA
Caltech EILER, John M.	"Acquisition of Instrumentation for Geochemistry at Caltech"	EAR9903699	177,305/12	204,830/24	standard grant for EA
Caltech SIEH, Kerry	"Collaborative Research: Paleoseismology and Paleogeodesy of the Sumatran Subduction Zone"	EAR9903301	19,393/12	19,393/12	IF split-funding for EA on PH grant
Chicago RIVERS, Mark L.	"GeoSoilEnviroCARS: A National Resource for Earth, Planetary, Soil and Environmental Science Research at the Advanced Photon Source"	EAR9906456	8,099,515/60	1,402,000/36	1st yr incr on 3-yr cont grant for FS

Institution/PI	Title of Proposal	Proposal #	\$'s Requested/ months	FY99 Funding by IF/months	Comments
CIW - DTM HAURI, Erik H.	"Facility Support for the CIW Ion Microprobe Laboratory"	EAR9811348	273,451/36	91,112/12	2nd yr incr on 3-yr cont grant for FS
CIW - GL COHEN, Ronald E.	"Acquisition of a Supercomputer for Theoretical Geophysics"	EAR9975753	280,919/36	280,919/36	standard grant for EA
CIW - GL HEMLEY, Russell J.	"Workshop: Mineralogy at the Millennium"	EAR9907081	15,000/01	15,000/12	standard grant for Other
CIW - GL HEMLEY, Russell J.	"Renewal: Chemistry of the Earth's Deep Mantle and Core"	EAR9814819	15,000/12	15,000/12	IF split-funding for EA on CH grant
CIW - GL MAO, Ho-kwang	"Superconducting Wiggler Beam Line for X-Ray Studies with the Diamond Cell at Ultrahigh Pressures"	EAR9730617	380,772/36	144,591/12	2nd yr incr on 3-yr cont grant for FS
CIW - GL MAO, Ho-kwang	"Superconducting Wiggler Beam Line for X-Ray Studies with the Diamond Cell at Ultrahigh Pressures [supplement]"	EAR9730617	50,000/12	50,000/12	IF suppl to IF grant for EA
Clemson MURDOCH, Larry	"Characterization of Hydrologically Active Sheet Fractures in the Piedmont"	EAR9814861	6,400/12	6,400/12	IF split-funding for ITD on HS grant
Colorado GUPTA, Vijay K.	"A Framework to Reassess Basic Research and Educational Priorities in Hydrological Sciences For GEO-2000 and Beyond"	EAR9820275	15,000/12	15,000/12	IF split-funding for Other on HS grant
Colorado MILLER, Gifford H.	"Upgrade of High-Pressure Liquid Chromatograph (HPLC) for Amino Acid Racemization (AAR) Research of Quaternary Geochronology and Paleoclimatology"	EAR9817645	41,047/12	20,523/24	standard grant for EA; split-funded w/ATM/PC = 20,524
Colorado QUALLS, Russell J.	"Surface Fluxes and Remote Sensing: The Canopy Effect"	EAR9903117	1,400/12	1,400/12	IF split-funding for EA on HS grant
Colorado State WOHL, Ellen E.	"Hydraulic Resistance of Large Woody Debris in Step-pool Channels"	EAR9902440	8,380/12	8,380/12	IF split-funding for EA on HS grant
Connecticut College THOMPSON, Douglas M.	"Characterization of Channel Morphology and Hydraulics for Stream-Restoration Design"	EAR9874751	30,000/12	30,000/12	IF split-funding for EA on HS grant
Dartmouth CHAMBERLAIN, C. Page	"Technician Support (Phase I): Gas-Isotope Ratio Mass Spectrometer Laboratory at Dartmouth College"	EAR9903082	179,925/36	59,975/12	1st yr incr on 3-yr cont grant for TS
Dickinson College YOGODZINSKI, Gene M.	"MRI: Acquisition of Scanning Electron Microscope with X-ray Analysis System for Geology, Biology, and Environmental Studies at Dickinson College: An RUI Request"	EAR9977506	162,428/12	- 0 -	standard grant for EA; split-funded w/ OIA/MRI = 162,428
Duke BOUDREAU, Alan E.	"Quantitative Modeling of Infiltration in Layered Intrusions"	EAR9902183	6,000/12	6,000/12	IF split-funding for EA on CH grant

Institution/PI	Title of Proposal	Proposal #	\$'s Requested/ months	FY99 Funding by IF/months	Comments
Duke KATUL, Gabriel G.	"Collaborative Research: The Role of Canopy Structure on Variability of Water and Heat Fluxes from Forested Watersheds (joint with University of Virginia)"	EAR9903471	3,000/12	3,000/12	IF split-funding for EA on HS grant
Duke MALIN, Peter E.	"3D Numerical Modeling of Subduction Zone Anisotropy"	EAR9814242	5,300/12	5,300/12	IF split-funding for EA on PH grant
Field Mus Nat Hist WAGNER, Peter J.	"Phylogenetic and Morphometric Examinations of Evolutionary Dynamics Among Early - Middle Devonian Gastropods"	EAR9903238	12,670/12	12,670/12	IF split-funding for EA on GE grant
Florida CHANNELL, James E.	"Acquisition of Thermal and Alternating Field Demagnetizers"	EAR9902723	26,038/12	26,038/24	standard grant for EA
Florida International GENEREUX, David P.	"Paired-Watershed Study of Water and Solute Budgets in a Tropical Rainforest"	EAR9903243	10,100/12	10,100/12	IF split-funding for EA on HS grant
Georgia CROWE, Douglas E.	"Development of Laser Microprobe irmMS Methods for the Stable Isotopic Analysis of Sulfide Minerals Using SO2 Gas [supplement]"	EAR9811170	6,000/12	6,000/12	IF suppl to IF grant for EA
Georgia PATINO DOUCE, Alberto E.	"Modernization of Electron Microprobe"	EAR9814065	45,275/12	45,275/24	standard grant for EA
GSY-USA Inc. MACKIE, Randall L.	"Collaborative Research: Fast, Conjugate Gradients-Based Algorithm for 3-D Magnetotelluric Inversion"	EAR9903025	111,911/24	74,884/24	standard grant for ITD
Harvard O'CONNELL, Richard J.	"Models of Flow and Geochemical Transport in the Earth"	EAR9814666	25,000/12	25,000/12	IF split-funding for EA on PH grant
Hawaii BEVIS, Michael G.	"Collaborative Research: Integration of Synthetic Aperture Radar Interferometry, Continuous GPS and GPS Meteorology for Crustal Deformation and Earthquake Monitoring"	EAR9711445	111,298/36	13,833/12	3rd yr incr on a 3-yr cont grant for ITD; split-funded w/ interagency transfer from NASA/SENH = 12,500
Hawaii FULLER, Michael D.	"Morphology of reversal transition fields"	EAR9814965	2,360/12	2,360/12	IF split-funding for EA on PH grant
Hawaii MANGHNANI, Murli H.	"Elastic and Anelastic Properties of Molten and Partially Molten Iron Alloys"	EAR9941061	10,000/12	10,000/12	IF split-funding for EA on PH grant
Indiana FISHER, Timothy G.	"Elucidating Both the Northwest Extent of Glacial Lake Agassiz, and the Northwest and South Outlet Chronologies"	EAR9972998	4,500/12	4,500/12	IF split-funding for EA on GE grant
Iowa FOSTER, Charles T.	"Collaborative Research: Simulation of Metamorphism Near Plutons in the Middle Crust: An Approach Combining 3-D Thermal Models and Forward Models of Metamorphic Textures"	EAR9814372	7,051/12	7,051/12	IF split-funding for EA on CH grant

Institution/PI	Title of Proposal	Proposal #	\$'s Requested/ months	FY99 Funding by IF/months	Comments
IRIS BUTLER, Rhett	"IRIS/JOI Scientific Submarine Cable Steering Committee"	OCE9612368	123,096/36	25,000/12	3rd yr incr on 3-yr cont OCE grant for Other; split-funded w/ OCE = 25,000
IRIS SIMPSON, David W.	"IRIS 2000: A Science Facility for Studying the Dynamics of the Solid Earth"	EAR9843924	93,089,000/60	11,409,481/12	4th yr incr on 5-yr Cooperative Agreement EAR-9529992 for FS; split-funded w/ EAR/CD = 17,125 and OPP/AGG = 7,500
IRIS SIMPSON, David W.	"IRIS 2000: A Science Facility for Studying the Dynamics of the Solid Earth [supplement for USArray workshop, March 15-17, 1999]"	EAR9529992	26,000/12	26,000/12	IF suppl to Cooperative Agreement EAR-9529992 for Other
IRIS SIMPSON, David W.	"IRIS 2000: A Science Facility for Studying the Dynamics of the Solid Earth [supplement]"	EAR9529992	382,000/12	- 0 -	IF suppl to Cooperative Agreement EAR-9529992 for FS; split-funded w/ DOD-NIMA = 382,000
Johns Hopkins OLSON, Peter L.	"Experiments on Convection and Turbulence in Earth's Core"	EAR9902741	5,577/12	5,577/12	IF split-funding for EA on PH grant
Kansas BUTLER, James	"A New Method for Identification of Preferential Flow Paths at Sites of Groundwater Contamination"	EAR9903103	3,460/12	3,460/12	IF split-funding for EA on HS grant
Lehigh BEBOUT, Gray E.	"Technician Support (Phase II): Isotope Geochemistry at Lehigh University [supplement]"	EAR9727589	14,883/12	14,883/12	IF suppl to IF grant for TS
Lehigh KODAMA, Kenneth P.	"Acquisition of a Superconducting Rock Magnetometer and a Magnetostatically Shielded Room"	EAR9906070	230,020/12	230,020/24	standard grant for EA
Lehigh LARSEN, John W.	"Kerogen-Water Reactions During Maturation"	EAR9820862	13,000/12	13,000/12	IF split-funding for EA on GE grant
Louisiana State CHAN, Lui-heung	"Lithium Isotope Compositions of Hawaiian Lavas: A Study of Source Components"	EAR9903197	9,500/12	9,500/12	IF split-funding for EA on CH grant
Louisiana State DUTROW, Barbara L.	"Collaborative Research: Simulation of Metamorphism Near Plutons in the Middle Crust: An Approach Combining 3-D Thermal Models and Forward Models of Metamorphic Textures"	EAR9814418	8,600/12	8,600/12	IF split-funding for EA on CH grant
Maryland KAUFMAN, Alan J.	"Acquisition of a Gas Source Stable Isotope Mass Spectrometer and Automated Preparation Systems"	EAR9817348	247,500/12	247,500/24	standard grant for EA
Maryland LATHROP, Daniel P.	"Development of a Liquid Sodium Laboratory Model of the Earth's Outer Core"	EAR9903958	150,000/24	150,000/24	standard grant for ITD
Maryland LATHROP, Daniel P.	"A Liquid Sodium Laboratory Model of the Earth's Outer Core"	EAR9903162	12,000/12	12,000/12	IF split-funding for EA on PH grant

Institution/PI	Title of Proposal	Proposal #	\$'s Requested/ months	FY99 Funding by IF/months	Comments
Michigan LANGE, Rebecca A.	"Acquisition of an Ultra-High Temperature Acoustic Interferometer"	EAR9903070	22,410/12	22,410/24	standard grant for EA
Michigan WILKINSON, Bruce H.	"Calibration of Geologic Cycling Rate"	EAR9902849	1,410/12	1,410/12	IF split-funding for EA on GE grant
Michigan ZHANG, Youxue	"Diffusion, Solubility, Bubble Growth, and Gas-Driven Eruptions"	EAR9972937	19,634/12	19,634/12	IF split-funding for EA on CH grant
Michigan ZHANG, Youxue	"Reaction Kinetics and Geospeedometry"	EAR9940341	12,514/12	12,514/12	IF split-funding for EA on CH grant
Michigan - Dearborn MURRAY, Kent S.	"RUI: An Evaluation of the Effectiveness of Air Sparging Techniques in Nonhomogeneous Natural Sediments"	EAR9814833	12,500/12	12,500/12	IF split-funding for EA on HS grant
Minnesota BANERJEE, Subir K.	"Continuation of a Facility: Institute for Rock Magnetism"	EAR9818704	951,280/36	304,428/12	1st yr incr on 3-yr cont grant for FS
Minnesota BANERJEE, Subir K.	"Continuation of a Facility: Institute for Rock Magnetism [supplement]"	EAR9628693	21,777/12	21,777/12	IF suppl to IF grant for FS
Minnesota BANERJEE, Subir K.	"Continuation of a Facility: Institute for Rock Magnetism [supplement]"	EAR9818704	4,599/12	- 0 -	suppl to IF grant for Other; split-funded w/GEO = 4,599
Minnesota EDWARDS, R. Lawrence	"Collaborative Research: Paleoseismology and Paleogeodesy of the Sumatran Subduction Zone"	EAR9903443	1,400/12	1,400/12	IF split-funding for EA on PH grant
Minnesota HIRSCHMANN, Marc M.	"Collaborative Research: Melting and Mass Transfer in the Central American Arc From Pa-231, Th-230, and Ra-226 Systematics"	EAR9814805	7,000/12	7,000/12	IF split-funding for EA on CH grant
Minnesota KARATO, Shun-ichiro	"Technician for the Mineral and Rock Physics Laboratory, University of Minnesota (Phase II)"	EAR9906986	120,000/24	60,000/12	1st yr incr of 2-yr cont grant for TS
Minnesota KOHLSTEDT, David L.	"Evolution of Melt Distribution During Deformation of Partially Molten Mantle Rocks: Implications for Geodynamical Processes"	EAR9815039	10,000/12	10,000/12	IF split-funding for EA on PH grant
Minnesota SEYFRIED, William E.	"Acquisition of LA-ICP-MS Facilities for Geochemical Research at the University of Minnesota"	EAR9904323	200,000/12	200,000/24	standard grant for EA
Minnesota WHITNEY, Donna L.	"CAREER: Integrated Studies of Migmatite and Crustal Melting [supplement]"	EAR9943672	12,372/12	12,372/12	IF split-funding for EA on CH grant
Minnesota - Duluth MCMANUS, James	"Acquisition of a Flow Injection System and a Carbonate Carbon Analyzer for the Large Lakes Observatory"	EAR9902853	33,218/12	11,073/24	standard grant for EA; split-funded w/ OCE/ITS = 11,073 and ATM/PC = 11,072

Institution/PI	Title of Proposal	Proposal #	\$'s Requested/ months	FY99 Funding by IF/months	Comments
Missouri LYONS, Timothy W.	"CAREER: Developing an Initiative in Biogeochemistry at the University of Missouri-Columbia: The Doctoral Program and Related Research"	EAR9875961	3,000/12	3,000/12	IF split-funding for EA on GE grant
MIT BOWRING, Samuel A.	"MRI: Establishment of a State-of-the-Art Facility for Elemental and Isotope Analysis of Earth Materials"	EAR9977588	952,273/24	588,000/24	standard grant for EA
MIT EVANS, J. Brian	"Micromechanics of Semi-brittle Flow"	EAR9903307	3,000/12	3,000/12	IF split-funding for EA on PH grant
MIT GROTZINGER, John P.	"Acquisition of Differential GPS System for Use in Geologic Field Mapping"	EAR9904298	46,903/12	46,903/24	standard grant for EA
MIT HARVEY, Charles F.	"(Career) Revisiting Two Basic Processes in Hydrogeology: Solute Transport in Heterogeneous Formations and Chemical Mixing in Porous Media"	EAR9875995	15,000/12	15,000/12	IF split-funding for EA on HS grant
MIT MADDEN, Theodore R.	"Collaborative Research: Fast, Conjugate Gradients-Based Algorithm for 3-D Magnetotelluric Inversion"	EAR9903775	110,330/24	75,116/24	standard grant for ITD
MIT REILINGER, Robert E.	"Equipment for Collaborative Research: GPS Measurements of Plate Interactions in the Western Mediterranean"	EAR9819298	63,750/12	58,750/24	standard grant for EA
Montana State IVIE, Michael A.	"A New Insect and Plant Konservat-Lagerstätten from a Tertiary Marr Lake Deposit in the Upper Missouri River Basin, SW Montana"	EAR9903098	1,500/12	1,500/12	IF split-funding for EA on GE grant
Mt. Holyoke DYAR, M. Darby	"RUI: Acquisition of a Mossbauer Spectrometer"	EAR9811870	52,840/12	49,609/24	standard grant for EA
Nevada - Reno AREHART, Greg B.	"MRI: Acquisition of a Stable Isotope Facility to Study Earth and Environmental Systems and Processes"	EAR9977209	630,779/36	- 0 -	standard grant for EA; split-funded w/ OIA/MRI = 120,000 and EHR/EPSCoR = 120,000
New Mexico KARLSTROM, Karl E.	"Collaborative Research: An Integrated Study of Late Proterozoic (1.2-0.7 Ga) Extensional Tectonism, Basin Evolution, and Biological Evolution in the Grand Canyon supergroup and .."	EAR9941292	10,000/12	10,000/12	IF split-funding for EA on TE grant
New Mexico Tech HENDRICKX, Jan M.	"Recharge Enhancement Through Indurated Calcic Horizons?"	EAR9903095	28,000/12	28,000/12	IF split-funding for EA on HS grant
Northern Arizona HOISCH, Thomas D.	"Upgrading of Northern Arizona University Electron Microprobe Laboratory"	EAR9812392	29,092/12	29,092/24	standard grant for EA
Notre Dame GRAY, William G.	"Closure of Thermodynamically Constrained Models for Multiphase Systems"	EAR9901432	7,500/12	7,500/12	IF split-funding for EA on HS grant

Institution/PI	Title of Proposal	Proposal #	\$'s Requested/ months	FY99 Funding by IF/months	Comments
Ohio State DANIELS, Jeffrey J.	"Theory and Testing of Electromagnetic Wave Polarization Phenomena for Improving Ground Penetrating Radar Subsurface Imaging"	EAR9818137	179,518/24	179,518/24	standard grant for ITD
Ohio State SCHWARTZ, Franklin W.	"Anisotropic Dispersion and Variable-Density Flow in Fractured Media"	EAR9814820	14,000/12	14,000/12	IF split-funding for EA on HS grant
Oklahoma LONDON, David	"A Kinetic Model for Crystallization in the Hydrous Haplogranite System (Ab-Or-Qtz-H2O)"	EAR9814524	4,981/12	4,981/12	IF split-funding for EA on CH grant
Oklahoma SOREGHAN, Gerilyn S.	"Acquisition of a Cathodoluminescence System: Applications to Sedimentologic, Mineralogical, Geochemical, and Structural Analyses"	EAR9906029	22,578/12	22,578/24	standard grant for EA
Oregon WELDON, Ray J.	"Collaborative Research: Geodynamics of Intracontinental Mountain Building in the Tien Shan, Central Asia [supplement]"	EAR9614166	21,735/12	21,735/12	IF suppl to CD grant for EA
Oxford WILLEMAN, Raymond	"Partial Support of the International Seismological Center"	EAR9725096	345,600/36	59,300/12	IF split-funding for FS on 4-yr cont PH grant
Penn State LVOV, Serguei N.	"Collaborative Proposal: Development of Advanced Electrochemical Instruments for Accurate pH Measurements in Hydrothermal Solutions at Temperatures up to 450 Degrees Centigrade (Revised Version)"	EAR9725191	321,360/24	100,120/12	2nd yr incr on 3-yr cont grant for ITD
Penn State LVOV, Serguei N.	"Collaborative Proposal: Development of Advanced Electrochemical Instruments for Accurate pH Measurements in Hydrothermal Solutions at Temperatures up to 450 Degrees Centigrade"	EAR9725191	9,810/12	9,810/12	IF suppl to IF grant for ITD
Penn State SLINGERLAND, Rudy L.	"Sediment Transport and Fluvial Bedrock Erosion in an Evolving Mountain Belt: A Field Study"	EAR9903196	9,000/12	9,000/12	IF split-funding for EA on GE grant
Pittsburgh HARBERT, William P.	"Collaborative Research: Tectonics and Paleomagnetism of Kamchatka Peninsula Composite Terranes, Northeastern Russia"	EAR9940717	8,699/12	8,699/12	IF split-funding for EA on TE grant
Princeton BUNGE, H. Peter	"Building A PC-Cluster for Global Geodynamic Simulations"	EAR9814635	98,505/12	89,233/24	standard grant for EA
Purdue ELMORE, David	"Facility Support: The Purdue Rare Isotope Measurement Laboratory"	EAR9809983	1,590,830/36	568,933/12	2nd yr incr on 3-yr cont grant for FS
Rice ANDERSON, John B.	"Evaluation of Coastal Response to Predicted (IPCC) Sea Level Rise from Holocene Stratigraphic Records"	EAR9905230	10,000/12	10,000/12	IF split-funding for EA on GE grant
Rice SYMES, William W.	"MRI: Acquisition of a High Performance Computer System for the Center for Computational Geophysics"	EAR9977697	280,143/36	- 0 -	standard grant for EA; split-funded w/ OIA/MRI = 280,143

Institution/PI	Title of Proposal	Proposal #	\$'s Requested/ months	FY99 Funding by IF/months	Comments
Rutgers DELANEY, Jeremy S.	"Collaborative Research: Chemical Equilibria Involving Iron and Hydrogen in Metapelites From Western Maine"	EAR9909588	13,000/12	13,000/12	IF split-funding for EA on CH grant
Rutgers KENT, Dennis	"Basic Paleomagnetic Laboratory Equipment"	EAR9902811	28,580/12	29,032/24	standard grant for EA
Rutgers WRIGHT, James D.	"Acquisition of a Stable Isotope Mass Spectrometer and Automated Sample Preparation Device for Carbonate and Water Analyses"	EAR9816252	97,750/12	32,257/24	standard grant for EA; split-funded w/ OCE/ITS = 65,493
SD Mines & Tech DUKE, Edward F.	"Upgrading of Scanning Electron Microscope for Chemical and Morphological Feature Analysis"	EAR9906361	23,900/12	23,900/24	standard grant for EA
Smithsonian - AO DAVIS, James L.	"Development of a GPS Calibration System for High-Accuracy Geophysical Applications"	EAR9708251	938,591/36	201,908/12	3rd yr incr on 3-yr cont grant for ITD
South Florida QUINN, Terrence M.	"Acquisition of a Stable Isotope Ratio Mass Spectrometer for Global Change Research at USF"	EAR9816650	137,000/12	45,667/24	standard grant for EA; split-funded w/ OCE/ITS = 45,667 and ATM/PC = 45,666
Southern California HENYEY, Thomas L.	"Southern California Earthquake Center [supplement for workshop on Plate Boundary Observatory]"	EAR9944296	13,500/12	13,500/12	IF supplement to STC Coop Agree EAR-8920136 for Other
Southern California MUTTI, Maria	"Acquisition of a Coulometrics Carbonate Carbon Analyzer and a CE CNS Elemental Analyzer"	EAR9817651	34,750/12	17,375/24	standard grant for EA; split-funded w/ OCE/ITS = 17,375
Southern Illinois PINTER, Nicholas	"Collaborative Research: Testing Models of Fault-Related Folding, Northern Channel Islands, California [supplement]"	EAR9940718	3,989/12	3,989/12	IF split-funding for EA on TE suppl
St. Louis MITCHELL, Brian J.	"Technician Support for Seismological Studies in the Central United States"	EAR9905328	179,927/36	60,000/12	1st yr incr on 2-yr cont grant for ITD
Stanford BIRD, Dennis K.	"Seasonal Attenuation and Release of Arsenic by Pyrite Weathering Products, Southern Mother Lode Gold District, California"	EAR9902859	4,000/12	4,000/12	IF split-funding for EA on CH grant
Stanford MILLER, Elizabeth L.	"Acquisition of (U-Th)/He Thermochronology Laboratory"	EAR9902988	68,509/12	68,509/24	standard grant for EA
Stanford SEGALL, Paul	"Expansion of the Permanent GPS Network on Kilauea Volcano"	EAR9902903	29,415/12	29,415/24	standard grant for EA
Stanford ZEBKER, Howard A.	"Collaborative Research: Integration of Synthetic Aperture Radar Interferometry, Continuous GPS and GPS Meteorology for Crustal Deformation and Earthquake Monitoring"	EAR9711915	226,200/36	25,584/12	3rd yr incr on a 3-yr cont grant for ITD; split-funded w/ interagency transfer from NASA/SENH = 25,585

Institution/PI	Title of Proposal	Proposal #	\$'s Requested/ months	FY99 Funding by IF/months	Comments
SUNY - College Env Sci MCDONNELL, Jeffrey J.	"Hillslope-Riparian Zone Reservoir Mixing: A Multi-Catchment Test of a New Methodology for Predicting Stream Chemistry"	EAR9805475	8,500/12	8,500/12	IF split-funding for EA on HS grant
SUNY - Stony Brook DAVIS, Daniel M.	"Acquisition of GPR System"	EAR9816044	17,661/12	17,661/24	standard grant for EA
SUNY - Stony Brook WEIDNER, Donald J.	"Science and Technology Center for High Pressure Research"	EAR9841353	14,680,542/60	2,835,695/12	9th yr incr on STC Cooperative Agreement EAR-8920239 for FS; split-funded w/ EHR = 163,835
SUNY - Stony Brook WEIDNER, Donald J.	"Science and Technology Center for High Pressure Research [supplement]"	EAR8920239	100,000/12	100,000/12	IF suppl to Cooperative Agreement EAR-8920239 for FS
Temple ULMER, Gene C.	"Collaborative Proposal: Development of Advanced Electrochemical Instruments for Accurate pH Measurements in Hydrothermal Solutions at Temperature Up to 450 Degrees Centigrade (Revised Version)"	EAR9727118	234,290/24	68,291/12	2nd yr incr on 3-yr cont grant for ITD
Temple ULMER, Gene C.	"Collaborative Proposal: Development of Advanced Electrochemical Instruments for Accurate pH Measurements in Hydrothermal Solutions at Temperature Up to 450 Degrees Centigrade [supplement]"	EAR9727118	6,397/12	6,397/12	IF suppl to IF grant for ITD
Texas BENNETT, Philip C.	"Microbial Weathering of Silicates: Aggressive Release of Limiting Nutrients"	EAR9903267	1,100/12	1,100/12	IF split-funding for EA on GE grant
Texas CARLSON, William D.	"Facility Support: High-Resolution X-Ray Computed Tomography Laboratory"	EAR9816020	303,122/36	200,000/24	standard grant for FS
Texas - Dallas PRESNALL, Dean C.	"High Pressure Melting Relations of Model Carbonated Lherzolite in the CaO-MgO-Al ₂ O ₃ -SiO ₂ -CO ₂ System: The Carbonatite-Kimberlite-Basalt Connection [supplement]"	EAR9725900	13,560/12	13,560/12	IF suppl to CH grant for EA
UCAR - COSMIC ANTHES, Richard	"Constellation Observing System for Meteorology Ionosphere and Climate"	ATM9908671	75,000/12	75,000/12	IF split-funding for Other on ATM grant
UCAR-UNAVCO WARE, Randolph H.	"Support of UNAVCO and Related Activities"	EAR9840963	10,057,671/36	1,650,000/12	3rd yr incr on 3-yr cont grant for FS; split-funded w/ PH = 6,100
UCAR-UNAVCO WARE, Randolph	"Support of UNAVCO and Related Activities [supplement for workshop on Plate Boundary Observatory]"	EAR9944293	25,000/12	25,000/12	IF suppl to UNAVCO Cooperative Agreement ATM-9209181/SPO #2 EAR-9405501 for Other
UCAR-UNAVCO WARE, Randolph H.	"Support of UNAVCO and Related Activities [supplement]"	EAR9903413	169,655/12	- 0 -	suppl to UNAVCO Cooperative Agreement ATM-9209181/SPO #2 EAR-9405501 for ITD; "Development of an L-1 Phase GPS Volcano Monitoring System"; split-funded w/ NASA-SENH = 169,655

Institution/PI	Title of Proposal	Proposal #	\$'s Requested/ months	FY99 Funding by IF/months	Comments
UCAR-UNAVCO WARE, Randolph H.	"Support of UNAVCO and Related Activities [supplement]"	EAR9903413	218,058/12	- 0 -	suppl to UNAVCO Cooperative Agreement ATM-9209181/SPO #2 EAR-9405501 for FS; split-funded w/OPP = 200,000, PH = 12,585 and CH = 5,473
Utah WANNAMAKER, Philip E.	"Collaborative Research: A Magnetotelluric Instrumentation Facility for Electromagnetic Study of the Continents (EMSOC)"	EAR9616450	318,713/36	93,385/12	2nd yr incr on 3-yr cont grant for FS
Utah State OR, Dani	"Thin Films in Unsaturated Porous Media - Effects on Flow and Transport"	EAR9805409	397,946/36	15,450/12	IF split-funding for EA on HS grant
Virginia ALBERTSON, John D.	"Joint Proposal with Duke University: The Role of Canopy Structure on Variability fo Water and Heat Fluxes from Forested Watersheds"	EAR9902957	4,500/12	4,500/12	IF split-funding for EA on HS grant
VPI & SU BODNAR, Robert J.	"Accomplishment-Based Renewal: Source(s) and Distribution of Metals in Porphyry Copper Deposits"	EAR9940042	17,836/12	17,836/12	IF split-funding for EA on CH grant
VPI & SU BURBEY, Thomas J.	"Assessing Horizontal Strain and Deformation From Extensometer Data"	EAR9902728	6,000/12	6,000/12	IF split-funding for EA on HS grant
VPI & SU HOCELLA, Michael F.	"Mineral-Water Interface Dynamics: The Complex Interactions of Redox Active Metals With Manganese Oxide Surfaces"	EAR9902996	21,900/12	21,900/12	IF split-funding for EA on CH grant
VPI & SU SPOTILA, James A.	"Development of the Radiogenic Helium Thermochronometer for Study of Landscape Evolution and Geomorphic Process in Active and Extinct Mountain Systems"	EAR9906357	48,554/12	48,554/24	standard grant for ITD
Washington BROWN, J. Michael	"ISS Laboratory Upgrade"	EAR9817863	243,800/36	243,800/36	standard grant for EA
Washington NELSON, Bruce K.	"Technician Support Phase II: Isotope Geochemistry Laboratory, Department of Geological Sciences, University of Washington"	EAR9803659	85,400/24	43,536/12	2nd yr incr on 2-yr cont grant for TS
Washington - SL TUCKER, Robert D.	"Continuation of Support for a Technical Scientist in the Geochronology Laboratory, Washington University (Phase II)"	EAR9816037	80,000/24	80,000/24	standard grant for TS
Washington State ALLEN-KING, Richelle M.	"Geochemical and Physical Aquifer Heterogeneity: Correlation with Sedimentary Facies"	EAR9804980	8,694/12	8,694/12	IF split-funding for EA on HS grant
WHOI COLLINS, John A.	"Collaborative Proposal: Analysis of Broadband Seismic Measurements from the Oceanic Seismic Network Pilot Experiment"	OCE9900943	41,426/12	13,642/12	IF split-funding for Other on OCE grant
WHOI KURZ, Mark D.	"Technician Support for Isotope Geochemistry (Phase I)"	EAR9807951	150,000/36	59,995/12	2nd yr incr on 3-yr cont grant for TS

Institution/PI	Title of Proposal	Proposal #	\$'s Requested/ months	FY99 Funding by IF/months	Comments
WHOI PEUCKER-EHRENBRINK, B.	"Acquisition of an Electric Pulse Rock Sample Disaggregator"	EAR9905530	145,204/12	108,000/24	standard grant for EA
WHOI SHIMIZU, Nobumichi	"Support of a National Ion Microprobe Facility at Woods Hole Oceanographic Institution"	EAR9904400	756,472/36	184,259/12	1st yr incr on 1.5 yr cont grant for FS
WHOI SHIMIZU, Nobumichi	"Support of a National Ion Microprobe Facility at Woods Hole Oceanographic Institution [supplement for workshop on Geochemical SIMS]"	EAR9628749	10,941/12	10,941/12	IF suppl for Other
WHOI STEPHEN, Ralph A.	"Time Dependence of Broadband Ambient Seismic Noise on the Ocean Floor"	OCE9819539	89,188/12	26,667/12	IF split-funding for Other on OCE grant
Wisconsin JOHNSON, Clark M.	"Acquisition of the Next-Generation Magnetic-Sector Inductively-Coupled Plasma Mass Spectrometer"	EAR9905436	250,000/24	250,000/24	standard grant for EA
Wyoming EGGLESTON, Carrick M.	"CAREER: Career Development in the Environmental Geochemistry of Dissolution-Growth and Electron Transfer at the Iron Oxide/Fluid Interface"	EAR9875830	25,100/12	25,100/12	IF split-funding for EA on GE grant
Yale LEES, Jonathan M.	"Technician Support: Supervisor of Computer Facilities (Phase I)"	EAR9729976	150,000/36	50,000/12	2nd yr incr on 3-yr cont grant for TS

ABBREVIATIONS and EXPLANATIONS

AAS =	Archeology, Archeometry and Systematic Collections Program in SBER	incr =	an annual increment of funds to an active NSF grant
AFOSR =	Air Force Office of Scientific Research	INT =	Division of International Programs in SBE
AGG =	Antarctic Geology and Geophysics Program in OPP	IRIS =	Incorporated Research Institutions for Seismology
AMS =	Accelerator Mass Spectrometry	ISS =	Impulsive Stimulated Scattering
ANS =	Arctic Natural Sciences Program in OPP	ITD =	Instrument and Technique Development component of IF Program
AO =	Astronomical Observatory of the Smithsonian Institution	ITS =	Oceanographic Instrumentation and Technical Service Program in OCE
ARCSS =	Arctic System Sciences Program in OPP	IUPU =	Indiana University - Purdue University system
ASL =	Albuquerque Seismology Laboratory of the USGS	LA-ICP-MS =	laser ablation ICP-MS
ATM =	Division of Atmospheric Sciences in GEO	LDEO =	Lamont-Doherty Earth Observatory, Columbia University
BNL =	Brookhaven National Laboratory	MGG =	Marine Geology and Geophysics Program in OCE
CD =	Continental Dynamics Program in EAR	MPS =	Directorate for Mathematics and Physical Sciences at NSF
CD-ATM =	Climate Dynamics Program in ATM	MRI =	Major Research Instrumentation Program in OSTI
CH =	Geochemistry and Petrology Program in EAR	NASA-DOSE =	National Aeronautics and Space Administration-Dynamics of the Solid Earth Program
CHE =	Chemical Instrumentation Program in MPS	NIMA =	National Imagery and Mapping Agency (formerly DMA)
CIW =	Carnegie Institution of Washington	NOAA =	National Oceanic and Atmospheric Administration within U.S. Department of Commerce
CO =	Chemical Oceanography Program in OCE	NOS =	National Ocean Service in NOAA
cont grant =	continuing grant, a multi-year grant funded one year at a time	NSLS =	National Synchrotron Light Source at BNL
DCP =	direct current plasma	OBES =	Office of Basic Energy Sciences in the U.S. Department of Energy
DMA =	Defense Mapping Agency	OCE =	Division of Ocean Sciences in GEO
DMR =	Division of Materials Research in MPS	ODP =	Ocean Drilling Program in OCE
DOD =	Department of Defense	OIA =	Office of Integrative Activities at NSF (formerly OSTI)
DRI =	Desert Research Institute of the University of Nevada	OMA =	Office of Multidisciplinary Activities at NSF
DTM =	Department of Terrestrial Magnetism in CIW	OPP =	Office of Polar Programs at NSF
EA =	Equipment Acquisition component of IF Program	OSTI =	Office of Science and Technology Infrastructure at NSF
EAR =	Division of Earth Sciences in GEO	OT =	Oceanographic Technology Program in OCE
EH =	Education & Human Resources Program in EAR	PC =	Paleoclimate program in ATM
EHR =	Directorate for Education and Human Resources at NSF	PH =	Geophysics Program in EAR
ENG =	Directorate for Engineering at NSF	REU =	Research Experience for Undergraduates Program in EHR
EPSCoR =	Experimental Program to Stimulate Competitive Research in EHR	RSMAS =	Rosenstiel School of Marine and Atmospheric Sciences
FS =	Facility Support component of IF Program	RUI =	Research in Undergraduate Institutions Program in EHR
FY =	Federal fiscal year e.g., FY94: 10/1/93 to 9/30/94	SBE =	Directorate for Social, Behavioral & Economic Sciences at NSF
GE =	Geology and Paleontology Program in EAR	SBER =	Division of Social, Behavioral and Economic Research in SBE
GEO =	Directorate for Geosciences at NSF	SENH =	NASA's Solid Earth And Natural Hazards Research Program
GL =	Geophysical Laboratory in CIW	SGER =	Small Grants for Exploratory Research
GPS =	Global Positioning System	SIMS =	secondary ionization mass spectrometry
GSN =	Global Seismographic Network of IRIS	SNL =	Sandia National Laboratory
GSO =	Graduate School of Oceanography, University of Rhode Island	split-funding =	two or more programs share the funding of a grant
HRTEM =	high- resolution TEM	standard grant	a grant funded for the full amount in its 1st yr
HS =	Hydrologic Sciences Program in EAR	STC =	NSF Science and Technology Center
ICP-AE =	Inductively coupled plasma-atomic emission spectrometer	suppl =	a funding supplement to an active NSF grant
ICP-MS =	Inductively coupled plasma-mass spectrometer	TE =	Tectonics Program in EAR
IF =	Instrumentation and Facilities Program in EAR		

TEM = transmission electron microscopy
TIMS = thermal ionization mass spectrometry
TS = Technician Support component of IF Program
UCAR = University Consortium for Atmospheric Research
UNAVCO = University NAVSTAR Consortium within UCAR
USGS = U.S. Geological Survey
WE = Western Europe Program in INT
WHOI = Woods Hole Oceanographic Institution
XRD = X-ray diffractometer
XRF = X-ray fluorescence spectrometer

NATIONAL SCIENCE FOUNDATION
 4201 Wilson Boulevard, Arlington VA 22230

Division of Earth Sciences (EAR)

Instrumentation and Facilities Program (IF)

Numerical Summary of All Actions in FY-1999

<u>PROPOSALS</u>		<u>DOLLARS</u>	
Total number of proposals processed by IF	223	Total dollars requested of IF (per year for multi-year proposals)	44,589,808
Logged-in to IF as primary program	139	Total awarded through IF actions in FY-1999	29,502,973
New proposals; full review by IF	105	Awarded from IF budget	26,289,511
Declined	48	For equipment acquisition/upgrade (EA)	4,608,527
Withdrawn	1	For instr and technique development (ITD)	1,330,690
Funded entirely from IF budget	43	For facility support (FS)	19,574,975
Split-funded with other programs ..	12	For technician support (TS)	498,389
Held over for FY'00 decision	1	Other (workshops, REU, etc.)	276,930
New proposals; withdrawn before review	1	Awarded from other NSF budgets through split-funding ..	2,482,975
Other award actions (incr, suppl, etc)	33	For equipment acquisition/upgrade (EA)	1,923,258
Funded entirely from IF budget	22	For facility support (FS)	530,118
Split-funded with other programs	11	Other (workshops, REU, etc.)	29,599
Logged-in to other NSF programs; IF-split-funding	84	Awarded through interagency transfers	730,487
		For facility support (FS)	382,000
		For instr and technique development (ITD)	348,487