

**NATIONAL SCIENCE FOUNDATION**

4201 Wilson Boulevard, Arlington VA 22230

**Division of Earth Sciences  
Instrumentation and Facilities Program**

*Summary of All FY-1996 Actions Leading to AWARDS*

<b>Institution/PI</b>	<b>Title of Proposal</b>	<b>Proposal #</b>	<b>\$'s Requested/ months</b>	<b>FY96 Funding by IF/months</b>	<b>Comments</b>
Alabama GREEN, Nathan L.	"Acquisition of a Computer-Controlled X-Ray Fluorescence Spectrometer"	EAR9628232	93,900/6	93,900/24	standard grant for EA
Arizona BUSEK, Peter R.	"Solid State Geochemistry: High-Resolution Transmission Electron Microscopy of Minerals"	EAR9219376	943,620/60	- 0 -	4th yr incr on 5-yr cont grant for Research; split-funded w/ CH= 130,000 in FY 96
Arizona DONAHUE, Douglas J.	"NSF Arizona Accelerator Mass Spectrometry Facility: Operations and Research Applications"	EAR9508413	1,973,131/60	325,000/36	2nd yr incr on 3-yr cont grant for FS
Arizona DRAKE, Michael J.	"Acquisition of A Walker-Style Multi-Anvil Apparatus [supplement]"	EAR9418215	6,457/12	6,457/12	IF suppl for EA on IF grant
Arizona JOHNSON, Roy A.	"High Resolution Seismic Imaging of the Santa Rita Fault, a Low-Angle Normal Fault Linked to Large-Magnitude Earthquakes"	EAR9526862	12,800/12	12,800/12	IF split-funding for EA on PH grant
Arizona PATCHETT, P. Jonathan	"Acquisition of a Multicollector Mass Spectrometer"	EAR9526269	405,901/12	330,000/24	standard grant for EA
Arizona State FINK, Jonathan H.	"High-Resolution Electron Energy-Loss Spectroscopy of Minerals"	EAR9418206	346,731/36	- 0 -	2nd yr incr on 3-yr cont grant for ITD; split-funded w/ CH = 71,638 in FY 96
Arizona State HOLLOWAY, John R.	"Development of an Artificial Fumarole for High Temperature Gas Flow Experiments"	EAR9529603	54,787/12	40,241/24	standard grant for ITD
Arizona State WILLIAMS, Stanley N.	"Galeras Volcanic Complex, Colombia: An Integrated Study of Andean Volcanism [supplement]"	EAR9641249	7,000/12	7,000/12	IF suppl for EA on CH grant
Auburn GASTALDO, Robert A.	"Request for a Modified Fisher 1650 MV Aluminum Boat with 40hp Mercury Outboard for Water Column and Vibracore Sampling"	EAR9625992	7,750/3	7,750/24	standard grant for EA
Augustana College WOLF, Michael B.	"RUI: Acquisition of a Cold-Seal Experimental Petrology Laboratory"	EAR9526163	54,476/12	40,000/24	standard grant for EA
Berkeley Geochronology Cen LUDWIG, Kenneth	"Acquisition of a Thermal Ionization Mass Spectrometer at the Berkeley Geochronology Center"	EAR9601975	513,520/12	- 0 -	standard grant for EA; split-funded w/ ARI/OSTI = 200,000; SBER/Archaeometry = 167,879

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Brown RUTHERFORD, Malcolm J.	"Electron Microprobe Upgrade, Brown University [supplement]"	EAR9641267	7,450/12	7,450/12	IF suppl for EA on IF grant
Brown TULLIS, Jan A.	"Flow Laws for Quartzo-Feldspathic Aggregates"	EAR9628348	3,750/12	3,750/12	IF split-funding for EA on PH grant
California - Berkeley CARMICHAEL, Ian S. E.	"Acquisition of a New XRF Machine"	EAR9628440	210,000/12	124,800/24	standard grant for EA
California - Berkeley JEANLOZ, Raymond	"Collaborative Research: Composition and Evolution of the Lower Mantle: Experiments on the Thermal Equation of State of Perovskite"	EAR9527021	8,000/12	8,000/12	IF split-funding for EA on PH grant
California - Berkeley ROMANOWICZ, Barbara A.	"Near Real-Time Access to Earthquake Data in Central California"	EAR9628318	240,679/24	199,628/24	standard grant for EA
California - Berkeley RUBIN, Yoram	"Collaborative Research: Hydrogeological-Geophysical Methods for Subsurface Site Characterization"	EAR9628306	15,000/12	15,000/12	IF split-funding for EA on HS grant
California - Davis CASEY, William H.	"The Kinetics and Surface Chemistry of Mineral Corrosion"	EAR9626553	10,100/12	10,100/12	IF split-funding for EA on GE grant
California - Los Angeles HARRISON, T. Mark	"Support of An Ion Microprobe Facility"	EAR9509641	708,667/36	194,278/12	2nd yr incr on 3-yr cont grant for FS
California - Los Angeles HARRISON, T. Mark	"Technician Support: Restructuring of the UCLA 40-Ar/39-Ar Laboratory"	EAR9627980	98,352/36	98,352/36	standard grant for TS
California - Los Angeles REID, Mary R.	"Technician Support: UCLA Thermal Ionization Mass Spectrometry Facility (Phase II)"	EAR9633808	100,005/24	100,000/24	standard grant for TS
California - San Diego AGNEW, Duncan Carr	"In Situ Measurements of the Mechanical Properties of Active Fault Zones"	EAR9528113	79,595/12	60,000/24	standard grant for ITD
California - San Diego BOCK, Yehuda	"Facility for Supporting the Analysis and Integration of Regional and Global GPS Networks for Crustal Deformation"	EAR9405934	50,000/12	50,000/12	IF split-funding for FS on PH grant
California - San Diego BOCK, Yehuda	"Facility for Supporting the Analysis and Integration of Regional and Global GPS Networks for Crustal Deformation [supplement]"	EAR9640275	9,434/12	9,434/12	IF suppl for FS on PH grant
California - San Diego HEDLIN, Michael A.	"Experiments in Imaging Core-Mantle Boundary Scatters Using Global Seismic Data"	EAR9628020	4,275/12	4,275/12	IF split-funding for EA on PH grant
California - San Diego MACDOUGALL, J. Douglas	"Acquisition of a Multi-Collector Thermal Ionization Mass Spectrometer at the Scripps Institution of Oceanography"	EAR9528787	409,741/12	301,000/36	standard grant for EA

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California - San Diego ORCUTT, John A.	"Broad-band Seismic Measurements on the Deep Ocean Floor: A Pilot Experiment"	OCE9523541	646,542/24	88,000/12	IF split-funding for ITD on 2 yr cont grant from OCE; split-funded w/ OCE/ODP = 132,000 in FY 96
California - San Diego SHEARER, Peter M.	"Technician Support for Computing at IGPP"	EAR9530529	165,767/36	120,000/36	standard grant for TS
California - San Diego SHEARER, Peter M.	"Upgrading of Computing Support for Research in Seismology, Geodynamics and Geomagnetism"	EAR9530797	67,350/36	67,350/36	standard grant for EA
California - San Diego ZUMBERGE, Mark A.	"A Resurvey of California Absolute Gravity Sites"	EAR9628974	53,209/12	28,209/24	standard grant for EA; split-funded w/ PH = 25,000
California - Santa Barbara SPERA, Frank J.	"Collaborative Research: Role of Shear Heating in the Generation and Ascent of Granitic, Basaltic, and Komatiitic Magma"	EAR9627800	8,000/12	8,000/12	IF split-funding for EA on PH grant
California - Santa Cruz GRIGGS, Gary B.	"Acquisition of Image Processing Software and a SUN Workstation for an Image Processing and Mapping Laboratory at the University of California, Santa Cruz"	EAR9526765	79,197/12	41,870/24	standard grant for EA
California Inst of Tech AHRENS, Thomas J.	"Dynamic Properties of Earth Materials"	EAR9506377	2,752/12	2,752/12	IF split-funding for EA on PH grant
California Inst of Tech KIRSCHVINK, Joseph L.	"Acquisition of an Ultrasensitive Superconducting (SQUID) Rock Magnetometer System"	EAR9628007	65,827/12	65,827/24	standard grant for EA
Carnegie Inst of Wash-DTM HAURI, Erik H.	"Establishment of an Ion Microprobe Facility at the Carnegie Institution of Washington [supplement]"	EAR9642404	25,000/12	- 0 -	suppl to IF grant for FS; interagency transfer from USGS = 25,000
Carnegie Inst of Wash-DTM JOHNSON, Catherine L.	"Collaborative Research: Long Term Structure and Variability in the Geomagnetic Field: The View from Lavas, Sediments and Magnetic Anomalies"	EAR9526682	6,157/12	6,157/12	IF split-funding for EA on PH grant
Carnegie Inst of Wash-GL FEI, Yingwei	"CSEDI: A Test of Dehydration Weakening Hypothesis for the Occurrence of Intermediate/Deep-Focus Earthquakes"	EAR9628861	34,200/12	34,200/12	IF split-funding for EA on PH grant
Carnegie Inst of Wash-GL MAO, Ho-Kwang	"Synchrotron X-Ray Diffraction Facility for Studies at Ultrahigh Temperatures and Pressures"	EAR9632360	307,727/24	208,727/24	standard grant for ITD
Carnegie Inst of Wash-GL MAO, Ho-kwang	"Superconducting Wiggler Insertion Device for X-Ray Studies with the Diamond-Anvil Cell at Ultra-High Pressures"	EAR9418328	403,967/36	106,956/12	2nd yr incr on 3-yr cont grant for FS
Chicago CLAYTON, Robert N.	"Acquisition of a Mass Spectrometer Facility for Earth Sciences Applications at the University of Chicago"	EAR9601478	825,419/24	- 0 -	standard grant for EA; split-funded w/ ARI/OSTI = 410,000

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Chicago RIVERS, Mark L.	"GeoCARS, a National Resource for Earth, Planetary, Soil and Environmental Science Research at the Advanced Photon Source"	EAR9317772	11,745,446/60	1,200,000/12	3rd yr incr on 5-yr cont grant for FS
Chicago STEELE, Ian M.	"Technician Support: Electron Microprobe Facility, Dept. of Geophysical Sciences, University of Chicago. Phase II"	EAR9627336	46,295/24	46,295/24	standard grant for TS
Cincinnati SHAFIQUL, Islam	"Effects of Space-Time Dynamics of Surface Processes on Land-Atmosphere Interactions at the Mesoscale"	EAR9526628	5,000/12	5,000/12	IF split-funding for EA on HS grant
Colorado COLE, Julia E.	"Acquisition of a Stable Isotope Mass Spectrometer for Automated Carbonate Analysis: Analytical Instrumentation for Earth Science/Global Change Research"	EAR9628080	113,487/24	50,987/24	standard grant for EA; split-funded w/ ATM = 34,000 and OPP = 28,500
Colorado GETTING, Ivan C.	"Temperature Calibration at High Pressure Based on Johnson Noise Thermometry"	EAR9526392	215,459/24	136,670/24	standard grant for ITD
Colorado GETTING, Ivan C.	"Absolute Pressure and Temperature Calibration to 6 GPa and 1700K"	EAR9418685	30,515/12	29,192/12	IF split-funding for ITD on CH grant
Colorado GETTING, Ivan C.	"Shear Inelasticity Measurements in Mantle Minerals"	EAR9526988	5,000/12	5,000/12	IF split-funding for EA on PH grant
Colorado OVERPECK, Jonathan T.	"Climate Change of the Last 500 Years: Simulations Versus Data"	ATM9631282	18,000/12	18,000/12	IF split-funding for EA on ATM grant
Colorado WILLIAMS, Mark W.	"Meltwater Flow Through Snow from Plot to Basin Scales"	EAR9526875	15,790/12	15,790/12	IF split-funding for EA on HS grant
Columbia KENT, Dennis V.	"DC SQUID Upgrade and Impulse Magnetizer"	EAR9628156	41,125/12	41,125/24	standard grant for EA
Columbia LERNER-LAM, Arthur	"Acquisition of a Very Large Mass Storage System for Earth & Environmental Science Research & Research Training at Lamont-Doherty Earth Observatory"	EAR9601930	954,456/36	- 0 -	standard grant for EA; split-funded w/ ARI/OSTI = 500,000
Connecticut PHILPOTTS, Anthony R.	"Behavior of Partly Crystallized Basaltic Magma Based on a Field and Laboratory Study of a Thick Flood Basalt"	EAR9628269	17,000/12	17,000/12	IF split-funding for EA on CH grant
Cornell WHITE, William M.	"Research Technician Support: W. M. Keck Foundation Isotope Laboratory"	EAR9629959	148,179/36	147,475/36	standard grant for TS
Florida State SALTERS, Vincent J. M.	"A Hf-Isotope Study of Mantle Materials"	EAR9526609	8,000/12	8,000/12	IF split-funding for EA on CH grant
Florida State ZINDLER, Alan	"U-Th Systematics of Primitive Icelandic Basalts: Building a Foundation for Interpreting U-Th Disequilibrium in MORBs"	EAR9628083	10,000/12	10,000/12	IF split-funding for EA on CH grant

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Florida State ZINDLER, Alan	"Acquisition of an ICP-MS for Elemental Concentration Analysis in Earth Sciences Research"	EAR9601952	267,500/36	- 0 -	standard grant for EA; split-funded w/ ARI/OSTI = 267,500
Georgia Tech STIXRUDE, Lars	"Collaborative Research: Quantum Mechanical Modeling of Major Mantle Materials"	EAR9628199	4,200/12	4,200/12	IF split-funding for EA on PH grant
Harvard BLOXHAM, Jeremy	"Investigations of the Geodynamo"	EAR9526914	10,000/12	10,000/12	IF split-funding for EA on PH grant
Harvard DZIEWONSKI, Adam M.	"Studies of Global Seismicity and Earth Structure"	EAR9219361	7,200/12	7,200/12	IF split-funding for EA on PH grant
Harvard JACOBSEN, Stein B.	"Secular Evolution in the Composition of the Mantle"	EAR9506517	14,000/12	14,000/12	IF split-funding for EA on CH grant
Hawaii MANGHNANI, Murli H.	"U.S.-Japan Seminar: High Pressure-Temperature Research: Properties of Earth and Planetary Materials/January 23-26, 1996/Maui, Hawaii [supplement]"	INT9640524	10,000/12	5,000/12	IF suppl to INT grant for workshop; split-funded w/ PH = 5,000 in FY 96
Hawaii MING, Li-Chung	"Collaborative Research: Composition and Evolution of the Lower Mantle: Experiments on the Thermal Equation of State of Perovskitite [supplement]"	EAR9527084	22,678/12	22,678/12	IF suppl for EA on PH grant
Illinois KIRKPATRICK, R. James	"Investigation of Mineral Structure and Dynamics"	EAR9526317	29,500/12	29,500/12	IF split-funding for EA on CH grant
IRIS SIMPSON, David W.	"IRIS 2000: A Science Facility for Studying the Dynamics of the Solid Earth"	EAR9529992	93,089,000/60	8,000,226/12	1st yr incr on 5-yr Cooperative Agreement EAR-9529992 for FS
IRIS SIMPSON, David W.	"Cooperative Agreement: Understanding the Earth's Dynamics and Structure (IRIS) [supplement]"	EAR9642032	9,250,000/12	- 0 -	suppl to IRIS Cooperative Agreement EAR-9529992 for FS; interagency transfer from AFOSR = 9,250,000 in FY 96
IRIS SIMPSON, David W.	"Cooperative Agreement: Understanding the Earth's Dynamics and Structure (IRIS) [supplement]"	EAR9023505	698,014/12	- 0 -	suppl to IRIS Cooperative Agreement EAR-9529992 for FS; interagency transfer from DMA = 624,766
IRIS SIMPSON, David W.	"IRIS 2000: A Science Facility for Studying the Dynamics of the Solid Earth [supplement]"	EAR9529992	73,248/12	- 0 -	suppl to IRIS Cooperative Agreement EAR-9529992 for FS; interagency transfer from DMA = 73,248
Johns Hopkins OLSON, Peter L.	"Laboratory Experiments in Geodynamics"	EAR9627891	11,000/12	11,000/12	IF split-funding for EA on PH grant
Kansas BUTLER, James J.	"Identification of Preferential Flow Paths at Sites of Groundwater Contamination"	EAR9526888	24,565/12	24,565/12	IF split-funding for EA on HS grant

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Kent State MAURICE, Patricia A.	"Collaborative Research: An Integrated Study of the Fractionation of Natural Dissolved Organic Matter Upon Sorption to Mineral Surfaces"	EAR9628461	17,000/12	17,000/12	IF split-funding for EA on HS grant
Kentucky STREET, Ronald L.	"Acquisition of State-of-the-Art Instrumentation to do High-Resolution Shear-Wave Investigations in the New Madrid Seismic Zone"	EAR9601489	110,356/12	- 0 -	standard grant for EA; split-funded w/ ARI/OSTI = 110,356
Lehigh MELTZER, Anne S.	"Facility Upgrade: Seismology Laboratory at Lehigh University"	EAR9528954	73,945/12	52,473/24	standard grant for EA
Macalester College WIRTH, Karl R.	"Acquisition of an XRF for Geochemical Research on the Earth's Crust and Mantle and for Multidisciplinary Chemical Research"	EAR9601475	178,199/36	- 0 -	standard grant for EA; split-funded w/ ARI/OSTI = 110,000
Massachusetts BRADLEY, Raymond S.	"Patterns of Organized Climatic Variability"	ATM9626833	12,500/12	12,500/12	IF split-funding for EA on ATM grant
Miami - RSMAS YAMAMOTO, Tokuo	"Broadband Seismic Measurements on the Deep Ocean Floor: A Pilot Experiment"	OCE9523658	175,000/24	32,000/12	IF split-funding for ITD on 2 yr cont grant from OCE; split-funded w/ OCE/ODP = 38,000 in FY 96
Michigan LANGE, Rebecca	"Acquisition of a Rapid-Quench Cold-Seal Pressure Apparatus"	EAR9526338	16,610/12	16,610/24	standard grant for EA
Michigan PEACOR, Donald R.	"Scanning Electron Microscope System"	EAR9628196	125,000/12	125,000/24	standard grant for EA
Michigan WALTER, Lynn M.	"Acquisition of a High Resolution ICP Mass Spectrometer"	EAR9526980	228,000/12	228,000/24	standard grant for EA
Minnesota BANERJEE, Subir K.	"Continuation of a Facility: Institute for Rock Magnetism"	EAR9628693	1,502,322/60	277,779/12	1st yr incr on 3-yr cont grant for FS
Minnesota BANERJEE, Subir K.	"Continuation of a Facility: Institute for Rock Magnetism [supplement]"	EAR9628693	25,059/36	25,059/36	IF suppl for FS on IF cont grant
Minnesota KARATO, Shun-ichiro	"Technician for the Mineral and Rock Physics Laboratory, University of Minnesota"	EAR9526239	120,000/36	120,000/36	standard grant for TS
Minnesota KOHLESTEDT, David L.	"Experimental Investigation of the Rheology of the Earth's Upper Mantle"	EAR9526925	10,990/12	10,990/12	IF split-funding for EA on PH grant
Minnesota WENTZCOVICH, Renata M.	"Collaborative Research: Quantum Mechanical Modeling of Major Mantle Materials"	EAR9628042	3,700/12	3,700/12	IF split-funding for EA on PH grant

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Minnesota YUEN, David A.	"Collaborative Research: Role of Shear Heating in the Generation and Ascent of Granitic, Basaltic and Komatiitic Magma"	EAR9628154	2,000/12	2,000/12	IF split-funding for EA on PH grant
Minnesota - Duluth BROWN, Erik T.	"Acquisition of an ICP-MS for the Large Lakes Observatory"	EAR9601577	136,000/36	93,326/24	standard grant for EA; split-funded w/ ARI/OSTI = 42,674
MIT BOWRING, Samuel A.	"Acquisition of Thermal Ionization and Inductively Coupled Plasma Mass Spectrometers"	EAR9419210	625,000/12	100,000/24	1st yr incr on 2-yr cont grant for EA; split-funded w/ OCE/CO = 50,000 in FY 96
MIT MARONE, Chris J.	"Laboratory Study of Fault Healing and Friction Under Hydrothermal Seismogenic Conditions"	EAR9627895	3,800/12	3,800/12	IF split-funding for EA on PH grant
MIT MOLNAR, Peter H.	"Kinematics and Dynamics of Continental Deformation and the Effective Viscosity of Continental Lithosphere"	EAR9527024	10,900/12	10,900/12	IF split-funding for EA on PH grant
MIT MORGAN, Frank D.	"Laboratory Studies of Streaming Potentials at In-Situ P/T Conditions"	EAR9526710	24,600/12	24,600/12	IF split-funding for EA on PH grant
New Mexico LAYNE, Graham D.	"Support of UNM/SNL Ion Microprobe Facility"	EAR9506611	334,689/36	80,786/12	2nd yr incr on 2-yr cont grant for FS
New Mexico State NI, James	"Upgrade of the Computational Facilities in the Solid Earth Geophysics Program at New Mexico State University"	EAR9526730	35,000/36	35,000/24	standard grant for EA
New Mexico Tech DUNBAR, Nelia W.	"Acquisition of an Analytical Scanning Electron Microscope [supplement]"	EAR9413900	25,000/12	25,000/12	IF suppl for EA on IF grant
NOAA-NOS SASAGAWA, Glenn	"An Absolute Gravity Facility for Global Geophysical Studies: Participation by NOAA-NOS"	EAR9417446	200,000/36	82,058/12	3rd yr incr on 3-yr cont grant for FS
North Carolina RIAL, Jose A.	"Understanding the Anomalous Ground Motion Recordings at the Tarzana, California Site"	EAR9526796	5,720/12	5,720/12	IF split-funding for EA on PH grant
Northern Arizona NATIONS, J. Dale	"RUI: Student-Based Facies Analysis and Determination of Coalbed Methane Potential of Cretaceous Coal-Bearing Rocks of the Navajo and Hopi Reservations"	EAR9641061	3,650/12	3,650/12	IF split-funding for EA on E& HR grant
Notre Dame NEAL, Clive R.	"Development of Laser Probe ICP-MS as a Routine Analytical Technique for Determining Trace-Element Compositions of Geological Materials"	EAR9526956	140,869/36	80,000/24	standard grant for ITD
Ohio State FOLAND, Kenneth A.	"Acquisition of a Noble Gas Mass Analysis System [supplement]"	EAR9641268	15,000/12	15,000/12	IF suppl for EA on IF grant

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Oregon MANGA, Michael	"Acquisition of a Computer System for Research in Geology and Geophysics"	EAR9629976	39,960/12	39,960/24	standard grant for EA
Oregon State DUNCAN, Robert A.	"A Continuous Laser Microprobe Extraction System for 40-Ar/39-Ar Geochronology"	EAR9522588	30,150/12	24,650/24	standard grant for EA
Penn State SOWERS, Todd	"Constructing Paleatmospheric Records of the Isotopic Composition of Methane and Nitrous Oxide"	OPP9526556	45,000/12	45,000/12	IF split-funding for EA on OPP grant
Puerto Rico JANSMA, Pamela E.	"RUI: Instrumentation: Acquisition of GPS Equipment for Seismic and Volcanic Hazard Assessment in the Caribbean"	EAR9628553	80,285/24	25,000/24	standard grant for EA
Purdue ELMORE, David	"Facility Support: The Purdue Rare Isotope Measurement Laboratory"	EAR9510040	1,993,293/60	325,000/36	2nd yr incr on 3-yr cont grant for FS
Purdue SACK, Richard O.	"Upgrade of Purdue University's Cameca SX-50 Electron Microprobe"	EAR9628453	31,081/12	31,081/24	standard grant for EA
Rensselaer Polytech Inst WARK, David A.	"Upgrade of Rensselaer's Electron Microprobe System"	EAR9522764	52,145/12	52,145/24	standard grant for EA
Rice GORDON, Richard G.	"Upgrade of Departmental Computer System"	EAR9632364	75,581/24	91,581/24	standard grant for EA
Rochester ANBAR, Ariel D.	"Acquisition of a High Resolution Inductively Coupled Plasma Source Mass Spectrometer (HR-ICP-MS) for Inorganic and Biogeochemistry"	EAR9601929	294,772/12	- 0 -	standard grant for EA; split-funded w/ ARI/OSTI = 294,772
Rochester BASU, Ashish R.	"Collaborative Research: The Flood Basalt-Alkalic Magmatism-Kimberlite Connection and the Temporal-Spatial Evolution of the Siberian Mantle Plume"	EAR9527053	10,000/12	10,000/12	IF split-funding for EA on CH grant
Rochester POREDA, Robert J.	"Collaborative Research: Radiogenic He-4 as a Chronologic Tracer for Young Groundwater"	EAR9627898	4,700/12	4,700/12	IF split-funding for EA on HS grant
South Carolina SHERVAIS, John W.	"Instrument Upgrade: The USC Electron Microprobe Facility"	EAR9530284	50,000/12	40,000/24	standard grant for EA
Southern California HENYEY, Thomas	"Acquisition of Continuous GPS Equipment for the Earth Sciences"	EAR9601571	2,000,000/36	- 0 -	standard grant for EA; split-funded w/ ARI/OSTI = 2,000,000
Southern California LUND, Steven P.	"Paleomagnetic Field Variability 100-200,000 YBP: A Test of the Relationship Between Excursions and Secular Variations"	EAR9526940	6,500/12	6,500/12	IF split-funding for EA on PH grant
Southern California MORRISON, Jean	"Technician Support for the Stable Isotope Laboratory at the University of Southern California"	EAR9528947	80,000/24	80,000/24	standard grant for TS



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St. Louis University AMMON, Charles J.	"Structure of the Lithosphere Beneath North America"	EAR9628401	1,000/12	1,000/12	IF split-funding for EA on PH grant
SUNY - Stony Brook HOLT, William E.	"The Kinematics and Dynamics of Continental Deformation"	EAR9628872	30,619/12	30,619/12	IF split-funding for EA on PH grant
SUNY - Stony Brook WEIDNER, Donald J.	"Center for High-Pressure Research"	EAR9640686	12,211,011/60	2,310,000/12	6th yr incr on STC Cooperative Agreement EAR-8920239 for FS
SUNY - Stony Brook WEIDNER, Donald J.	"Center for High Pressure Research [supplement]"	EAR9643561	230,000/12	230,000/12	IF suppl to STC Cooperative Agreement for FS
Syracuse SAMSON, Scott D.	"Technician Support: Radiogenic Isotope, Stable Isotope, and X-ray Fluorescence Laboratories at Syracuse University"	EAR9528422	150,000/36	150,000/36	standard grant for TS
Tennessee THONNARD, Norbert	"Development of Laser-Based Resonance Ionization Spectroscopy Techniques for 81-Kr and 85-Kr Measurements in the Geosciences"	EAR9410695	537,738/36	71,848/12	3rd yr incr on 4-yr cont grant for ITD; split-funded w/ IF = 71,848 and OPP = 25,000 in FY 96
Texas BANNER, Jay L.	"Pleistocene-Holocene-Modern Evolution of Groundwater in a Limestone Aquifer: Geochemical and Geochronologic Links"	EAR9526714	7,900/12	7,900/12	IF split-funding for EA on HS grant
Texas CARLSON, William D.	"Acquisition of a High Resolution X-Ray Tomographic Scanner"	EAR9406258	150,000/12	150,000/24	standard grant for EA
Texas MCDOWELL, Fred W.	"Upgrading of Potassium-Argon Dating Laboratory Within the Department of Geological Sciences, The University of Texas at Austin"	EAR9627839	35,000/12	17,000/24	standard grant for EA
Texas WILSON, Clark R.	"Acquisition of Two Global Positioning System Receivers for Geodetic and Geodynamics Research"	EAR9506778	28,000/12	28,000/24	standard grant for EA
Texas - Dallas PRESNALL, Dean C.	"Technician Support: Electron Microprobe"	EAR9529290	60,000/24	60,000/24	standard grant for TS
Texas - El Paso PINGITORE, Nicholas E.	"Acquisition of X-Ray Fluorescence Instrumentation for Archaeological, Geological, and Environmental Research and Training"	EAR9601715	111,126/12	111,126/24	standard grant for EA
UCAR-UNAVCO WARE, Randolph H.	"University NAVSTAR Consortium"	EAR9640521	10,300,425/60	1,103,437/12	2nd yr incr on 2-yr cont grant for FS; First installment, 75% of total FY 96 funding for UNAVCO
UCAR-UNAVCO WARE, Randolph H.	"University NAVSTAR Consortium"	EAR9642405	367,812/12	367,812/12	2nd yr incr on 2-yr cont grant for FS; Second installment, 25% of total FY 96 funding for UNAVCO

<b>Institution/PI</b>	<b>Title of Proposal</b>	<b>Proposal #</b>	<b>\$'s Requested/ months</b>	<b>FY96 Funding by IF/months</b>	<b>Comments</b>
UCAR-UNAVCO WARE, Randolph H.	"University NAVSTAR Consortium [supplement for support of annual meeting]"	EAR9642405	35,000/12	35,000/12	IF suppl for FS on IF grant
UCAR-UNAVCO WARE, Randolph H.	"University NAVSTAR Consortium [supplement for GPS support for U.S. Antarctic Program]"	EAR9405501	138,600/12	- 0 -	suppl to UCAR Cooperative Agreement for FS; split-funded w/ OPP=138,600
UCAR-UNAVCO WARE, Randolph H.	"Support of UNAVCO and Related Activities [supplement]"	EAR9643971	70,622/12	- 0 -	suppl to UCAR Cooperative Agreement for FS; split-funded w/ ATM = \$70,622
UCAR-UNAVCO WARE, Randolph H.	"Support of UNAVCO and related activities [supplement]"	EAR9643657	313,421/12	- 0 -	suppl to UCAR Cooperative Agreement for FS; split-funded w/ ATM = 313,421
UCAR-UNAVCO WARE, Randolph H.	"Support of UNAVCO and Related Activities [supplement]"	EAR9643470	110,140/12	- 0 -	suppl to UCAR Cooperative Agreement for FS; interagency transfer from NOAA = 110,139
UCAR-UNAVCO WARE, Randolph H.	"University NAVSTAR Consortium [supplement for UNAVCO field assistance]"	EAR9642405	8,700/12	- 0 -	suppl to UCAR Cooperative Agreement for FS; split-funded w/ PH = 8,700
Utah CERLING, Thure E.	"Purchase of a Noble Gas Mass Spectrometer"	EAR9629556	382,584/24	270,000/24	standard grant for EA
Utah SOLOMON, D. Kip	"Collaborative Research: Radiogenic Helium as a Chronologic Tracer for Younger Groundwater"	EAR9628627	4,900/12	4,900/12	IF split-funding for EA on HS grant
Utah State KAUFMAN, Darrell	"Development of an Automated HPLC for Separation of DL Amino Acids for Enhanced Geochronology and Paleothermometry"	EAR9530417	81,980/24	65,000/24	standard grant for ITD
VPI & SU HOCELLA, Michael F.	"Development of Scanning Tunneling Spectroscopy (STS) for Research in Mineralogy and Geochemistry"	EAR9527092	133,605/24	109,205/24	standard grant for ITD
Washington BOOKER, John R.	"INternational DEep Profiling of Tibet and the Himalaya (INDEPTH)-Magnetotelluric Transect [supplement]"	EAR9642494	10,600/12	10,600/12	IF suppl for EA on CD grant
Washington EVANS, Bernard W.	"Upgrading of Electron Microprobe Automation"	EAR9526375	60,650/12	45,000/24	standard grant for EA
Washington State HOOPER, Peter R.	"Upgrading of ICP-MS, XRF, and Electron Microprobe Facilities in the GeoAnalytical Laboratory, Washington State University"	EAR9526433	119,529/12	119,529/36	standard grant for EA
Washington State KELLER, C. Kent	"The Geochemical Carbon Cycle: A Vadose-Hydrologic Study of the Effect of Plants on Chemical Weathering"	EAR9628296	9,210/12	9,210/12	IF split-funding for EA on HS grant
WHOI HART, Stanley R.	"Geochemical Evolution of the Mantle"	EAR9219958	3,000/12	3,000/12	IF split-funding for EA on CH grant

<b>Institution/PI</b>	<b>Title of Proposal</b>	<b>Proposal #</b>	<b>\$'s Requested/ months</b>	<b>FY96 Funding by IF/months</b>	<b>Comments</b>
WHOI SHIMIZU, Nobumichi	"Renewal of NSF Grant No. EAR-9305508 - Support of a Regional Microprobe Facility at Woods Hole Oceanographic Institution"	EAR9628749	538,966/36	174,742/12	1st yr incr on 3-yr cont grant for FS
WHOI STEPHEN, Ralph A.	"Broadband Seismic Measurements on the Deep Ocean Floor: A Pilot Experiment"	OCE9522114	355,796/24	50,000/12	IF split-funding for ITD on 2 yr cont grant from OCE; split-funded w/ OCE/ODP = 150,000 in FY 96
Wright State RITZI, Robert W.	"RUI: Predicting Transport through Heterogeneous Facies Assemblages: Geostatistical Anatomy of Buried-Valley Aquifers, II"	EAR9628299	10,000/12	10,000/12	IF split-funding for EA on HS grant
Wyoming FROST, Carol D.	"Acquisition of a Thermal Ionization Mass Spectrometer"	EAR9601783	250,000/12	- 0 -	standard grant for EA; split-funded w/ ARI/OSTI = 250,000
Wyoming SMITHSON, Scott B.	"Acquisition of a Computer System for Processing, Analysis and Interpretation of Seismic Data"	EAR9531832	155,000/12	55,000/24	standard grant for EA
Yale LASAGA, Antonio C.	"Acquisition of a New In Situ Near-Atomic Resolution Hydrothermal System and Automated BET Equipment for Surface Area Analysis"	EAR9529258	264,875/12	154,875/24	standard grant for EA
Yale RIBE, Neil M.	"Upgrading the Geophysics/Tectonics Computational Facilities at Yale"	EAR9528484	117,378/36	100,000/36	standard grant for EA

## ABBREVIATIONS and EXPLANATIONS

<b>AASC =</b>	Archeology, Archeometry and Systematic Collections Program in SBER	<b>MPS =</b>	Directorate for Mathematics and Physical Sciences at NSF
<b>AFOSR =</b>	Air Force Office of Scientific Research	<b>NASA-DOSE =</b>	National Aeronautics and Space Administration-Dynamics of the Solid Earth Program
<b>AMS =</b>	Accelerator Mass Spectrometry	<b>NOAA =</b>	National Oceanic and Atmospheric Administration within U.S. Department of Commerce
<b>ARI =</b>	Academic Research Infrastructure Program in OSTI	<b>NOS =</b>	National Ocean Service in NOAA
<b>ASL =</b>	Albuquerque Seismology Laboratory of the USGS	<b>OBES =</b>	Office of Basic Energy Sciences in the U.S. Department of Energy
<b>ATM =</b>	Division of Atmospheric Sciences in GEO	<b>OCE =</b>	Division of Ocean Sciences in GEO
<b>CD =</b>	Continental Dynamics Program in EAR	<b>ODP =</b>	Ocean Drilling Program in OCE
<b>CD-ATM =</b>	Climate Dynamics Program in ATM	<b>OPP =</b>	Office of Polar Programs at NSF
<b>CH =</b>	Geochemistry and Petrology Program in EAR	<b>OSTI =</b>	Office of Science and Technology Infrastructure at NSF
<b>CIW =</b>	Carnegie Institution of Washington	<b>OT =</b>	Oceanographic Technology Program in OCE
<b>CO =</b>	Chemical Oceanography Program in OCE	<b>PH =</b>	Geophysics Program in EAR
<b>cont grant =</b>	continuing grant, a multi-year grant funded one year at a time	<b>REU =</b>	Research Experience for Undergraduates Program in EHR
<b>DCP =</b>	direct current plasma	<b>RUI =</b>	Research in Undergraduate Institutions Program in EHR
<b>DMA =</b>	Defense Mapping Agency	<b>SBE =</b>	Directorate for Social, Behavioral & Economic Sciences at NSF
<b>DMR =</b>	Division of Materials Research in MPS	<b>SBER =</b>	Division of Social, Behavioral and Economic Research in SBE
<b>DOD =</b>	Department of Defense	<b>SIMS =</b>	secondary ionization mass spectrometry
<b>DTM =</b>	Department of Terrestrial Magnetism in CIW	<b>split-funding =</b>	two or more NSF programs share the funding of a grant
<b>E&amp;HR =</b>	Education & Human Resources Program in EAR	<b>standard grant =</b>	a grant funded for the full amount in its 1st yr
<b>EA =</b>	Equipment Acquisition component of IF Program	<b>STC =</b>	NSF Science and Technology Center
<b>EAR =</b>	Division of Earth Sciences in GEO	<b>suppl =</b>	a funding supplement to an active NSF grant
<b>EHR =</b>	Directorate for Education and Human Resources at NSF	<b>TE =</b>	Tectonics Program in EAR
<b>ENG =</b>	Directorate for Engineering at NSF	<b>TEM =</b>	transmission electron microscopy
<b>FS =</b>	Facility Support component of IF Program	<b>TIMS =</b>	thermal ionization mass spectrometry
<b>FY =</b>	Federal fiscal year e.g., FY94: 10/1/93 to 9/30/94	<b>TS =</b>	Technician Support component of IF Program
<b>GE =</b>	Geology and Paleontology Program in EAR	<b>UCAR =</b>	University Consortium for Atmospheric Research
<b>GEO =</b>	Directorate for Geosciences at NSF	<b>UNAVCO =</b>	University NAVSTAR Consortium within UCAR
<b>GL =</b>	Geophysical Laboratory in CIW	<b>USGS =</b>	U.S. Geological Survey
<b>GPS =</b>	Global Positioning System	<b>WHOI =</b>	Woods Hole Oceanographic Institution
<b>GSN =</b>	Global Seismographic Network of IRIS	<b>XRD =</b>	X-ray diffractometer
<b>HRTEM =</b>	high- resolution TEM	<b>XRF =</b>	X-ray fluorescence
<b>HS =</b>	Hydrologic Sciences Program in EAR		
<b>ICP-AE =</b>	Inductively couple plasma-atomic emission		
<b>ICP-MS =</b>	Inductively coupled plasma-mass spectrometry		
<b>IF =</b>	Instrumentation and Facilities Program in EAR		
<b>incr =</b>	an annual increment of funds to an active NSF grant		
<b>IRIS =</b>	Incorporated Research Institutions for Seismology		
<b>ITD =</b>	Instrument and Technique Development component of IF Program		
<b>LA-ICP-MS =</b>	laser ablation ICP-MS		
<b>LDEO =</b>	Lamont-Doherty Earth Observatory, Columbia University		
<b>MGG =</b>	Marine Geology and Geophysics Program in OCE		

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Division of Earth Sciences (EAR)

Instrumentation and Facilities Program (IF)

Numerical Summary of All Actions in FY-1996

<u>PROPOSALS</u>		<u>DOLLARS</u>	
Total number of proposals processed by IF .....	200	Total dollars requested of IF (per year for multi-year proposals) .....	48,741,917
Logged-in to IF as primary program .....	146	Total awarded through IF actions in FY-1996 .....	36,622,991
New proposals; full review by IF .....	111	Awarded from IF budget .....	20,799,537
Declined .....	46	For equipment acquisition/upgrade (EA) .....	4,003,965
Funded entirely from IF budget .....	53	For instr and technique development (ITD) ...	970,883
Split-funded with other NSF programs ..	12	For facility support (FS) .....	14,897,567
Held over for FY97 decision .....	0	For technician support (TS) .....	922,122
		Other (workshops, REU, etc.) .....	5,000
New proposals; withdrawn before review .....	5		
		Awarded from other NSF budgets through split-funding ..	5,740,300
Active IF awards (incr, suppl, etc) .....	30	For equipment acquisition/upgrade (EA) .....	4,240,681
		For instr and technique development (ITD) ...	416,638
		For facility support (FS) .....	947,981
		Other (workshops, REU, etc.) .....	135,000
Logged-in to other NSF programs; IF-split-funding .....	54	Awarded through interagency transfers .....	10,083,154
		For facility support (FS) .....	10,083,154