

NATIONAL SCIENCE FOUNDATION
ACTIVE GRANTS IN
GRAVITATIONAL PHYSICS
FY2001 ANNUAL RATES

Brandeis University —Deser, S.

Research in Gravitation and Quantum Field Theory
\$128,791

California Institute of Technology —Barish, B.

LIGO Visitors Program
\$250,000

California Institute of Technology —Barish, B.; Sanders, G.; Libbrecht, K.

LIGO Advanced R&D Program
\$2,700,000

California Institute of Technology —Barish, B.; Sanders, G.; Thorne, K.;

Massachusetts institute of Technology —Weiss, R.

Construction, Operation, and Supporting Research and Development of a Laser interferometer Gravitational Wave Observatory
\$22,920,000

California Institute of Technology —Drever, R.

Development of Laser interferometer Gravity-Wave Detectors, and Related Investigations in Experimental Gravity and Gravitational Radiation
\$175,000

California Institute of Technology —Prince, T.

Advanced Signal Analysis Methods For Detection of Gravitational Waves with LIGO
\$160,000

California Institute of Technology —Mendell, G.

Gravitational-radiation Backreaction and Other Relativistic Effects in Compact Astrophysical Systems
\$21,113

California Institute of Technology —Thorne, K., Lindblom, L.

Gravitational Radiation and Relativistic Astrophysics
\$200,000

California Institute of Technology —Whitcomb, S.

Moscow State University —Bilenko, I.; Braginsky, V.; Khalili, F.; Mitrofanov, P.; Vyatchanin, S.
Low Noise Suspension and Readout Systems for LIGO
\$147,341

University of California (Irvine) —Newman, R.

Tests of Newtonian Gravitation and the Weak Equivalence Principle and Cryogenic Torsion Pendulum Development
\$220,692

University of California (Santa Barbara) —Hartle, J.; Horowitz, G.

Research in Classical and Quantum Gravity
\$222,869

- Carleton College** —Christensen, N.
RUI: New Parameter Estimation, Data Analysis, and Statistical Strategies for LIGO
 \$32,586
- Central Connecticut State University** —Roman, T.
Negative Energy in General Relativity and Quantum Field Theory
 \$25,000
- University of Chicago** —Wald, R.
Research in Gravitational Physics
 \$182,000
- University of Colorado (Boulder)** —Price, J.
Search for Gravitational Strength Forces Below 1 cm
 \$210,000
- Cornell University** —Flanagan, E.
CAREER Award: Research and Education in Gravitational Wave Astronomy and Gravitational Physics
 \$60,000
- Cornell University** —Teukolsky, S.
Research in Black-Hole Physics and Relativistic Astrophysics
 \$151,800
- Cornell University** —Teukolsky, S.; Kidder, L.
Numerical Computation of Black-Hole Coalescence
 \$81,784
- Duquesne University** —Frittelli, S.
Prescription of Initial Data With Small Radiation Content for Characteristic Evolution
 \$18,173
- University of Florida** —Avery, P.; Reitze, D.; Mitselmakher, G.; Tanner, D.; Whiting, B.
Detection of Gravitational Waves: Advanced Research and Development for LIGO
 \$445,000
- University of Florida** —Avery, P.; Reitze, D.; Mitselmakher, G.; Tanner, D.; Whiting, B.
Institute of Applied Physics, Nizhny Novgorod, Russia —Andreev, N.; Khazanov, E.; Kozhevov, I.; Kulagin, O.; Poyomkin, A.; Sergeev, A.
Methods and Instruments for High-Precision Characterization of LIGO Components
 \$110,350
- University of Florida** —Klauder, J.;
Affine Quantum Gravity
 \$27,000
- Guilford College** —Shapiro, S.
High Accuracy Measurement of the Solar Gravitational Deflection of Radio Waves
 \$10,392

- University of Illinois (Urbana-Champaign)** —Shapiro, S.
Bowdoin College —Baumgarte, T.
Coalescence of Binary Black Holes and Neutron Stars: Computational Contributions to LIGO
 \$34,618
- University of Illinois (Urbana-Champaign)** —Shapiro, S.
Theoretical Studies in Gravitation and Astrophysics
 \$132,836
- Long Island University, Southampton** —Liebling, S.
Brigham Young University —Hirschmann, E.
Topics in Numerical Relativity
 \$50,828
- Louisiana State University** —Adams, P.; Johnson, W.
Research on a Cryogenic Suspension for LIGO
 \$75,000
- Louisiana State University** —Giaime, J.
A Study of Transient noise Sources in LIGO
 \$103,000 ¹
- Louisiana State University** —González, G.
Research on Gravitational Wave Detectors
 \$219,750
- Louisiana State University** —Hamilton, W. O.; Johnson, W.
University of Maryland —Paik, H. J.
Search for Gravitational Waves With the Allegro Detector
 \$460,000
- University of Maryland** —Hu, B. L.; Jacobson T.
Gravitation, Quantum Fields, and Relativistic Cosmology
 \$226,495
- University of Maryland** —Misner, C.
Gravitational Radiation from Compact Objects
 \$75,000
- University of Miami** —Andersson, L.
Global Existence Problems for the Einstein Equations
 \$16,000 ²
- University of Michigan** —Gustafson, H. R.; Riles, J.
Gravitational Wave Detection
 \$190,114
- University of Mississippi** —Bombelli, L.
Statistical Geometry of Weaves in Quantum Geometry
 \$15,000
- Montana State University** —Cornish, N. J.
Two Body Dynamics in General Relativity
 \$30,000

¹Gravitational Physics share of award split-funded with EPSCOR Program. Total award \$206,000.

²Gravitational Physics share of award split-funded with DMS Geometric Analysis Program. Total award \$33,000.

- Montana State University** —Hiscock, W. A.
Quantum Fields and Black Holes
\$32,000
- University of North Carolina** —York, J.
Einstein's Equations as a Dynamical System
\$108,285
- North Carolina State University** —Brown, J.;
Investigations in Gravitational Wave Sources and Numerical Relativity
\$25,785
- Northwestern University** —Rasio, F.;
Hydrodynamic Calculations of Coalescing Compact Binaries
\$58,370
- Oakland University** —Garfinkle, D.
RUI: Studies of Singularities
\$28,284
- University of Oregon (Eugene)** —Brau, J.
A Search for Gravitational Radiation at LIGO: Oregon Experimental Relativity Group
\$ 180,000
- University of Oregon (Eugene)** —Isenberg, J.
On The Behavior of Solutions of Einstein's Equations and Other Nonlinear Partial Differential Equations
\$ 22,000³
- Pennsylvania State University** —Ashtekar, A.; Penrose, R.; Smolin, L.
Theoretical investigations in Classical and Quantum Gravity
\$278,296
- Penn State** —Finn, L. S.
LIGO Data Analysis, Detector Characterization, and Gravitational Wave Astronomy
\$217,837
- Penn State** —Finn, L. S.; Laguna, P.; Meszaros, P.I.
PHYSICS FRONTIER CENTER: Center for Gravitational Wave Physics
\$1,000,000
- Pennsylvania State University**—Laguna, P.; Pullin, J.
Gravitational Radiation From Collision and Accretion of Compact Objects
\$140,454
- University of Pittsburgh** —Newman, E. T.
Mathematical Aspects of Einstein's Theory of General Relativity
\$15,000
- University of Pittsburgh** —Rovelli, C.
Non-Perturbative Quantum Gravity
\$31,877
- University of Pittsburgh** —Winicour, J.
Gravitational Radiation from Black Holes
\$115,000

³Gravitational Physics share of award split-funded with DMS Geometric Analysis Program. Total award \$32,000.

- Pittsburgh Supercomputer Center**—Gómez, R.
Problems in Gravitational Radiation
\$31,700
- Princeton University** —Christodoulou, D.
Mathematical Problems in General Relativity.
\$79,915
- Princeton University** —Page, L.; Staggs, S.; Wilkinson, D. T.
Research on Gravitation, Relativity and Cosmology
\$595,000
- Princeton University** —Staggs, S.;
CAREER: Measuring the CMB Polarization Spectrum
\$108,753
- Princeton University** —Taylor, J.
Radio Observations of Pulsars
\$50,000⁴
- Southern University and A&M College** —McGuire, S.
Materials Science, Astronomy, and Outreach: A Collaborative Program of Research and Science Education between Southern University and LIGO
\$0⁵
- Stanford University** —Byer, R. L.; Debra, D.; Fejer, M.
Massachusetts Institute of Technology —How, J.
The Galileo Program
\$1,450,000
- Stanford University** —Wagoner, R.
Persistent Gravitational Radiation: Sources and LIGO Detection
\$44,000
- Syracuse University** —Marolff, D.
CAREER: Critical Issues in Quantum Gravity
\$50,000
- Syracuse University** —Saulson, P.
Thermal Noise Research for Advanced LIGO interferometers
\$320,000
- Syracuse University** —Sorkin, R.
Research in General Relativity and Quantum Gravity
\$34,000
- University of Texas (Austin)** —Matzner, R.
Problems in Gravitation
\$140,000
- University of Texas (Brownsville)** —Cabeza, L.; Diaz, M; Khan, F.; Romano, J.
CIRE: Collaboration To integrate Research and Educaton Between UTB and LIGO
\$259,962
- Tufts** —Ford, L.
Research in Quantum Fluctuation and Gravitation
\$32,999

⁴Gravitational Physics share of award split-funded with AST Stars and Stellar Evolution Program. Total award \$200,000.

⁵Gravitational Physics share of award split-funded with EPSCOR Program. Total award \$200,000

- United States Naval Academy** —Konkowski, D.
RUI Award: Nature of Spacetimes With Mild Singularities or Cauchy Horizons
 \$24,310
- University of Utah** —Kuchař, K. V.; Price, R. J.
Quantum Gravity and Relativistic Astrophysics
 \$167,070
- Utah State**—Torre, C.
Research in Classical and Quantum Gravity
 \$26,521
- Wake Forest University** —Anderson, P.
Effects of Quantized Fields on Black Hole and Cosmological Spacetimes
 \$24,582
- Wake Forest University** —Cook, G.
Coalescence of Binary Black Holes: Computational Contributions to LIGO
 \$25,167
- Washington University** —Masso, J.; Suen, W. M.
University of California (San Diego) – Norman, M.
University of Chicago —Foster, I.
Rutgers University —Parashar, M.
University of Illinois (Urbana-Champaign) – Seidel, H.E.
KDI: An Astrophysical Simulation Colaboratory: Enabling Large Scale Simulations in Relativistic Astrophysics
 \$0⁶
- Washington University** —Will, C.
Relativistic Gravitation and Astrophysics
 \$120,000
- University of Washington** —Adelberger, E.; Heckel B.; Gundlach, J.
Exploring a Low-Energy Frontier of Particle Physics Using Methods of Experimental Gravitation
 \$271,351
- University of Washington** —Boynton, P.
Non-Newtonian forces
 \$281,000
- University of Wisconsin (Milwaukee)** —Allen, B.
Data Analysis Tools, Techniques, and Algorithms for Gravitational Wave Detectors
 \$210,000
- University of Wisconsin (Milwaukee)** —Brady, P.
Gravitational Waves and The Physics of Strong Fields
 \$62,026
- University of Wisconsin (Milwaukee)** —Friedman, J.; Parker, L.
Classical and Quantum Gravitation and Cosmology
 \$211,000
- University of Wisconsin (Milwaukee)** —Wiseman, A.
Gravitational Wave Source Calculations and Detection Strategies
 \$79,993

⁶Gravitational Physics share of award split-funded with KDI Program. Total award \$733,333.

Yale University — Moncrief, V.
Relativistic Astrophysics and Gravitation Physics
\$45,000 ⁷

⁷Gravitational Physics share of award split-funded with DMS Geometric Analysis Program. Total award \$65,000.