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RESEARCH
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$37.8 MILLION AWARDED TO UNIVERSITIES FOR RESEARCH EQUIPMENT

The Department of Defense (DoD) today announced plans to award $37.8 million to academic institutions to support the purchase of research instrumentation. The 165 awards to 83 academic institutions are being made under the Defense University Research Instrumentation Program (DURIP). The awards are expected to range from $50,000 to $990,000 and average approximately $230,000.

"The department has a vested interest in ensuring that our nation has the talent needed to help us sustain our technology advantage," said Zachary Lemnios, assistant secretary of defense for research and engineering. "Providing awards for much needed equipment helps U.S. universities provide the world-class research and related education that attracts future DoD researchers and engineers."

DURIP supports the purchase of state-of-the-art equipment that augments current university capabilities or develops new university capabilities to perform cutting-edge defense research. DURIP meets a critical need by enabling university researchers to purchase scientific equipment costing $50,000 or more to conduct DoD-relevant research. Researchers generally have difficulty purchasing instruments costing that much under research contracts and grants.

These planned awards are the result of a merit competition for DURIP funding conducted by the Army Research Office, Office of Naval Research, and Air Force Office of Scientific Research. Each organization requested proposals from university investigators conducting science and engineering research of importance to DoD. This includes research underpinning advances in surface chemistry and physics, computing and networks, electronics and electro-optics, neuroscience, fluid dynamics and propulsion, robotics and autonomous systems, and ocean, environmental, and biological science and engineering. In response to the requests, the research organizations collectively received more than 800 proposals requesting $243 million in support for research equipment.

All awards are subject to the successful completion of negotiations between DoD research offices and the academic institutions.

The list of winning proposals follow.

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Principal Investigator	Institution	State	Brief Description of Instrumentation or Research it Supports	Awarding Office
Agarwal, Arvind	Florida International University	FL	Synthesis of nanocomposite and amorphous coatings and nanocomposites reinforced with nanotubes	AFOSR
Albertani, Roberto	Oregon State University	OR	Simulation of critical flight modes of flexible, movable and/or articulated, and flapping wing micro air vehicles in unsteady and transitional flight conditions	AFOSR
Anderson, Dana	University of Colorado	CO	Demonstration of an atom transistor and related atomtronic ultracold atom devices and circuits	AFOSR
Astratov, Vasily	University of North Carolina - Charlotte	NC	Examination of microspheres	ARO
Balachandran, Balakumar	University of Maryland - College Park	MD	Opto-acoustic characterization of micro-air-vehicle wings	ARO
Bandosz, Teresa	The City University of New York	NY	Instruments for study of nanoengineered materials	ARO
Bank, Seth	University of Texas - Austin	TX	Molecular beam epitaxy system enhancement to study control of growth of nanocomposites and nanostructures for new device architectures	AFOSR
Baranec, Christoph	California Institute of Technology	CA	Research on astrometric error sources in mercury cadmium telluride arrays	ONR
Barrash, Warren	Boise State University	ID	Measuring soil moisture at multiple scales	ARO
Basov, Dmitri	University of California - San Diego	CA	Research on superconductivity at the nano-scale in heterogeneous samples and electronic phase separation in organic and molecular semiconductors	AFOSR
Batzill, Matthias	University of South Florida	FL	Nanostructure formation in graphene	ONR
Belta, Calin	Boston University	MA	Use of autonomous flight to collect data on bat flight in forests and forest-like environments in order to enhance control of unmanned autonomous vehicles	AFOSR
Biswas, Saroj	Temple University	PA	Stress magnetization and hysteresis	ONR
Booske, John	University of Wisconsin - Madison	WI	Radio frequency properties of high-power, millimeter-wave to terahertz radiation sources and materials' surface physics	AFOSR
Brailsford, Bruce	University of New Orleans	LA	Research on friction stir welding of ship structures	ONR
Bruno, Oscar	California Institute of Technology	CA	Creation of dispersionless general geometry time-domain solvers for partial differential equations	AFOSR
Burke, Peter	University of California - Irvine	CA	Near and far field radio frequency interrogation of nanostructures	ARO
Butenko, Sergiy	Texas A&M University	TX	Optimization techniques for analysis of biological and social networks and for clustering, connectivity, and flow patterns in complex networks	AFOSR
Byer, Robert	Stanford University	CA	Mid-infrared frequency-comb standoff chemical sensor and splicing of dissimilar fibers for high power, ultrafast, fiber laser systems and fiber optic gyroscopes	AFOSR/ONR
Campbell, Mark	Cornell University	NY	Intelligent robots for outdoor testing of networks of humans and machines	AFOSR
Capone, Dean	Pennsylvania State University - University Park	PA	Vibration control using constrained layer damping and compound isolation mounts	ONR
Chellappa, Rama	University of Maryland - College Park	MD	Opportunistic sensing research	ARO
Chen, Weinong	Purdue University	IN	Dynamic triaxial examination of cellular immune response induced by nanocarrier vaccines	ARO
Chen, Zhan	University of Michigan	MI	Understanding biofouling mechanisms at the molecular level	ONR
Chiu, Ching-Sang	Naval Postgraduate School	CA	Low-to-mid frequency shallow-water acoustics experiments	ONR

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Choi, Chang-Hwan	Stevens Institute of Technology	NJ	In-situ wetting dynamics study of nanostructured surfaces	ONR
Christe, Karl	University of Southern California	CA	High energy density materials	ONR
Chun, Francis	US Air Force Academy	CO	Network of 20-inch telescopes for research on space situational awareness	AFOSR
Clarke, David	Harvard University	MA	Microscope-based trace element analysis system	ONR
Clements, John	Tulane University	LA	Infectious disease	ARO
Corso, Jason	State University of New York at Buffalo	NY	Mobile robots for swarm surveillance research	ARO
Cowan, Richard	Georgia Institute of Technology	GA	Electromagnetic testing of friction and wear under cyclic loading	ONR
D'Agostino, Dominic	University of South Florida	FL	Oxygen toxicity	ONR
Dahl, Peter	University of Washington	WA	Low-to-mid frequency ocean acoustic studies	ONR
Darie, Costel	Clarkson University	NY	Proteomics research activities	ARO
Davis, Michael	Oklahoma State University	OK	Research on canine exercise physiology	ARO
Dinges, David	University of Pennsylvania	PA	Assessment of neurobehavioral capability in naval operations	ONR
Diplas, Panos	Virginia Polytechnic Institute & State University	VA	Investigation of entrainment, deposition, and transport across a wide range of temporal and spatial scales	ARO
Duan, Guohong	University of Arizona	AZ	Hydraulic engineering research	ARO
Eden, James	University of Illinois - Urbana-Champaign	IL	Long pulse photoexcitation of alkali/rare gas and other component mixtures may yield efficient atomic lasers suitable for scaling to high power	AFOSR
Elston, Timothy	University of North Carolina - Chapel Hill	NC	Systems level understanding of changing cell shape	ARO
Fisichella, David	Woods Hole Oceanographic Institution	MA	Bottom mapping and water column observations	ONR
Flament, Pierre	University of Hawaii at Manoa	HI	Mesoscale flow in sea straits	ONR
Gavini, Vikram	University of Michigan	MI	Algorithms for density functional theory computation of material properties, study of electromagnetic compatibility, and fast electromagnetics computation	AFOSR
Glezer, Ari	Georgia Institute of Technology	GA	Unsteady aerodynamic flow control on moving platforms and acoustically enhanced boiling heat transfer	ARO/ONR
Grafton, Scott	University of California - Santa Barbara	CA	Brain mapping of human performance	ARO
Grenestedt, Joachim	Lehigh University	PA	The local and dynamic nature of marine vehicle slamming	ONR
Gupta, Arunava	University of Alabama	AL	Characterization of multiferroic thin film heterostructures for high-frequency device applications	ONR
Guza, Robert	University of California - San Diego	CA	Lagrangian tracer transport and dispersion in tidal inlets with surf zones	ONR
Hagstrom, Thomas	Southern Methodist University	TX	Computational electrodynamics	ARO
Hanson, Ronald	Stanford University	CA	Shock tube analysis	ARO
Herring, Andrew	Colorado School of Mines	CO	Chemical characterization of complex heterogeneous polymeric solutions and film	ARO
Horner, Douglas	Naval Postgraduate School	CA	Bathymetric mapping for change detection in harbor and riverine environments	ONR

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Howell, John	University of Rochester	NY	Examination of transverse entanglement and ultra-low light level	ARO
Hua, Yingbo	University of California - Riverside	CA	Examinations of full duplex multiple-input and multiple-output relays	ARO
Huerta, Ramon	University of California - San Diego	CA	Calibrating low-cost sensor arrays	ONR
Jajodia, Sushil	George Mason University	VA	Research on heterogeneous virtual machine replication	ARO
Jameson, Antony	Stanford University	CA	Development of a high-order, three-dimensional, flux reconstruction flow solver optimized for parallel computing architectures	AFOSR
Jarrahi, Mona	University of Michigan	MI	Studies on germanium-based plasmonic photomixers	ONR
Jonsson, Haflidi	Naval Postgraduate School	CA	Mobile weather radar	ONR
Just, Marcel	Carnegie Mellon University	PA	Cognitive applications that use brain imaging	ONR
Kanold, Patrick	University of Maryland - College Park	MD	Optical stimulation to probe function and structure of microcircuits in auditory cortex of the brain	AFOSR
Kik, Pieter	University of Central Florida	FL	Rapid optical mapping of large-area plasmonic nanocomposites	ARO
Klibanov, Michael	University of North Carolina - Charlotte	NC	Measuring the time history of backscattered fields	ARO
Koder, Ronald	City College of New York	NY	Charge separation proteins for attachment to biofuel-generating enzymatic domains and deposition on light-harvesting metamaterial electrodes	AFOSR
Kornev, Konstantin	Clemson University	SC	Microwave assisted geopolymer synthesis of refractory materials	AFOSR
Kozlowski, Steven	Michigan State University	MI	The emergence, assessment, and measurement of macrocognition	ONR
Kuga, Yasuo	University of Washington	WA	Communication and imaging research	ONR
Kumar, Vijay	University of Pennsylvania	PA	Control of groups of aerial and ground vehicles for situational awareness in urban environments	ONR
Landry, Donald	Columbia University	NY	Support of drug discovery effort	ONR
Lee, Tonghun	Michigan State University	MI	High-speed laser diagnostics with multi-kiloherz imaging of chemical species and thermodynamic parameters for study of combustion dynamics in a scramjet	AFOSR
Lee, Wenke	Georgia Institute of Technology	GA	Malware: a network intelligence gathering and analysis framework	ONR
Lesieutre, George	Pennsylvania State University - University Park	PA	Dynamic testing of rotor dynamics in adverse-environments	ARO
LeVan, Martin	Vanderbilt University	TN	Reactive adsorbent synthesis	ARO
Lewis, Laura	Northeastern University	MA	Characterization of high-temperature magnetic materials	ONR
Liang, Qilian	University of Texas - Arlington	TX	Research on asymmetric and irregular warfare in urban or littoral environment	ONR
Liberatore, Matthew	Colorado School of Mines	CO	Characterization of complex heterogeneous organic materials	ARO
Likhachev, Maxim	Carnegie Mellon University	PA	Intelligent mobile manipulation by heterogeneous robot teams	ARO
Litchinitser, Natalia	State University of New York at Buffalo	NY	Metamaterial characterization of nonlinear and spin optics	ARO
Liu, Yan	Arizona State University	AZ	Imaging surface enhanced Raman scattering	ARO

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Liu, Yingmei	Oklahoma State University	OK	Implementing spin-squeezed Bose-Einstein condensates in optical lattices	ARO
Makela, Jonathan	University of Illinois - Urbana-Champaign	IL	Equipment for ionospheric observation at low latitudes for study of the formation and growth of equatorial irregularities	AFOSR
Mankowski, John	Texas Tech University	TX	Research on countering improvised explosive devices	ONR
May, Steven	Drexel University	PA	Electronic transport measurements and device characterization of oxide heterostructures	ARO
McBride, Michael	University of California - Irvine	CA	Social science laboratory research	ARO
McDermott, Robert	University of Wisconsin - Madison	WI	Millikelvin studies of superconducting quantum circuits	ONR
McDonell, Vince	University of California - Irvine	CA	Spray and flowfield quantification for atomization and combustion of alternative fuels	ONR
M'Closkey, Robert	University of California - Los Angeles	CA	Real-time modification of gyro resonator dynamics	ONR
Melville, W. Kendall	University of California - San Diego	CA	Air-sea interaction research	ONR
Mendillo, Michael	Boston University	MA	Instrumentation for a North-South America network of magnetically conjugate all-sky imagers for ionospheric space weather understanding	AFOSR
Menoni, Carmen	Colorado State University	CO	Nanocomposites for optical interference coatings for use with mid-infrared lasers at megawatt power levels	ONR
Mingolla, Ennio	Boston University	MA	Real-time simulation of brain models with up to 38 billion synapses	AFOSR
Minus, Marilyn	Northeastern University	MA	In-situ interphase characterization of polymer-based nano-composites	AFOSR
Mirotznik, Mark	University of Delaware	DE	Rapid prototyping of advanced multifunctional composites structures	ONR
Mohapatra, Prasant	University of California - Davis	CA	Security and mobility research	ARO
Molisch, Andreas	University of Southern California	CA	Distributed electronic warfare applications	ONR
Morris, Philip	Pennsylvania State University - University Park	PA	Noise sources in high performance military jet engines	ONR
Mount, Andrew	Clemson University	SC	Investigation of biofouling and biomineralization mechanisms in marine invertebrates	ONR
Myers, Roberto	Ohio State University	OH	Inter(sub)band transitions in highly confined nitride nanostructures	ONR
Narayanan, Ram	Pennsylvania State University - University Park	PA	Compressive sensing and mutual information in radar imaging to reduce sampling and computational power, enhance images, and reduce clutter and distortion	AFOSR
Negrut, Dan	University of Wisconsin - Madison	WI	Large scale modeling, simulation, and visualization of complex dynamics phenomena	ARO
Neumark, Daniel	University of California - Berkeley	CA	Incorporation of ion trapping and cooling into slow electron velocity-map imaging	AFOSR
Nguyen, Cam	Texas A&M University	TX	Research on concurrent-multiband, multi-beam, aperture-synthesis sensor with intelligent processing for urban operation	AFOSR
Norton, Michael	Marshall University	WV	Single molecule biosensor studies	ARO
Ophir, Alexander	Oklahoma State University	OK	Research on appraisal of ethogenetic variation	ARO
Padilla, Willie	Boston College	MA	Active electronic metamaterials at terahertz frequencies	ONR

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Patterson, Eann	Michigan State University	MI	Real-time measurement of three-dimensional stress, strain, and displacement on deforming solid surfaces subject to extreme thermomechanical loading	AFOSR
Paul, Debevec	University of Southern California	CA	Improve the photorealism of simulations to enhance training	AFOSR
Perry, Joseph	Georgia Institute of Technology	GA	Ultrafast, nonlinear optical spectroscopic studies for all-optical switching	ARO
Peyghambarian, Nasser	University of Arizona	AZ	Explore a packaged, updateable, three-dimensional display system using photorefractive polymer devices for near real-time telepresence	AFOSR
Polynkin, Pavel	University of Arizona	AZ	Mathematical modeling and experimental validation of ultrafast nonlinear light-matter coupling	AFOSR
Prather, Dennis	University of Delaware	DE	Using high-frequency RF signals to modulate an optical wave in a fiber to explore prospects for battlefield use of high frequency RF	AFOSR
Preble, Stefan	Rochester Institute of Technology	NY	Study of dynamically tuned silicon resonators for Terabit per second photonics processors	AFOSR
Preston, John	Pennsylvania State University - University Park	PA	Research on shallow water acoustics	ONR
Priya, Shashank	Virginia Polytechnic Institute & State University	VA	Understanding the jellyfish propulsion and feeding mechanisms to bioengineer autonomous vehicles	ONR
Ramachandran, Siddharth	Boston University	MA	High power blue-green fiber lasers	ONR
Rao, Ramesh	University of California - San Diego	CA	Cognitive mesh network examinations	ARO
Raubenheimer, Britt	Woods Hole Oceanographic Institution	MA	Waves and currents near an inlet	ONR
Regan, John	Pennsylvania State University - University Park	PA	Simultaneous electrochemical and biochemical monitoring and control	ARO
Reynolds, John	University of Florida	FL	Study of donor-acceptor conjugated polymer systems that result in high charge mobility, high solar cell performing, and redox switchable electrochromic materials	AFOSR
Richardson, Martin	University of Central Florida	FL	Femtosecond fiber laser	ONR
Rowan, Stuart	Case Western Reserve University	OH	Miniature mechanical evaluations	ARO
Rudnick, Daniel	University of California - San Diego	CA	Kuroshio and Mindanao current characterization	ONR
Rudolph, Wolfgang	University of New Mexico	NM	Light sensing and modulation research	ARO
Schoenung, Julie	University of California - Davis	CA	Engineered nanostructured metals, ceramics and composites	ONR
Schulz, Mark	University of Cincinnati	OH	Carbon nanotube arrays	ONR
Shamma, Shihab	University of Maryland - College Park	MD	Research in audio-visual saliency and attention	ONR
Shaw, Joseph	Montana State University	MT	System to measure aerosol optical properties in support of atmospheric polarization imaging	AFOSR
Shih, Chih-Kang Ken	University of Texas - Austin	TX	Molecular beam epitaxy of topological insulators	ARO
Shinn-Cunningham, Barbara	Boston University	MA	Processing and presentation of complex information to human observers in demanding circumstances	ONR
Sirohi, Jayant	University of Texas - Austin	TX	Mach-scaled, coaxial test system for rotary wing research	ARO

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Smith, David	Duke University	NC	Study of inherently nonlinear materials integrated into structured metamaterials to control anisotropy, dispersion and other composite crystal characteristics	AFOSR
Smits, Alexander	Princeton University	NJ	Hydrodynamic forces at high Reynolds number	ONR
Sorooshian, Armin	University of Arizona	AZ	Cloud droplet residual particles	ONR
Spanier, Jonathan	Drexel University	PA	Research on signal processing, switching, and amplification	ARO
Srikanth, Hariharan	University of South Florida	FL	Probe station for research on thermomagnetics	ARO
Stavrou, Angelos	George Mason University	VA	Research into malware detection	ARO
Tchakhalian, Jak	University of Arkansas	AR	Research on correlated electron heterostructures	ARO
Thadhani, Naresh	Georgia Institute of Technology	GA	Examination of shock-induced physical changes	ARO
Towe, Elias	Carnegie Mellon University	PA	Measurement and characterization for grapheotonics research	ARO
Traynor, Patrick	Georgia Institute of Technology	GA	Instrumentation for research on mobile devices and critical cellular infrastructure	ARO
Tyo, J.	University of Arizona	AZ	Active Mueller matrix polarimetry and coherence-based sensing of the visible and near-infrared spectrum	AFOSR
van Donkelaar, Paul	University of Oregon	OR	Human homeostasis research	ARO
Veazie, David	Southern Polytechnic State University	GA	Predicting mechanical and structural properties of multi-constituent particulate composite energetic materials containing aluminum and nickel powders	AFOSR
Vishwanath, Sriram	University of Texas - Austin	TX	Interference alignment using a real-time, software-defined radio testbed	ONR
Vuckovic, Jelena	Stanford University	CA	Research on photonic crystal structures and singly-charged quantum dots	ARO
Vuletic, Vladan	Massachusetts Institute of Technology	MA	Optical-transition squeezed clock below the standard quantum limit	ONR
Waas, Anthony	University of Michigan	MI	Characterization of dynamic response in three-dimensional textile composites	ARO
Wang, Qing	Pennsylvania State University - University Park	PA	Dielectric polymers and nanocomposites with high energy density	ONR
Waters, Marcey	University of North Carolina - Chapel Hill	NC	Dynamic combinatorial chemistry research	ARO
White, Christopher	Virginia Polytechnic Institute & State University	VA	Knowledge cloud computing research	ARO
Wilcox, Jennifer	Stanford University	CA	Examination of diffusion behavior of small molecules	ARO
Williamson, Charles	Cornell University	NY	Three-dimensional dynamics of rigid or deformable bodies in a physical fluid	AFOSR
Yan, Hao	Arizona State University	AZ	Real time imaging of biomolecular assembly	ONR
Yang, Eui-Hyeok	Stevens Institute of Technology	NJ	Investigation of carbon nanotube-based single-electron transistors for more efficient memory and other devices	AFOSR
Yang, Vigor	Georgia Institute of Technology	GA	Computational work on hypergolic gels	ARO
Zalek, Steven	University of Michigan	MI	Unsteady deformation of flexible marine structures	ONR
Zare, Richard	Stanford University	CA	Research on polarized molecular targets	ARO
Zelevinsky, Tanya	Columbia University	NY	Examinations of molecular lattice clocks	ARO

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Zhang, Haifeng	University of North Texas	TX	Determination of nonlinear material constants	ARO
Zhang, Xinghang	Texas A&M University	TX	Tolerant nanostructured metallic materials	ARO
Zhao, Guang-Lin	Southern University and A&M College	LA	Studies of the electromagnetic wave absorption properties of carbon nanotube polymer composites	AFOSR
Zheng, Y.	Missouri University of Science and Technology at Rolla	MO	Measurement and modeling of correlated wireless channels	ONR
Zhu, Lei	Case Western Reserve University	OH	High energy density storage of electrical energy	ONR
Zhu, Lin	Clemson University	SC	Research on high-power lasers	ARO

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