



## NITRD News Brief

We are pleased to continue NITRD's News Brief that offers insight into the activities NITRD's member agencies are conducting to achieve the Nation's priorities through the lens of the public-facing news sources. These are divided into networking and information technology topics that have been identified as of great importance for improving Americans' daily lives.

For ease of access, under NITRD's logo, the title of each section is listed as a link to that section. The titles of the articles under the section's heading are links that provide immediate access to the news article listed. We hope you find this informative and helpful in your daily activities.

Do you know someone who would like to receive NITRD's weekly news brief? They can email NITRD's IT aficionados at [nco@nitrd.gov](mailto:nco@nitrd.gov) and voilà they will receive the news brief with the cool technology articles each week!

## NITRD News

### **CAREER OPPORTUNITIES: Program Manager, National Strategic Computing Reserve Pilot Program Office: CLOSING JAN 15TH!**

...The Federal Government is creating a National Strategic Computing Reserve (NSCR) that can be called up in times of urgent national needs to address emergencies from pandemics to earthquakes to other natural or man-made disasters. The NSCR is envisioned as a coalition of resource providers (of compute, software, and data) and technical experts spanning government, academia, industry, nonprofits/foundations, civil society, and communities of practice supported by appropriate coordination structures and mechanisms that can be mobilized quickly to provide critical cyberinfrastructure capabilities and services in times of urgent need. The Networking and Information Technology Research and Development (NITRD) Program is seeking candidates interested in serving as the Program Manager for the NSCR Pilot Program Office. The NSCR Pilot Program

Office will (1) develop a plan, to include the structures, policies, and processes for an NSCR Program Office, and (2) prototype the implementation and operation of these structures, policies, and processes. Submit your resume by January 15, 2023.  
The Networking and Information Technology Research and Development (NITRD) Program - Dec 14, 2022

## Federal Agency Funding Opportunities

### **NSF: Addressing Systems Challenges through Engineering Teams (ASCENT)**

...The Electrical, Communications and Cyber Systems Division (ECCS) supports enabling and transformative engineering research at the nano, micro, and macro scales that fuels progress in engineering system applications with high societal impact. The research is envisioned to be empowered by cutting-edge computation, synthesis, evaluation, and analysis technologies and is to result in significant impact for a variety of application domains in healthcare, homeland security, disaster mitigation, telecommunications, energy, environment, transportation, manufacturing, and other systems-related areas. ECCS also supports new and emerging research areas encompassing 5G and Beyond Spectrum and Wireless Technologies, Quantum Information Science, Artificial Intelligence, Machine Learning, and Big Data. ECCS envisions a connected portfolio of transformative and integrative projects that create synergistic links by investigators across its three ECCS clusters: Communications, Circuits, and Sensing-Systems (CCSS), Electronics, Photonics and Magnetic Devices (EPMD), and Energy, Power, Control, and Networks (EPCN), yielding novel ways of addressing challenges of engineering systems and networks. ECCS seeks proposals that are bold and ground-breaking, transcend the perspectives and approaches typical of disciplinary research efforts, and lead to disruptive technologies and methods or enable significant improvement in quality of life. Letter of intent is required and due February 1, 2023. Full proposal deadline is April 19 2023...

National Science Foundation - Dec 29, 2022

### **NSF: Emerging Mathematics in Biology (eMB)**

...The Emerging Mathematics in Biology (eMB) program seeks to stimulate fundamental interdisciplinary and potentially transformative research pertaining to the development of innovative mathematical/statistical/computational theories, tools, and modeling approaches to investigate challenging questions of great interest to biologists and public health policymakers. It supports research projects in mathematical biology that address challenging and significant biological questions through novel applications, including Artificial Intelligence/Deep Learning/Machine Learning. Full proposal deadline is March 22 2023...

National Science Foundation - Dec 22, 2022

## HPC

### **NSF funds new multi-institutional project to examine the flow of the Earth's mantle**

...National Science Foundation (NSF) awarded a five-year, \$127,723 grant to Visiting Research Scientist Chris Havlin and Assistant Professor Matthew Turk that is part of \$1.6 million project multi-institution project to integrate theory, experiments, and observations spanning seismic to convective timescales. Havlin and Turk will focus on computational modeling to better understand the microphysical activities of rocks that affect the upper mantle of the Earth. The scientists will focus on shorter time scale responses and consider three locations on the planet with existing datasets, the western United States, Iceland, and Alaska. The iSchool team will use a software program Havlin has developed, Very Broadband Rheology Calculator (VBRC), to determine the rocks' properties at various time and length scales. The tool will connect the microscopic description of the rock to macroscopic observations of the land masses as recorded from satellites in space, Global Positioning System networks and seismic stations...

News Bureau - Dec 30, 2022

## Artificial Intelligence / Machine Learning

### **Artificial Intelligence and Satellite Data to Understand High-Pressure Systems Favor Sea-Breeze Convection Over Southeastern Texas**

...During the summer months, sea- and bay-breeze circulations from the Gulf of Mexico and Galveston Bay are important drivers of the weather in southeastern Texas. These circulations, in conjunction with those from larger-scale weather systems—also known as the synoptic conditions—affect the flow of moisture and aerosol particles. Understanding how these flows affect clouds and storms is important to improving models used for weather forecasts and climate predictions. This study uses artificial

intelligence techniques to reveal the relationships between weather system circulations and cloud physics in southeastern Texas. The team projected data from the Geostationary Operational Environmental Satellite and the Next-Generation Weather Radar system onto each SOM node to investigate the characteristics of cloud and precipitation properties (e.g., fraction, intensity) in different regimes...  
Department of Energy - Jan 3, 2023

### **Materials science and engineering research focus efforts for US Army**

...Texas A&M University, the University of California San Diego and the Georgia Institute of Technology have combined efforts to develop new approaches for the accelerated discovery of materials. The development of these materials will enable the U.S. Army's equipment to better perform in environments that include high acceleration, high temperature, rapid ablation and high-velocity impacts. Phase one of the High-Throughput Materials Discovery for Extreme Environments (HTMDEC) program started in July. The center is to use machine learning and artificial intelligence in combination with advanced experimental and computational materials science methods as a way to enhance and accelerate the discovery of new materials capable of withstanding extreme conditions. The researchers will use advanced active learning techniques, allowing machine-learning algorithms to select a few next-best experiments out of a sea of possible experiments. After the first phase is complete, the research could lead to the university housing a HTMDEC research center. From there, the Army could add another four years of research funding and possibly extend the contract further...  
Texas A&M University College of Engineering - Jan 3, 2023

## **Quantum**

### **NSF/DOE-Funded Research Finds New Type of Entanglement That Lets Scientists 'See' Inside Nuclei**

...Nuclear physicists have found a new way to use the Relativistic Heavy Ion Collider (RHIC)—a particle collider at the U.S. Department of Energy's (DOE) Brookhaven National Laboratory—to see the shape and details inside atomic nuclei. The method relies on particles of light that surround gold ions as they speed around the collider and a new type of quantum entanglement that's never been seen before. Through a series of quantum fluctuations, the particles of light (a.k.a. photons) interact with gluons—gluelike particles that hold quarks together within the protons and neutrons of nuclei. Those interactions produce an intermediate particle that quickly decays into two differently charged "pions" ( $\pi$ ). By measuring the velocity and angles at which these  $\pi^+$  and  $\pi^-$  particles strike RHIC's STAR detector, the scientists can backtrack to get crucial information about the photon—and use that to map out the arrangement of gluons within the nucleus with higher precision than ever before. ... This work was funded by the DOE Office of Science, the U.S. National Science Foundation. The team used computational resources at the RHIC and ATLAS Computing Facility/Scientific Data and Computing Center at Brookhaven Lab, the National Energy Research Scientific Computing Center (NERSC)—a DOE Office of Science user facility at Lawrence Berkeley National Laboratory.  
Brookhaven Lab - Jan 4, 2023

### **USARO/AFOSR/ONR-supported research finds a new method that can produce a hundredfold increase in light emissions from a type of electron-photon coupling**

...The way electrons interact with photons of light is a key part of many modern technologies, from lasers to solar panels to LEDs. But the interaction is inherently a weak one because of a major mismatch in scale: A wavelength of visible light is about 1,000 times larger than an electron, so the way the two things affect each other is limited by that disparity. Researchers have come up with an innovative way to make much stronger interactions between photons and electrons possible, in the process producing a hundredfold increase in the emission of light from a phenomenon called Smith-Purcell radiation. In a combination of computer simulations and laboratory experiments, the team found that using a beam of electrons in combination with a specially designed photonic crystal — a slab of silicon on an insulator, etched with an array of nanometer-scale holes — they could theoretically predict stronger emission by many orders of magnitude than would ordinarily be possible in conventional Smith-Purcell radiation. The approach is based on a concept called flatbands, which have been widely explored in recent years for condensed matter physics and photonics but have never been applied to affecting the basic interaction of photons and free electrons. The underlying principle involves the transfer of momentum from the electron to a group of photons, or vice versa. ... The work was supported by the U.S. Army Research Office through the Institute for Soldier Nanotechnologies, the U.S. Air Force Office of Scientific Research, and the U.S. Office of Naval Research.  
MIT News - Jan 4, 2023

## **5G, Wireless Spectrum, Networking & Communications**

**430th EECS begins operations with new E-11A BACN**

...For the 430th Expeditionary Electronic Communications Squadron "Black Wolves," delivering communication coverage to the American warfighter, the nation's allies and coalition partners is a primary objective. To help keep the 430th's fleet airborne projecting constant combat communications support, the Air Force and Air Combat Command procured a brand-new E-11A. Essentially functioning as a low earth satellite, or "Wi-Fi in the sky," the E-11A is used to provide extended aerial command and control capabilities to air assets and troops on the ground. The E-11A is the only aircraft of its kind in the Air Force, and all of the pilots with the 430th EECS are all volunteers from other airframes...

Air Force Link - Jan 4, 2023

### **A new terahertz wireless link could bridge the digital divide, says Northeastern researcher**

...For years, the idea of 6G was thought to be science fiction. Now, it's closer than ever before, but there's still room for improvement. Together with NASA, the U.S. Air Force and Amazon, Josep Jornet at Northeastern showed that high-speed, high-bandwidth wireless communication at the terahertz frequency is possible across long distances. The terahertz band is a set of frequencies above 100 gigahertz, pushing past 5G's 71 gigahertz limit. The rollout of 6G wireless will bring this level of service to the public, but although sending signals across the terahertz band has been showed, doing so at a great distance has been all but impossible. The higher the frequency is, the shorter the distance information can travel. For terahertz communications, that would amount to a one-foot communication. Jornet and his team were able to form a 2-kilometer link. For years, NASA has been toying with terahertz wireless systems to sense signals in space, but the organization's efforts have been focused solely on receiving signals. When it comes to sending a signal, things get tricky. The problem is that terahertz frequencies are so high and require so much power to reach that any mixer placed in the radio would break. Instead of putting the mixer after the signal source, Jornet and his team fed information straight into the source itself. However, doing so distorted the information to the point where it was a mangled mess. Jornet and his team had four days in the U.S. Air Force Base in Rome, New York, to pull off a long-distance terahertz connection, and by day two...

Northeastern News - Jan 3, 2023

### **NASA-supported research uses satellites to track groundwater depletion in California**

...Researchers have pioneered the use of a tool that can track the loss of groundwater in California's Central Valley by measuring how much the Earth is sinking. The leading cause of subsidence is the removal or disturbance of groundwater, which is found underground in soil and between rocks and sand. Land subsidence often makes human-made areas uninhabitable and those conditions can cause water and food insecurity issues. Researchers are using satellite radar altimetry with creative new techniques to understand how Earth's complex geophysical processes impact human life. Satellite altimetry measures the time it takes a radar pulse to travel from the satellite to the Earth's surface and back. Tiny changes in these measurements over time can indicate whether a specific point of land is rising or falling. The study concluded that satellite altimetry could become an effective tool to monitor land subsidence. Additionally, because of its pinpoint accuracy and long data record, the research could be used to complement other geodetic techniques used to measure changes on the land. The work was supported by the NASA ESI Program...

Ohio State News - Jan 4, 2023

## **Advanced Manufacturing**

### **Technology That Will Change Our World in 2023 and Beyond: Manufacturing Innovation**

...Manufacturers are increasingly applying to their operations a framework called Prognostics and Health Management (PHM) so that by evaluating how reliable a system is, companies can use preventative maintenance to keep their systems running safely and efficiently. The sensors that allow this type of proactive systems maintenance will become less expensive and more readily available. This is happening mainly because of the recent increase in availability of two things necessary for this technology to advance — optical equipment that can detect tiny details that may show a problem in a system and more affordable computational capabilities. Both factors are driving down the computing costs and the physical costs of the sensors and other components required for this type of maintenance. | Additive manufacturing allows the production of complex shapes and geometries that cannot be built with other techniques. It can be used with a variety of materials, including polymers, cement and metals. One of the most exciting possibilities is the 3D printing of biological organs, though this is still in development. This offers tremendous potential for saving lives with replacement organs made from cellular material. Advances in digital manufacturing techniques are changing how and where physical goods can be made, making on-demand and hyper-customized products a reality. | Smart manufacturing is nimble, reacting quickly to changes in demand. It's also adaptable and resilient to disruption. The advantages of smart manufacturing include streamlining and improving the production process and enhanced visibility into sourcing and supply chains. While there are some vulnerabilities with this technology currently, including cyber threats, addressing those issues could lead to significant breakthroughs in this area of manufacturing technology. Smart manufacturing can allow a digital thread to be run through an entire supply chain to ensure ethical sourcing within products. Some companies are already seeing the promise of Internet of Things technology in their operations...

National Institute of Standards and Technology - Jan 4, 2023

# Microelectronics

## **DARPA Kicks Off JUMP 2.0 Consortium Aimed at Microelectronics Revolution**

...DARPA, along with the Semiconductor Research Corporation (SRC) and industry and academic stakeholders, is kicking off the Joint University Microelectronics Program 2.0 (JUMP 2.0). The SRC-led effort expands on the original JUMP collaboration aimed at accelerating U.S. advances in information and communications technologies. The consortium created under JUMP 2.0 will pursue high-risk, high-payoff research spanning seven thematically structured centers. Each multidisciplinary center will focus on one overarching research theme identified as key to addressing emerging technical challenges. These defined interests, spurred by an increasingly connected world and a rapidly changing microelectronics landscape, will centralize long-term, pathfinding research aimed at breakthroughs applicable across defense and academia. The centers will focus on JUMP 2.0's seven complementary research themes, led by the following university-run centers...

DARPA - Jan 4, 2023

# Climate Change / Green Energy & IT

## **DOE: 11 Big Wins for Nuclear Energy in 2022**

...From the historic signing of the Inflation Reduction Act (IRA) to loading fuel in the nation's next new reactor, momentum is definitely building for our largest source of clean power. Here are 11 BIG wins for nuclear energy that are setting the stage for what is shaping up to be another fruitful year in 2023. \* Several advanced reactor companies made significant strides toward deploying their small modular reactors (SMRs) in the United States. \* The U.S. Department of Energy released a major study in September that found 80% of the nation's coal power plant sites evaluated could be converted to nuclear power plants. \* X-energy broke ground on its TRISO-X fuel fabrication facility in Tennessee, which will be the nation's first commercial-scale facility dedicated to fueling HALEU-based reactors. DOE also awarded \$150 million to Centrus Operating Corporation to demonstrate the nation's ability to produce HALEU using an enrichment cascade. \* Machinists at Idaho National Laboratory successfully built a full-scale prototype to support DOE's (MARVEL) project. Researchers also performed their first digital twin test for a simulated microreactor at the lab. The successful demonstration will help advance remote monitoring, autonomous control, and predictive capabilities that can help lower operating costs of microreactor technologies. \* The Integrated Effects Test (IET) is the largest chloride salt system in the world for nuclear energy and will be used to develop the team's molten chloride fast reactor technology. The Molten Chloride Reactor Experiment (MCRE) at INL is being funded through DOE's Advanced Reactor Demonstration Program...

Department of Energy - Dec 30, 2022

## **DOE-funded research uses models to show climate change could cause “disaster” in the world's oceans comparable to the complete melting of the ice sheets on land**

...Climate-driven heating of seawater is causing a slowdown of deep circulation patterns in the Atlantic and Southern oceans and if this process continues, the ocean's ability to remove carbon dioxide from the atmosphere will be severely limited, further exacerbating global warming. University of California, Irvine researchers analyzed projections from three dozen climate models and found that the Atlantic Meridional Overturning Circulation and the Southern Meridional Overturning Circulation will slow by as much as 42 percent by 2100. The simulations suggest that under worst-case warming, the SMOC could cease entirely by 2300. Projections from 36 Earth system models over a range of climate scenarios shows that unchecked global warming could lead to a shutdown of the ocean deep circulation. This would be a climate disaster similar in magnitude to complete melting of the ice sheets on land. The analysis also shows that reducing greenhouse gas emissions now can prevent this complete shutdown of the deep circulation in the future. ... This project was funded by the U.S. Department of Energy.

UCI News - Jan 4, 2023

## **Cyclone researchers use global climate model: Warming climate means more and stronger Atlantic tropical storms**

...A warming climate will increase the number of tropical cyclones and their intensity in the North Atlantic, potentially creating more and stronger hurricanes, according to simulations using a high-resolution, global climate model. The research team ran climate simulations using the Department of Energy's Energy Exascale Earth System Model and found that tropical cyclone frequency could increase 66% during active North Atlantic hurricane seasons by the end of this century. The projected numbers of tropical cyclones could increase by 34% during inactive North Atlantic hurricane seasons. The simulations project an increase in storm intensity...

Iowa State University News Service - Jan 4, 2023



## Digital Health

### **NSF-funded study finds keeping indoor humidity levels at a "sweet spot" may reduce spread of COVID-19**

...A study by MIT researchers finds that indoor relative humidity may influence transmission of the COVID-19 virus. The team reports that maintaining an indoor relative humidity between 40% and 60% is associated with relatively lower rates of COVID-19 infections and deaths, while indoor conditions outside this range are associated with worse COVID-19 outcomes. To put this into perspective, most people are comfortable between 30% and 50% relative humidity, and an airplane cabin is at around 20% relative humidity. The U.S. National Science Foundation-supported findings are based on the team's analysis of COVID-19 data combined with meteorological measurements from 121 countries, from January 2020 through August 2020. Their study suggests a strong connection between regional outbreaks and indoor relative humidity. ... This award is supported by the cross-directorate Predictive Intelligence for Pandemic Prevention Phase I (PIPP) program, which is jointly funded by the Directorates for Biological Sciences (BIO); Computer, Information Science and Engineering (CISE); Engineering (ENG) and Social, Behavioral and Economic Sciences (SBE).  
National Science Foundation - Jan 5, 2023

### **Hand-held diagnostic lab offers point-of-care solution for future pandemics**

...A U.S. National Science Foundation-supported technology breakthrough could help authorities better prepare for future pandemics by decentralizing testing and maximizing the use of resources. University of California, Los Angeles researchers have developed a technology, using swarms of pinhead-sized magnets inside a hand-held, all-in-one lab kit, that could significantly increase the speed and volume of disease testing, while reducing the costs and usage of scarce supplies. Using a circuit board that controls a set of movable, 1-millimeter-sized magnetic discs known as "ferrobots" to transport samples through the diagnostic workflow of a nucleic acid amplification test, the researchers' ultra-sensitive lab kit was able to detect the presence of genetic material from a virus. The steps to separate, sort, mix and amplify testing samples are all automated and performed at a miniaturized level inside the kit. More than 100 test results using the lab kit were compared to the same samples tested for COVID-19 using polymerase chain reaction-based molecular diagnostics...  
National Science Foundation - Jan 4, 2023

## Other IT Related

### **NIST, NOAA & Academic Institutions Collaborate to Give Ocean Color System a 'Refresh,' Allowing for More Precise and Accurate Measurements**

...To ensure satellite measurements are accurate, researchers in the U.S. and many other nations rely on an ocean-color sensor called the Marine Optical Buoy (MOBY). Now, the National Oceanic and Atmospheric Administration (NOAA), Moss Landing Marine Laboratories (MLML), the University of Miami and the National Institute of Standards and Technology (NIST) have collaborated on an upgrade to the sensor, known as MOBY-Refresh, that will enable more precise and accurate measurements of sunlight's colors or wavelengths. The ocean-color satellite sensors observe the oceans, including the MOBY site. The MOBY data then are delivered to the satellite teams, which use the data to adjust the satellite sensors' calibration, thus improving the accuracy of the global data products. MOBY consists of two primary buoys: the optical buoy, which measures and records light, and the mooring buoy, which keeps the optical buoy in place. In parallel to MOBY-Refresh the team is developing similar instrumentation called MarONet, which will be used by an upcoming NASA satellite mission called PACE (Plankton, Aerosol, Cloud, ocean Ecosystem). NIST's role in this process will be to check for any changes in the optical system during transportation...  
National Institute of Standards and Technology - Jan 3, 2023

### **Establishing the Office of the Special Envoy for Critical and Emerging Technology**

...The Department of State Secretary Blinken established the Office of the Special Envoy for Critical and Emerging Technology as part of the wider modernization agenda because the constellation of critical and emerging technologies reshaping the world. The Office of the Special Envoy will bring additional technology policy expertise, diplomatic leadership, and strategic direction to the Department's approach to critical and emerging technologies. The office will provide a center of expertise and energy to develop and coordinate critical and emerging technology foreign policy, and to engage foreign partners on emerging technologies that will transform our societies, economies, and security—including biotechnology, advanced computing, artificial intelligence, and quantum information technologies...  
United States Pacific Command - Jan 3, 2023

### **Hubble Finds That Ghost Light Among Galaxies Stretches Far Back In Time**

...A recent infrared survey from NASA's Hubble Space Telescope, which looked for this so-called "intracluster light," sheds new light on how did the stars get so scattered throughout the cluster in the first place. The new Hubble observations suggest that these stars have been wandering around for billions of years, and are not a product of more recent dynamical activity inside a galaxy cluster that would strip them out of normal galaxies. The survey included 10 galaxy clusters as far away as nearly 10 billion light-years.

These measurements must be made from space because the faint intracluster light is 10,000 times dimmer than the night sky as seen from the ground. The survey reveals that the fraction of the intracluster light relative to the total light in the cluster remains constant, looking over billions of years back into time. If the wandering stars were produced through a comparatively recent pinball game among galaxies, they would not have enough time to scatter throughout the entire gravitational field of the cluster and therefore would not trace the distribution of the cluster's dark matter. But if the stars were born in the cluster's early years, they will have fully dispersed throughout the cluster. This would allow astronomers to use the wayward stars to map out the dark matter distribution across the cluster. This technique is new and complementary to the traditional method of dark matter mapping by measuring how the entire cluster warps light from background objects due to a phenomenon called gravitational lensing...  
National Aeronautics and Space Administration - Jan 4, 2023

## **STEM / Workforce & IT**

### **A Proclamation on National Mentoring Month, 2023**

...Every January, our Nation celebrates the dedicated mentors whose wisdom, guidance, and positive examples set our children on a sound path and help prepare them to succeed. The American Rescue Plan provided \$122 billion to help schools reopen safely and invest in tutoring, afterschool activities, summer learning, and enrichment programs, helping students regain ground that was lost in the last two years. The bill delivered a billion dollars to AmeriCorps to expand national service projects to include the recruitment of new mentors, tutors, and student success coaches. Through the Department of Labor, we are connecting young people who have previously dropped out of high school to pre-apprenticeship opportunities that help them prepare for jobs in high-demand industries. And this summer, I was proud to launch the National Partnership for Student Success, a collaboration between the Department of Education, AmeriCorps, and the Johns Hopkins Everyone Graduates Center to add 250,000 tutors and mentors around the country over the next 3 years...  
The White House - Dec 30, 2022

## **STEM / Workforce Resources & Opportunities**

### **R&D WORKFORCE TRAINING: FEDERAL AGENCIES' STEM INTERNSHIPS, SCHOLARSHIPS, AND TRAINING OPPORTUNITIES**

...Increasing the availability of STEM opportunities is a priority in the Biden-Harris Administration. To help facilitate this, the team at NITRD developed a STEM Portal that allows anyone to search for internships and other training opportunities at Federal agencies. The NITRD STEM PORTAL is a searchable database that includes a description, link, and contact information for each program listing. Government-sponsored internships and training programs are competitive, but there are many Federal opportunities and the NITRD STEM Portal is here to help...  
The Networking and Information Technology Research and Development (NITRD) Program - Dec 29, 2022

### **Workforce Recruitment Program**

...The Workforce Recruitment Program (WRP) is a recruitment and referral program that connects federal and private-sector employers nationwide with highly motivated college students and recent graduates with disabilities who are eager to demonstrate their abilities in the workplace through summer or permanent jobs. The Workforce Recruitment Program is managed by the U.S. Department of Labor's Office of Disability Employment Policy and the U.S. Department of Defense...  
Workforce Recruitment Program - Jan 4, 2023

### **NIST Summer High School Intern Program: DEADLINE February 13, 2023.**

...The Summer High School Intern Program (SHIP) is a NIST-wide summer intern program for students who will have finished their junior or senior year of high school by the start of the program and are interested in scientific research only. Students selected for this competitive volunteer program will participate in cutting-edge research at NIST, and will work closely with NIST staff scientists and engineers on a specific research problem. The 8-week program is tentatively scheduled to start on Tuesday, June 20, 2023 to August 14, 2023. The on-line application, including letters of recommendation, is accepting applications only between December 01 and February 13, 2023.  
National Institute of Standards and Technology - Dec 8, 2022

### **NIST Summer Undergraduate Research Fellowship (SURF)**

...The NIST SURF program sponsors an 11-week summer internship program for undergraduate students enrolled at U.S. 2-year and 4-year institutions majoring in chemistry, computer science, engineering, materials science, fire research, nanotechnology, information technology, mathematics, biology, manufacturing, statistics, or other STEM

disciplines. Designed to inspire undergraduate students to pursue careers in STEM through a unique research experience that supports the NIST mission, the program provides students with hands-on research experience under the mentorship of a NIST scientist or engineer in Boulder, CO, or Gaithersburg, MD. Vacancy announcements for the SURF 2023 program are OPEN, and accepting applications! The SURF 2023 program format is hybrid, including in-person and virtual components. The SURF program runs from May 22 to Aug 3, 2023. Prospective applicants must apply no later than 11:59 PM (ET) on February 1, 2023, for consideration for the program.

National Institute of Standards and Technology - Oct 6, 2021

### **NIST NRC Postdoctoral Research Associateships Program**

...The NIST NRC Postdoctoral Program supports a nationwide competitive postdoctoral program administered in cooperation with the National Academies/National Research Council (NRC). The postdoctoral program brings research scientists and engineers of unusual promise and ability to perform advanced research related to the NIST mission, introduces the latest university research results and techniques to NIST scientific programs, strengthens mutual communication with university researchers, shares NIST unique research facilities with the U.S. scientific and engineering communities, and provides a valuable mechanism for the transfer of research results from NIST to the scientific and engineering communities. There are two competitions per year, with application deadlines of February 1 and August 1. Start dates for the positions are June through December and January to June, respectively.

National Institute of Standards and Technology - Dec 8, 2022

## **Upcoming Conferences / Workshops / Webinars**

### **Digital Identity Guidelines - Kicking Off Revision 4! Jan 12th**

...The Draft Fourth Revision to NIST Special Publication 800-63, Digital Identity Guidelines (Draft NIST SP 800-63-4) is available for review, and your feedback is requested! During this webinar, we will: \* Describe the design principles and rationale behind the proposed changes included in this revision \* Provide an overview of proposed changes between Revision 3 and Draft Revision 4. ... January 12, 2023 1-3PM ET.

National Institute of Standards and Technology - Jan 3, 2023

### **Innovation Through NITRD Coordination**

Networking and Information Technology Research and Development

National Coordination Office, Washington, DC USA

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