2023

FEDERAL R&D IN PICTURES

FLC

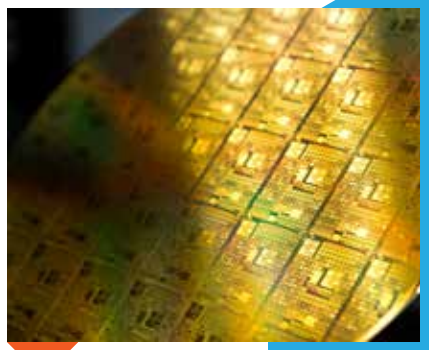
Federal Laboratory Consortium
for Technology Transfer

2023 PLANNER AT A GLANCE

DECEMBER 2022

JANUARY 2023

FEBRUARY



MARCH

APRIL

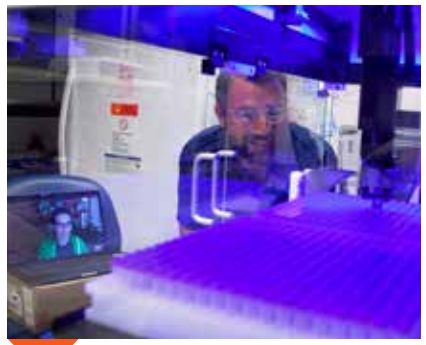
MAY

JUNE

JULY

AUGUST

SEPTEMBER



OCTOBER

NOVEMBER

DECEMBER 2023

JANUARY 2024

LAB TECH EXTRAS

There were too many great Planner submissions this year to fit into just 14 months, so please check out the "Extras" section following January 2024 for bonus photos of six additional amazing FLC technologies.

....and more!

LEARN MORE *about the featured labs and technologies in the Laboratory Directory on the last page.*

ABOUT THE FLC

The Federal Laboratory Consortium for Technology Transfer (FLC) is a nationwide network of over 300 federal laboratories, agencies, and research centers that fosters commercialization best practice strategies and opportunities for accelerating technologies from out of the lab and into the marketplace. The American taxpayers' investment in our national laboratories' research and development (R&D) efforts has spurred scientific and technological breakthroughs that can return dividends for our economy, such as creating new industries, businesses and jobs, when introduced to the marketplace.

The FLC's mission is to promote, educate, and facilitate federal technology transfer (T2) among its member labs and institutions so they can commercialize new, innovative technologies and create social and economic impacts. The FLC creates and provides resources such as education and training, tools and services, so that federal labs are better able to create partnerships, navigate the commercialization process, and achieve market success.

By serving as the touchpoint for T2 communication, education, and open data services tools, the FLC plays a central role in providing the skilled T2 workforce that our country desperately needs. These highly motivated T2 professionals are the driving force behind federal labs' ability to effectively partner with the private sector. The FLC strives to support the dedicated individuals who make up the federal laboratory system by continuing to serve as a gateway for industry, government, and academia to access R&D in an effort to stimulate our nation's economic health.

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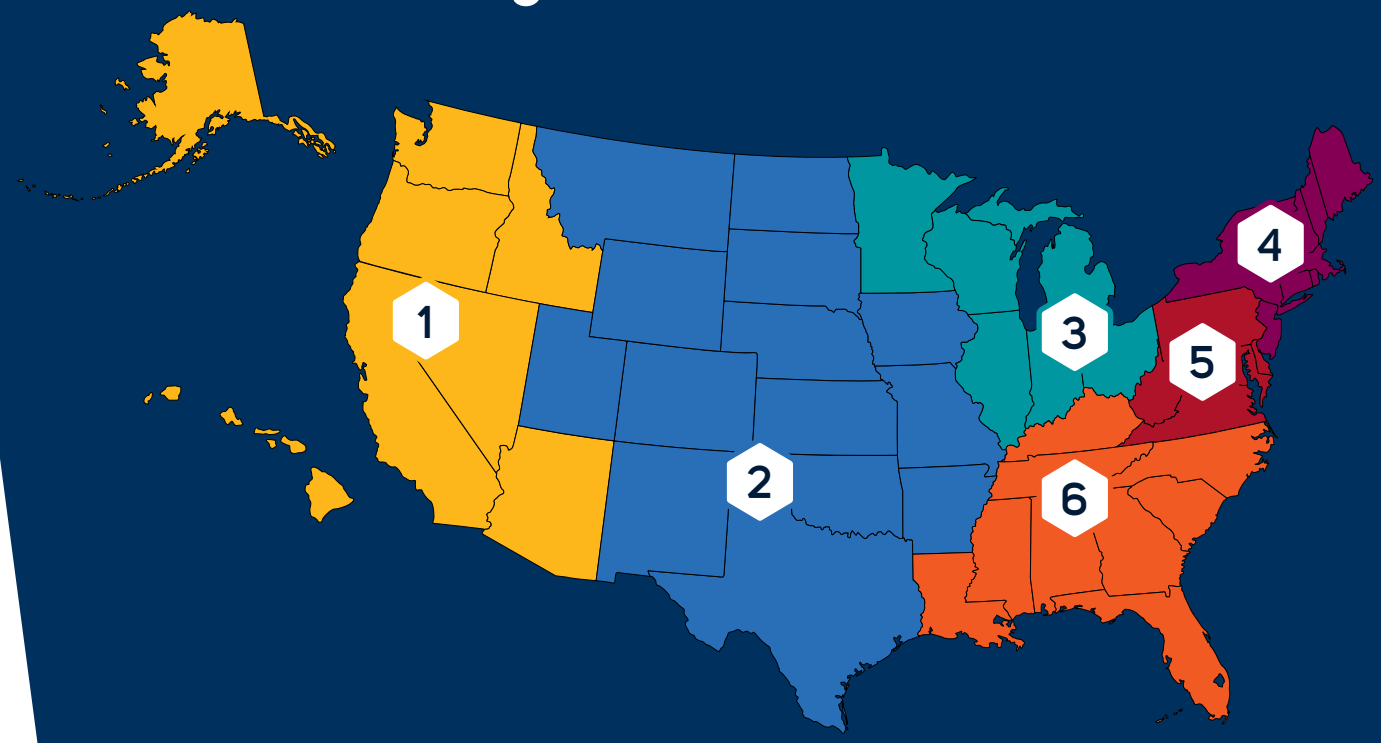
FLC Regions



1 Far West
Regional Coordinator:
Jennifer Stewart,
Naval Surface Warfare Center,
Corona Division

2 Mid-Continent
Regional Coordinator:
David Kistin
Sandia National Laboratories

3 Midwest
Regional Coordinator:
Annie Bullock-Yoder,
Naval Surface Warfare Center,
Crane Division

4 Northeast
Regional Co-Coordinators:
Laurie Bagley, Princeton Plasma Physics Laboratory (PPPL);
David Lee, CCDC Armaments Center

5 Mid-Atlantic
Regional Coordinator:
Vladimir Popov, Frederick National Laboratory for Cancer Research

6 Southeast
Regional Coordinator:
Paige George,
Naval Surface Warfare Center,
Panama City Division

Photo credit: © David Woodfin, Sarah Tasseff, and Allen Hopkins/ Los Alamos National Laboratory

Additive Manufacturing of a Tamper Evident Container (TEC)

Additive manufacturing creates a unique Tamper Evident Container (TEC) with arbitrarily complex monitoring electro/ optical-mechanical sensors embedded within its walls and lid. Unlike traditional tamper evident seals, the entire TEC acts as a seal, providing full coverage for storage and transport of valuables, sensitive assets, forensic evidence or accountable items for government or private sector use. Encrypted on-board electronics record the complete integrity history of the protected items, and can alert owners or take defensive actions if tampering occurs. The flexible design and simple manufacturing offer customized sizing, capabilities, and mass production. Patents are pending for this R&D 100 Award winning technology.

Los Alamos
NATIONAL LABORATORY

DECEMBER 2022

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SUN	MON	TUE	WED	THU	FRI	SAT
				1	2	3
4	5	6	7	8	9	10
11	12 Anniversary of Bayh-Dole Act	13	14	15	16	17
18 Start of Hanukkah	19	20	21	22	23	24
25 Christmas	26 Start of Kwanzaa	27	28	29	30	31 New Year's Eve

Department of Energy/National Nuclear Security Administration
Los Alamos National Laboratory

Los Alamos National Laboratory, a multidisciplinary research institution engaged in strategic science on behalf of national security, is managed by Triad, a public service oriented, national security science organization. Los Alamos enhances national security by ensuring the safety and reliability of the U.S. nuclear stockpile, developing technologies to reduce threats from weapons of mass destruction and solving problems related to energy, environment, infrastructure, health and global security concerns.

NOTES

Tracking Wildlife with High-Tech Tags

United States Geological Survey (USGS) Western Ecological Research Center (WERC), National Aeronautics and Space Administration (NASA) Ames Research Center, and collaborators are leveraging Global Positioning System (GPS) and Long-Range Radio (LoRA) technology to develop a new generation of flipper-mounted tags, which are less invasive than the abdominally implanted transmitters used in the past. These small, light-weight transmitters will collect and remotely offload more accurate location data. The group is working to add sensors and modifications to enable multi-species networks where data are shared among tags, to better understand animal communities and how sea otters and other species interact in changing ecosystems.

USGS
science for a changing world

JANUARY 2023

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SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
New Year's Day						
8	9	10	11	12	13	14
15	16	17	18	19	20	21
	Martin Luther King, Jr. Day					
22	23	24	25	26	27	28
Lunar New Year						
29	30	31	1	2	3	4

Department of the Interior, U.S. Geological Survey

Western Ecological Research Center (WERC)

The Western Ecological Research Center (WERC) is a USGS Ecosystems Mission Area operation serving primarily California and Nevada. WERC scientists work closely with federal, state, academic, and other collaborators to address a diverse array of high-profile topics. Topics include research on effects of wildfire, sea level rise, drought, energy development and more on federal Trust species.

NOTES

Photo credit: © Laurie Zaleski and Amanda Werner/FAA

Automated Synthesis of Explosive Threats

The synthesis of explosive threats requires preparation, processing and quality control by trained laboratory staff. Synthesis automation would reduce batch-to-batch variability, increasing the reliability of achieving process and purity specifications. With this goal in mind, the Transportation Security Laboratory (TSL) recently invested in an automated chemical synthesis reactor capable of synthesizing two explosive threats simultaneously. Here, Dr. Alicia Broderick prepares a chemical reactor by assembling the starting materials and setting the reaction conditions. Once initiated, the reaction conditions are actively monitored remotely until a pure explosive threat is produced with reduced batch variation.

FEBRUARY

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SUN	MON	TUE	WED	THU	FRI	SAT
29	30	31	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21 Valentine's Day	22	23	24	25
26	27 President's Day	28	1	2	3	4

Department of Homeland Security, Science and Technology Directorate

Transportation Security Laboratory

The Transportation Security Laboratory (TSL), a Department of Homeland Security Federal Laboratory in the Science and Technology Directorate, supports the maturation, evaluation, and certification of explosives detection technologies. TSL helps the detection equipment industry meet performance requirements established by DHS and other customers. Though primarily an explosive and weapons detection laboratory, TSL leverages its capability and expertise to help DHS operating components address other detection problems (e.g., opioids).

NOTES

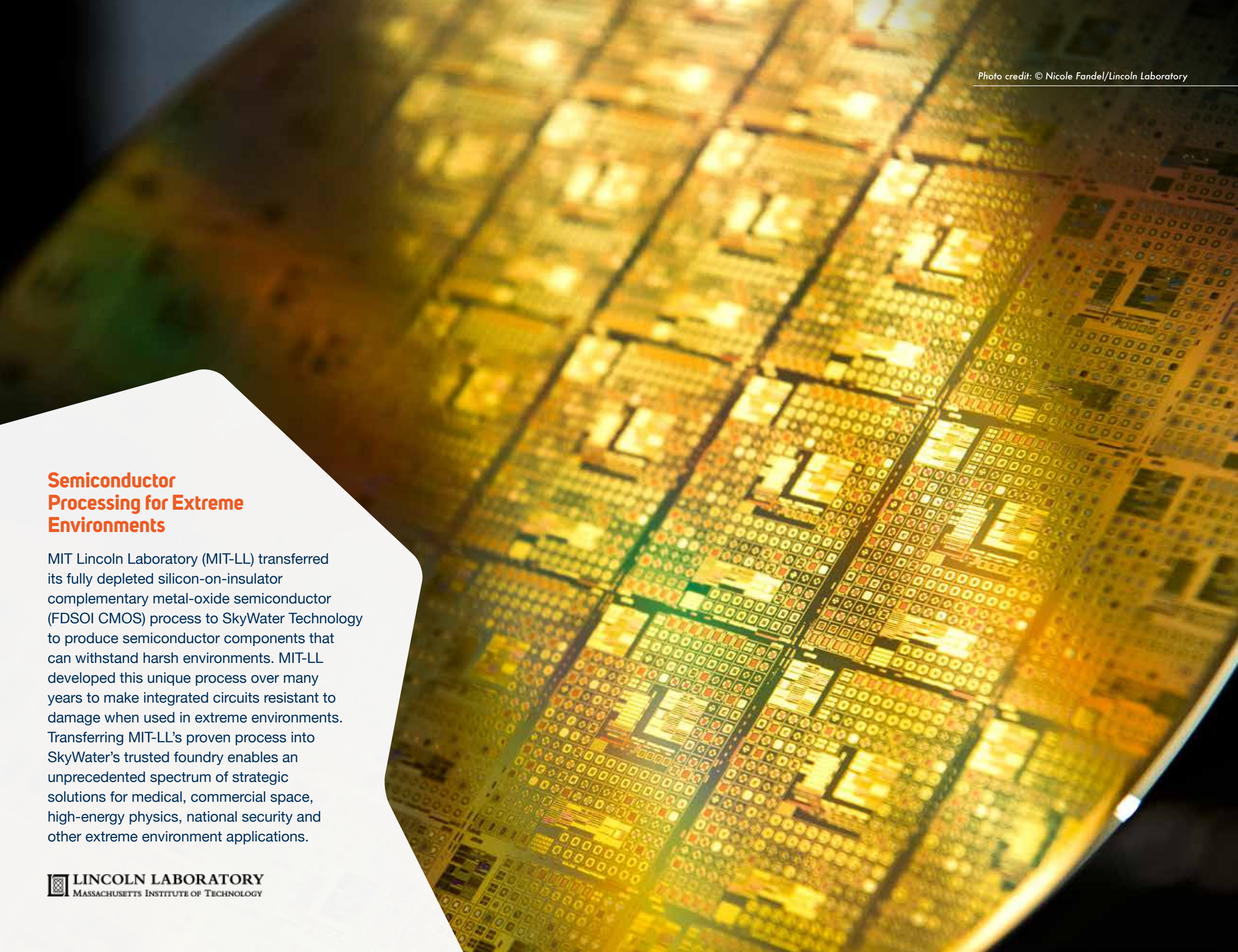

Photo credit: © Nicole Fandel/Lincoln Laboratory

Semiconductor Processing for Extreme Environments

MIT Lincoln Laboratory (MIT-LL) transferred its fully depleted silicon-on-insulator complementary metal-oxide semiconductor (FDSOI CMOS) process to SkyWater Technology to produce semiconductor components that can withstand harsh environments. MIT-LL developed this unique process over many years to make integrated circuits resistant to damage when used in extreme environments. Transferring MIT-LL's proven process into SkyWater's trusted foundry enables an unprecedented spectrum of strategic solutions for medical, commercial space, high-energy physics, national security and other extreme environment applications.

LINCOLN LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

MARCH

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SUN	MON	TUE	WED	THU	FRI	SAT
26	27	28	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
Start of Daylight Saving Time					St. Patrick's Day	
19	20	21	22	23	24	25
			Start of Ramadan			
26	27	28	29	30	31	1
		FLC 2023 National Meeting				

Department of Defense

MIT Lincoln Laboratory

Lincoln Laboratory conducts research and development on behalf of the military services, the Office of the Secretary of Defense, the intelligence community, and other government agencies. Its mission is to develop technology in support of national security in a broad range of domains, including space security, air/missile/maritime defense, cyber security, communication systems, bioengineering, homeland protection, microelectronics, air traffic control, and intelligence, surveillance, and reconnaissance.

NOTES

Photo credit: © Carlos Jones/ ORNL, U.S. Dept. of Energy

OAK RIDGE National Laboratory

Frontier Supercomputer

The Frontier supercomputer at Oak Ridge National Laboratory—the world's fastest with 1.1 exaflops of performance—is the first to achieve an unprecedented level of computing performance known as exascale, a threshold of a quintillion calculations per second. Through the Department of Energy (DOE) user program at Oak Ridge Leadership Computing Facility, Frontier will enable scientists from the national laboratory system, academia and industry to develop critically needed technologies for the country's energy, economic and national security, helping researchers address problems of national importance that were impossible to solve just five years ago.

APRIL

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SUN	MON	TUE	WED	THU	FRI	SAT
26	27	28	29	30	31	1
2	3	4	5	6	7	8
			Start of Passover			
9	10	11	12	13	14	15
Easter Sunday						
16	17	18	19	20	21	22
	Tax Day				Eid al-Fitr	Earth Day
23	24	25	26	27	28	29
30			World IP Day			

Department of Energy
Oak Ridge National Laboratory

Oak Ridge National Laboratory, operated by UT-Battelle on behalf of the Department of Energy, delivers scientific discoveries and technical breakthroughs needed to realize solutions in energy and national security and provide economic benefit to the nation. It conducts research that translates science into solutions for the world's biggest problems. The lab's translational R&D approach spans fundamental science to demonstration and deployment, leveraging signature strengths in materials, neutrons, nuclear, and computing sciences.

NOTES

Photo credit: © Allan Jones/ Cape Eleuthera Island School

Underwater Hurricane Glider

This image shows an underwater hurricane glider in Bahamian waters after a deployment in partnership with Cape Eleuthera Island School. Underwater gliders are autonomous vehicles that measure ocean parameters, including temperature and salinity, several times per day from the sea surface and at depths up to 1000 meters. Gliders are deployed and recovered a few miles from the coast utilizing small boats, are remotely piloted from the ground, and remain in the water for up to nine months. Current research supports the value of glider observations for monitoring ocean conditions that have been linked to hurricane intensity changes.

MAY

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SUN	MON	TUE	WED	THU	FRI	SAT
30	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
						Armed Forces Day
21	22	23	24	25	26	27
28	29	30	31	1	2	3
	Memorial Day					

Department of Commerce, National Oceanic and Atmospheric Administration (NOAA)

Atlantic Oceanographic and Meteorological Laboratory (AOML)

Atlantic Oceanographic and Meteorological Laboratory (AOML) is a federal research laboratory in Miami, Florida. As a part of NOAA's Office of Oceanic and Atmospheric Research, the lab studies hurricanes, coastal ecosystems, oceans and human health, climate, global carbon, and how the ocean changes over time. AOML partners with many NOAA offices to support NOAA's mission and improve prediction and management services for the nation.

NOTES

Pivot-Flex Prosthetic Foot with Biodynamic Motion

The Department of Veterans Affairs (VA) annually performs more than 6,000 lower limb amputations on veterans, many of whom are then fitted with a prosthesis. A key difference between an intact foot and a prosthetic foot involves coupled motion; biological feet are capable of rotating while pointing and flexing, whereas prosthetic feet typically cannot. Glenn Klute, PhD, a researcher at the VA's Center for Limb Loss and Mobility, has prototyped a torsionally adaptive prosthesis that mimics the natural coupling motions of an intact foot. The VA's Technology Transfer Program is pursuing the commercialization of this life-improving innovation.

VA | U.S. Department of Veterans Affairs

Photo credit: © Rafael Cruz

JUNE

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SUN	MON	TUE	WED	THU	FRI	SAT
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14 Flag Day	15	16	17
18	19 Juneteenth	20	21	22	23	24
25	26	27	28	29	30	1

Department of Veterans Affairs

VA Center for Limb Loss and Mobility

The Department of Veterans Affairs Center for Limb Loss and Mobility at the VA Puget Sound Health Care System is focused on preserving and enhancing mobility in U.S. military veterans and others with foot and leg impairments or amputations.

NOTES

Photo credits: © Chris Smallwood

USDA

Novel Soybean Crosses to Develop Elite Germplasm

Soybean, valued globally for high-quality protein and oil, is the second most produced crop in the U.S. Diseases reduce the productivity and limit the income of soybean farmers, with loss estimates from the leading pathogen, soybean cyst nematode, estimated to exceed $1 billion annually. Cross-breeding is necessary to develop new and improved soybean varieties with exceptional disease resistance. In 2022, the Agricultural Research Service obtained crossing rights through Material Transfer Agreements to five elite varieties from external programs to use as parents in developing elite new soybean germplasm. Shown here, researchers make novel crosses to begin the breeding journey.

JULY

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SUN	MON	TUE	WED	THU	FRI	SAT
25	26	27	28	29	30	1
2	3	4	5	6	7	8
9	10	11 Independence Day	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS)

Crop Genetics Research Unit

USDA's soybean breeding program in Jackson, Tennessee, seeks to mitigate disease losses by breeding high yielding germplasm lines with exceptional disease resistance, which leads to more reliable farmer income and improves the sustainability of soybean production. With a primary disease focus on soybean cyst nematode, the lab uses both conventional and molecular breeding strategies to achieve optimal outcomes.

NOTES

Training Aid Material Delivery Device (TAMDD)

U.S. Army Combat Capabilities Development Command Chemical Biological Center (DEVCOM CBC) scientists developed the Training Aid Material Delivery Device (TAMDD) to help improve canine detection programs. The TAMDD assists in canine training by delivering defined and consistent amounts of training odor profiles to the animals in a repetitive and safe method. The TAMDD is low cost, composed of durable and inert materials, has customizable emission rates and delivers a consistent scent/odor profile during training sessions. The device is available for license, and CBC continues to develop and improve the technology through CRADA partnerships with academia.

Photo credit: ©Richard Arndt/ U.S. Army Combat Capabilities Development Command Chemical Biological Center

AUGUST

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SUN	MON	TUE	WED	THU	FRI	SAT
30	31	1	2	3	4	5
6	7	8 Anniversary of the CHIPS and Science Act	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26 International Dog Day
27	28	29	30	31	1	2

Department of Defense U.S. Army Combat Capabilities Development Command Chemical Biological Center (DEVCOM CBC)

The U.S. Army Combat Capabilities Development Command Chemical Biological Center (DEVCOM CBC) is the Army's principal research and development center for chemical and biological defense technology. DEVCOM CBC is aligned under the U.S. Army Futures Command, which provides Army modernization solutions to allow U.S. forces to achieve overmatch in the future operational environment.

NOTES

Photo credit: © Jason Creps

Building a Brighter Future: Advanced Photon Source Upgrade Project

This photo provides a view through the center of one of the 1,321 magnets that will be assembled into the new electron storage ring for the upgrade of the Advanced Photon Source (APS) at the U.S. Department of Energy's Argonne National Laboratory. The new storage ring will increase the brightness of the APS x-rays by up to 500 times, enabling users from universities, industry, and the federal government to achieve scientific discoveries beyond what is currently possible.

Argonne NATIONAL LABORATORY

SEPTEMBER

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SUN	MON	TUE	WED	THU	FRI	SAT
27	28	29	30	31	1	2
3	4 Labor Day	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Department of Energy
Argonne National Laboratory

The U.S. Department of Energy's Argonne National Laboratory is a multidisciplinary research center located just outside Chicago. Argonne scientists and engineers tackle the biggest questions facing humanity – from how to obtain affordable clean energy to protecting ourselves and our environment.

NOTES

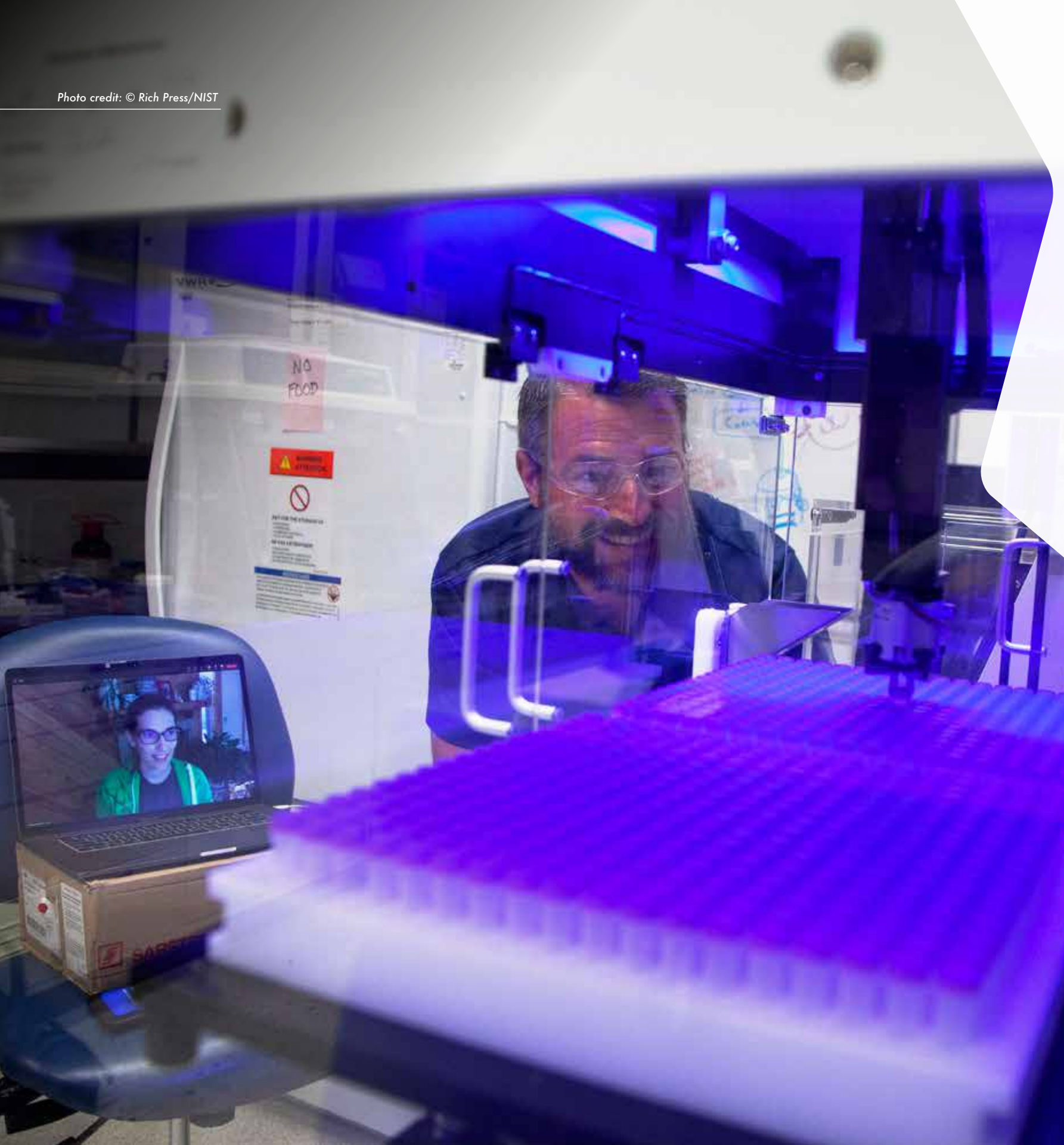

Photo credit: © Rich Press/NIST

Bottling Monkeypox Gene Fragments

Researchers at the National Institute of Standards and Technology (NIST) have produced a testing material containing gene fragments from the monkeypox virus. This material, which is non-infectious and safe to handle, will help manufacturers, testing laboratories and the U.S. Centers for Disease Control and Prevention ensure the accuracy of tests for the disease. To help speed up the widespread availability of monkeypox testing, NIST is making this material free for laboratories worldwide. In this photo, NIST microbiologist Stephanie Servetas (left) and NIST microbial geneticist Scott Jackson watch as a laboratory robot fills vials with the material in preparation for shipping.

NIST | NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
U.S. DEPARTMENT OF COMMERCE

OCTOBER

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Department of Commerce, National Institute of Standards and Technology (NIST)

Material Measurement Laboratory (MML)

NIST promotes U.S. innovation and industrial competitiveness by advancing measurement science, standards and technology in ways that enhance economic security and improve our quality of life. NIST is a non-regulatory agency of the U.S. Department of Commerce.

SUN	MON	TUE	WED	THU	FRI	SAT
1 Start of Federal Fiscal Year	2	3	4	5	6	7
8	9 Columbus Day Indigenous People's Day	10	11	12	13	14
15	16	17	18	19	20 Anniversary of Federal Technology Transfer Act	21 Anniversary of Stevenson-Wydler Act
22	23	24	25	26	27	28
29	30	31 Halloween	1	2	3	4

NOTES

Photo credit: © FHWA

U.S. Department of Transportation
Federal Highway Administration

Enhancing Roadway Safety for Vulnerable Road Users

The Federal Highway Administration (FHWA) uses state-of-the-art research tools to enhance roadway safety for vulnerable road users (VRUs). At the Turner-Fairbank Highway Research Center, these tools include virtual reality, articulating pedestrian test devices, highway driving simulators and the Center's vehicle-to-pedestrian test bed. In this photo, researchers use an adult pedestrian anthropomorphic test device to simulate high-risk crash scenarios involving vulnerable road users. FHWA's Human Factors Team is also evaluating the ability of forward-looking infrared sensors to detect and count VRUs. Improving count data collection can help researchers understand VRU exposure and improve safety.

NOVEMBER

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SUN	MON	TUE	WED	THU	FRI	SAT
29	30	31	1	2	3	4
5 End of Daylight Saving Time	6	7 Election Day	8	9	10	11 Veterans Day
12	13	14	15	16	17	18
19 Start of Diwali	20	21	22	23 Thanksgiving	24	25
26	27	28	29	30	1	2

Federal Highway Administration
Turner-Fairbank Highway Research Center

The Federal Highway Administration's Turner-Fairbank Highway Research Center is a federally owned and operated national research facility located in McLean, Virginia. The research center houses 15 laboratories, as well as support facilities and data sets. It conducts applied and exploratory advanced research in safety, pavements, highway structures and bridges, human-centered systems, operations and intelligent transportation systems, and materials.

NOTES

Photo credit: © D. A. Phillips

USGS
science for a changing world

HVO Monitoring Network

This photograph shows the Kīlauea volcano in Hawaii during the early days of the December 2020 Halema'uma'u eruption. It depicts not only the lava lake and eruption vent, but also USGS Hawaiian Volcano Observatory (HVO) scientists using state-of-the-art instruments to collect data about the eruption (in this case thermal and visual imagery). HVO communicates the results of its work to fellow federal agencies such as Hawai'i Volcanoes National Park, the public, emergency managers, and the international scientific community.

DECEMBER

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SUN	MON	TUE	WED	THU	FRI	SAT
26	27	28	29	30	1	2
3	4	5	6	7	8	9
10	11	12	13	14 Start of Hanukkah	15	16
17	18	19 Anniversary of Bayh-Dole Act	20	21	22	23
24	25	26	27	28	29	30
New Year's Eve 31	Christmas	Start of Kwanzaa				

Department of the Interior U.S. Geological Survey, Hawaiian Volcano Observatory (HVO)

The U.S. Geological Survey (USGS) Hawaiian Volcano Observatory (HVO) is part of the USGS Volcano Hazards Program. HVO monitors earthquakes and active volcanoes in Hawaii to assess hazards, issue warnings, and advance scientific understanding to reduce the impacts of volcanic eruptions. HVO communicates the results of its work to the public, emergency managers, and the scientific community.

NOTES

Photo credit: © James Gathany/CDC

Newborn Screening Test for Glucose-6-phosphate Dehydrogenase Deficiency Using Dried Blood Spot Specimens

The Centers for Disease Control and Prevention's (CDC's) Division of Laboratory Sciences (DLS) researchers Elizabeth McCown (left) and Sharon Flores (right) observe results of a newborn screening test for glucose-6-phosphate dehydrogenase deficiency using dried blood spot specimens. DLS has produced and characterized dried blood spot quality assurance materials for newborn screening tests and distributed them to almost 700 public health laboratories worldwide.

JANUARY 2024

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SUN	MON	TUE	WED	THU	FRI	SAT
31	1 New Year's Day	2	3	4	5	6
7	8	9	10	11	12	13
14	15 Martin Luther King, Jr. Day	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3

Centers for Disease Control and Prevention

National Center for Environmental Health

CDC's National Center for Environmental Health (NCEH) plans, directs and coordinates a program to protect the American people from environmental hazards. We promote a healthy environment and prevent premature death, avoidable illness and disability caused by non-infectious, non-occupational environmental and related factors. We are especially committed to safeguarding the health of vulnerable populations – such as children, the elderly, and people with disabilities – from certain environmental hazards.

NOTES

LAB TECH EXTRAS

Nature's Bounty: Revitalizing the Discovery of New Cancer Drugs from Natural Products

NIH NATIONAL CANCER INSTITUTE

Natural products have been a bedrock of drug discovery for decades. It's estimated that more than half of all cancer drugs and antibiotics originated from chemical compounds discovered in natural sources. The National Cancer Institute (NCI) has one of the largest and most diverse collections of organisms for natural product-based research. New natural products were isolated and investigated as potential anti-cancer agents from the pictured sea squirt, a Clavelina species. NCI's Technology Transfer Center supports the efforts of the Natural Products Branch and its Program for Natural Product Discovery, negotiating more than 400 agreements since 1990 on its behalf.

Photo credit: Photo taken by the Coral Reef Research Foundation under contract to the Natural Products Branch, National Cancer Institute.

DILBIT Research

CG RDC

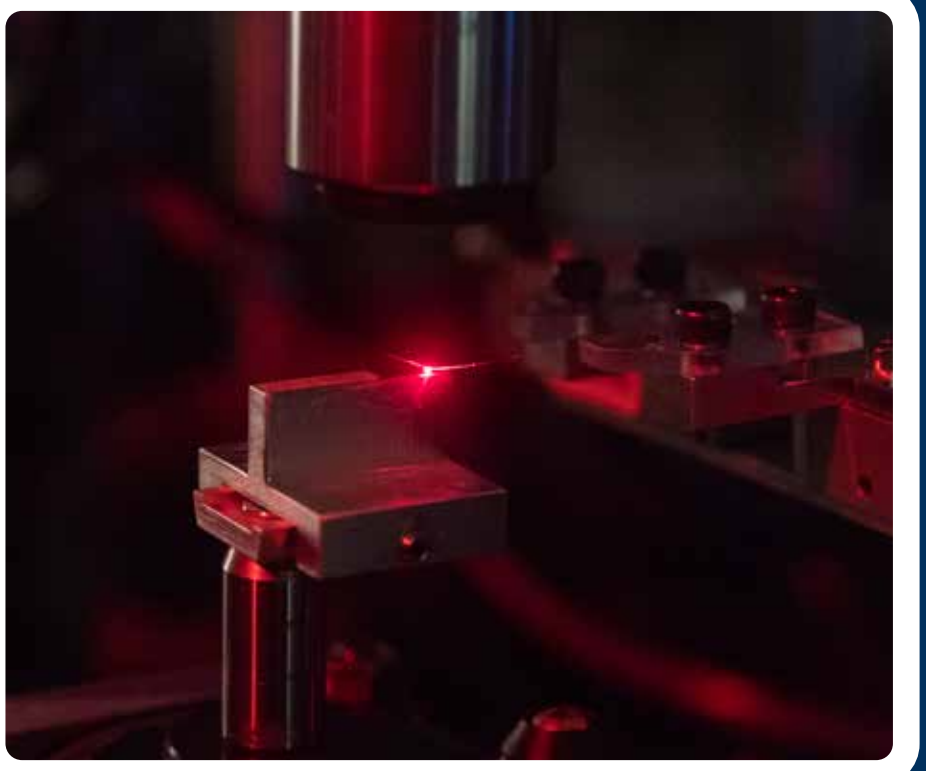
U.S. Coast Guard Research & Development Center (USCG RDC) in 2022 conducted extensive research on oil spill response, a critically important area of research with national implications. This included in-situ (controlled) burning evaluations to develop best practices for operational use in multiple environments, and analysis of the behavior of diluted bitumen (dilbit) spills including changes to the spilled substance as it interacts with the environment. This in-depth research is designed to provide the USCG Federal On-Scene Coordinators with tools to address to fresh water spill events.

Photo credit: Official U.S. Coast Guard Photo

Tapering Glass Optical Fibers for Technological Advancements

National Security Agency (NSA) researchers are exploring ways to incorporate tapered glass optical fibers into new technologies. Glass optical fibers do not conduct heat the same way that typical wires would, creating higher efficiency and adaptability. These fibers maintain effectiveness at extreme temperatures, which allows compatibility in retrieving data from superconducting computers. Scientists use existing technology, specifically designed for optical fibers, to taper the fiber down to one micron. NSA is using these fibers in various studies including cryogenic applications.

Photo credit: © Chuck Robinson/NSA



Water on Wheels (WOW) Mobile Emergency Water Treatment System

Jointly developed by the Environmental Protection Agency (EPA) and nonprofit WaterStep, this modular and portable water treatment system has provided safe water to communities immediately following disasters. The emergency water treatment system, known as the Water on Wheels (WOW) cart, features multiple treatment technologies and alternative power sources that can be configured on-site without producing contaminated waste. This system can be transported by a pick-up truck to provide areas affected by disasters with access to clean water for drinking, cooking, cleaning and medical triage. The system can be deployed to critical infrastructure ahead of disasters to build community resiliency.

Photo credit: © Dustin Alton Strupp/WaterStep

Black Hawk Helicopter for Test and Evaluation of Medical Equipment

The world's only dedicated aeromedical research Black Hawk helicopter (HH-60M), "Forge 612," overlooks a field while research pilots prepare for medical equipment testing at the U.S. Army Aeromedical Research Laboratory (USAARL), located in Fort Rucker, Alabama. The USAARL partners with other Department of Defense entities and industry leaders to test and evaluate the effectiveness and usefulness of medical equipment in flight, providing airworthiness certification for equipment deemed safe to use in military aircraft.

Photo credit: © Stephen F. Williams/U.S. Army Aeromedical Research Laboratory; Goldbelt Frontier, LLC

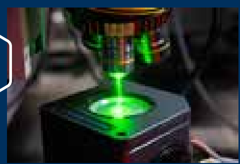
Tissue Culture Plates Stained with Crystal Violet to Visualize Viral Plaques

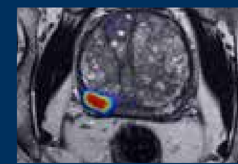
At the Centers for Disease Control and Prevention's (CDC's) biosafety level 4 (BSL-4) laboratory, the highest laboratory biological safety level attainable, a scientist examines tissue culture plates stained with crystal violet to visualize viral plaques. This staining method allows for quantifying viable virus. Research like this facilitates early development of CDC diagnostic technologies, such as CDC's PCR test to detect non-variola orthopoxvirus — including monkeypox virus. On June 24, 2022, FDA approved updates to the previously cleared CDC's Non-variola Orthopoxvirus Real-time PCR Primer and Probe Set for Laboratory Response Network and CDC-designated laboratory use to increase U.S. monkeypox outbreak testing capacity.

Photo credit: © James Gathany/CDC photo

THANK YOU

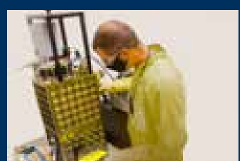
to all of the federal laboratories that submitted photos of their innovative technologies! Your participation helps the T2 community thrive!

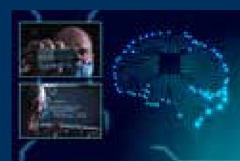


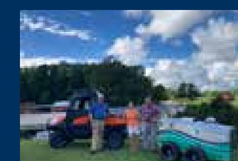



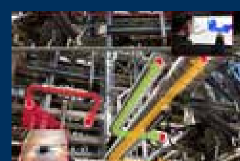








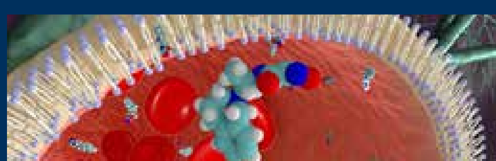


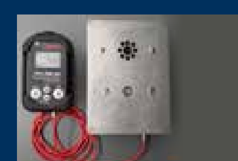








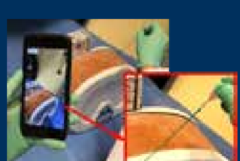




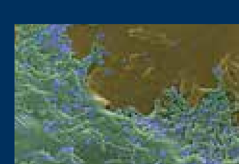









LABORATORY DIRECTORY

December '22
Department of Energy/
National Nuclear Security Administration
Los Alamos National Laboratory

January '23
Department of the Interior, U.S. Geological Survey,
Western Ecological Research Center

February
Department of Homeland Security Science and Technology Directorate, Transportation Security Laboratory

March
Department of Defense,
MIT Lincoln Laboratory

April
Department of Energy,
Oak Ridge National Laboratory

May
Department of Commerce, National Oceanic and Atmospheric Administration, Atlantic Oceanographic and Meteorological Laboratory

June
Department of Veterans Affairs,
VA Center for Limb Loss and Mobility

July
U.S. Department of Agriculture,
Agricultural Research Service,
Crop Genetics Research Unit

August
Department of Defense U.S. Army Combat Capabilities Development Command Chemical Biological Center

September
Department of Energy,
Argonne National Laboratory

October
Department of Commerce, National Institute of Standards and Technology, Material Measurement Laboratory

November
Department of Transportation,
Federal Highway Administration,
Turner-Fairbank Highway Research Center

December
Department of the Interior, U.S. Geological Survey, Hawaiian Volcano Observatory

January '24
Centers for Disease Control and Prevention,
National Center for Environmental Health

Lab Tech Extras

National Institutes of Health,
National Cancer Institute,
Natural Products Branch

Department of Defense,
National Security Agency

Department of Homeland Security,
U.S. Coast Guard Research and Development Center

Environmental Protection Agency,
Center for Environmental Solutions and Emergency Response

Centers for Disease Control and Prevention, National Center for Emerging and Zoonotic Infectious Diseases

Department of Defense, U.S. Army Aeromedical Research Laboratory

FLC

Federal Laboratory Consortium
for Technology Transfer

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