APS TV

APS March Meeting 2018, Los Angeles, California, March 5-9, 2018.

APS TV on a screen near you!

APS TV launched in partnership with The American Physical Society at their March meeting in Baltimore, MD in 2013. APS TV, now in its 6th year, is there to raise the visibility of best practices and research in the field, highlight collaborations between diverse institutions such as research institutions, universities, and private sector organizations

APS TV will also be around the convention center to cover the conference, interview key speakers and get your views on hot topics.

Where to Watch APS TV

Around the venue

YouTube: https://www.youtube.com/WebsEdgeEducation
WebsEdge: http://www.websedge.com/videos/aps_tv_2018/
Facebook: @WebsEdgeEducation

Select delegate hotels:

JW Marriott - Channel 72
InterContinental - Channel 3
Millennium Biltmore - Channel 87
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#APSMarch
@APSMeetings
@APSphysics
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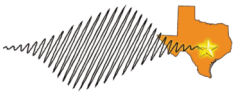
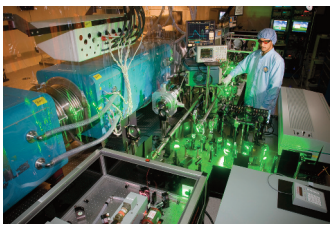
APS TV Program Highlights





This film examines the Texas Petawatt Laser at the University of Texas at Austin. This laser produces light pulses with power in excess of 10^15 W and focused intensity exceeding 10^22 W/cm^2, an intensity that can be argued is brighter than any known optical source in the universe. Creating such laser pulses requires complicated optical techniques and uses some extreme technologies, such as the largest diffraction gratings in the world and single cycle control of the light pulse. Focusing this power onto solid targets or into gases creates fascinating extreme conditions and high temperature plasmas which can only be accessed in a laboratory with such a device.

Harnessing the Brightest Light in the Universe: The Science and Technology of the Texas Petawatt Laser

DESY
A Research Centre of the Helmholtz Association

DESY builds and operates top-level accelerator facilities enabling a broad range of scientific usage. The most prominent example is the superconducting accelerator of the European XFEL facility. DESY is leading in superconducting RF and ultrafast FEL technologies.

Accelerator Division at DESY (Deutsches Elektronen-Synchrotron)

NASA Goddard's Astrophysics Science Division (ASD) is home to a vibrant community of scientists, technologists, and support staff dedicated to enabling NASA's over-arching goals in astrophysics. ASD is the world leader in leading and supporting astrophysics missions through all stages of their lifecycles: our staff develop the theory, design and build the instrumentation, perform integration and testing, operate the spacecraft, archive the data, and obtain science results, and share those discoveries with the public.

Astrophysics Science Division at NASA's Goddard Space Flight Center

北京计算科学研究中心
BEIJING COMPUTATIONAL SCIENCE RESEARCH CENTER

CSRC

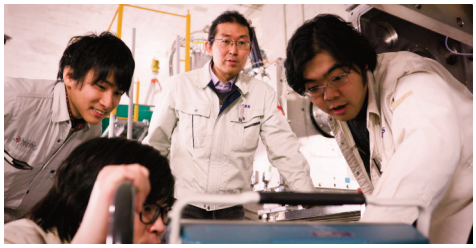
The Beijing Computational Science Research Center (CSRC) attracts national and international talent and conducts leading, multidisciplinary research with state-of-the-art facilities. The centre participates in international, academic exchange programs. A recently implemented management system at the Beijing Computational Science Research Center has brought the center closer in line to management systems at similar centres in the UK, US or Hong Kong.

Beijing Computational Science Research Center (CSRC)

CAS Key Laboratory of Solar Activity, National Astronomical Observatories was founded in December 2008. It includes two research groups (Solar Magnetism & Activity Group, Solar Activity Prediction Centre) and two observing stations (Huairou Solar Observing Station, Mingantu Observing Station). KLSA is the unique laboratory of solar physics in China, focusing on studying the frontier solar problems, developing new techniques and solar telescopes, forecasting solar activity and space weather to serve national and international key projects.

CAS Key Laboratory of Solar Activity (KLSA) National Astronomical Observatories Chinese Academy of Sciences

The Laboratory for Advanced Nuclear Energy (LANE) is based at the Tokyo Institute of Technology and is focused on providing the latest research in nuclear energy, radiation utilizations, as well as ensuring the safety of nuclear energy. As populations increase across the world and energy consumption goes up, traditional fossil fuel-burning means of generating energy are proving increasingly damaging to the environment. It's essential that we find better ways of generating energy. At the same time, after the Tohoku earthquake in 2011, it's essential to ensure all future use of nuclear energy does not pose the same risks, better anticipating events like these and their potential impact. Japan and the world as a whole have high expectations for the kind of work LANE is doing, and Professors, students and staff plan to meet these expectations head on.

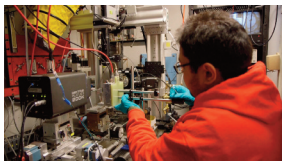


Center for Nuclear Study at the University of Tokyo

The center of excellence for green nanotechnologies aims to create a global focal point for applied research in nanoscience and engineering, by discovering and innovating new technologies in different types of applications. The center works hand-in-hand with international collaborators such as the University of California, Los Angeles, and University of Southern California. Our efforts create innovative approaches in various applications including renewable energy, biomedical, and military applications. Our message is to create global awareness of competitive research efforts in the middle east region and the tremendous amount of talent found in that region. Aligned with the Kingdom's vision 2030, the region is currently transforming into a knowledge based economical society.

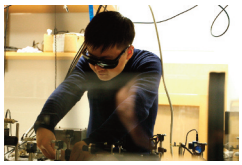
Center of Excellence for Green Nanotechnologies (CEGN) at King Abdulaziz City for Science and Technology (KACST)

Cornell High Energy Synchrotron Source, New York - CHESS is a National Science Foundation supported national user facility serving over 1200 user visits each year,. It is one of only two sources of high-energy (>20 keV) x-rays in the nation and a world leader in inventing innovative tools and techniques that harness their penetrating power and short wavelength to advance our understanding of biological, electronic and structural materials at the atomic length scale.



Cornell High Energy Synchrotron Source

At the University of Chicago's Department of Physics, faculty and students are conducting research across the scales of length and time; from the origin of the Universe to quantum entanglement. It's a diverse and inclusive atmosphere, where scientists cross boundaries and disciplines to advance physics research in all realms of science.



Department of Physics University of Chicago

Northwestern and Fermilab established the Center for Applied Physics and Superconducting Technologies (CAPST) with a focus on superconductivity at the forefronts of accelerator physics, quantum simulation and computing, and discovery of superconducting materials for next generation quantum devices.

The Center for Applied Physics and Superconducting Technologies (CAPST)

The Center for Solar-Terrestrial Research (CSTR) at NJIT is an international leader in ground- and space-based solar and terrestrial physics, with interest in understanding the effects of the Sun on the geospace environment.

The Center for Solar-Terrestrial Research at the New Jersey Institute of Technology

With more than £26 Million in research income, the Physics Department at Imperial is one of the world's largest and most successful.

Imperial College London – Department of Physics

The Institute of Physics at Academia Sinica in Taiwan is one of the world's leading centres for fundamental physics research encompassing three main areas of research: Quantum Materials Physics, Physics of Active Biological Systems and Medium and High Energy Physics. With its steady government funding, the Institute of Physics at Academia Sinica has around 50 faculty members with backgrounds in Physics, Materials Science and Engineering.

Institute of Physics at Academia Sinica

IFUNAM, the first and largest physics institute in México, is at the forefront in research and academic development, with a well-deserved international reputation. Research at IFUNAM comprises a vast range of fields of knowledge in experimental, theoretical and applied physics, currently focusing primarily on: nuclear and medical physics; optics, atomic, and molecular physics; condensed matter and nanosciences; complex systems, statistical and biological physics; high-energy physics and cosmology; quantum and ultra-cold matter.

Institute of Physics-National Autonomous University of Mexico (IFUNAM)

Japan Proton Accelerator Research Complex, or J-PARC, aims to answer humanity's most fundamental questions: how our universe began and how matter and life in all its variety emerged. J-PARC is a multi-purpose research facility engaged in basic science and industrial applications using world-class high-intensity proton accelerators. With this expertise, J-PARC has become a world leader in particle and nuclear studies, through T2K neutrino oscillation experiment, the various experiments made possible at the Hadron Experimental Facility as well as at the Materials and Life Science Experimental Facility (MLF).

J-PARC (Japan Proton Accelerator Research Complex) Center

The wide-ranging interests of scientists at JILA has defined it as one of the nation's leading research institutes in the physical sciences. JILAns explore some of today's most challenging and fundamental scientific questions about quantum physics, the design of precision optical and X-ray lasers, the fundamental principles underlying the interaction of light and matter, and processes that have governed the evolution of the Universe for nearly 14 billion years.

JILA - University of Colorado Boulder

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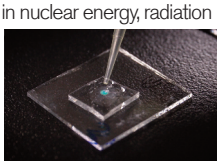


Laboratory for Advanced Nuclear Energy (LANE) at the Tokyo Institute of Technology

The U.S. Army Research Laboratory (ARL) Center for Distributed Quantum Information (CDQI) is a collaborative basic research effort connecting ARL, academic, industrial and other government researchers to develop a multi-site, multi-node, modular quantum network based on resilient distributed quantum entanglement preserved by quantum memory and quantum error correction.

US Army Research Laboratory, Center for Distributed Quantum Information (CDQI)

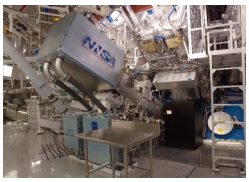
For more than 30 years the Los Alamos Neutron Science Center (LANSCE) has provided the scientific underpinnings in nuclear physics and material science needed to solve national security challenges. In addition to national security research, the LANSCE User Facility has a vibrant research program in fundamental science, providing the scientific community with intense sources of neutrons and protons to perform experiments supporting civilian and industrial research and the production of medical and research isotopes.

Los Alamos Neutron Science Center (LANSCE)

Inspired by dramatic discoveries with the Karl G. Jansky Very Large Array in central New Mexico and the Atacama Large Millimeter/submillimeter Array in northern Chile, the next generation Very Large Array (ngVLA) will open vast new discovery space, enabling scientists to directly image the formation of Earth-like planets, trace the complex organic molecules in star-forming regions, unravel the dense gas history of the Universe during the key epoch of galaxy assembly, probe fundamental physics, and much more.

National Radio Astronomy Observatory (NRAO)

The National Ignition Facility is the world premiere institution of nuclear science. As the home to the world's largest and most energetic laser, NIF is dedicated to pushing the boundaries of plasma science while ensuring our nation's nuclear stockpile is safe, secure, and reliable. The brightest and best scientists from around the world work together at NIF to answer one of science's grand challenges - inertial confinement fusion.



National Ignition Facility & Photon Science (Lawrence Livermore National Lab)

The Department of Physics at North Carolina State University is one of the top physics departments in the country. With research occurring in condensed matter physics, biophysics, astrophysics, nuclear physics, and many more areas, students at NCSU have a variety of learning experiences and career paths at their fingertips. APS TV visited this prestigious department and spoke with several faculty and students about what NCSU has to offer to the physicists of tomorrow.

North Carolina State University

The film shows a few highlights of the exciting research done in the Nuclear Science Division at LBNL. We work on forefront problems in Nuclear Science, as identified in the 2015 Nuclear Science Advisory Committee Long Range Plan, including applications of technologies developed for basic research for the benefit of society.

Nuclear Science Division at Lawrence Berkeley National Laboratory

The Joint Research Institute of Physics (JPRI) at NYU Shanghai combines the skills and expertise of three outstanding universities in the US and China: New York University, NYU Shanghai and East China Normal University. By combining the theoretical and fundamental physics strengths of New York University and NYU Shanghai with the experimental expertise of East China Normal University the JPRI is aiming to become one of the world's leading research institutes.

NYU Shanghai

New Zealand punches above its weight in quantum and optical physics. The Dodd-Walls Centre coordinates the talent from across the universities in NZ and creates a world-class collaborative organization comparable to other leading institutions.

Quantum and optical physics opportunities in New Zealand: the Dodd-Walls Centre

Sandia's Center for Microsystems, Science and Technology is a place where we build some of the smallest things at the Nation's largest National Laboratory. We work on scales from the cosmic to the quantum.

Sandia National Laboratories, Microsystems Science & Technology Center (MS&T)

The invention of scanning tunneling microscopy (STM) has enabled nanoscale science in real space with atomic resolution, and opened a new door in science. Achieving the next breakthrough in STM, the addition of high time resolution was a major challenge, which we have succeeded in realizing, for the first time, by combining STM with ultrashort-pulse laser technologies. We have started a new research group and aim to achieve significant progress in quantum technology research, from the development of quantum devices to advances in bioscience and medicine, using the new microscopy techniques as the core technology.

Shigekawa Lab and Research Unit at University of Tsukuba

The Engineering Product Development Pillar at the Singapore University of Technology and Design (SUTD) aims to prepare its students for leadership in the full value chain of scientific research and innovative technology for the design and development of engineering products. It aims to nurture technically grounded leaders and innovators to serve the needs of society in Singapore and beyond.

Singapore University of Technology and Design (SUTD) – Engineering Product Development Pillar (EDUP)

The Southampton Theory Astrophysics and Gravity (STAG) Research Centre brings together three research groups with world-leading expertise on issues relating to fundamental physics and astronomy. STAG researchers are interested in problems ranging from the ultimate building blocks of matter to dynamics on cosmological scales, and actively engage with high-profile international experiments and observational facilities. STAG runs a regular interdisciplinary seminar series, hosts international visitors and arranges high-profile research colloquia.

Southampton Theory Astrophysics and Gravity Research Centre (STAG) University of Southampton

In Tohoku University, outstanding researchers are working on diverse research areas from fundamental science to application / implementation. The intention of the Center for Science and Innovation in Spintronics is to facilitate interaction between researchers not only in Tohoku University but also over the world. Throughout activities in this center, we expect researchers to be more aggressive, more innovative and more creative, and grow up as new leaders in spintronics.

Spintronics Research at Tohoku University, Japan - From spin physics to integrated circuit applications

The Advanced Science Research Center (ASRC) is a fundamental science research institute that conducts frontier research and development in the National Institute, Japan Atomic Energy Agency (JAEA). In order to solve today's problems and to meet future challenges, ASRC promotes cutting-edge nuclear and materials science research by making maximum use of the advantages of JAEA. With leading-edge projects in different fields, and with

complementary viewpoints, researchers at ASRC explore new paths leading to far-reaching scientific discoveries and innovative solutions for the dawn of a bright future.

The Advanced Science Research Center (ASRC) at the Japan Atomic Energy Agency (JAEA)

Scientists around the world are joining forces to develop the world's largest tokamak, a magnetic fusion device that holds great promise for limitless energy production. ITER -- being constructed in southern France -- is one of the most ambitious energy projects in the world and scientists at the DIII-D Research

Program at General Atomics are using their tokamak expertise to make major contributions to the burning plasma experiment.

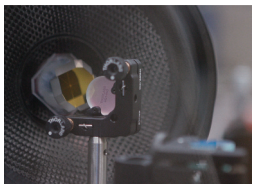
The DIII-D National Fusion Facility

TUNL is a U.S. Department of Energy Center of Excellence. The TUNL research program spans the entire breadth of nuclear

physics. The common theme is the synergistic use of accelerators and non-accelerator techniques to tackle complex problems. In doing this work, TUNL trains about 9% of the PhDs nationwide annually in experimental nuclear physics - a flexible, highly-trained workforce in service of society.

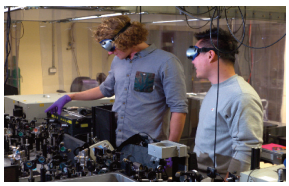
The Triangle Universities Nuclear Laboratory (TUNL)

APS TV travelled to Buffalo, NY to visit the Department of Physics at the University at Buffalo. This department has been making great strides in both research and education, and has been providing countless opportunities to its students. We spoke with several students and faculty from the department to find out just how being a part of the UB Department of Physics is preparing them for success in the future.



University at Buffalo, Department of Physics

The Physics department at the University of California San Diego has a long and proud tradition of excellence in teaching and in research. Since 1960, when the physics department was the first department to enroll students at UCSD, the department has maintained its rigor and relevance as evidenced by its diverse research areas, dedicated faculty, and motivated students. From Condensed Matter to Astrophysics to Biological Physics, the department of Physics at UCSD is at the frontier of knowledge.



University of California San Diego, Department of Physics

Quantum computing is defining a new computing paradigm. By using the nation's only academic installation of a D-Wave machine, the USC Center for Quantum Information Science and Technology (CQIST) is bridging the gap between theory and experiment to solve some of the hardest problems facing physicists today.

USC Center for Quantum Information Science and Technology (CQIST)