



Message from the Director



I lead my last column as director of the San Diego Supercomputer Center with a quote by the iconic Mr. Spock: “Change is the essential process of all existence.” So true.

As I am about to resume my full-time duties as a faculty member in the physics department, it is natural to take a retrospective glance at the 12 years I spent as director of this incredible center.

During the years, many [milestones](#) were marked, including celebrating the 25th, 30th and 35th anniversaries of SDSC, and restoring SDSC’s national leadership in innovative high-performance computing platforms. We added *Gordon*, *Comet* and *Expanse* to our family of supercomputers, stewarding our national

reputation as an HPC and data-intensive computing leader. Later this summer, we will be installing *Voyager*, our latest experimental system envisioned as a resource for conducting AI research across the sciences and engineering.

Importantly, over the years we consistently worked in partnership with the National Science Foundation, which has contributed significantly to SDSC, enabling us to contribute in the big ways that we do to advance research in academia and industry, nationally. In fact, just recently the Biden administration announced the National Artificial Intelligence Research Resource Task Force, of which I am a member.

Narrowing the scope to the regional and local levels, we are the only supercomputer center to serve the entire UC system, and I am especially proud of leading UC San Diego’s Research Cyberinfrastructure Initiative, from which emerged the SDSC rack colocation services (COLO), the *Triton Shared Computing Cluster (TSCC)*, and which inspired the center’s investment in the Qumulo centralized storage service for campus researchers.

But our biggest source of power and energy at SDSC comes from our people, and I am most proud of the quality people I had the privilege of hiring and working with during my time as SDSC director. Together we powered this place with skill and purpose. My sincere gratitude goes out to the entire SDSC staff for your years of dedication and tenacity in keeping the lights on and the racks humming, particularly during this COVID-19 pandemic.

Since a leader is only as good as the team, the SDSC team is my lasting legacy. I feel good about the strategic investments we made in SDSC, and I trust that this human legacy will lead SDSC where no supercomputer center has gone before. To lend some expert guidance to this endeavor, I leave you in the capable hands of our friend and colleague Frank Würthwein. Live long and prosper my friends.

With gratitude and best wishes,

Michael L. Norman
SDSC Director

SDSC NEWS HIGHLIGHTS



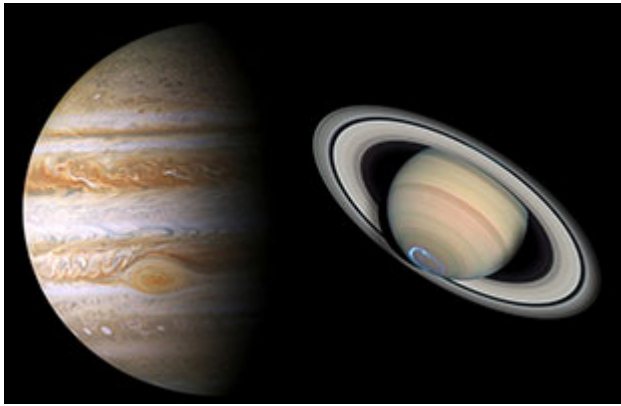
Interim Director Named for San Diego Supercomputer Center

Lead of Distributed High-Throughput Computing Frank Würthwein takes the helm while the formal search for the next long-term SDSC director is underway at UC San Diego.



High-Performance Computing Makes a Splash in Water Cycle Science

Pact between San Diego Supercomputer Center and the Scripps Institution of Oceanography leverages computation to improve weather and hydrological forecasts.



XSEDE Resources Lead to Better Understanding of Jupiter and Saturn

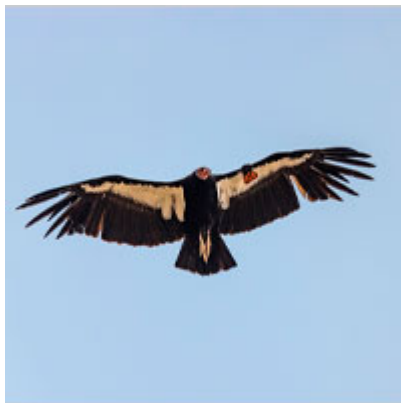
Comet at the San Diego Supercomputer Center at UC San Diego and *Bridges* at the Pittsburgh Supercomputing Center were used to run more than 6,000 simulations to better understand the space between Jupiter and Saturn.



Stickiness of COVID Particles Reduces Airborne Concentration in Supermarkets

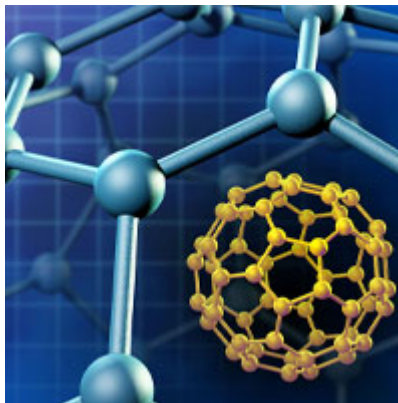
A team of environmental engineers used high-performance computing to simulate how SARS-CoV-2's airborne pathogens travel and land in the familiar setting of the supermarket.

RESEARCHER SPOTLIGHT



HPC, Ecology Experts Team Up to Ease Study of Wildlife Movements

Bob Sinkovits serves as PI on the Spatial Ecology Gateway, an innovative computational resource envisioned to enable researchers to interpret animals' use of space in their home ranges.



A Quantum Leap for Molecular Simulations on GPUs

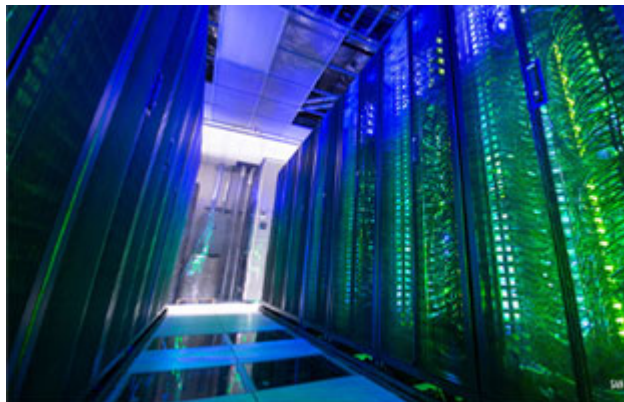
Researchers led by SDSC's Andreas Goetz develop open-source software to ease computational science on modern computers.



SDSC Programmer's Demo Captures the Attention of CERN

A demonstration by Shava Smallen sparked an international partnership between CERN and SDSC to help researchers optimize procurement of cloud services with CloudBank.

INDUSTRY PARTNER HIGHLIGHTS



San Diego Supercomputer Center, Core Scientific Form New Partnership

Core Scientific Plexus™ software extends the reach of SDSC's *Expansive* supercomputer.



Pondering the Costs of High-Performance Computing

Industry Partnerships Director Ron Hawkins discusses energy costs of large-scale computing and the energy required to run computing facilities that power apps on our smartphones and other conveniences of modern life.

AROUND SDSC

The Latest from HubZero

The HUBzero® team is proud to collaborate with two new projects and host their communities using the HUBzero® Platform:

- **NeuroElectroMagnetic data Archive and tools Resource (NEMAR)**
An open access data, tools and compute resource operating on NeuroElectroMagnetic data made available in OpenNeuro.org.
- **Computational Infrastructure for Geodynamics (CIG)**
A community-driven organization advancing Earth science by developing and disseminating software for geophysics and related fields. These two projects join other projects, from intercultural learning to nanotechnology, hosted by the HUBzero® team at SDSC.

From Innovation to Production: SDSC Tests Hybrid Cloud Approach

In collaboration with the University of Wisconsin-Madison researchers David Schultz and Benedikt Riedel, incoming SDSC Interim Director Frank Würthwein has been working with Igor Sfiligoi, Nicole Wolter and Shava Smallen on using a hybrid cloud approach to boost the IceCube Neutrino

Observatory's GPU resources for achieving maximum research efficiency. "Over a period of two weeks, we conducted a test to further integrate IceCube resources with Open Science Grid's commercial cloud providers for infrastructure needs and CloudBank for budget management," said Würthwein. "We basically more than doubled the capacity of production systems by integration into the commercial cloud and our next step is to engage other scientific communities that have the need for greater GPUs from time to time." For details on the two-week experiment, contact [Igor Sfiligoi](#).

PROGRAMS & EVENTS



SDSC hosts speaker events, workshops and hands-on training in computational thinking, high-performance computing and big data exploration for students and researchers at nearly every level of sophistication. Following is a list of upcoming programs and events. Please click on the highlighted text for details and for registration information. A full list of SDSC events can be found [here](#).

June 30, 2021

[Live at ISC21 – AMD HPC User Forum Networking Meeting](#)

July 19 – 22, 2021

[Practice and Experience in Advanced Research Computing \(PEARC21\)](#)

August 10 – 13, 2021

[Research Running on Cloud Compute and Emerging Technologies \(RRoCCET 21\) by CloudBank](#)

September 23, 2021

[Technology Forum: SDSC Voyager - An Innovative Resource for AI & Machine Learning](#)

SOCIAL MEDIA HIGHLIGHTS



Flashback: At the time, the Tera MTA was definitely one of the coolest looking compute systems in our datacenter



IceCube Neutrino Observatory Detects New High-Energy Particle

CAMPUS NEWS

Serving Diverse Digital Tech Users

UC San Diego's Electronic Accessibility Oversight Committee (EAOC) hosted its annual Global Accessibility Awareness Fair to shed light on the challenges of users who rely on assistive technology to browse the internet or navigate software.

UC San Diego Response to Pandemic Recognized with National Award

UC San Diego receives the 2021 American Council of Education/Fidelity Investments Award for Institutional Transformation for its approach to maintaining a low infection rate among students, faculty and staff on campus during the COVID-19 pandemic.



SDSC's Innovators Newsletter is published six times a year, every two months.
To submit information to be included in the August 2021 issue, please send details to: cdillon@ucsd.edu.

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