**Current and Previously Funded NSF Science and Technology Centers**

* The number of partners in current and past funded STCs varies from 3-14 (with an average of ~7); this number often grows as the center ages.
* More details on currently funded STCs are available on the main [NSF STC page](https://www.nsf.gov/od/oia/programs/stc/index.jsp).

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| **Cornell Univ.** | **CCB Center for Bright Beams** (Physics) funded 2016 |
| 12 partners | Brigham Young University; Chicago State University; Clark Atlanta University; Morehouse College; UCLA; U. Chicago; U. Florida; U. Maryland at College Park; U.Toronto; Fermi National Accelerator Laboratory; LBNL; TRIUMF |
| Research focus | *To increase the intensity ("brightness") of beams of charged particles by two orders of magnitude while decreasing the cost of key accelerator technologies.* |
| Education program | Postdoc/graduate: seminarsUndergrad: REU.Precollege: Middle school teacher training resources and summer prof. development and xraise lending library |
| URL | [*http://cbb.cornell.edu*](http://cbb.cornell.edu) |

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| **UCSF** | **CCC Center for Cellular Construction** (Biology) funded 2016 |
| 5 partners | San Francisco State University; UC Berkeley; Stanford University; IBM Almaden Research Center; The Exploratorium |
| Research focus | *To transform the field of cell biology into a quantitative discipline that uses tools from engineering, physical and computer sciences to enable both a greater understanding of the rules that govern cell behavior and the ability to design cells to have useful functions* |
| Education program | Graduate: 2-3 week long intensive “mini courses”Undergrad: REU and new coursesPrecollege: summer instructional bootcamps for high school students and teachers from San Francisco Unified School District and Bay Area.Outreach: Science Festivals, Maker Faires, Hackathons and (through partnership with the Exploratorium) Science Museum Exhibits. |
| URL | *https://ccc.ucsf.edu/* |

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| **U. Pennsylvania** | **CEMB Center for Engineering Mechano-Biology** (CMMI - Eng) funded 2016 |
| 6 partners | Washington U. in Saint Louis; Boston U.; Bryn Mawr College; New Jersey Institute of Technology; Alabama State University; U. Texas at Austin |
| Research focus | *To discover the governing principles of molecular and cellular communication and provide the intellectual foundations and materials for engineering new and powerful cell-based devices* |
| Education program | Faculty: teach and participate and get to audit courses and “sabbaticals” in other CEMB labsPostdoc/graduate: postdoc fellows get to audit courses and “sabbaticals” in other CEMB labs; graduate fellows get advisors, boot camps, courses, mentorship and internships.Undergrad: summer REU and other research opportunities.Precollege: RET |
| URL | [*www.cemb.org*](http://www.cemb.org/) |

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| **U. Colorado at Boulder** | **STROBE Science and Technology Center on Real – Time Functional Imaging** (Materials research) funded 2016 |
| 5 partners | UCLA; UC Berkeley; Fort Lewis College; Florida International University; UC Irvine |
| Research focus | *To advance and integrate different imaging modalities using electron, X-ray, optical, and nano-probe microscopy to collectively tackle major scientific challenges.* |
| Education program | Postdoc/graduate: multidisciplinary graduate certificate and degree programsUndergrad: REU. |
| URL | [*http://strobe.colorado.edu*](http://strobe.colorado.edu) |

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| **Univ at Buffalo** | **BioXFEL Biology with X-Ray Free Electron Lasers** (Biology) funded 2013 |
| 11 partners | ASU; CFEL Science; Cornell; Hauptman-Woodward Inst; LBNL; LLNL; Rice; Stanford; UC Davis; UCSF; Univ. Wisconsin, Milwaukee |
| Research focus | *To use X-ray lasers to watch biomolecular machines in operation, the better to understand how life works at the molecular level* |
| Education program | Postdoc/graduate: Postdoc fellowships; graduate course models.Undergrad: REU.Precollege: BioXFel Research Program for HS juniors/seniors, and ASU undergrads. |
| URL | [*bioxfel.org*](https://www.bioxfel.org/) |

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| **MIT** | **Center for Brains, Minds and Machines (CBMM)** (Info Sci/Neuroscience) funded 2013 |
| 8 partners | Children’s Hospital Boston, Wellesley, UCLA, Allen Institute for Brain Science, Stanford, Cornell, Harvard, Rockefeller Univ. |
| # from MIT/#total | management: 6/10; Faculty: 7/17; Research Scientists: 1/2; Postdocs 10/14; Grad students: 11/16; Staff: 1/3 |
| B particip partners | CUNY (Hunter and Queens), Wellesley, Universidad Central del Caribe, Howard University |
| Research focus | *To create a new field—the Science and Engineering of Intelligence—by bringing together computer scientists, cognitive scientists, and neuroscientists to work in close collaboration.* |
| Education program | Faculty: faculty summer sabbaticalsGrads: January workshop **“**Introduction to computational tools used in neuroscience research” (25 participants from selected institutions, by invitation); Summer Lecture series (by invitation); Annual workshops and retreats; Summer school on Brains, Minds and Machines in Woods Hole.Undergrads: REU |
| URL | [*cbmm.mit.edu*](http://cbmm.mit.edu/) |

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| **Harvard** | **Center for Integrated Quantum Materials (CIQM)** (Materials Science) funded 2013 |
| 3 partners | MIT; Museum of Science, Boston; Howard University |
| # people Harvard/total | Management: 6/15; Faculty: 11/32; Staff: 4/8; Students and postdocs: 19/52 |
| 6 college network | Bunker Hill Community College, Mt Holyoke, Wellesley, Gallaudet, Olin, Prince George’s Community College |
| Research focus | *To build new types of quantum electronic and photonic systems and quantum networks in order to transform signal processing and computation. Research thrusts: (1) atomic layer materials; (2) topological insulators; (3) nitrogen vacancy**centers.* |
| Education program\* | Grads/undergrads: Courses and modules for grads & undergrads, Ethics training for all center studentsUndergrads: REU; Museum of Science activities and programs developed by CIQM faculty/students (disseminated through NISE); David MacCauley studio (How Things Work) at CIQM/Boston Museum of Science; Precollege: Quantum Express at Howard Univ, mobile van for K-12 education in nanoscience.  |
| URL | [*ciqm.org*](http://ciqm.harvard.edu/) |

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| **Michigan State** | **BEACON Center for the Study of Evolution in Action** (Ecology) funded 2010 |
| 4 partners | North Carolina A&T State University; UT Austin; Univ. of Washington; Univ. of Idaho |
| # from MSU/total | Management: 8/9; Faculty 92/192; Staff: 27/43; Postdocs: 35/62; Grad students: 138/249;  |
| Research focus | *Biological evolution, digital evolution, and evolutionary applications in engineering, uniting biologists who study natural evolutionary processes with computer scientists and engineers who are harnessing these processes to solve real-world problems.* |
| Education program\* | Grad: New courses, mentoring program.Undergrad: REU, Freshman Research Initiative at UT Austin. Online resources for UG.Precollege: Teacher training at TX Natural Science Center; Beacon High School Summer Residential Program; Teaching Evolution in Action online resources and lessons, web-based materials for k-12.Public: Museum exhibits; Artist-in-residence interactive project on origins of life; weekly podcast on evolution.  |
| URL | [*beacon.msu.edu*](http://beacon-center.org/) |

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| **USC** | **Center for Dark Energy Biosphere C-DEBI** (Environmental Science) funded 2010 |
| 4 partners | University of Alaska, Fairbanks; UC Santa Cruz; Univ. of Hawaii; Univ. of Rhode Island |
| # from USC/total | Management: 8/13; Theme leads: 0/4; Ed: 3/8 |
| Research focus | *To resolve the extent, function, dynamics, and implications of the sub-seafloor biosphere.* |
| Education program\* | Grad: Professional development webinars, networked speaker series, e-list, symposia, research grants, education and outreach grants, fellowships and travel grants.Undergrad: Courses, Community College-RISE Research Internship Program, REU for partner institutions; SACNAS involvement.Educators**:** Community college instructor workshops; CC connections program (seminars, field trips); EARTH summer workshop at Monterrey Bay Acquarium for K-16 educators; COSEE West Online Teacher Training Workshops; School of Rock for educators; Weeklong NASA Astrobiology Lab Institute for Instructors; JOIDES Teacher at Sea program; small grants for K-12 teachers; Education and outreach grants to educators.Precollege: Summer Marine Science Camp (1 wk); summer internships for HS students (Rising Deep Scholars); USC Young Researchers Program. |
| URL | [*darkenergybiosphere.org*](http://darkenergybiosphere.org/) |

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| **UC Berkeley** | **Center for Energy Efficient Electronics Science (E3S)** (Electrical Engineering) funded 2010 |
| 5 partners | MIT; Stanford; UTexas El Paso; Contra Costa College; Los Angeles Trade Tech College |
| # Berkeley/total | Management: 5/7; Faculty: 11/21; Students and postdocs: 18/33 |
| Research focus | *To research revolutionary concepts and scientific principles to enable fundamentally new and different science for digital information processing, in order to achieve a radical reduction in energy consumption in electronic devices.* |
| Education program\* | Grad**:** Courses, research rotations, seminars, journal club, grad/postdoc council, research and prof dev retreat.Undergrad: E-tern REU for member institutions, REU for jrs/srs, Transfer to Excellence program for community college students, summer research workshops**.** Precollege: Research Experiences for Teachers, MITES Intro to Engineering and Science at MIT, MIT Online Science Community (MOSTEC). |
| URL | [*e3s-center.org*](http://www.e3s-center.org/) |

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| **MIT** | **Emergent Behaviors of Integrated Cellular Systems (EBICS)** (Bioengineering) funded 2010 |
| 10 partners | Clark Atlanta Univ.; Georgia Tech; Morehouse; UCSD; Univ. of Illinois Urbana-Champaign; Univ. of Michigan; Univ. of Minnesota; Univ. of Pennsylvania; Spelman; Texas A&M |
| # MIT/total | Management: 3/7; Faculty: 6/29; Staff: 3/5; Trainees: 17/79 |
| Research focus | *To create a new scientific discipline for building living, multi-cellular machines that solve real world problems in health, security, and the environment.* |
| Education program | Precollege: Project Engage HS program, various high school programs at partner campuses (e.g., camps, workshops, field trips)Univ: research exchanges (including internationally), REU, summer school for high-level researchers, courses (some internet-based), student leadership council.  |
| URL | [*ebics.net*](http://ebics.net/) |

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| **Purdue** | **Center for Science of Information (CSOI)** (Information Science) funded 2010 |
| 9 partners | Bryn Mawr; Howard; MIT; Princeton; Stanford; **Berkeley**; UCSD; Univ. of Illinois Champaign-Urbana; Texas A&M;  |
| # Purdue/total | Faculty: 15/49; Staff 6/6; Postdocs: 1/14; students: 26/142 |
| Strategic partners | Laboratory of Information, Network, and Communication Sciences (LINCS) |
| Research focus | *To advance science and technology through a new quantitative understanding of the representation, communication, and processing of information in biological, physical, social, and engineered systems. Research thrusts: (1) life sciences; (2) communication; (3) knowledge extraction*  |
| Education program | Graduate: Online learning hub (courses, modules, resources), Summer School for grads/postdocs, **Student Postdoc Research Teams (teams of 4 work on projects related to primary thrusts of the Center)**, Education and Research Workshops for grads/postdocs, Student Leadership Council, Prestige Lecture Series, Graduate Channels Research Program (for diversity students with stipend of $4200)Undergraduate: Channels REU Program (paid REU), CalTeach Internships at UC BerkeleyPrecollege: SEED Academy at MIT*Note: Most programs seem to be leveraging existing programs and adding little that is novel.* |
| URL | [*soihub.org*](http://soihub.org/) |

**STCs Funded in 2002-2006 – now graduated or sunsetting**

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| **OHSU** | **Center for Coastal Margin Observation & Prediction (CMOP)** (Environmental Science) funded 2006 |
| 6 partners | Oregon State Univ; Saturday Academy; Univ. of Maryland Center for Envtl Sci; Univ. of Utah; Univ. of Washington; Univ. of Wisconsin, Madison |
| Research focus | *Our research mission is to conduct studies and develop technology that provide a sound foundation for predictive coastal margin science. Our research is focused on the coastal margin influenced by the Columbia River.*  |
| Education program | Graduate: Masters and PhD Degree programs (note: not sure of the nature of these)Undergrad: Summer Undergraduate InternshipPrecollege: Teacher PD workshops and resources, CMOP School Collaboratory (i.e. ocean sciences field trips, curriculum, classroom activities for local high schools), Apprenticeships in Science & Engineering (ASE) Internships for high school students, Saturday Academy (camp). *Note: Most programs in partnership with existing.* Outreach/diversity: Native American Initiative (presentations to local native groups); Native students participate in k-12 programs above. |
| URL | [*stccmop.org*](http://www.stccmop.org) |

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| **Case Western** | **Center for Layered Polymeric Systems (CLIPS)**  (Materials Science) funded 2006 |
| 6 partners | Univ. of Texas; Fisk; Univ. of Southern Mississippi; Northwestern; Naval Research Laboratory; Kent State Univ. |
| K-12 ed partners | Cleveland Metropolitan School District and six affiliated schools |
| Research focus | *Our Mission is to pursue an integrated program of research, innovation, and education through a unique multilayering process known as “forced assembly.” This technology allows for the layering of two polymers using layer multiplication coextrusion techniques.*  |
| Education program | Graduates: Courses, teaching experiences in Envoys program and REUUndergrad: REUUndergrad/Precollege: **Polymer Envoys Program** (Layered research teams that include grad mentors, undergrads, high school, pre-high school)Elementary/middle: **Future Science Stars** introduces k-8 students to science through interactions with scientists and hands-on activities. |
| URL | [*clips.case.edu*](http://www.stc-clips.org/) |

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| **Univ. of Hawaii** | **Center for Microbial Oceanography (C.MORE)** (Microbiology) funded 2006 |
| 6 partners | MIT; Woods Hole; Monterey Bay Aquarium Research Institute; Monterey Peninsula College; UC Santa Cruz; Oregon State Univ. |
| # Hawaii/total | Faculty: 10/23; Postdocs: 10/25; Grad students: 9/30 |
| Research focus | *To facilitate a more comprehensive understanding of the diverse microorganisms in the sea, ranging from the genetic basis of marine microbial biogeochemistry including the metabolic regulation and environmental controls of gene expression, to the processes that underpin the fluxes of carbon, related bioelements and energy in the marine environment (i.e., linking genomes to biomes). 4 thrusts (1) microbial biodiversity, (2) metabolism and CNP-energy flow, (3) remote and continuous sensing and links to climate variability, (4) ecosystem modeling, simulation and prediction.* |
| Education program | Grad: summer grad training course “[the Agouron Course](http://cmore.soest.hawaii.edu/agouron/index.htm)”Undergrad: internships, REUsPrecollege: Resources for educators (training workshops, science kits, teacher at sea program) |
| URL | [*cmore.soest.hawaii.edu*](http://cmore.soest.hawaii.edu/) |

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| **Colorado State** | **Center for Multi-Scale Modeling of Atmospheric Processes (CMMAP)**  (Environmental Science) funded 2006 |
| 9 partners | Colorado College; Nat’l Center for Atmospheric Research; SUNY Stony Brook; **Berkeley**; UCSD; Univ. of Colorado; Univ. of Utah; Univ. of Washington |
| #Colorado/total | Management, staff and faculty: 33/89 |
| Collaborating institutions | NOAA (Atlantic Oceanographic & Meteorological Lab, Earth System Research Lab, Geophysical Fluid Dynamics Lab, Nat’l Centers for Environmental Prediction); NASA (Goddard Space Flight Center, Langley Research Center); European Centre for Medium Range Weather Forecasting; Inst. for the Global Environment and Society/Center for Ocean-Land-Atmosphere Studies; LBNL; Max Planck; Pacific Northwest Nat’l Lab; Scripps Inst. of Oceanography; UCLA; University Corporation for Atmospheric Research; Poudre School District; Thompson School District |
| Research focus | *To improve the representation of cloud processes in climate models* |
| Education program | Grads/undergrads: CMMAP Colloquium (small-group learning, presentations); CMMAP fellowships and scholarships.Undergrads: REU.Teachers: Research Experiences for Teachers.Precollege: Front Range Teen Science Café (teens attend science talks and interact with scientists)Public: 100 Views of Climate Change (web resources, videos, blogs, essays about climate change) |
| URL | [*cmmap.colostate.edu*](http://www.cmmap.org/) |

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| **Univ. of Kansas** | **Center for Remote Sensing of Ice Sheets (CReSIS)** (Environmental Science) funded 2005 |
| 7 partners | Elizabeth City State Univ.; Ohio State; Indiana Univ.; Penn State; Univ. of Washington; Los Alamos Nat’l Lab; ADMI (Assoc. of Computer/Info Sciences & Engineering Depts at Minority Institutions) |
| # Kansas/total | Management:: 4/11; Faculty: 13/25; Staff: 12/18; Students: 33/49 |
| Industry partners | NASA (Goddard Space Flight Center, JPL); Kansas City Plant (NASA, Honeywell) |
| Collab partners | Univ. of Copenhagen (Niels Bohr Inst. Centre for Ice & Climate); Cambridge (Centre for Polar Observations & Modeling); Indian Inst. of Technology Kanpur; Univ. of Magallanes, Chile |
| Research focus | *To develop new technologies & computer models to measure and predict the response of sea level change to the mass balance of ice sheets in Greenland and Antarctica* |
| Education program | Graduates: Student org, seminar series, general teaching/mentoring/knowledge transfer activities (not detailed)Undergrads: REUPre-college: Lesson plans/activities for teachers; teacher summer workshops, Research Experiences for Teachers, Glacier Fun website (interactive), Polar Opposites online game |
| URL | *cresis.ku.edu* |

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| **UC Berkeley** | **Team for Research in Ubiquitous Secure Technology (TRUST)** (Cybersecurity) funded 2005 |
| 7 partners | Carnegie Mellon; Cornell; Mills; San Jose State; Smith; Stanford; Vanderbilt |
| # Berkeley/total | Management: 6/8; Faculty: 9/35 |
| Research focus | *TRUST research is addressing technical, operational, privacy, and policy challenges via interdisciplinary projects that combine fundamental science and applied research to deliver breakthrough advances in trustworthy systems.* |
| Education program | Postdoc/faculty: Curriculum development in security and information assurance (annual workshop); TRUST postdoctoral fellowship; TRUST Academy Online (supports online community outreach for TRUST)Graduate: Women’s Institute in Summer Enrichment (WISE) one week residential summer program for grads, postdocs, facultyUndergraduate: TRUST REU (for students from 4-year schools); TRUST STAR REU (for CA community college students)Precollege: TRUST BFOIT four week computing high school program |
| URL | [*trust.eecs.berkeley.edu*](http://www.truststc.org/) |

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| **Univ. of Illinois** Champaign-Urbana | **Center of Advanced Materials for Water Purification (WaterCampWS)** (Environmental Engineering) funded 2002 |
| 10 partners | Clark Atlanta Univ.; Yale; MIT; Rose-Hulman Inst. of Technology; Univ. of Michigan; Howard; **Berkeley**; Notre Dame; WEB SITE ONLY: National Univ. of Singapore; Tsinghua Univ. (Beijing) L-B ONLY: Rutgers |
| Govt partners | Metro. Water Reclamation Dist. of Greater Chicago; Sandia Nat’l Labs; National Risk Management Research Lab |
| Research focus | *To develop revolutionary new materials and systems for safely and economically purifying water for human use.**Research efforts focus on (1) the basic science of the aqueous interface and (2) developing advanced materials and systems that exploit the unique physics and chemistry at the interface.*  |
| Education program | Graduate: Graduate Involvement in Outreach (teacher programs, student recruitment); Student Leadership Council; Variety of grad International research and service learning exchange opportunities.Undergraduate: WaterPURE REU program (year-long); Undergraduate courses; Undergraduate mentoring program (grad students mentor undergrads); Variety of UG International research and service learning opportunities.Precollege: WaterCAPWS teacher training workshops; WaterCLEAR Research Experiences for Teachers (10 month program); WaterCIP 8-week high school internship program­­­­­ Industrial Affiliates Program (aggressive knowledge transfer activities) |
| URL | [*watercampws.uiuc.edu*](http://watercampws.illinois.edu/static/www.watercampws.illinois.edu/) |

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| **UC Davis**  | **Center for Biophotonics Science and Technology (CBET)** (Biophotonics) funded 2002 |
| 8 partners | Alabama A&M; Fisk; LLNL; Mills; Stanford; **Berkeley**; UCSF; UT San Antonio |
| partners |  |
| Research focus |  |
| Education program | Graduate: Undergraduate: Pre-college:  |
| URL |  |

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| **Univ of Minnesota** | N**ational Center for Earth-Surface Dynamics (NCED)**  (Environmental Science) funded 2002 |
| 10 partners | Johns Hopkins; Louisiana State Univ; Science Museum of Minnesota; Southern Illinois Univ. Carbondale; St. Anthony Falls Lab; **Berkeley**; Univ. Colorado Boulder; Univ. Illinois Urbana-Champaign; UT Austin |
| Govt partners |  |
| Research focus |  |
| Education program | Graduate: Undergraduate: Pre-college:  |
| URL |  |

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| **UCLA** | **Center for Embedded Network Sensing (CENS)** (Computer Science) funded 2002 |
| 4 partners | CalTech; UC Merced; UC Riverside; USC |
| partners |  |
| Research focus |  |
| Education program | Graduate: Undergraduate: Pre-college:  |
| URL |  |

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| **Boston Univ.** | **Center for Integrated Space Weather Modeling (CISM)** (Environmental Science) funded 2002 |
| 10 partners | Alabama A&M; Dartmouth; Florida Inst. Technology Melbourne; Nat’l Center for Atmospheric Research; Rice; Science Applications International Corp.; Stanford; **Berkeley**; Univ. Colorado Boulder; Univ. Maryland |
| partners |  |
| Research focus |  |
| Education program | Graduate: Undergraduate: Pre-college:  |
| URL |  |

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| **Univ. Washington** | **Center for Materials and Devices for Information Technology Research (CMDIR)** (Materials Science) funded 2002 |
| 8 partners | Cal Tech; Cornell; Georgia Tech; New Mexico Highlands Univ.; Norfolk State Univ.; Univ. of Arizona; Univ. of Central Florida; Univ. of Maryland, Baltimore County |
| partners |  |
| Research focus |  |
| Education program | Graduate: Undergraduate: Pre-college:  |
| URL |  |