This resource listing is intended as a source of information that can be selectively cut, pasted and edited into Facilities and Other Resources sections of grant submissions.

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ACADEMIC INSTITUTIONS

Brown University

Brown University - Long

https://www.brown.edu/about

Brown University: Brown was founded in 1764 — the third college in New England and the seventh in Colonial America. Brown was the first Ivy League school to accept students from all religious affiliations, a testament to the spirit of openness that still typifies Brown today. Originally located in Warren, Rhode Island, and called the College of Rhode Island, Brown moved to its current spot on College Hill overlooking Providence in 1770 and was renamed in 1804 in recognition of a $5,000 gift from Nicholas Brown, a prominent Providence businessman and alumnus, Class of 1786.

Women were first admitted to Brown in 1891. The Women's College was later renamed Pembroke College in Brown University before merging with Brown College, the men's undergraduate school, in 1971. The northern section of campus where the women's school was situated is known today as the Pembroke Campus. The first master's degrees were granted in 1888 and the first doctorates in 1889. A medical school was first established in 1811 but was suspended in 1827 and only revived in the early 1970s. The University's main campus covers nearly 150 acres on historic College Hill, and the campus in the Jewelry District is home to the Warren Alpert Medical School, the School of Professional Studies, research laboratories, and the South Street Landing administrative building.

Brown draws students from all over the United States and the world, distinguished by their academic excellence, creativity, self-direction, and leadership, and attracts faculty known both for prize-winning scholarship and research as well as their dedication to teaching. Brown is internationally known for its Open Curriculum for undergraduates, which does not require distribution or core courses outside the concentration. Three basic principles lie at the heart of the Open Curriculum: that students are active participants in learning; that acquiring analytical and critical skills is as important as mastering factual knowledge; and that learning requires opportunities for experimentation and synthesis that crosses boundaries that typically separate fields of study.

More than 2,000 undergraduate courses support more than 80 concentrations, many of them interdisciplinary, and a wide variety of independent studies. The undergraduate enrollment exceeds 7200 and more than 4,000 graduate and medical students comprise approximately one quarter of the University's total student population. Through the Graduate School, Brown offers approximately 50 doctoral programs and 40 master's programs across the life and physical sciences, social sciences, and arts and humanities. An executive MBA is offered through the School of Professional Studies in partnership with the IE Business School in Madrid, Spain; executive education degrees are also offered in Healthcare Leadership and Technology Leadership. The Warren Alpert Medical School, which awarded its first M.D. degrees in 1975, promotes the health of individuals and communities through education, research, and excellence in clinical practice. Warren Alpert is the only medical school in the state of Rhode Island and the School of Public Health is also the only such school in the state, training future public health leaders and advancing knowledge on pressing health challenges facing society, while enhancing population health and wellbeing.

Brown University - Short

https://www.brown.edu/about

Brown University: Located in historic Providence, Rhode Island and founded in 1764, Brown University is the seventh-oldest college in the United States. Brown is an independent, coeducational Ivy League institution comprising undergraduate and graduate programs, plus the Alpert Medical School, School of Public Health, School of Engineering, and the School of Professional Studies. With its talented and motivated student body and accomplished faculty, Brown is a leading research university that maintains a particular commitment to exceptional undergraduate instruction .Brown's vibrant, diverse community consists of about 6,580 undergraduates, 2,255 graduate students, 545 medical school students, more than 6,000 summer, visiting, and online students, and more than 700 faculty members. Brown students come from all 50 states and more than

115 countries. Undergraduates pursue bachelor's degrees in 81 concentrations, ranging from Egyptology to cognitive neuroscience. Anything is possible at Brown—the university's commitment to undergraduate freedom means students must take responsibility as architects of their courses of study. Brown University has 51 doctoral programs and 32 master's programs. The broad scope of options vary from interdisciplinary opportunities in molecular pharmacology and physiology to a master's program in acting and directing through the Brown/Trinity Repertory Consortium. Additional programs include the Undergraduate Summer Session and Pre-College Programs for high school students — on campus, online, and abroad. Brown is frequently recognized for its global reach, many cultural events, numerous campus groups and activities, active community service programs, highly competitive athletics, and beautiful facilities located in a richly historic urban setting.

University of Rhode Island (URI)

https://www.uri.edu/

The University of Rhode Island (URI) had humble beginnings as the state's agricultural school chartered in 1888. Today URI is a nationally recognized Land, Sea and Urban Grant public research institution, and the only public institution in Rhode Island offering undergraduate, graduate, and professional students. URI maintains a large focus on Allied Health programs including the College of Pharmacy, Nursing, and the new College of Health Sciences (2016). This Academic Health Collaborative brings together the previously individual schools of communicative disorders, health studies, human development and family studies, kinesiology, nutrition and food science, physical therapy, and psychology. Together the Allied Health expertise at URI in partnership with Brown's Alpert Warren Medical School, and School of Public Health, round out the health education and research expertise in the state.

URI has a long-standing collaboration with Brown University's Medical School, Brown University Health, Care New England, the Providence Veterans Affairs Hospital and other hospital providers in the state. URI has more than 16,000 undergraduate and graduate students who work side-by-side with more than 721 full-time, tenure track teaching faculty, as well as with hundreds of dedicated lecturers, researchers, and adjunct faculty. URI has over 120,000 alumni globally. The main campus is in the historic, rural town of Kingston, just 30 miles south of the metropolitan city Providence and Brown University.

ACADEMIC HEALTH CENTERS

Brown University Health

https://www.brownhealth.org/about-brown-university-health/overview

Formed in 1994, Brown University Health is a not-for-profit health system based in Providence, RI comprising three teaching hospitals of The Warren Alpert Medical School of Brown University: Rhode Island Hospital and its Hasbro Children's; The Miriam Hospital; and Bradley Hospital, the nation's first psychiatric hospital for children; Newport Hospital, Saint Anne's Hospital and Morton Hospital, community hospitals offering a broad range of health services; Gateway Healthcare, the state's largest provider of community behavioral health care; and Brown Health Medical Group, the largest multi-specialty practice in Rhode Island.

Brown University Health teaching hospitals are among the country's top recipients of research funding from the US National Institutes of Health. The hospitals received $145 million in external research funding in fiscal 2023. All Brown University Health hospitals are charitable organizations that depend on support from the community to provide programs and services.

Rhode Island Hospital

About Rhode Island Hospital | Brown University Health

Rhode Island Hospital is a private, 719-bed, not-for-profit acute care hospital and academic medical center. Rhode Island Hospital is the largest hospital in Rhode Island and is a nationally and internationally recognized research center. The state's only Level I trauma center, Rhode Island Hospital also houses the state's only verified burn center. Rhode Island Hospital provides a full range of diagnostic and therapeutic services to patients, with particular expertise in cardiology, diabetes, emergency medicine and trauma, neurosciences, oncology/radiation oncology, orthopedics, pediatrics, and surgery. Rhode Island Hospital is the principal

teaching hospital of The Warren Alpert Medical School of Brown University. The hospital receives more than $50 million annually in external research funding and ranks among the country's leading independent hospitals that receive funding from the National Institutes of Health. Rhode Island Hospital is the only hospital in the state to have three units—the pediatric intensive care unit, a medical-surgical unit, and the cardiothoracic intensive care unit—recognized with a Beacon Award for nursing excellence from the American Association of Critical Care Nurses.

Hasbro Children's Hospital

About Hasbro Children's | Brown University Health

The state's premier advanced pediatric specialty care and outpatient center, Hasbro Children's is the pediatric division of Rhode Island Hospital. Built in 1994, the 87-bed Hasbro Children's offers a spectrum of pediatric services and programs and is a designated burn center of the American Burn Association and American College of Surgeons.

Hasbro Children's has the only pediatric emergency department and Level I trauma center in southeastern New England, as well as the only Center for Pediatric Imaging and Sedation, Food Allergy Center and pediatric critical care team and ambulance that operates 24 hours per day, seven days per week. The pediatric emergency department is staffed 24 hours a day, seven days a week, by specialists trained in pediatric emergency medicine and other pediatric subspecialties. Hasbro Children's has earned worldwide recognition for its patient and family-centered environment and expert staff.

The principal teaching hospital of The Warren Alpert Medical School of Brown University, Hasbro Children's offers pediatric residency, pediatric surgery residency and pediatric fellowship programs. The hospital's nationally recognized research is funded by many leading organizations that support investigation and innovation in children's health, including the National Institutes of Health.

The Miriam Hospital

For Patients & Visitors | Brown University Health

The Miriam Hospital is a 247-bed not-for-profit hospital nationally known for its HIV/AIDS and behavioral and preventive medicine research. The hospital is home to Rhode Island's first Joint Commission-certified Stroke Center and robotic surgery program, and has been awarded Magnet Recognition for Excellence in Nursing Services six times.

Founded by Rhode Island's Jewish community in 1926, The Miriam Hospital provides a broad range of primary, secondary and tertiary medical services to adolescents and adults in 34 medical and surgical specialties and subspecialties, with particular expertise in cardiology, oncology, orthopedics, gastroenterology, urology, immunology and infectious diseases. The hospital also provides a full range of pathology and radiology services as well as psychiatric consultation/liaison services. The Miriam Hospital is a major teaching affiliate of The Warren Alpert Medical School of Brown University.

Bradley Hospital

About Bradley Hospital | Brown University Health

The Emma Pendleton Bradley Hospital, which opened in 1931, was the nation's first psychiatric hospital devoted exclusively to children and adolescents, and today remains the only such hospital in the region. Bradley Hospital is a private, 70-bed, not-for-profit hospital and is licensed as an acute care hospital as well as a fully certified special education school.

Bradley Hospital is world renowned for its expertise in child and adolescent psychiatry. Bradley Hospital provides a continuum of inpatient, school, residential, partial outpatient and special education services for infants, children and adolescents. It is a major teaching affiliate and research center of The Warren Alpert Medical School of Brown University, with more than 30 postdoctoral residents and fellows in child psychiatry, psychology and pediatrics who receive training in Bradley Hospital's programs every year.

Newport Hospital

About Newport Hospital | Brown University Health

Newport Hospital is a private, 129-bed, not-for-profit hospital offering a wide range of health care services including the Noreen Stonor Drexel Birthing Center. Since 2004, Newport Hospital has been designated both a Baby Friendly hospital by the World Health Organization and UNICEF, and a Magnet hospital by the American Nurses Credentialing Center.

Founded in 1873, Newport Hospital Services also include emergency care, comprehensive surgical services, intensive care, the Noreen Stonor Drexel Birthing Center, the Vanderbilt Rehabilitation (inpatient/outpatient) Center, the Vanderbilt Wound Care Program, an inpatient behavioral health unit, Brown University Health Cancer Institute services, and comprehensive diagnostic imaging services in two locations: on the main campus and at a satellite office in Portsmouth, RI.

St. Anne's Hospital

Saint Anne's Hospital | Brown University Health

Founded by the Dominican Sisters of the Presentation in 1906, Saint Anne's Hospital in Fall River, Massachusetts, is a full-service, acute care Catholic hospital with 211 beds and satellites in Fall River, Attleboro, Swansea, and Dartmouth, Massachusetts. The hospital provides nationally recognized patient- and family-centered inpatient and outpatient clinical services to patients from surrounding Massachusetts and Rhode Island communities.

In addition to comprehensive diagnostic, medical, surgical, and emergency services, specialty services include our Joint Commission-certified Center for Orthopedic Excellence; Saint Anne's Hospital Regional Cancer Center in Fall River and Dartmouth; the Center for Pain Management; multi-disciplinary Spine Center; and inpatient geriatric psychiatry services.

Morton Hospital

Morton Hospital | Brown University Health

Morton Hospital in Taunton is a 144-bed acute care community hospital serving patients and families in southeastern Massachusetts. In addition to a compassionate and skilled team of physicians, nurses and staff who treat patients like family, we provide comprehensive health care services including emergency care, wound care, state-of-the-art imaging services, and a variety of surgical services including vascular surgery, breast surgery, general surgery, orthopedic surgery and podiatric surgery.

In addition to ongoing facility renovations and investments in innovative technology and patient care equipment, Morton Hospital recently opened a new Level 4 Substance Use Disorder Treatment Unit called MORCAP. In addition, oncology patients have access to Dana Farber cancer services through the hospital's affiliation with the Dana Farber Cancer Institute.

Gateway Healthcare

About Gateway Healthcare | Brown University Health

Established in 1995, Gateway Healthcare is a non-profit behavioral health care organization that includes more than 42 locations across Rhode Island and is the state's largest provider of community behavioral health care.

Gateway provides a wide array of services to adults, children and families, including around-the-clock psychiatric emergency services, psychiatric medication therapy services, outpatient counseling for individuals and families, specialized residential care for children and adolescents, permanent affordable housing for adults, supervised adult residential services, adult supported housing services, mental health services for adults with persistent mental health issues, a licensed school for children with emotional and behavioral difficulties, nationally recognized vocational and occupational rehabilitation services, a therapeutic outdoor recreation program for children and adolescents, a homeless shelter for families and residential substance abuse services, as well as individual and case management services for adults and children.

Brown University Health Specialty Centers and Services
https://www.brownhealth.org/about-brown-university-health/overview

Brown Health Medical Group Primary Care
Brown Health Medical Group Primary Care | Brown University Health

Brown Health Medical Group Primary Care serves over 165,000 patients with a team of 150 clinicians located in medical offices across Rhode Island. Brown Health Medical Group Primary Care is committed to providing outstanding care to its patients by offering 365-day access to sick visits, developing chronic care management programs for its sickest patients, and building care teams that support its providers in delivering high-quality care.

Brown Health Medical Group Primary Care supports the three-part aim of better care, better health and lower cost and earned an average Medicare Shared Savings Program Accountable Care Organization quality score of 97.5% (2013-2017). Within Coastal, we foster a culture of teamwork, innovation, and shared learning that inspires every employee to continuously improve the care we provide and the services we offer to patients. In addition to primary care, Brown Health Medical Group Primary Care offers behavioral health, and musculoskeletal health services.

Bradley Hasbro Children's Research Center
About the Bradley Hasbro Children's Research Center in Rhode Island

At Bradley Hospital and Hasbro Children's, our role as leaders in child mental health research stretches back more than 75 years. As a field of scientific investigation, you could say that pediatric psychopharmacology began at Bradley Hospital, with the 1937 publication of the results of stimulant trials in children.

We have continued a long tradition of taking our valuable clinical research and applying it directly to our mission of improving the lives of children and their families. Today, for example, our pioneering research in children's sleep, infant development, psychophysiology, and HIV prevention has translated into new and effective treatments and strategies for children and their families.

Brown University Health Ambulatory Care Centers
RI Hospital Ambulatory Patient Center Departments and Services

The department of Adult Ambulatory Services at Rhode Island Hospital is committed to accessible, consumer oriented health care. We have incorporated both long-term and acute primary care, including a full range of specialty services. Our focus is on the wellness of our patients and their families within the context of the community setting. We ensure that care is maintained through our coordination of services and participation with community agencies.

The Brown University Health Cancer Institute and Dana-Farber Cancer Institute
https://www.brownhealth.org/centers-services/cancer-institute/partnership-dana-farber-cancer-institute

Dana-Farber Cancer Institute and the Brown University Health Cancer Institute continue their strategic alliance to advance cancer treatment and research. This alliance, created in 2017, supports the expansion of clinical trials, access for Brown University Health physicians to cancer-specific disease expertise for complex cases, and the continuation of a highly successful program coordinating the treatment of cell therapy and transplant patients. Cellular therapies and transplants are provided in Boston at Dana-Farber and the care surrounding these procedures is provided in Providence at the Brown University Health Cancer Institute. The two organizations share patient information through their respective secure electronic health record systems and use the same clinical trials management platform, resulting in better care coordination.

Brown University Health Cardiovascular Institute
Brown Cardiovascular Institute

The Brown University Health Cardiovascular Institute at Rhode Island, The Miriam and Newport hospitals provides the highest level of diagnostic, interventional, surgical and rehabilitative cardiac care 24 hours a day, seven days a week. We offer comprehensive cardiac services at multiple ambulatory center locations throughout the region for your convenience and include cardiac diagnostic testing and intervention, cardiac rehabilitation, heart failure management, congenital heart disease management and programs for lipid management, management of hypertension and disease prevention.

The Brown University Health Orthopedics Institute
Orthopedics Institute and Joint Health Care in Rhode Island

Orthopedic physicians at Rhode Island, Hasbro Children's, The Miriam Hospital, Newport Hospital, and Morton Hospital provide diagnostic, medical and surgical treatment for injuries and disorders of the musculoskeletal system. The hospitals offer a variety of orthopedic services and many outpatient settings for both pediatric and adult patients.

The Norman Prince Neurosciences Institute
Norman Prince Neurosciences Institute (NPNI) in RI | Brown University Health

The Norman Prince Neurosciences Institute (NPNI) at Brown University Health is a national leader in the neurosciences, providing exceptional neurological and neurosurgical care to adults with brain or spine disorders and comprehensive care for patients in need of mental and behavioral health care. Our renowned specialists offer innovative and collaborative approaches to treating the most complex and challenging illnesses and injuries, while our depth of experience ensures the highest level of expertise in treating the most common conditions.

Brown University Health Home Medical
Home Medical Supplies and Services

At Brown University Health Home Medical, our success springs from the trust we have developed with our patients, doctors, and other health care providers during the 20 years we've been in business. We have built our reputation by providing service that is caring and reliable.
We are an affiliate of Brown University Health, Rhode Island's largest provider of health services. However, patients do not need to have a relationship with a Brown University Health health care provider or hospital to take advantage of services provided by Brown University Health Home Medical.

Psychiatry and Behavioral Health Services
Rhode Island Adult Psychiatry and Behavioral Health Services

Brown University Health's Psychiatry and Behavioral Health Services offer a full range of assessment and treatment options to address the mental, emotional and behavioral problems that occur throughout life. Our programs encompass a comprehensive view of mental health that includes and integrates the biological, psychological and social dimensions of care. Our service line spans the activities of Rhode Island Hospital, The Miriam Hospital, Bradley Hospital, Newport Hospital, Gateway Healthcare and Morton Hospital, and meets the needs of patients suffering from the wide spectrum of psychiatric and behavioral conditions. We are also strongly committed to the integration of behavioral health with the mainstream of medical care.

Care New England (CNE) Health System
http://www.carenewengland.org/about/

Care New England is a health care system that has nationally recognized expertise in family medicine, obstetrics, gynecology, neonatology and adult psychiatry and has made major investments in population health management. Backed by a broad range of services—primary care, surgery, cardiovascular care, oncology, psychiatry, behavioral health, newborn pediatrics and the full spectrum of women's health services—CNE is working to create a community of healthier people. CNE hospitals are vital partners in the education of hundreds

of medical students and residents each year. The partnerships include Butler Hospital as the major teaching affiliate for psychiatry and human behavior, Kent Hospital as the major teaching affiliate for internal and family

medicine (primary care), and Women & Infants Hospital as the major teaching affiliate for obstetrics, gynecology and neonatology

Women & Infants' Hospital of Rhode Island
Women & Infants | Essential Healthcare For Women In Rhode Island

Women & Infants Hospital is the region's premier hospital for women and newborn children. It is the nation's eighth busiest stand-alone obstetrical service and operates one of the nation's largest single-family room neonatal intensive care units. In 2009, Women & Infants opened the country's largest, single-family room neonatal intensive care unit. Women and Infants Hospital is a major teaching affiliate of the Warren Alpert Medical School of Brown University for obstetrics, gynecology and newborn pediatrics, as well as a number of specialized programs in women's medicine.

Butler Hospital
Behavioral Health and Neurology Services | Butler Hospital

Butler Hospital is the premier treatment, teaching and research hospital for psychiatric, movement and memory disorders, serving Rhode Island and southeastern Massachusetts. Butler offers acute inpatient and partial hospital services for psychiatric and substance abuse treatment for adults and adolescents and includes a state-of-the-art senior treatment center.

Kent Hospital
Kent Hospital | Primary and Intensive Care In Warwick, Rhode Island

Kent Hospital, the second-largest hospital in Rhode Island, provides a full spectrum of primary and acute care services. Kent Hospital is an affiliate of the University of New England College of Osteopathic Medicine (UNECOM) for medical education.

The Providence Center
https://www.providencecenter.org/

The Providence Center is at the forefront of innovative approaches to behavioral health care designed to meet the changing needs of the more than 18,000 Rhode Islanders it serves each year. Since opening its doors in 1969, it has been a community resource, providing people from all walks of life with mental health and substance use services in their homes, schools, and neighborhoods.

The VNA of Care New England
VNA of Care New England | Home Health & Hospice Agency In Rhode Island

The VNA of Care New England provides a broad spectrum of home health, hospice services for adults, and the terminally ill. A trusted community resource, the VNA offers bereavement support groups, health screenings, and community education sessions in an effort to maintain healthy communities.

VA Providence Healthcare System (VAPHS)
https://www.va.gov/providence-health-care/about-us/

The VA Providence Health care system is one of the leading health care systems serving Veterans in the VA New England Health care system. We're an innovative care center within the VA New England Healthcare System (VISN 1), which includes medical centers and clinics in Connecticut, Maine, Massachusetts, New Hampshire, Vermont, and Rhode Island.

The Providence Medical Center is dedicated to providing high quality comprehensive outpatient and inpatient health care to Veterans residing in Rhode Island and southeastern Massachusetts. Each Veteran who comes to

the medical center for care is assured personalized care by a team of health care providers. A Primary Care Provider coordinates each patient's medical care, patient education needs and referrals to any of the medical

centers 32 subspecialty clinics. The Medical Center's Ambulatory Care Program is supported by a general medical, surgical, and psychiatric inpatient facility fully-accredited by the Joint Commission. The medical center delivers a broad range of services in medicine, surgery, and behavioral sciences and is currently operating 73 beds. Veterans can also avail themselves of primary care and some specialty services at the VA Community Based Outpatient Clinics (CBOC) in New Bedford, MA, Hyannis, MA, and in Middletown, RI.

Brown Innovation Research Collaborative for Health (BIRCH)

https://birch.brown.edu/

The Brown Innovation and Research Collaborative for Health (BIRCH) brings together the research conducted by Brown University's Division of Biology and Medicine, Brown University Health, and Care New England under one administrative umbrella. The overarching goal for BIRCH is to align the organizations' biomedical and health sciences research activities to support research growth and innovation. BIRCH will improve the researcher experience, attract patients, recruit and retain diverse, top-class faculty and staff, streamline administrative support, and address barriers to growth.

MULTISPECIALTY PRACTICE GROUPS

Brown Physicians Inc. (BPI)

https://brownphysicians.org/about-us/

Brown Physicians, Incorporated (BPI) is a community-based not-for-profit multi-specialty practice group founded and led by faculty affiliated with The Warren Alpert Medical School of Brown University. Our mission is to provide outstanding patient care, exceptional medical education, and groundbreaking advances in research to promote better health for the people of Rhode Island and its surrounding communities. BPI is composed of six foundations, which include Brown Dermatology, Brown Emergency Medicine, Brown Medicine, Brown Neurology, Brown Urology, and University Surgical Associates.

Southeastern New England Primary Care Practice-Based Research Network (PBRN)

Brown Health Medical Group

https://www.brownhealth.org/locations/brown-health-medical-group

Our growing network of over 800 providers offers a multitude of services that encompass medical areas such as primary care, psychiatry and behavioral health, urgent care and specialty services including cardiology, gastroenterology, and ophthalmology. Brown Health Medical Group's continuum of care guarantees access to specialty services within our network, as well as to all clinical care across the Brown University Health system. Our integrated approach to your care is facilitated by your single electronic health record, MyChart.

Care New England Medical Group

https://www.carenewengland.org/cnemg

With more than 500 physicians and advanced practitioners, Care New England Medical Group (CNEMG) offers primary care and specialty services in offices throughout Rhode Island and Southeastern Massachusetts as well as at Women & Infants Hospital, Kent Hospital, Butler Hospital, and the VNA of Care New England. Care New England Medical Group is helping to reinvent the way healthcare is delivered, partnering with our patients to provide the best care possible while working to create a community of healthier people. Integra Community Care Network is a Centers for Medicare and Medicaid Services (CMS) certified Accountable Care Organization (ACO) with more than 120,000 covered lives. Its participating provider network includes its founding organization Care New England Health System, independent pediatric and primary care practices and medical groups, and employed and affiliated physicians.

Integra Community Care Network

https://www.integracare.org/

Integra is nationally recognized as a leader in population health and value-based care. Integra has developed innovative programs that help physicians and primary care clinicians improve the health of their patients while also increasing patient and clinician satisfaction and lowering the cost of care. Nationally, Integra has been recognized for its commitment to care models that keep patients out of the hospital, including Integra at Home, partnerships with community paramedics, team-based care, patient-centered, goals-driven care management, behavioral health services in the physician's office and social support services addressing food, housing, and other needs.

Prima CARE
https://www.prima-care.com/

At Prima CARE, we are passionate about building relationships between doctors and patients. Our services include primary care, pediatrics, and comprehensive specialty care to meet your individual needs. We provide services in the office, hospital, nursing home, walk-in clinic or at home for home-bound patients.

Southcoast Health
https://www.southcoast.org/services/primary-care/#/slot-search/specialtyGroup/D4AFAEC8-AEF2-4F03-929A2825CEB30A04

Our physicians group brings together the passion and specialty of more than 450 providers across service lines to offer patients the resources to receive better care for our community. Learn more about the Southcoast Physicians Group. Southcoast Physicians Group offers great opportunities for physicians interested in being a part of the largest physicians network in the South Coast of Massachusetts. Learn more about SPG.

ACADEMIC SCHOOLS, COLLEGES, DEPARTMENTS, CENTERS, INSTITUTES AND PROGRAMS

Academic School - Engineering
https://engineering.brown.edu/about

Our historical roots are truly interdisciplinary. The School is organized without the traditional departments or boundaries found at most schools; our model is focused on making unique connections between the various engineering disciplines.

Along with our associations with the other scholarly disciplines – biology, medicine, physics, chemistry, computer science, the humanities and the social sciences – our co-operations bring unique solutions to challenging problems. The School focuses on unique and innovative clustering of faculty; in terms of research groups, engineers of all types team together with non-engineers to tackle some of the biggest problems facing engineering and science today. Our talents and expertise lie in the interdisciplinary domain where the seemingly diverse disciplines converge.

Academic School - Graduate
https://graduateschool.brown.edu/about/mission-facts

The Graduate School, as a partner with departments, oversees policies and processes that guarantee the academic integrity of graduate programs institution-wide, manages campus appointments and an array of academic and professional development opportunities for graduate students, and provides a wide range of support services and programming to support student needs.

Brown University prepares graduate students for distinguished careers in research, teaching, and as experts in the public and private sectors. The rigors of research, analysis, debate, performance, and publication prepare our graduates to help address challenges inside and outside academia.

Academic School - International and Public Affairs

The School of International and Public Affairs will be established in July 2025. It will provide graduates with deep knowledge of policy and highly developed analytical skills that will enable them to serve their communities, the nation and the world," Brown University President Christina H. Paxson said. "Integrating study and practice is critical to confronting policy and social issues during a time of momentous global challenge, and a scholarly practice rooted in this approach has fueled Brown's growth in international and public affairs, positioning us for this transformational next step. The Watson Institute for International Public Affairs will transition into the School of International and Public Affairs, with faculty, staff and scholarly activity from the institute forming the bedrock of the new school.

Academic School - Warren Alpert Medical

https://medical.brown.edu/about

The Warren Alpert Medical School is a component of Brown's Division of Biology and Medicine, which also includes the Program in Biology. Together with Brown's seven affiliated teaching hospitals, the collective research enterprise in the life and health sciences attracts $195 million in sponsored research funding per year. Nearly 90 percent of our students take part in clinical or basic science research within the University's vigorous and growing research community. Our principal mission – to train excellent physicians equipped to improve the health of individuals and communities – is inseparable from our commitment to create an academic medical enterprise of the first rank in Rhode Island.

Academic School - Professional Studies

https://professional.brown.edu/about-us

The School of Professional Studies is one of Brown University's four schools, in addition to the Graduate School and undergraduate College. With its origins dating back three decades to Brown's summer and continuing studies program, SPS was established as a stand-alone school in 2014, under the leadership of Karen Sibley, Ed.D., with the purpose of enhancing the University's reach and impact in the world by reaching new communities of learners across the career continuum through distinctive degree and non-degree programs aligned with Brown's academic strengths.

Today, SPS offers a range of programs of varying lengths and modes of delivery, including professional degree programs in Healthcare Leadership, Technology Leadership, and the top ranked IE Brown Executive MBA; more than 30 early career master's programs spanning all disciplines; and non-degree executive education and professional certificates.

Academic School - Public Health

https://sph.brown.edu/about

At the Brown University School of Public Health, we are educating future public health leaders to evaluate and intervene upon issues that face our most vulnerable populations—including disorders of aging and chronic health conditions, maternal and child health and infectious disease outbreaks. Our researchers are working on the front lines of the most timely public health crises of our time, from reproductive health advocacy to the overdose crisis.

Faculty across our four academic departments educate students to become public health professionals equipped with the skills needed for success in the field today.

Center - Advance RI-CTR: Comprehensive

https://www.brown.edu/initiatives/translational-research/home

Advance Clinical and Translational Research (Advance-CTR, U54GM115677) is a statewide Institutional Development Award for clinical and translational research (IDeA-CTR) funded by the National Institute of General Medical Sciences. Based at Brown University, Advance-CTR is a statewide collaboration between Rhode Island's primary academic institutions, hospital systems, and community organizations. Advance-CTR supports Rhode Island investigators through funding, research resources and services, and professional development

offerings. Ultimately, Advance-CTR aims to fuel discoveries and collaborations that are responsive to the health priorities and disparities of Rhode Island's diverse communities.

Advance-CTR comprises two Administrative Cores (the Administrative Core and the Tracking and Evaluation Core), two Award Cores (the Pilot Projects Program and the Professional Development Core), and three Service Cores (the Biostatistics, Epidemiology, and Research Design Core, the Biomedical Informatics, Bioinformatics, and Cyberinfrastructure Enhancement Core, and the Community Engagement and Outreach Core).

Administrative Core: The Administrative Core serves as the central operations hub for Advance-CTR. It includes three Project Managers, a Communications Manager, a Data Manager and one Coordinator who each report to the Advance-CTR Administrative Director. These individuals support the PD/PI; Program Coordinator; Strategic Planning Coordinator, the IAC, EAC, Operations and Steering Committees; and the six Cores. Administrative Core personnel assist the Core Leads in program management and planning, tracking and evaluation, budget development, allocation of resources, reporting, and development of educational initiatives.

Pilot Projects Program: The Pilot Projects Program brings investigators together from institutions across the state to develop interdisciplinary collaborations that span the translational research spectrum. The program awards five to seven investigators per year with one-year grants of up to $75,000 each in direct costs for clinical and translational research. Awarded proposals must be interdisciplinary with a focus on clinical, translational, or community research. Priority is given to proposals that address statewide health priorities set forth by the Rhode Island Department of Health. Awardees gain the opportunity to experience planning and preparing research applications in an NIH format, respond to reviews, and learn grant management skills in a collaborative, cross-disciplinary environment. Awardees may also leverage Advance-CTR's research services in both the pre-proposal and post-award stages of their projects.

Professional Development Core: The Professional Development Core equips early-career health researchers in Rhode Island with the resources and training they need to build competitive research programs that improve population health in our state. The Core provides educational and mentoring opportunities to investigators at all career stages. The Mentored Research Awards program (MRAs) is geared toward early career stage investigators, especially those from historically underrepresented groups in STEM. The MRAs are given annually to two to three investigators from Brown University and the University of Rhode Island. They are two-year awards that cover up to 75% salary up to $90,000 in direct costs. An additional $25,000 per year is also provided to cover research-related expenses or tuition (a Master's degree in Clinical and Translational Research from the Brown University School of Public Health is encouraged). Finally, the awards provide a structured mentoring program and training in clinical and translational research. Awardees are encouraged to take advantage of Advance-CTR's research services in both the pre-proposal and post-award stages of their projects.

The Professional Development Core also offers the Advance-K Scholar Career Development Program (Advance-K) and the Advance-CTR Mentoring Training Program. Advance-K trains and supports highly qualified junior faculty in the preparation of individual, extramural career development award applications (NIH K series or equivalent), and connects them to resources, mentorship, and other career development opportunities. The program encourages applications that emphasize community engagement. Up to 10 Scholars are selected annually to participate in the program. Junior faculty candidates pursuing a career in clinical research or translational research from Brown, URI, and the affiliated hospital systems are eligible to apply. Advance-K Scholars follow a common curriculum along with a customized set of activities to meet individual learning goals and are required to participate in 2-hour, bi-weekly training sessions throughout the duration of the yearlong program. Scholars are expected to submit an application for individual funding (K01, K08, K23, or CDAs from the VA or foundations) by the end of the 12-month program period.

The Advance-CTR Mentoring Training Program is a 9-hour, peer-driven program that provides faculty mentors with skills and techniques to enhance communication with their mentees and improve outcomes for professional development and success. Five faculty from Brown University and the University of Rhode Island who are certified Mentor Facilitators from the National Research Mentoring Network (NRMN) lead the trainings. The training sessions are adapted from NRMN and the Center for Improvement of Mentored Experiences in Research (CIMER). It is designed to help research mentors maximize the effectiveness of their mentoring relationships. All Rhode Island investigators and research staff are also eligible to receive clinical research

training through various sponsored training, including but not limited to Public Responsibility in Medicine and Research (PRIM&R), and Good Clinical Practice (GCP) through the Professional Development Core. Finally, the Core offers regular workshops for entrepreneurship, team science, and grant writing.

Biostatistics, Epidemiology, and Research Design Core (BERD): The BERD Core aims to empower investigators to design, interpret, and publish impactful health research. It offers research consultations and support to Rhode Island investigators who are seeking quantitative, psychometric, and qualitative research design and analysis support. The Biostatistics Core links investigators with multidisciplinary faculty members and experts in various methodological techniques including biostatistics, epidemiology, research design, qualitative data techniques, and measurement and evaluation in health-related research. The Core also makes available a variety of research training, including monthly REDCap workshops, the Qualitative Methods and Machine Learning Seminar Series, and regular seminars on research design and analysis, systematic review, and biostatistical methodology.

Bioinformatics, and Cyberinfrastructure Enhancement Core (BIBCE): The BIBCE Core works to transform the research capacity in Rhode Island for big data health research by enabling access to electronic health data through secure, inter-institutional infrastructure. The Core works closely with the Center for Computation and Visualization (CCV) and Brown University Library to address the breadth of data, technology, and computing needs for clinical and translational research. Through the Unified Research data Sharing and Analysis (URSA) Initiative, the Core provides expertise and infrastructure for accessing and using large-scale datasets for health-related research. This includes storage, management, and analysis of health data within high performance and secure computing environments at Brown. The Core also participates in the National COVID Cohort Collaborative (N3C) Analytics Platform, which provides clinical data from more than 1.6 million COVID+ cases to RI investigators. The Core also offers consultative services for implementation science—from strategy and blueprints to sustainability and policy implementation. Finally, BIBCE provides a wide variety of research training, including its annual Informatics and Implementation Science Learning Series and Machine Learning Seminar Series.

Community Engagement and Outreach Core (CEO): The CEO Core helps facilitate research endeavors that are relevant, accessible, and impactful to the entire state of Rhode Island. New in Phase II of Advance CTR, this Core is built around a philosophy and culture of partnership and reciprocity. The CEO Core provides RI investigators with the training and guidance they need to conduct successful community-engaged research initiatives. These include offering investigators the opportunity to receive feedback from community stakeholders on their research ideas before they begin and brokering partnerships between investigators and community stakeholders during each step of the research process. Community stakeholders, in turn, have the opportunity to participate in the dissemination of study results, including publication and dissemination of study findings to the public and the communities who stand to benefit from knowledge production. This culture and the Core's commitment to community participation at every stage of the research process will help ensure that the CEO Core's activities are relevant to populations who experience health disparities and to the Rhode Island community at-large.

Center - Advance RI-CTR: Summary

https://www.brown.edu/initiatives/translational-research/home

Advance Clinical and Translational Research (Advance-CTR): Advance-CTR partners were awarded an IDeA CTR grant by NIGMS in 2016 as well as a renewal award in 2021 (Advance-CTR, U54GM115677). Advance Clinical and Translational Research (Advance-CTR) is a statewide Institutional Development Award for clinical and translational research (IDeA-CTR) funded by the National Institute of General Medical Sciences. Based at Brown University, Advance-CTR is a statewide collaboration between Rhode Island's primary academic

institutions, hospital systems, and community organizations. Advance-CTR supports Rhode Island investigators through funding, research resources and services, and professional development offerings. Ultimately, Advance CTR aims to fuel discoveries and collaborations that are responsive to the health priorities of Rhode Island's diverse communities. Advance-CTR comprises two Administrative Cores (the Administrative Core and the Tracking and Evaluation Core), two Award Cores (the Pilot Projects Program and the Professional Development Core), and three Service Cores (the Biostatistics, Epidemiology, and Research Design Core, the Biomedical Informatics, Bioinformatics, and Cyberinfrastructure Enhancement Core, and the Community Engagement and Outreach Core).

More than 7,000 square feet is dedicated to Advance-CTR across all partner institutions in Rhode Island. Central offices are located in downtown Providence, Rhode Island, adjacent to the Warren Alpert Medical School of Brown University and less than a mile from the Brown University School of Public Health, Brown Health and Care New England hospital systems. Other partners, including the VA Providence Healthcare System and the Rhode Island Quality Institute are less than three miles away from the Administrative Core offices. This includes contiguous workspace in two dedicated suites for the BIBCE and Administrative Cores in a building adjacent to the Warren Alpert Medical School. Shared building-wide resources include a small 209 square-foot conference room with capacity of 8 people and a larger 365 square-foot conference room with a capacity of 16 people. The building is serviced by a 10 Gigabits per second optical network (Cisco). State-of-the-art, audio visual conferencing equipment is used utilized for both internal and external audiences to facilitate a spectrum of Advance-CTR needs, including administrative planning, professional development, educational outreach, local discussions, team project meetings, Advisory Committee meetings, NIGMS reporting, and multi-site forums.

Center - Advancing Health Policy through Research (CAHPR)
CAHPR | School of Public Health | Brown University

The CAHPR works to understand health care affordability and value to translate research into policy change. In a nation that spends nearly double the resources of its peers on health care, we recognize the urgency for innovative solutions to reshape health care delivery and expenditure in the United States. At CAHPR, our faculty and staff are committed to unraveling the intricate connections between insurance design, market structures, and policy dynamics to pave the way for enhanced patient outcomes and reduced spending.

Center for AIDS Research - Providence/Boston
https://cfar.med.brown.edu/about-us

The Providence/Boston Center for AIDS Research (CFAR) is a joint research effort between Brown University, Brown Health, and Boston University/Boston Medical Center. The Providence/Boston Center for AIDS research is devoted to the pursuit of translational research to reduce the burden of HIV infection worldwide, with special focus on substance users, women, MSM, justice-involved persons, and at-risk youth. To achieve this goal, we are committed to fostering emerging HIV investigators both domestically and within resource-limited settings.

Center - Alcohol and Addiction Studies (CAAS)
https://www.brown.edu/academics/public-health/research/alcohol-addiction-studies/

Center for Alcohol and Addiction Studies (CAAS): The Brown University Center for Alcohol and Addiction Studies in the School of Public Health is an internationally renowned research center in alcohol research. The mission is twofold: to conduct collaborative research that will lead to more effective treatment for alcohol and drug abuse, and to create a nationwide program in substance abuse, education and training for psychologists, physicians, medical students, and health care professionals. CAAS faculty conduct empirical research in a variety of areas of alcohol abuse/dependence, drug abuse/dependence and tobacco use, ranging from laboratory investigations of mechanisms through treatment or early intervention to policy. Funding comes from the federal government and a variety of foundations.

Comprehensive training is provided in how to conduct excellent research to predoctoral and postdoctoral research fellows. Faculty conduct clinical training seminars for practitioners at national and regional conferences. Faculty are involved in developing training curricula for medical schools and addiction training for clinicians as

part of the Addiction Technology Transfer Center (ATTC). The CAAS houses the largest library of material on Alcoholics Anonymous, in conjunction with the Brown University Library system. Faculty are involved in Physicians and Lawyers for National Drug Policy to align policy, practice, and public understanding with the scientific evidence that addiction is a preventable and treatable disease; to support the use of evidence-based, cost-effective approaches toward prevention and treatment; and to enable lawyers and physicians to provide effective and sustained leadership in this effort.

Center - Alternatives to Animals in Testing
https://caat.brown.edu/

The Center for Alternatives to Animal Testing is modernizing toxicity and drug testing by measuring and integrating the biologic responses of miniaturized human tissues. There is a large and growing number of potential toxicants and drugs whose concentration-dependent effects are unknown. Current animal and simple 2D cell culture models do not rapidly and effectively identify human health risks. Needed are new, cost-effective, and predictive assays that can assess adverse effects. Through an integration of biology and engineering, we have devised simple, high-throughput 3D microtissues as predictive biology platforms that reflect human physiology and disease, solving fundamental questions of adverse biological response. We use quantitative confocal imaging of 3D human microtissues to identify pathologic responses to chemical and drug exposures.

The Center for Alternatives to Animal Testing provides a scholarly environment for research and teaching in the development and use of state-of-the-art humane approaches to understanding the fundamental characteristics of health and disease, including identifying alternatives to animal testing for screen of environmental toxicants and new drugs. The Center's strategy is to optimize and validate in vitro assays using human 3D micro-tissues visualized by high-throughput/high-content imaging. These novel platforms for predictive biology are designed to address the unmet need for screening and safety assessment of large numbers of environmental chemicals and emerging toxicants, thus protecting human health and the environment.

Center - Alzheimer's Disease Research

https://alz.carney.brown.edu/research

The mission of the Center for Alzheimer's disease Research is to catalyze collaborations across basic and clinical research groups at Brown and its affiliated hospitals to uncover when, where and how Alzheimer's disease first arises. The center is a joint initiative between Brown's Robert J. and Nancy D. Carney Institute for Brain Science and the University's Division of Biology and Medicine.

Housed within the Carney Institute, the center supports and enables team research projects that integrate knowledge across biological systems in humans, including behavioral, neural, vascular and immune. Areas of cutting-edge research include inflammation, metabolism, bioinformatics, gerosciences and cellular protein/RNA processing.

Center - Animal Resources and Education (CARE)

https://animal-care.brown.edu/

The Center for Animal Resources and Education (CARE): Brown University shares a mission with other institutions of higher learning in the responsibility to advance the understanding of living organisms through studies of the behavioral and biological processes upon which their survival and well-being depends. Research involving laboratory animals has an essential role in this process. There are approximately 70 Brown-based or Brown affiliated investigators who use vertebrate animals in their research and approximately 115 active IACUC protocols each year.

The CARE program at Brown University is accredited by the Association for the Assessment and Accreditation of Laboratory Animal Care, International, (AAALAC), and is registered with and inspected by the U.S Department of Agriculture (USDA). Brown's Assurance of compliance with the Public Health Service Policy on Humane Care and Use of Laboratory Animals has been reviewed and accepted by the Office of Laboratory Animal Welfare (OLAW) of the National Institutes of Health (NIH). All animals are maintained in accordance with the National Research Council Guide for the Care and Use of Laboratory Animals. The CARE program is directed by

attending veterinarian Lara Helwig, D.V.M., a diplomat of the American College of Laboratory Animal, Medicine, (DACLAM). The facility is staffed by three full-time veterinarians, all ACLAM diplomats. The veterinary staff provides veterinary services to research investigators at three of the area hospitals affiliated with the Warren Alpert Medical School. They are responsible for the health care of all animals in the facilities, the review of all IACUC-approved animal care and use protocols, appropriate training/procedural oversight for investigators, and assisting investigators in any animal related queries The veterinary staff is on site and a clinical veterinarian is available at all times. Animal care staff provides daily feeding, watering and cleaning to all species. Veterinary technicians provide health surveillance and technical assistance. Brown's animal facilities include specialized housing and equipment for a wide variety of species. Dedicated surgical suites are available as well as dedicated procedural areas. A radiological suite is available and an ethylene oxide (ETO) sterilization machine for items that cannot withstand pressures and or temperatures of steam autoclaving.

Campus Facilities: Brown's animal facilities include specialized housing and equipment for a wide variety of species. Dedicated surgical suites are available as well as dedicated procedural areas. A radiological suite is available and an ethylene oxide (ETO) sterilization machine for items that cannot withstand pressures and or temperatures of steam autoclaving. Brown University Animal Care maintains a steadfast commitment to supporting research to the highest contemporary standards. Please contact the Animal Care Office for consultation about or assistance with any planned or current research animal needs.

Hospital Facilities: All animals are housed at the Rhode Island Hospital Central Animal Care Facility (11,000 sq. ft., including four procedure rooms). The facilities are operated in full compliance with USPHS policy, with oversight by the animal welfare committee. The animal facility is AAALAC approved (7/1/96; Multiple Assurance no A 3922-01). The hospital-based animal care program is also directed by Lara Helwig, an ACLAM diplomat. The facility is staffed by 3 full-time veterinarians, all ACLAM diplomats.

Center - Biology of Aging
https://www.brown.edu/research/projects/biology-aging/

Center on the Biology of Aging: The mission of the Center is to promote at Brown University and at its affiliated hospitals research and education programs on the causes and treatment of aging. The Center complements already existing strengths such as clinical care and health services research by providing a focal point whose primary function is basic research on the biology of aging. The Center's goal is to catalyze activity that will improve human health span. The Center for Aging Initiative seeks to:1) identify biological mechanisms that can extend healthy life, 2) develop interventions to ameliorate the negative aspects of aging. By assembling a core group of experienced scientists, the Center is increasing the interactions among investigators interested in aging, attracting talented students to their laboratories, and promoting growth by recruiting top-ranked new faculty. In addition to escalating research activity, the Center also strives to inform and educate the Brown community and the public. The Center also runs a monthly Providence Area Aging Research Forum, an extramural Aging Seminar Series, and the annual Colloquium on the Biology of Human Aging.

Center - Brown Center for Biomedical Informatics (BCBI)
https://www.brown.edu/academics/medical/about-us/research/centers-institutes-and-programs/biomedical informatics/

Through its research, education, and service activities, BCBI is involved with development and application of informatics and data science approaches across the full spectrum of biomedicine and health care (translational bioinformatics, clinical research informatics, clinical informatics, consumer health informatics, public and population health informatics, global health informatics, and biomedical data science).

Areas of methodological expertise include: biological sequence analysis; data extraction, integration, management, and analysis; data mining, machine learning, and deep learning; clinical decision support; evaluation; human factors engineering; information retrieval; knowledge engineering; natural language processing and text mining; privacy and security; and, software engineering and system development.

As part of transdisciplinary collaborations, these methods are being applied to support artificial intelligence in health care, clinical and translational research, and learning health systems. Specific health contexts include: cancer, cardiovascular conditions, infectious diseases, maternal and child health, and mental health.

Center - Brown Center for the Study of Children at Risk
https://childrenatrisk.med.brown.edu/

The Brown Center for the Study of Children at Risk is dedicated to:

Advance theories of the developmental pathways from fetal and infancy periods in at-risk children

Enhance synergy between research and clinical practice that advances child development research, intervention programs and social policy

Train scientists and practitioners in interdisciplinary methods from the field of child development

The objective is to nurture, promote and coordinate research, training, education, and clinical service in child development and developmental psychopathology. Our group is interdisciplinary spanning the disciplines of developmental and clinical psychology, pediatrics, psychiatry, nursing, occupational therapy, social work, substance abuse and public health. We are excited by the translational work that occurs at the boundaries where disciplines intersect leading to new science and the handshaking between science and clinical practice.

Center - Brown Center for Digital Health (CDH)
https://digitalhealth.med.brown.edu/

Brown-Brown Health Center for Digital Health (CDH): The Center for Digital Health is an incubator for practical research, enabling the development of novel digital health science and tools focused on solving the real needs of patients, providers, and populations. It offers experiential education in ethical, effective digital health development and deployment for the next generation of scientists, clinicians, and entrepreneurs. And it is a leader in the scaling for impact of these digital treatment modalities.

Through our strong partnership and research collaboration with our Leadership Team and Affiliated Faculty, we have strong content area expertise in: adolescent health, artificial intelligence, behavioral health, depression, firearm use, health equity, HIV/AIDS/Hepatitis C, interpersonal violence, social media, suicide, substance use, and weight loss/management.

Center - Cardiovascular Research (CVRC)
http://cvrc.brownmedicine.org/

The Cardiovascular Research Center (CVRC) performs interdisciplinary research in basic and translational, and clinical research to develop innovative therapies and cure cardiovascular diseases. The CVRC provides a home for a wide spectrum of investigation ranging from the molecular mechanisms of cardiac and vascular diseases to biomedical engineering. It links faculty interested in cardiovascular biology and disease across departments and campuses in Rhode Island Hospital, VA Medical Center, and Brown University in Providence, RI. The collaborative culture of CVRC fosters multidisciplinary research programs to bridge between basic and clinical science.

Center - Children's Environmental Health (CCEH)
https://www.brown.edu/academics/public-health/cceh/about

The Center for Children's Environmental Health (CCEH) is dedicated to promoting the health of children by understanding the determinants, health effects, and biological action of environmental pollutant exposures from before conception until adolescence. The Center is engaged in studies examining pesticides, drinking water contaminants, metals, and chemicals used in consumer products.

The Center's interdisciplinary group of faculty, postdocs, clinicians, students, staff, and practitioners conduct research, teaching, and community engagement in Rhode Island and around the world. Members and affiliates of CCEH investigate the connections between human health and environmental pollutants (research), support trainees as they develop, learn or apply innovative approaches to important public health problems (training), and engage with governments, communities, and individuals to improve environmental conditions for children (translation and practice).

Specifically, the CCEH:

1. Provides a hub at Brown University and across the region for children's environmental health research and action;
2. Provides diverse learning opportunities for trainees from any academic background to engage in children's environmental health research or practice;
3. Facilitates translation of environmental health research into action through engagement of governments, communities, and individuals.

Center - COBRE for Addiction & Disease Risk Exacerbation (CADRE) at Brown University https://www.brown.edu/academics/public-health/cadre/home

COBRE for Addiction & Disease Risk Exacerbation (CADRE): Established in 2019, CADRE is a federally funded NIH Center of Biomedical Research Excellence (COBRE). The CADRE's mission is to become a national leader in substance use bio-behavioral research and chronic disease manifestations in vulnerable populations (especially underrepresented ethnic or racial minorities), serving as a resource for training and research within Brown University as well as regionally and nationally.

Additionally, the overarching goal of CADRE is to create a thematically and technically linked center that will promote the research programs of 5 promising interdisciplinary junior faculty members, and in so doing, enhance their competitiveness for independent external funding. Brown University's commitment to supporting CADRE's goal of diversifying the biomedical workforce and addressing health disparities will be supported by (1) a pilot grants program that focuses on addressing the higher burden of illness related to substance use and chronic disease among racial and ethnic minorities, and (2) a postdoctoral position given to someone from a group underrepresented in biomedical sciences. Through its affiliation with the Center for Alcohol and Addiction Studies at the Brown University School of Public Health, CADRE will investigate mechanisms whereby substance use impacts disease, using a combination of behavioral and physiological laboratory-based approaches across several substances of abuse. Center –

Center - COBRE for CardioPulmonary Vascular Biology (CPVB) Providence VA Health System https://cpvb.org/

Cardiovascular and pulmonary vascular diseases are leading causes of morbidity and mortality in the U.S. The aim of the CPVP is to improve understanding of the pathogenesis and treatment of vascular pathobiology in lung and heart diseases and develop effective therapies for blood vessel diseases based on mechanistic understanding.

Center - COBRE for Central Nervous System Function at Brown University https://www.brown.edu/research/projects/central-nervous-system-function/

The National Institute of General Medical Sciences (NIGMS), NIH funded COBRE Center for Central Nervous System Function focuses on the brain processes that underlie attention, decision making and action. The COBRE Center for Central Nervous System Function is a subunit of the Carney Institute for Brain Science.

Purposeful human behavior requires attention, decisions and action, all basic functions mediated by brain networks primarily located in the neocortex but modulated and shaped by sub-cortical processing. Behavioral and brain mechanisms of attention, including vigilance, orienting and perceptual and action selection, are key gateways into high-level function. Thus, in a general and even specific sense, attention, decision making and

the ensuing actions define human mental activities. Deficits in these functions are common in both neurological and psychiatric disorders and can result in a wide range of higher-order behavioral deficits. In 2013, with funding NIGMS, we established our Phase I COBRE Center at Brown University that investigated the mechanisms of higher-brain function, with a focus on attention, decision making and action and disorders that modify these key systems, using a combination of genetic, behavior, and systems neuroscience approaches.

Center - COBRE for Computational Biology of Human Disease (CBHD) at Brown University https://www.brown.edu/research/projects/computational-biology-of-human-disease/home

COBRE Center for Computational Biology of Human Disease (CBHD): The COBRE CBHD embraces the age of genomics medicine from an explicitly data-driven, computational perspective. By building a collaborative Center of empirical and computational scientists, this COBRE advances new discoveries, algorithms, and genomic screening approaches with direct relevance to several human diseases. This is consistent with NIH's mission of supporting bioinformatics and computational biology to advance all areas of biomedicine. This Center provides a centralized service to assist researchers in computational, bioinformatic, and data management challenges of analyzing large data sets made available by modern 'omics' technologies. In addition, this funding will support the research activities of junior investigators to ensure their transition to stand-alone extramurally funded

research scientists. The COBRE CBHD uses an innovative joint mentoring process, where each junior faculty member is advised by both computational and biological or clinical senior faculty members. In addition, staff data scientists in the Computational Biology Core will be active members of each of these laboratory groups to better integrate all phases of the research activities.

Center - COBRE for Injury Control
https://www.brownhealth.org/centers-services/injury-control-cobre

Injury-related morbidity and mortality remain important public health epidemics. In 2018, there were over 240,000 injury related deaths nationwide with unintentional injury remaining the leading cause of death for individuals 1 to 44 years old. More research is urgently needed to control the burden of injury. The Rhode Island Hospital (RIH) Injury Control COBRE supports the development of independent researchers to lead rigorous, innovative injury control research that changes practice and improves health. Through the Injury Control COBRE we will see the development researchers and a research infrastructure that examines the entire spectrum of injury prevention, treatment, and rehabilitation with individuals across the lifecycle (youth, emerging adults, and older adults) covering a range of injury topics. The goal is to conduct rigorous, innovative injury control research that changes practice and improves health.

Center - COBRE for Neuromodulation (CCN) at Butler Hospital
Center of Biomedical Research Team (COBRE) | Butler Hospital

The CCN Administrative Core, develops design/statistical, neuroimaging, and brain stimulation resources focusing particularly on COBRE projects and new pilot research. The CCN Administrative Core works closely with our partners. These include IDeA Networks of Biomedical Research Excellence (INBRE) Centers and IDeA Clinical and Translational (CTR) programs in Rhode Island, collaborating entities at/affiliated with Brown University including the Brown Department of Psychiatry and Human Behavior (DPHB), Carney Institute for Brain Science, COBRE Center for Central Nervous System Function (CCNSF), Advance Clinical and Translational Research (Advance-CTR) and the Providence VA Medical Center for Neurorestoration and Neurotechnology (CfNN).

Center - COBRE for Sleep and Circadian Rhythms in Child and Adolescent Mental Health https://bradleycobre.org/cobre-cores-services/

The Emma Pendleton Bradley Hospital COBRE Center on Sleep and Circadian Rhythms in Child and Adolescent Mental Health is the first and only NIH-funded research center that aims to bridge sleep and circadian knowledge with outstanding mental health research and clinical care.

The Emma Pendleton Bradley Hospital, founded in 1931, was the nation's first psychiatric hospital devoted to children and adolescents. Links between mental illness and sleep are indisputable; probing and identifying the links from sleep and circadian rhythms to pediatric mental illness and mental health can identify important pathways to prevention and early intervention.

Extending the reach and accelerating the growth of clinical scientists with multidisciplinary training and supportive infrastructure exponentially impacts the potential of improving the health and well-being of children, adolescents and their families.

The Center will train, mentor, and support junior investigators toward independent research careers.

The Center's research Cores will host training in the assessment of pediatric mental health and in sleep and circadian theory, science, and methods.

The Center is committed to diversity in faculty, mentors, investigators, research approaches and methods, and research participants.

Center - COBRE for Stress, Trauma, and Resilience

https://www.starcobre.org/about

The STAR COBRE takes a comprehensive approach to stress and trauma exposures, and includes a focus on identifying proximal, ongoing mechanisms of risk and resilience through in-vivo ecological sampling and other approaches, in addition to historical adversities and traumas. In focusing on these mechanisms, we aim to rapidly discover novel and actionable intervention targets to improve health outcomes.

Center - COBRE on Opioids and Overdose at Rhode Island Hospital
https://opioidcobre.org/

The Center of Biomedical Research Excellence (COBRE) on Opioids and Overdose, based at the Rhode Island Hospital, is the first center of its kind aimed to collaboratively address the opioid epidemic. This COBRE is a vibrant, interdisciplinary center that supports research essential to understanding the mechanisms underlying opioid use disorder and developing innovative solutions. A main objective of the NIH-Funded COBRE initiative is to support the development of junior investigators into independently funded investigators, and to develop a critical mass of investigators competitive for peer-reviewed external research funding

Center - Computation and Visualization (CCV)
https://ccv.brown.edu/

Center for Computation and Visualization (CCV): The mission of CCV is to provide the scientific and technical computing expertise required to advance computational research and support Brown's academic mission. The accelerated transformation of the pace and impact of computational approaches led to Brown University's recognition of the importance of high-performance computing across all of its disciplines. As a result, Brown and IBM developed in 2009 a $4M investment in a high-performance computing platform, known as Oscar, that is available statewide to researchers. Through grant funding and University investment, this platform has undergone continual hardware enhancement, and now includes Intel Scalable Processors and nVIDIA GPUs of the Pascal and Volta architectures, as well as 100Gb/s EDR Infiniband. The equipment is maintained and operated by the staff of the Center for Computation and Visualization (CCV), who have extensive experience in operating shared computational clusters. CCV staff are responsible for scheduled maintenance, access control as needed, and integration with research specific hardware as required by NIH-funded researchers. CCV staff also take care of all financial aspects of operating and maintaining the facility.

The high-performance computing resources at CCV equip the Brown research community to undertake complex numerical simulation, modeling, and data analysis. Oscar is the primary research computing cluster with several hundred multi-core nodes sharing a high-performance interconnect and file system. Applications can be run interactively or scheduled as batch jobs. Several large memory nodes provide substantially more memory than

is available on typical workstations and laptops. A large collection of software is available on CCV systems, including:python, perl, R, Matlab, Mathematica, Maple, optimized math and science libraries, and domain specific applications. CCV staff can help acquire and install most applications upon request. The technical specifications of Oscar are:

- Two login nodes provide access for application development, debugging and batch job management •
  About 400 compute nodes up to current specs of dual multi-core processors and 128 GB of memory and a total of more than 8,000 cores
- ·Specialized nodes containing GPU processors or 512 GB of memory
- High-bandwidth/low-latency Infiniband interconnects
- All nodes are diskless with I/O provided by an IBM GPFS parallel file system
- 1 PB of usable disk space
- RHEL 7.3 Linux operating system

- SLURM workload manager

CCV provides storage for large research files connected to the high-performance computing (HPC) system. A default allocation of 256 GB (also called RData) is given to all faculty members at Brown, on a per request basis, with the option of purchasing additional storage as needed. Long-term storage and backups are available on a fee basis. Storage can be purchased in increments of terabytes for periods of up to 6 years. The cost for backups is included when storage is purchased. Data is incrementally backed up to tape on a daily basis. In addition, snapshots for the last 7 days are available online for quick restores. Long-term archiving of files to tape (one or two copies) can be purchased as needed. Tape libraries are housed at two separate locations to enable disaster/recovery scenarios. In addition, a disaster recovery copy of the non-ephemeral data is kept on a lower performance filesystem to permit immediate recovery and limited production computing in the unlikely event of the loss of the primary filesystem. These research storage allocations can be easily mounted to desktops or other computer systems to allow for easy access and sharing files. Details of HPC file storage at CCV:

- Rdata is accessible from all CCV systems (/gpfs/data)
- Can be mounted to all desktops on Brown's campus network
- Is backed up on a daily incremental basis
- Rdata allocations can be increased by purchasing additional storage
- Home directory on Oscar: All users will have access to a home (/gpfs/home) allocation of 10 GB. This allocation is backed up on a daily basis
- Group storage: Premium accounts will be entitled to an additional allocation of 256 Gb that may be merged with RData (for primary PI). Likewise, group premium accounts will be entitled to additional 25 GB per user
- Snapshots: Daily snapshots are available for both RData and Home file systems for seven consecutive days
- Scratch: Space for temporary files is available as (/gpfs/scratch). These files are not backed up and scratch space is strictly for temporary files. Files may be purged after 30 days or as the file system is being utilized. This allocation will be managed by an application called xdisk (time versus space) (work in progress)
- Sharing data: Sharing files that are too big to be sent via email. There is a 10 GB quota and a limit of 2 GB per file
- Users can access RData from the CIFS share. This can be mapped as a drive in Windows and mounted in Mac OS X and Linux from any campus system (off-campus use requires a VPN connection to campus). Users can also access files by using a file transfer tool like Secure Copy (SCP), Secure FTP (SFTP), or rsync

A key benefit of using these computing resources is that CCV installs and maintains a large collection of computational research software. CCV can install most software packages upon request. A full range of statistical and other scientific software is available on the CSS system, including standard statistical packages (including SAS, Stata, S-plus), specialized statistical software (such as DBMSCopy, ROCKIT, nQuery, East), scientific programming languages and software (such as Fortran, C++, Matlab) and office software. All data stored on the CSS network is secure: access to the system from outside our network requires the use of a

software client that employs a point-to-point encryption. The UNIX operating system also provides the mechanism to limit access of specific directory trees to specific groups of users. CSS will supplement the funded Administrative Coordinator for the Core with a modest amount of in-kind administrative support in the form of existing clerical and secretarial help, assistance with grant and subcontract preparation, access to conference rooms and office equipment. The Core will pay a nominal fee to CSS to offset the cost of maintaining multiple user site licenses for statistical software and for maintaining updated operating systems, having full access to

the computing network (including associated software and dedicated hardware), and software and systems support for core personnel.

Center - Computational Molecular Biology (CCMB)

https://ccmb.brown.edu/

Computational Molecular Biology (CCMB): CCMB was founded in September 2003 with the aim of establishing a world-class center for research and scholarship in this new discipline. CCMB exists as a research center within the Brown Data Science Institute. CCMB's prime intellectual mission is to promote the development, implementation, and application of analytical and computational methods to foundational questions in the biological and medical sciences. The research programs of the Core Faculty in CCMB lie fundamentally at the intersection of computer science, evolutionary biology, mathematics, and molecular and cellular biology.

Center - Epidemiologic Research (CER)

https://www.brown.edu/academics/public-health/cer/about

The Center for Epidemiologic Research: The Center for Epidemiology and Environmental Health (CER) was founded in 2016, within Brown University's School of Public Health. In 2020, the name changed to Center for Epidemiologic Research. The goal of CER is to conduct epidemiologic studies of the causes, treatment and prevention of major health concerns at the population level. Members of the Center are epidemiologists, physicians and social scientists who combine state-of-the-art research methods with expertise in specific diseases, including cardiovascular, cancer, reproductive, nutritional, psychiatric and behavioral disorders.

Research on etiology involves several large-scale longitudinal projects of representative community-based samples, in some cases followed over decades, to investigate the emergence of disease and disorder as well as the combined influences of environmental, nutritional, social & genetic factors on the incidence and course of these conditions. Randomized clinical trials and other clinical investigations are conducted in collaboration with leading hospitals and other treatment facilities in Rhode Island and throughout the U.S. to investigate the impact of new therapeutic technologies and to add to evidence-based treatment decisions in medicine and public health.

Center faculty also collaborate regularly with Rhode Island agencies including the Departments of Health, Human Services, Education and others to assist with statewide analyses of population health and the implementation of population-based prevention efforts.

Center - Evidence Synthesis in Health (CESH)

https://www.brown.edu/public-health/cesh/home

The Center for Evidence Synthesis in Health (CESH): The CESH currently occupies 2,865 square feet on the 8th floor of 121 South Main Street housing faculty, research and administrative staff and graduate students. The mission of the Center is to promote rational decision making by means of conducting research in and teaching the principles of research synthesis (systematic review and meta-analysis) and evidence contextualization (decision and economic modeling). Members of the Center are physicians, methodologists, biostatisticians, statisticians and computer scientists who combine state-of-the-art research methods with expertise in applied research and evidence contextualization; and there is a strong culture of intellectual collaboration.

The Center provides support to investigators for pilot studies, professional development and administrative support for research-related activities. The financial support structure allows for protected time for research with salary support. Physical resources such as office space, conference rooms, teleconference equipment, computer resources and support staff have been allocated to the investigator's research efforts. Mentorship is available

from senior faculty in the center and department. The CESH has strong record of federal funded and collaborative sponsored research with both seasoned and new investigators.

The Center operates the Brown Evidence-based Practice Center (EPC) for the Effective Healthcare (EHC) Program of the Agency for Healthcare Research and Quality (AHRQ) of the U.S. Department of Health and Human Services (HHS). Ours is one of 9 EPCs currently sponsored by AHRQ. This EPC develops comparative effectiveness reviews, evidence reports, and technology assessments on a spectrum of clinical and policy

oriented topics. Our reviews inform decisions of clinicians, patients, policymakers, purchasers, and payers. We synthesize literature on clinical, behavioral, organizational, and financing topics, promotes improvements in health and healthcare and provides data for others to make coverage decisions develop quality measures, educational materials, and guidelines to set research agendas.

Center - Gerontology and Healthcare Research

https://www.brown.edu/academics/public-health/cghr/home

Center for Gerontology and Healthcare Research: The Center for Gerontology and Healthcare Research in the School of Public Health is a nationally prominent research center that studies the diverse health and social service needs of elderly and other persons with chronic illnesses. Since the early 1980's, center faculty members have had substantial success in securing funding from the National Institutes of Health, the Agency for Healthcare Research and Quality, and the Health Care Financing Administration, as well as from numerous philanthropic foundations. The research findings of center faculty have, as intended, figured prominently over the years as valuable guides for government agencies making decisions regarding policy aimed at improving health and health care for aging and disabled populations. Initiating new lines of research on previously unstudied or understudied populations is a hallmark of the center work. The Center for Gerontology and Healthcare Research is located on the campus of Brown University in the city of Providence, Rhode Island and is the administrative home of the Center for Long-Term Care Quality & Innovation.

Center - Health Promotion and Health Equity (CHPHE)

https://www.brown.edu/academics/public-health/chphe/about

The Center's mission is to to improve health and advance health equity through interdisciplinary and community engaged research, education and advocacy at the structural, organizational, interpersonal, and individual levels. Center researchers conduct qualitative research, sophisticated quantitative modeling, laboratory-based experiments, and formative research with community partners to develop and test behavior change theories and to implement, evaluate and disseminate interventions that promote healthier behaviors.

Center for Health System Sustainability (CHeSS)

https://chess.sph.brown.edu/

At the Center for Health System Sustainability (CHeSS), we help countries learn from one another to optimize patient care and build resilient and sustainable health systems. We do so by leveraging patient-level data and global partnerships to produce comparative data insights and actionable policy recommendations. The mission of the Center for Health System Sustainability is to bring together knowledge from across regions and countries, identify how health systems can maximize the health outcomes they produce, and eliminate health disparities, given current levels of investment. The center moves measurement and comparison of health system performance away from static indicators of input or output. We focus on providing more dynamic means to compare how health systems use inputs differently to produce valued health system outcomes. These insights help health systems learn from one another to optimize patient care and build more resilient and sustainable health systems.

Center- Legoretta Cancer Center

https://legorreta.brown.edu/about-us

The Legorreta Cancer Center is building world-class cancer research programs that bring basic science discoveries about cancer, interdisciplinary clinical, translational, and population research to innovative therapeutic, disease

intervention and cancer prevention clinical trials to patients in the State of Rhode Island. The Cancer Center is an outgrowth of the Joint Program in Cancer Biology at Brown and Brown University Health. In 2021, we received a generous $25 million gift from life sciences entrepreneur and investor Pablo Legorreta and his wife, Almudena, that will help advance our goals.

Center members represent Brown University, the Brown University Health Cancer Institute, the affiliated hospitals, The Warren Alpert Medical School, and Brown's School of Public Health and School of Engineering, among others. We are working to understand how cancer develops, grows and metastasizes, and to develop

new biomarkers and treatments for patients in a personalized way that addresses their needs ranging from risk through survivorship. The Center's goal is to impact on cancer in Rhode Island and beyond through outstanding research programs that uphold the high standards of excellence adopted by the National Cancer Institute.

Legorreta research activities span cellular, molecular analysis of the tumor microenvironment at high resolution, genomics and Precision Oncology, cell cycle, oncogenes and tumor suppressor genes, cell death, DNA repair, cellular senescence, cancer inflammation, cancer immunotherapy, drug discovery, first-in-human and other early phase investigator-initiated clinical trials across a range of tumor types, health services, addiction and disease epidemiology research.

The Cancer Biology Program brings together basic and translational investigators with expertise in mechanisms of cancer development, cell signaling, DNA repair, aging, stem cells, genomics, and tumor heterogeneity. Program meetings are held every two weeks throughout the year. Several program members have expertise in toxicology including activity of heavy metals and toxic waste that may impact on cancer rates in Rhode Island. The group is interdisciplinary and includes members from several basic and clinical departments with laboratories at Brown University, Brown University Health, and their affiliated hospitals.

The Cancer Therapeutics Program brings together clinical investigators who work together with basic and translational scientists to advance promising therapeutic options to patients in clinical trials. Program meetings are held every two weeks throughout the year. There is a robust portfolio of early phase clinical trials led by investigators through the Brown University Oncology Group (BrUOG), Brown University Health Cancer Institute and Women's and Infants Hospital. The Program has depth of expertise in disease-based adult and pediatric oncology, pathology, and clinical investigations. The early phase experimental therapeutics effort has a strong focus on cell death pathways and immunotherapy.

The Population Science Program includes investigators with focus on population and health services research, nicotine addiction, cancer prevention, biomarkers and disease epidemiology, comparative effectiveness research and outcomes research. Program meetings are held every two weeks throughout the year. A number of investigators have expertise in computational biology, biostatistics methods, and behavioral medicine interventions. Investigators at the School of Public Health interact with colleagues at The Warren Alpert Medical School and the Brown University
affiliated hospitals. The Program has a major focus on cancers and problems that affect the population of Rhode Island.

Translational Oncology: We have established an infrastructure for translational oncology research through Translational Research Disease Groups (TRDGs). TRDGs foster broad collaboration among scientists across Brown's academic departments and affiliated hospitals. A regular program of meetings and panel discussions brings together medical oncologists, surgical oncologists, radiation oncologists, pediatric oncologists, pathologists, biostatisticians, population researchers, basic scientists, and trainees to discuss translational directions. Current TDRGs are focused on cancers of the breast, CNS, gastrointestinal, genitourinary, gynecological, hematological, thoracic and sarcoma/skin.

Brown University Oncology Research Group (BrUOG)
https://bruog.med.brown.edu/

Brown University Oncology Group (BrUOG): BrUOG was established in 1994. BrUOG has become a highly respected cancer research group because of its history of innovative clinical trials. These investigations evaluate early, cutting-edge applications of chemotherapy, biologic agents, and other cancer treatments in both Phase I (which determine the optimally tolerated dose of an anticancer treatment regimen) and Phase II trials (which

assesses the potential therapeutic effectiveness). BrUOG has provided essential preliminary data for definitive Phase III trials, which are being conducted nationwide, often under the auspices of the National Cancer Institute.

BrUOG teaches the fundamental of clinical cancer research and provides outstanding research opportunities for physicians in training. In addition to protocols coordinated by BrUOG, patients at the affiliated hospitals also have access to a large variety of other clinical trials through national cooperative groups such as Cancer and Leukemia Group B (CALGB), the National Surgical Adjuvant Breast and Bowel Project (NSABP) and the Radiation Treatment Oncology Group (RTOG). Only through the resources of such large organizations can such

randomized trials of cancer therapy take place. Pharmaceutical industry-sponsored trials of novel agents are also available. Sponsorship for clinical trials is derived from the National Cancer Institute and from numerous pharmaceutical industry sponsors.

Center - Long-term Care Quality & Innovation (Q&I)

https://qandi.sph.brown.edu/team

At the Center for Long-Term Care Quality & Innovation (Q&I), the focus is on pragmatic research that improves care for older adults, especially those in nursing homes and assisted living communities. The Center partners researchers with healthcare providers to use pragmatic methods that accelerate effectiveness testing and the translation of findings into practice. Our diverse research program includes nearly 20 studies, $19.3M in annual funding, 50 students, staff, and faculty across the Department and School, and more than 150 other researchers across the country.

Center - Mindfulness at Brown University

https://mindfulness.sph.brown.edu/about-us

While there is outstanding activity in mindfulness research and education, mindfulness training is currently more easily accessible to certain communities than others, and that evidence-based mindfulness training tested in clinical trials has been primarily developed by those with greater resources, power, and limited racial, ethnic and cultural diversity. It is understood that many cultures and religions have strong elements of mindfulness within them that can emerge and support well-being of their members, allowing ripple effects and inspiration to other elements of society. The Mindfulness Center is dedicated to creating conditions for people, regardless of their background, to be met by, and to co-create, mindfulness programs that in turn are researched and have the capacity to be scaled and delivered by others in their communities. This involves not only offering great respect and curiosity towards communities whose voices have not been heard as much as others, but also to engage in helping to foster healing from histories of oppression. We are also aware of limited affordable access to mindfulness programs that have been evaluated by numerous high-quality clinical trials. In this regard, the Center is engaged in implementation science research on what is required for health insurance coverage for evidence based mindfulness programs which would increase accessibility. The Center works with philanthropists and the University to offer free or affordable mindfulness training and mindfulness teacher training to people who serve historically underrepresented groups.

Center - Neurobiology of Cells and Circuits

https://carney.brown.edu/centers/center-neurobiology-cells-and-circuits

The Center for the Neurobiology of Cells and Circuits advances the understanding of the function of neural circuits, building on a foundation of genetic, molecular and cellular approaches. Center faculty produce vital knowledge to advance understanding and treatment of autism, neurodegeneration including Alzheimer's and ALS, chronic pain, psychiatric illness, migraine, addiction and epilepsy. One focus of the center is the study of neurodegenerative diseases, such as amyotrophic lateral sclerosis (ALS) and Alzheimer's, which have remained resistant to cures or therapies. The center is deeply involved with ALS research, as a broad team of faculty led by Brown and including two collaborating institutions developed research plans that won a major grant from the ALS Finding a Cure Foundation.

Center - Pandemic

https://pandemics.sph.brown.edu/

The Pandemic Center at the Brown University School of Public Health works to reduce vulnerabilities and increase resilience to pandemics, other biological emergencies, and the harms they pose to health, peace, security, and prosperity. The Pandemic Center is an independent and credible voice for positive disruption.This Pandemic Center is uniquely positioned to work across disciplines and sectors to generate and analyze evidence, educate a new generation of leaders, and ensure this work is translated to effective policy and practice around the globe.

Center - Plant Environmental Center

https://www.brown.edu/academics/ecology-and-evolutionary-biology/about-us/plant-environmental-center

Plant Environmental Center: The Plant Environmental Center at Brown University consists of six environmentally controlled research greenhouses, a conservatory, two laboratories and a classroom. The facility is comprised of six computer controlled research greenhouses totaling approximately 5,000 square feet. Theses greenhouses are used for research experiments, as well as various plant collections used to support biological science classes. In addition, this roof top space includes an 1800 square-foot conservatory open year around. The collection in the conservatory includes many plant families, including a diverse collection of Cycads, Orchids, Aroids, and many plants from the Amazon region. Many of these plants have medicinal and ceremonial uses and are part of our Ethnobotanical collection.

The greenhouse facility also consists of a head house for potting and other prep work, classroom, and plant growth chamber laboratory. The plant growth laboratory consists of eight E7/2 Conviron Plant growth chamber units, as well as two eighty square-foot walk-in chambers and one 80 square-foot cold room. These units are primarily used by graduate students and faculty performing research with very specific cultural requirements that cannot be maintained in the greenhouses.

Center - Sheridan Center for Advanced Teaching and Learning
https://www.brown.edu/sheridan/sheridan-center

The Sheridan Center for Advanced Teaching and Learning is a place where faculty, graduate students and postdocs come together from across the disciplines to inquire about, explore, and reflect upon teaching and learning as ongoing and collaborative processes. Sheridan Center programs, services and resources are available to all members of the Brown community, including full-time and part-time faculty, postdoctoral fellows, teaching fellows, and teaching assistants. The Sheridan Center provides practical advice about teaching and professional development and promotes best practices and promising new practices in teaching. Advanced T32 students use this center to work toward various teaching certificates. Graduate students can move through to Certificate IV, which is the teaching consultant program. There is a graduate student liaison to the Teaching Center. The Sheridan Center resources are especially valuable to students interested in future careers that involve college level teaching. Programs offered include the following:

- The Brown Learning Collaborative, offering rigorous academic courses for undergraduate teaching fellows and evidence-based course design institutes for faculty and GTAs, to enhance student learning in key liberal arts skill areas, such as writing, problem-solving, and research.
- Inclusive teaching, embedded in Sheridan programs and offered as customized workshops for departments, drawing upon pedagogical research in the disciplines.
- Writing, academic tutoring, and English language expertise to offer direct support to students and to develop peer fellows and tutors, as well as faculty and department practices to help all students succeed as learners and communicators.
- Interdisciplinary learning communities, such as certificates on reflective teaching and course design, a Junior Faculty Fellows program, dissertation writing groups, and writing and problem-solving course design institutes.
- Assessment and research support for program review, cross-institutional grants supporting educational innovation, and initiatives to enhance teaching and learning at Brown.

- Confidential consultations – classroom observations; early student feedback; consultations on inclusive teaching, course design, writing pedagogy, assessment, student evaluations, and graduate and undergraduate TA training.
- Services to enhance student learning – Excellence at Brown pre-orientation program on writing, conversation

partners program, classroom-based writing workshops on topics such as peer review, academic tutoring. • Programs on teaching - orientations for instructors and students, certificate programs, institutes, disciplinary and interdisciplinary workshops.

- Educational research and assessment – collaboration on course and curricular assessment, consultations on the scholarship of teaching and learning, assistance with evaluation sections of postsecondary educational grants. The Center also has a resource library open to the Brown community.
- Community - programs and projects that bring together faculty, graduate students, postdocs, and undergraduates from across the disciplines.

Center - Statistical Sciences (CSS)

https://biostatistics.sph.brown.edu/center-statistical-sciences

Center for Statistical Sciences (CSS): The Center for Statistical Sciences was founded in 1995 as a unit of Brown Medical School, funded by research projects. Over the years, CSS has developed a robust research enterprise and provided the academic strength and infrastructure for the formation of the Department of Biostatistics. The Center organizes the Brown Statistics Seminar, which is and held throughout the academic year and features talks on current developments in statistical methodology from invited external speakers. In addition, Center faculty host regular working groups in which topics of current research are discussed. Presenters in these informal seminars include Brown graduate students and faculty as well as other campus- and hospital-based researchers. The Center's work is focused on methodologic research in biostatistics and interdisciplinary research across the spectrum of medicine, public health, biology, and health-related topics in the social sciences, with local, national, and international collaborations. It houses several interdisciplinary research groups listed below.

Biostatistics Core for BrownHealth/Tufts/Brown Center for AIDS Research (CFAR). The Outcomes and Biostatistics Core of the BrownHealth/Tufts/Brown CFAR is a major collaborative activity between CSS biostatisticians and HIV scientists and has been successfully sustained since 1999. The Core's personnel include three faculty, one staff biostatistician, graduate research assistants, and informatics and administrative support staff. Core faculty and staff collaborate with CFAR investigators in the development and conduct of studies in HIV/AIDS, including studies of the progression of HIV in women, behavioral interventions to increase compliance with antiretroviral therapy (ART), policy interventions and substance abuse, antiviral therapy adherence, and international studies of HIV drug resistance. The collaboration has also led to productivity in statistical methods work motivated directly by problems in HIV and AIDS, including published work on methods for informative dropout, causal inference and associated sensitivity analyses, and modeling HIV disease parameters and progression. Core faculty serve as mentors and consultants for a number of K award recipients who are junior faculty at Brown Health and/or Brown University.

Biostatistics Core for AMPATH Consortium. The Academic Model for Providing Access to Healthcare (AMPATH) Consortium is collaboration between Moi University in Eldoret, Kenya and 18 universities in North America. A core subgroup of these universities is involved in research using data from over 100,000 individuals with HIV in western Kenya. Dr Hogan oversees a staff of seven faculty and masters-level statisticians at Brown, Indiana University, and Moi University in the Biostatistics Program of AMPATH. He is involved in both research and statistical training with Kenyan and American investigators.

Eastern Cooperative Oncology Group/American College of Radiology Imaging Network (ECOG/ACRIN) is a cooperative group funded by the Cancer Imaging Program of the National Cancer Institute to conduct multi-center, interdisciplinary clinical evaluations of diagnostic imaging in cancer. CSS is home to the network's Biostatistics Center for which Dr. Gatsonis is Director. The current research portfolio of ACRIN includes 9 trials with active participant accrual or follow-up, eight trials with ongoing analysis of primary or secondary endpoints, and eight trials in development. ACRIN's research program includes imaging in cancer, early detection, diagnosis and staging, disease management and image guided treatment. ACRIN is now expanding its research portfolio with studies of imaging for cardiovascular and neurologic diseases; it conducted the Digital Mammography Screening Trial (DMIST), which enrolled 49,500 women and

compared the diagnostic accuracy of digital and film mammography, the National CT Colonography Trial evaluating the accuracy of CT Colonography for colon cancer screening, and the ongoing National Lung Screening Trial (NLST) which enrolled more than 50,000 participants at high risk for lung cancer and

randomized them to annual screening with helical CT or X-ray. More than 100 centers across the U.S., Canada and other countries participate in ACRIN studies. The Biostatistics Center of ACRIN provides methodologic leadership and support to ACRIN investigators in the design, implementation, and analysis of network studies. Center personnel includes five faculty, ten professional biostatisticians, graduate research assistants, and administrative and informatics support staff.

ACRIN Outcomes and Economics Assessment Unit (OEAU) was formed to support the operations of the ACRIN Outcomes and Economics Committee and to perform the collection of patient reported outcome data in ACRIN studies. The Assessment Unit has extensive experience with the instruments used to collect patient reported outcomes and cost data, and is responsible for the collection of quality of life data for the National Lung Screening Trial and data on screening-associated costs and test preferences for the National CT Colonography Trial.

Center - Swearer Center

https://www.brown.edu/academics/college/swearer/about

The Swearer Center is a community of scholars, students, practitioners and community members who works together to build on community strengths and address community challenges. The Center's work engages all as co-learners, co-teachers, co-actors and co-creators of knowledge and action. Through the creative capacities of our students, staff, faculty and community partners we explore, build and implement collaborative and strategic projects, programs and initiatives. The Swearer Center work yields transformative learning, and positive sustainable change, through collective action. The Center strives to work towards social justice by recognizing community agency, developing civic responsibility, promoting diversity, equity, and inclusion, and practicing anti racism guided by the following values. The Center's goals are to

Engage Based on Community-Identified Priorities
Foster Student Reflection, Learning, & Civic Commitment
Advance Community-Engaged Teaching & Research
Build Capacity for Just & Sustained Community Engagement

Center - Technological Responsibility, Re-Imagination, and Redesign (CTRN) https://cntr.brown.edu/

The mission of the Center, a research center within the Data Science Institute, is to redefine computer science education, research, and technology to center the needs, problems, and aspirations of all – and especially those that technology has left behind and in ways that put people first. Through its research and educational mission, the Center shows how to build technology that works—for all—by ensuring a focus not on what we build, but on the people we are building for. The Center engages students at all levels in transdisciplinary research to create new tools and technologies, influence technology policy, and rethink how we educate the technological workforce, with an eye to impact-driven work. We collaborate widely across Brown's campus and with other institutions and organizations.

Center - Translational Neuroscience (CTN)

https://www.brown.edu/carney/ctn

The Brown Center for Translational Neuroscience (CTN) synergizes the missions of the Robert J. and Nancy D. Carney Institute for Brain Science and the Brown Institute for Translational Science (BITS). The mission of the CTN is to advance knowledge of the pathogenesis of brain disease and to translate this knowledge to improved clinical outcomes for families affected by brain disease. The mission has an emphasis in research and training related to deciphering disease pathogenesis, identification of new targets for molecular interventions, and development of improved diagnostics and biomarkers.

In establishing the first formal collaboration between the Carney Institute and BITS, the CTN is a bench-to bedside, "go-to" hub facilitating translational neuroscience research at Brown University and the clinical neuroscience departments in the Warren Alpert Medical School and affiliated hospitals. The CTN builds upon and complements current translational research strength and expertise at Brown, with a central focus on

specific brain diseases.

A key element of the CTN is multidisciplinary team science with a focus in molecular medicine. The science of the CTN starts with patients and takes the specific approach of genetically inspired translational neuroscience. To this end, an emphasis in the CTN is to follow the logic of genetics based in the approach of a translational neuroscience cycle of research. This cycle moves back and forth from fundamental basic research to clinical research — with each stage providing key information that can be integrated into clinically relevant solutions — and, thereby, serves families affected by brain disease.

Center - Writing Center
https://sheridan.brown.edu/services/writing-center

The Writing Center is an academic support service, staffed by graduate students from a variety of academic disciplines, available for all members of the Brown Community. Writing Center staff members are experienced writers and teachers who participate in ongoing training in composition theory and practice. Along with holding one-on-one conferences, Associates in the Writing Center offer various workshops on writing for interested groups. Writing Center conferences generally last an hour. Writing Center Associates are prepared to discuss all stages of the writing process, from finding a topic up through revision and editing strategies. Associates can help writers deal with writer's block, audience awareness, argumentation, organization, grammar, research skills, and the conventions of academic writing

Department - BioMed Ecology and Evolutionary Biology (EEB)
https://www.brown.edu/academics/ecology-and-evolutionary-biology/

The Department of Ecology, Evolution, and Organismal Biology at Brown University shares a common interest in how organisms function, how they interact with their environments and how the mechanisms that sustain these processes have evolved over time. Our work is directed toward understanding biological systems at the gene, individual, population, and community levels of organization. Major conceptual areas pursued by our department include animal locomotion and functional morphology, ecology of marine and terrestrial communities, conservation biology and environmental science, and population and evolutionary genomics. We study a wide variety of organisms - both living and extinct - spanning the tree of life, including microbes, plants and algae, marine invertebrates, terrestrial arthropods, reptiles, birds, and mammals, including humans.

Department - BioMed Molecular Biology, Cell Biology and Biochemistry (MCB) https://www.brown.edu/academics/biomed/molecular-cell-biochemistry/

The Department of Molecular Biology, Cell Biology and Biochemistry is a basic science department within the Brown University Division of Biology and Medicine. Its core areas of scholarship are broad and encompass biochemistry, cell biology, developmental biology, and genetics. The department supports undergraduate, graduate, and medical education in these fields, offering a large variety of courses from introductory to highly specialized levels. The department currently houses 28 primary faculty whose research programs cover a wide array of biological questions, model systems, and methodological approaches. The biological phenomena under investigation range from embryonic and neuronal development, reproduction and genetics of behavior to neurodegeneration and aging. The biological mechanisms being addressed include DNA replication, recombination and transcription, RNA processing and transport, protein translation, protein folding and turnover, vesicular transport, and numerous aspects of molecular signaling. Model systems range from prokaryotic, through plant and several metazoan species to mammals including humans. Classical biochemical and genetic approaches are used alongside innovative technologies including genomics, proteomics, X-ray crystallography, and mouse transgenics. The department is also the centerpiece of an interdisciplinary and interdepartmental graduate program in Molecular Biology, Cell Biology and Biochemistry leading to the PhD degree

Department - BioMed Neuroscience (Neuro)
https://www.brown.edu/academics/neuroscience/

Neuroscience: basic functions and diseases of the nervous system. Areas of interest include neural plasticity, information processing, and neuronal and synaptic functions, particularly as they relate to development, sensory

perception, motor behavior, and cognition. The 20 campus-based neuroscience faculty train undergraduate, graduate, postdoctoral, and medical students in molecular, cellular, developmental, systems, cognitive, and theoretical neuroscience. There are currently 42 doctoral students in the Neuroscience Graduate Program and the innovative Brown-NIH Graduate Program Partnership, and 122 undergraduate students are enrolled in the neuroscience concentration. Members of the Department also participate in the MRI Research Facility, the Center for Vision Research, and several NIH and NIMH training grants for graduate and postdoctoral fellows studying neuroscience and vision sciences. The Department is also a cornerstone of Brown's Institute for Brain Science, a multidisciplinary consortium of about 90 faculty from 11 departments that promotes collaborative theoretical and experimental studies of the brain, and the Norman Prince Neurosciences Institute at Rhode Island Hospital.

Department - BioMed Molecular Microbiology and Immunology (MMI)
https://www.brown.edu/academics/medical/molecular-microbiology-and-immunology/

Molecular Microbiology and Immunology (MMI): The MMI Department supports undergraduate, graduate, and postdoctoral education by providing an interdisciplinary structure for training programs. The department's overall mission is to maintain an active and integrated research program for studying the interactions between pathogenic microbes and their hosts that influence the outcome of infections. MMI fosters collaborative studies within the department as well as with faculty in other departments, both on campus and hospital-based. MMI provides instruction and a nurturing environment for undergraduate, graduate, and medical students in the areas of microbiology and immunology. MMI's instruction includes lecture courses, seminar courses, and laboratory research (undergraduate independent study and graduate thesis).

Department - BioMed Pathology and Laboratory Medicine
https://www.brown.edu/academics/biomed/departments/pathology/home

Department of Pathology and Laboratory Medicine forms a bridge between the basic sciences and clinical medicine, bringing the newest scientific concepts to enhance understanding of the biologic basis of disease. Basic science research in pathobiology addresses how a sequence of biologic events leads to a disease state. Translational and clinical research bridges basic mechanistic research to advances in clinical diagnosis and treatment of human disease. Diagnostic testing in Pathology and Laboratory Medicine at Warren Alpert Medical School of Brown University is performed at the hospital affiliates; 90 faculty are located at Brown University, Rhode Island Hospital, The Miriam Hospital, Women & Infants' Hospital, and the Office of the Medical Examiner at the Rhode Island Department of Health. All campus and hospital-based faculty participate in teaching and advising undergraduates, graduate students, medical students, residents, and postdoctoral and clinical fellows. These trainees work together in multidisciplinary teams involving pathologists, biomedical scientists, clinicians, chemists, and engineers on basic and applied research projects related to human disease.

Department - BioMed Psychiatry and Human Behavior (DPHB)
https://www.brown.edu/academics/medical/psychiatry-and-human-behavior/home

The Department of Psychiatry and Human Behavior (DPHB) within the Warren Alpert Medical School of Brown University has a research infrastructure that is designed to facilitate the development and continued success of a structured and comprehensive program of research. The Department has more than 100 academic faculty and 65 postdoctoral trainees, plus dozens of residents and psychology interns. The university and department have a well-established administrative and financial structure. The DPHB also has a well-established research infrastructure, which includes a Research Technology Service Core, comprised of technology infrastructure units directed by nationally recognized senior scientists who are experts in the technology. DPHB was recently cited by an external panel of peers as one of the seven-benchmark academic departments of psychiatry in the country. The high caliber of education, training, research, community service, and national and international publications and presentations conducted and produced by DPHB faculty and trainees are a major reason why many are

considered leaders in their respective specialties. Research activities conducted by DPHB faculty include close to 200 ongoing studies funded by more than 50 external sources such as the National Institute of Mental Health (NIMH), National Cancer Institute (NCI), National Institute of Child Health and Human Development (NICHD), National Institute on Drug Abuse (NIDA), National Institute of Alcohol Abuse and Alcoholism (NIAA), and that National Alliance for research on Schizophrenia and Depression (NARSAD).

The Brown University DPHB Research Group

The Brown University DPHB Research Group is currently comprised of 12 academic psychologists, 3 academic psychiatrists, and 5 post-doctoral fellows in psychology. There are also 5 administrative and support staff, and Information Technology Specialists are available through the university. The DPHB research core contains the Clinical Assessment and Training Unit, Quantitative Sciences Program, and *Implementation Science Core*, which provide trainings across the Department. Brown University leases 10,000 square feet of office space, specifically designed for research, on the Butler Hospital campus. Faculty members meet regularly to discuss and critique each others' grant proposals and manuscripts.
The Brown University DPHB Research Group office space has a significant number of private offices and storage space to house the program. All staff have access to telephones, printers, fax machines, photocopiers, etc. Brown University provides its community with extensive choice of work-related tools, including electronic access to the library, computer systems, servers, software, databases, campus email, voice mail systems, and the Internet. These systems are made available to the University community through an advanced broadband, coaxial and fiber local area network that features data transfer rates up to 100 MBPS. Every employee has a desktop computer, to be used for data entry, data analysis, and centralized communications among investigators and research staff. For data analysis, the system offers SAS, S-Plus, Stata, and SPSS, as well as database languages such as SQL and CACHE.

Implementation Science Core.

The Implementation Science Core collaborates with the other DPHB Cores, the Quantitative Science Program and Qualitative Science and Methods Training Program (QSMTP), to foster the translation, spread, and scale up of evidence-based practices into routine clinical care. *A. Rani Elwy, PhD, Associate Professor and Director of the Implementation Science Core*, hosts regular office hours each week to work with faculty across the six Brown affiliated hospitals (including Providence VAMC), along with psychiatry residents and clinical psychology interns and fellows, to 1) provide consultation on dissemination and implementation (D&I) science models, theories and frameworks to guide studies, 2) develop qualitative and quantitative methods specific to D&I science research questions (such as formative evaluations, stakeholder engagement methods, implementation strategies, hybrid designs, etc.) and 3) serve as co-investigator on projects as the implementation science expert. Dr. Elwy also mentors those developing NIH K or VA Career Development Awards in implementation science. In addition to specific consultations, Dr. Elwy runs two different educational sessions for DPHB faculty, residents, fellows and interns: 1) a six-week fundamentals of D&I science series, held each semester; and 2) intermediate level workshops on D&I science, held twice per semester. Additional workshops are held each year for the T32 training program in clinical psychology and QSMTP. The Implementation Science Core also hosts an annual D&I Forum, where individual faculty projects are highlighted, and which culminates in a Grand Rounds lecture given by an invited, internationally-known researcher in D&I science.

Department - Chemistry

https://www.brown.edu/academics/chemistry/about

Chemistry: The Chemistry Department at Brown engages scientific problem-solving that advances our understanding of chemistry from the most fundamental level and addresses the needs of today's society. Chemists at Brown advance knowledge and discovery in theoretical, physical, inorganic, organic, materials, and biological chemistry. Innovative research areas include sustainability and green chemistry, chemistry and medicine, design and application of new materials, and novel methods of understanding molecular dynamics and reactions. Brown Chemistry research groups, in collaboration with other Brown schools and departments, as well as national laboratories, prepare students to succeed in a complex and changing world.

The department offers academic programming that includes introductory and advanced courses, a doctoral program, and three undergraduate concentrations: Chemistry, Biochemistry, and Chemical Physics. To complement academic programs, the department's weekly colloquium series and other seminars and events connect Brown with faculty and industry leaders throughout the world—including departmental alumni—to enrich students' learning as they engage and develop their intellectual independence.

Department - Computer Science

https://cs.brown.edu/

Department of Computer Science: Since its inception in 1979, the Computer Science Department at Brown has forged a path of innovative information technology research and teaching at both the undergraduate and graduate levels. From modest beginnings as an interest group within the Divisions of Applied Mathematics and Engineering in the 1960s to its current stature as one of the nation's leading computer science programs, the Computer Science Department has continuously produced prominent contributors in the field, at both the undergraduate and graduate levels. The Department is a diverse community of scholars engaged in all aspects of research, teaching and mentoring in computer science and its related interdisciplinary disciplines. Realizing the importance of computing and algorithmic thinking in so many scientific, social and technological endeavors, the faculty collaborate extensively with colleagues in archaeology, applied mathematics, biology, cognitive and linguistic sciences, economics, engineering, mathematics, medicine, physics and neuroscience.

Computer Science undergraduate offerings reflect the department's multidisciplinary orientations, with joint concentrations in mathematics, applied mathematics, computational biology and economics. There are strong undergraduate research groups in graphics, neuroscience and robotics as well as a long history of involving undergraduates in projects that span disciplinary boundaries. Graduate students find it easy to tailor their education to meet the challenges of multidisciplinary research and commonly have advisors in two or more departments.

Computer Science graduate students find it easy to tailor their education to meet the challenges of multidisciplinary research and commonly have advisors in two or more departments. Research in the department crosses traditional boundaries and projects spring from shared interests more than from established groups. Faculty work with postdoctoral students, graduate students and undergraduates with ideas and expertise are drawn from other disciplines and departments at the University. A long tradition of combining theory and practice is as strong and relevant today as it ever was. Research areas the department participates in include: algorithms; cloud computing; computational biology; computational geometry; computational neuroscience; computational photography; computer graphics; computer networks; computer vision; cryptography; data management; distributed systems; educational technology; electronic commerce; information visualization; intelligent agents; machine learning; mobile and ubiquitous computing; nanocomputing; natural language processing; operating systems; optimization; parallel computing; programming languages; robotics; scientific visualization and modeling; security and privacy; sensor networks; software engineering; user interfaces; theory of computation; verification and reliable systems; virtual reality.

Department - Earth, Environmental, and Planetary Sciences
https://www.brown.edu/academics/earth-environmental-planetary-sciences/

Department of Earth, Environmental, and Planetary Sciences (DEEPS): With its unique interdisciplinary research opportunities and collegial atmosphere, DEEPS is rated among the top programs in the world. Our internationally-known faculty engage in externally supported research in the following research fields: geochemistry, mineral physics, igneous petrology; geophysics, structural geology, tectonophysics; environmental science, hydrology; paleoceanography, paleoclimatology, sedimentology; and planetary geosciences. Emphasis in these different areas varies, but includes experimental, theoretical, and observational approaches as well as applications to field problems. Field studies of specific problems are encouraged rather than field mapping for its own sake. Interdisciplinary study with other departments and divisions is encouraged.

Students in DEEPS develop a comprehensive grasp of principles as well as an ability to think critically and creatively. Formal instruction places an emphasis on fundamental principles, processes, and recent

developments, using lecture, seminar, laboratory, colloquium, and field trip formats. Undergraduates as well as graduate students have opportunities to carry out research in current fields of interest.

Department - Mathematics
https://www.brown.edu/academics/math/

Department of Mathematics: The Department of Mathematics enjoys a rich historical tradition of research and education in many fields of pure mathematics, with particular strengths in algebra and number theory, geometry and topology, probability, and analysis. The Department, which counts many internationally recognized researchers among its faculty ranks, nurtures an informal environment for students that emphasizes creative

models for scholarship and learning. As data science challenges require increasingly complex methodologies and algorithms, the Department's expertise in tools from cryptography, harmonic analysis, probability, and even topology has become central to developing our understanding of data science's foundational questions, and the Department's courses in these areas serve as a theoretical foundation to the methodological research and curricular offerings in data science.

The undergraduate program in mathematics at Brown is designed to present students with challenging courses that will train them for any future they desire be it in the economy, in government, or in academe. It is also quite flexible in placing students, the goal being to discover a student's level of competence and then offering a stimulating course. The department supports approximately 40 to 50 graduate students in a PhD program whose graduates populate top mathematics departments and prominent positions in industry. Joint graduate courses and seminars with the adjacent Division of Applied Mathematics add to the breadth of offerings available to our graduate students.

The Mathematics Department at Brown balances a lively interest in students and teaching with a distinguished research reputation. Several strong research groups, Analysis, Algebraic Geometry, Geometry and Topology, and Number Theory, all have active weekly seminars that draw speakers ranging from the local to the international.

Department - Physics
https://www.brown.edu/academics/physics/welcome

Department of Physics: Physics has been in the Brown curriculum since 1772; today, Brown University has a vibrant Physics department with 27 faculty members and 12 joint and affiliated faculty members, all pursuing the frontiers of physics. Some members are developing advanced theories to explain phenomena as grand as the origin of our universe and the nature of matter. Others are pushing the limits of physics to detect new fundamental particles and dark matter, as well as building incredibly sensitive devices based on quantum physics. The Department has multiple strong research clusters spanning the discipline of physics, including high energy, cosmology/astrophysics, condensed matter, and biophysics. The Department boasts two Nobel Laureates (Leon N. Cooper and J. Michael Kosterlitz), the co-discoverer of the Higgs mechanism and Higgs boson (Gerald Stanford Guralnik), and the 2011 Fritz London Memorial Prize winner (Humphrey J. Maris).

Graduate students and postdoctoral researchers are trained to become next generation physicists and future leaders in academia, government, NGOs, or the private sector. Physics graduate students receive the most comprehensive education in scientific and mathematical methods, as well as the problem-solving process. Students have full access to the most advanced research facilities and our world-renowned faculty, who care very much about them. Students also benefit from strong links to the School of Engineering, Chemistry, and Earth, Environmental and Planetary Sciences departments, and, with this application, the Biological Data Science community.

Department - SPH Behavioral and Social Sciences
https://www.brown.edu/academics/public-health/bss/home

School of Public Health (SPH) Department of Behavioral and Social Sciences (BSS) is a multidisciplinary academic department in the Brown University School of Public Health. Over 50 BSS faculty members are actively

engaged in research and teaching to understand the behavioral and social determinants of public health problems and to develop interventions to change behaviors and improve social contexts related to public health. BSS faculty conduct collaborative research with a substantive focus on behavioral health issues such as alcohol and other drug abuse; smoking and tobacco use; obesity, nutrition, and physical activity; HIV and sexually transmitted infections; and health disparities and culture. The Department of Behavioral and Social Sciences offers courses of study leading to Master of Science (ScM) and Doctor of Philosophy (PhD) degrees in Behavioral and Social Health Sciences. BSS faculty also teach and advise Brown undergraduates and train and mentor postdoctoral research fellows

Department - SPH Biostatistics
https://www.brown.edu/academics/public-health/biostats/home

School of Public Health (SPH) Department of Biostatistics: The mission of the Department of Biostatistics at Brown is to conduct fundamental research that generates new discoveries in theory and methods of statistics and data science; to provide expertise and leadership and to promote interdisciplinary research in domain areas related to human health and the life sciences; to develop future researchers and professionals in the field of biostatistics through a graduate program that combines rigorous training in theory and methods with meaningful engagement in interdisciplinary research; to provide high-quality courses and mentoring in biostatistics and data science for the broader community of students and researchers at Brown; and to serve the academic community at Brown and the scientific community at-large by providing intellectual and organizational leadership and collaboration on programs in the statistical and data sciences.

Department - SPH Epidemiology

https://www.brown.edu/academics/public-health/epi/home

School of Public Health (SPH) Department of Epidemiology: The primary mission of the Department of Epidemiology is to provide excellence in teaching and training in the field of epidemiology. The graduate program offers master's and doctoral degrees to prepare students for careers in research or professions in public health which require knowledge of advanced epidemiologic methods. The department excels in research, education, and service covering the entire life-course for health outcomes in diverse populations, particularly focusing on critical windows of development (i.e., during and after pregnancy and during childhood and young adulthood). There are 19 primary faculty and more than 25 additional faculty associated with the Department of Epidemiology at the Brown School of Public Health. The faculty are world-renowned researchers whose expertise include cancer, environmental health, global health, mental health, infectious disease, maternal and child health, molecular, health disparities, obesity, substance use, mindfulness, and epidemiologic methods. The Department also collaborates with faculty in social sciences, basic biomedical sciences, and clinical departments at Alpert Medical School and its affiliated hospitals (e.g., Cardiology, Endocrinology, Obstetrics/Gynecology, Pediatrics, and Psychiatry). The department includes faculty engaged full-time in research and teaching, as well as importantly clinical faculty and faculty members jointly appointed with Brown University and the Rhode Island Health Department.

Department - SPH Health Services, Policy & Practice (HSPP)

https://www.brown.edu/academics/public-health/hspp/home

School of Public Health (SPH) Department of Health Services, Policy & Practice (HSPP) includes 25 full-time faculty based at 121 South Main Street in Providence, 73 faculty from other Brown University departments that have secondary appointments and other affiliated faculty. The Department's mission is to develop and disseminate new knowledge that helps to deliver effective, efficient, continuously improving and just public health and health care services. This is accomplished through innovative research, engaged teaching, creative training and mentoring and collaborative engagement with policy makers and service providers. The Department values innovation, creativity, promotion of diversity, multidisciplinary collaboration, community engagement, and excellence. The long-term goal is to catalyze the delivery of higher quality and more cost-effective public health and health care services.

The Department has developed relationships with a wide variety of partners and collaborators. Within Brown University these include the Departments of Medicine, Surgery, Psychiatry and OB/Gyn at the Medical School, and the Departments of Economics, Sociology and Computer Science on campus. The Department has a strong and long-standing relationship with the VA Providence Healthcare System. In addition, the department has relationships with a number of important Rhode Island state agencies including the Department of Health, the Executive Office of Health and Human Services (EOHHS) and the RI Medicaid Program. These and other partners and collaborators allow faculty and trainees to participate in multidisciplinary collaboration in a variety of academic and policy setting.

Division - Applied Mathematics

https://www.brown.edu/academics/applied-mathematics/

Division of Applied Mathematics: The Division of Applied Mathematics is one of the most prominent departments

at Brown, and one of the oldest and strongest of its type in the entire country. The Division had its origin in the program of Advanced Instruction and Research in Mechanics, established in 1941 on the recommendation of a committee of the National Research Council. This early program focused on solid and fluid mechanics, electromagnetic theory, mathematical methods in applied physics, numerical analysis and probability theory—the principal interests of the faculty for many years. Since then the interests of the faculty have expanded and diversified, as the Division has maintained a leading role in the development of applied mathematics both in the United States and throughout the world. In 1964, for example, the Center for Dynamical Systems was established to coordinate the research of a large group of people working in ordinary and partial differential equations and their applications. More recently, programs at the forefront of research in scientific computing and in applied probability and statistics have been established.

The Division's mission rests in research, education, and scholarship. The faculty engages in research in a range of areas from applied and algorithmic problems to the study of fundamental mathematical questions. By its nature, the Division's work is and always has been inter- and multidisciplinary. Among the research areas represented in the Division are dynamical systems and partial differential equations, control theory, probability and stochastic processes, numerical analysis and scientific computing, fluid mechanics, computational molecular biology, statistics, and pattern theory. The graduate program in applied mathematics includes around 50 Ph.D. students, with many of them working on interdisciplinary projects. Applied Math offers undergraduate degrees in Applied Mathematics, Applied Math–Biology, Applied Math–Computer Science, and Applied Math–Economics. The faculty actively involve undergraduates in summer research projects and offer many independent studies every year.

The Applied Math graduate program provides training and research activities in a broad spectrum of applied mathematics. The principal areas of research activities represented in the Division of Applied Mathematics are ordinary, functional, and partial differential equations; probability, statistics and stochastic systems theory; neuroscience, pattern theory, and computational/mathematical biology; numerical analysis and scientific computation. The effort in virtually all the research areas ranges from applied and algorithmic problems to the study of fundamental mathematical questions; many of our faculty are engaged in interdisciplinary research collaborations with colleagues here at Brown or elsewhere. This breadth is one of the great strengths of the program and is further reflected in the courses we offer. Brown guarantees financial support for five years, including summer support for 2.5 months, and generous health benefits. The Applied Math graduate program focuses on doctoral training.

Division - Biology and Medicine
https://www.brown.edu/academics/biomed/about-division-biology-and-medicine

Division of Biology and Medicine: Comprising the Program in Biology and the Warren Alpert Medical School (AMS), the Division is home to five biology departments offering undergraduate and graduate courses, 14 clinical departments, and one hybrid department (with both clinical and campus-based faculty). The Division of Biology and Medicine (BioMed) is the administrative home for faculty whose primary roles are in research, education, or clinical care in the domains of biology and medical science. This organizational structure encourages multidisciplinary instruction and research, a hallmark of education at Brown and unites the departments into a

cohesive unit with a common mission: to understand the underpinnings of human life and the study, prevention, and treatment of disease.

Division of Biology and Medicine by the Numbers 2025 – BioMed Facts and Figures https://biomedical.brown.edu/about-division

Initiative - Data Science Initiative (DSI)
https://www.brown.edu/initiatives/data-science/home

Data Science Initiative (DSI): The DSI is a new collaboration at Brown between Applied Mathematics, Biostatistics, Computer Science, and Mathematics, that seeks to develop research and training around methodologies in Data Science and applications to domains. The DSI leverages established academic strength to build a campus hub for research and education in foundational methodologies of data science, maintaining an outward focus on application areas and critical engagement with questions of the impact of the data revolution

on society, culture, and social justice. Academic and professional programs are offered for a rigorous, distinctive, and innovative approach to learning and collaboration for anyone building a career in data-enabled fields. Building on Brown's strength in the computational, mathematical, and statistical sciences, the DSI reaches out to support and connect with data-driven work across the campus, driving research in an increasingly interconnected University. The DSI focuses on the foundations of model-driven discovery from massive data. It supports broad engagement with the campus community through public lectures, panel discussions, boot camps, and other projects, and explores the challenges in translating data into knowledge and in understanding its impact. DSI industrial partners give students and faculty the opportunity to work hands-on, addressing problems arising in industrial settings, while giving partners the chance to leverage cutting-edge research and student creativity in their domains.

Initiative - Global Health (GHI)

https://www.brown.edu/initiatives/global-health/

The Global Health Initiative is a multidisciplinary university-wide effort to reduce health inequalities among underserved populations locally and worldwide through education, research, service and development of partnerships.

The GHI is distinguished by an integrative, overarching approach to the fundamentally interrelated problems of health and development. One key advantage of the GHI is its ability to bring together the social, cultural, and human dimensions of global health problems and their biomedical and technological elements under a single umbrella. Building upon Brown's expertise in both population analysis and infectious disease intervention, the Initiative offers high impact education, research, and service opportunities for students and faculty, and addresses issues of capacity, infrastructure, environment, and health care delivery to reduce the burden of disease in impoverished communities.

Initiative - Planetary Health

https://planetary-health.brown.edu/

Planetary health research and scholarship in the Division of Biology and Medicine spans institutions and intersects many fields of inquiry, from public health to disease ecology, conservation biology, emergency medicine, psychiatry, and beyond.

Institute - Biology Engineering and Medicine (I-BEAM)

This Institute is the only joint academic program of the School of Engineering and the Division of Biology and Medicine. This Institute's research improves human health through cross-disciplinary studies and educational activities that integrate the engineering, physical sciences, life sciences, and clinical practice. I-BEAM also oversees and administers degree programs in Biomedical Engineering for undergraduates, masters students, and PhD students.

I-BEAM faculty are drawn from across the campus academic departments as well as the School of Engineering and the clinical departments of the Division of Biology and Medicine. Their dual status as I- BEAM faculty and members of academic departments makes them well poised to bring the very latest in their disciplines to bear on the complex and multi-disciplinary problems of biomedical engineering. Many of our researchers bridge the gap between clinical and basic research through interaction with Brown's affiliated hospitals including Rhode Island Hospital, Providence Veterans Affairs Medical Center, and Miriam Hospital.

Institute - Brown for Environment & Society (IBES)

https://ibes.brown.edu/research

Institute at Brown for Environment & Society (IBES): The Institute at Brown for Environment & Society (IBES) supports research to understand the interactions between natural, human and social systems. IBES teaching programs prepare future leaders to envision and build a just and sustainable world. IBES work combines an understanding of the natural world and of human societies because environmental stewardship, human rights, and economic well-being are inextricably linked. Through an unique interdisciplinary approach, IBES fosters

actionable research outcomes and the change agents of tomorrow. The Institute's engagement programs take research from the lab to the statehouse, the hospital, and the public sphere. The Institute has research strengths in Climate Misinformation and Climate Policy, Navigating the New Arctic Frontier, and Conservation in the Context of Climate Change.

Institute - Brown Institute for Translational Science (BITS)
https://www.brown.edu/translational-science/initiatives

The cornerstone of the strategic plan is the Brown Institute for Translational Science (BITS). BITS builds on Brown's existing strengths in areas of societal importance, embraces the University's culture of interdisciplinary collaboration, and harnesses the potential of clinical partnerships and the state of Rhode Island's unique demography to accelerate discovery and application to human health.

BITS is composed of horizontally integrated research teams that will allow scientists and clinicians to work together along a common continuum. The integrating factor can be a disease, biologic pathway, investigative approach, or problem in society. In these teams, basic scientists make lab- or data-based discoveries and then work with master clinicians and physician-scientists to evaluate the importance of their findings in well characterized patient populations. Other investigators then look at the policy consequences of these findings, and focus on ways this knowledge can be used to generate companies and commercial products for patients.

The following horizontally integrated research centers have been established from

BITS: • Brown Center for Biomedical Informatics

• Brown Center for Digital Health

• Center for the Biology of Aging

• Center for Translational Neuroscience

• Center to Advance Predictive Biology

• Legorreta Cancer Center

Institute - Brown University Health Cancer Institute
https://www.brownhealth.org/centers-services/cancer-institute

The Brown University Health Cancer Institute at Rhode Island and its Hasbro Children's, The Miriam, and Newport hospitals provides the most current cancer diagnosis and treatment options. Our world-renowned physicians and specialists form multidisciplinary teams, both in the hospitals and at the Brown University Health Ambulatory Care Centers in East Greenwich and Lincoln. Their collective level of knowledge and experience is unparalleled in the region. Additional experts–including nurses, nurse navigators, pharmacists, social workers, and nutritionists–work with patients and their families to ensure complete care from diagnosis through recovery. The Brown University Health Cancer Institute is certified as a quality oncology practice by the American Society of Clinical Oncology.

Institute - Carney Institute for Brain Science
https://www.brown.edu/carney/node/1

Carney Institute for Brain Science: The Carney Institute for Brain Science advances multidisciplinary research, technology development, and training in the brain sciences and works to establish Brown University as an internationally recognized leader in brain research. The Institute unites more than 100 faculty from a diverse group of departments at Brown, spanning basic and clinical departments, and physical and biological sciences. The Carney Institute provides a mechanism to advance interdisciplinary research efforts among this broad group and provides essential support to obtain and administer multi-investigator grants for research, infrastructure, and training. The Institute actively seeks new training funds to support interdisciplinary education that transcends that available in individual academic departments.

The Carney Institute community is united under the common theme of understanding how brain circuits generate and control complex behavior. Carney Institute faculty members have pioneered research to give paralyzed individuals the ability to move prosthetic limbs, move their own limbs, and to control devices through brain computer interfaces; to develop new non-invasive tools to visualize and control brain function; to reveal the reward mechanisms in the brain that govern motivation and choice; to study and suppress diseases including ALS, spinal muscular atrophy, drug addiction, and epilepsy; to discover cells behind the retina in the eye that control the body's internal clock; and to discover mutations in genes that cause neurodevelopmental disorders including Christianson Syndrome. Carney Institute faculty are using computational and machine learning approaches for the diagnosis, assessment, and treatment of neurologic and psychiatric disorders including Parkinson's Disease, depression, chronic pain, and autism. Ongoing projects range from a single laboratory to multiple institutions, and from early-stage, high-risk high-reward projects to well-established research efforts.
Centers within the Carney Institute include.

Center for Alzheimer's Disease Research
https://alz.carney.brown.edu/
Brown University's Center for Alzheimer's Disease Research is committed to advancing early detection and individualized treatment for Alzheimer's disease and related dementias. Housed within the Carney Institute, the Center for Alzheimer's disease Research catalyzes collaborations across basic and clinical research groups toward uncovering when, where and how Alzheimer's disease first arises to advance the pace toward treatment. Our research projects integrate knowledge across biological systems in humans, including behavioral, neural, vascular and immune.

Center for Computational Brain Science
https://ccbs.carney.brown.edu/

The Center for Computational Brain Science (CCBS) within the Carney Institute for Brain Science harnesses Brown University's expertise in computation, cognition and systems neuroscience toward new brain health solutions. To demystify how the brain accomplishes complex tasks with precision and speed, the CCBS fosters collaborations between basic brain science researchers and engineers, mathematicians and computer scientists, and brings computational neuroscience innovations to clinical applications and commercialization.

Center for the Neurobiology of Cells and Circuits
https://www.brown.edu/carney/research/centers-initiatives-core-facilities/center-neurobiology-cells-and-circuits
The center advances the understanding of the function of neural circuits, building on a foundation of genetic, molecular, and cellular approaches. Center faculty produce vital knowledge to advance understanding and treatment of autism, neurodegeneration including Alzheimer's and ALS, chronic pain, psychiatric illness, migraine, addiction, and epilepsy.

Center for Translational Neuroscience
https://www.brown.edu/carney/ctn

The Brown Center for Translational Neuroscience (CTN) synergizes the missions of the Robert J. and Nancy D. Carney Institute for Brain Science and the Brown Institute for Translational Science (BITS). The mission of the

CTN is to advance knowledge of the pathogenesis of brain disease and to translate this knowledge to improved clinical outcomes for families affected by brain disease. The mission has an emphasis in research and training related to deciphering disease pathogenesis, identification of new targets for molecular interventions, and development of improved diagnostics and biomarkers.

In establishing the first formal collaboration between the Carney Institute and BITS, the CTN is a bench-to bedside, "go-to" hub facilitating translational neuroscience research at Brown University and the clinical neuroscience departments in the Warren Alpert Medical School and affiliated hospitals. The CTN builds upon and complements current translational research strength and expertise at Brown, with a central focus on specific brain diseases. A key element of the CTN is multidisciplinary team science with a focus in molecular medicine. The science of the CTN starts with patients and takes the specific approach of genetically inspired translational neuroscience. To this end, an emphasis in the CTN is to follow the logic of genetics based in the approach of a translational neuroscience cycle of research. This cycle moves back and forth from fundamental basic research

to clinical research — with each stage providing key information that can be integrated into clinically relevant solutions — and, thereby, serves families affected by brain disease.

Center for Central Nervous System Function - COBRE
https://www.brown.edu/research/projects/central-nervous-system-function/

The National Institute of General Medical Sciences (NIGMS), NIH funded COBRE Center for Central Nervous System Function focuses on the brain processes that underlie attention, decision making and action. The COBRE Center for Central Nervous System Function is a subunit of the Carney Institute for Brain Science.

Purposeful human behavior requires attention, decisions and action, all basic functions mediated by brain networks primarily located in the neocortex but modulated and shaped by sub-cortical processing. Behavioral and brain mechanisms of attention, including vigilance, orienting and perceptual and action selection, are key gateways into high-level function. Thus, in a general and even specific sense, attention, decision making and the ensuing actions define human mental activities. Deficits in these functions are common in both neurological and psychiatric disorders and can result in a wide range of higher-order behavioral deficits. In 2013, with funding NIGMS, we established our Phase I COBRE Center at Brown University that investigated the mechanisms of higher-brain function, with a focus on attention, decision making and action and disorders that modify these key systems, using a combination of genetic, behavior, and systems neuroscience approaches.

Center for Neuromodulation - COBRE
https://www.butler.org/services/cobre/

The mission of Butler's CCN is to support innovative clinical research in neuromodulation (brain stimulation) and the career development of investigators in this field. The work couples brain stimulation methods with readouts of brain activity (e.g., using various neuroimaging, behavioral, and physiological assessment methods) in clinical or clinically relevant populations. The CCN provides a platform for the exchange of scientific insights and technical skills and mentoring so project leaders can move towards scientific independence. A robust pilot project award program provides support for new proposals and scientists who stand to contribute to a sustainable pipeline of researchers in clinical neuromodulation. The CCN focuses on neuropsychiatric illness with the guiding principle that for noninvasive brain stimulation to gain clinical efficacy and implementation, it is imperative to better characterize clinically relevant target circuits and mechanisms of action.

Institute - Data Science
https://dsi.brown.edu/about

DSI at Brown University engages people across campus and beyond to: Educate all in data fluency and advanced area-specific applications of data science methods; Stimulate large-scale multidisciplinary research developing and applying data science methods to multiple data modalities; Ensure that the power of data be leveraged toward a more equitable society.

Institute - Hassenfeld Child Health Innovation Institute (HCHII)
https://www.brown.edu/hassenfeld/Hassenfeld

Hassenfeld Child Health Innovation Institute (HCHII): The Hassenfeld Institute seeks to integrate research, clinical practice, public health efforts, and educational programs to achieve the following four goals: 1) Improve the health of children, making the communities we serve among the world's healthiest places for children and their families, 2) Address the issue of poverty and how it impacts child health, 3) Serve as a national and international model for what can be achieved in child health and 4) Train the next generation of child health leaders. The Institute aims to make a transformative impact on the lives of children and their families in Rhode Island, as well as around the world. Made stronger by its deep and far reaching collaborations, the Hassenfeld Institute is led by and partners with key organizations throughout Rhode Island. Its core leadership resides under the following four institutions: Brown University's School of Public Health, Hasbro Children's Hospital, the Warren Alpert Medical School of Brown University, and Women & Infants Hospital of Rhode Island. Researchers and child health professionals from other institutions, such as Bradley Hospital, The Miriam Hospital, and its

community partners are also intricately involved.

The work of the Institute employs multidisciplinary research methods to address a broad range of child health issues. The Core Research and Evaluation Unit of the Hassenfeld Institute is tasked with providing the necessary research and evaluation infrastructure to support work on a broad range of health initiatives within the Institute as well as with the Institute partners. This includes extensive analysis and mapping of health data in Rhode Island, as well as launching a birth cohort study with long-term follow-up. Along with the work carried out by the Core Research and Evaluation Unit, the Hassenfeld Institute has assembled teams of experts to implement and assess innovative new approaches to address important child health issues. These teams will form the foundation of the Hassenfeld Initiatives. The Institute's three initial initiatives are: 1) Healthy weight, nutrition and physical fitness, 2) Autism (a precision medicine approach) and 3) Childhood asthma research innovation.

Institute - Institute for Computational and Experimental Research in Mathematics (ICERM) https://icerm.brown.edu/

Institute for Computational and Experimental Research in Mathematics (ICERM): The Institute for Computational and Experimental Research in Mathematics (ICERM) was founded in 2010 through a major grant to Brown University from the National Science Foundation, Division of Mathematical Sciences. The mission of ICERM is to support and broaden the relationship between mathematics and computation: specifically, to expand the use of computational and experimental methods in mathematics, to support theoretical advances related to computation, and address problems posed by the existence and use of the computer through mathematical tools, research and innovation. ICERM supports its mission by developing and hosting research programs and activities that 1) Encourage the creation of new computational methods to advance mathematical understanding, 2) Foster a deeper understanding of algorithms and computational tools, 3) Expose program participants to the use of simulation, visualization, experiments, or computer-assisted proofs, 4) Catalyze new directions of mathematical research through synergistic collaborations across disciplinary areas and research communities, 5) Advance the training and mentoring of graduate students and early-career postdoctoral researchers through exposure to new mathematical areas and computational methods. The Institute benefits from its strong ties to the mathematical sciences departments at Brown and from the vibrant educational community of colleges and universities across New England.

Institute - International Health (IHI)
https://www.brown.edu/academics/public-health/ihi/?utm_source=SPHResearch&utm_medium=accordion

The International Health Institute (IHI) was established in 1988 to develop, promote, and coordinate the international health activities of Brown University faculty and students committed to global community engagement, IHI faculty have established research collaborations with institutions in low and middle-income countries and developed supervised research experiences for Brown University undergraduate, graduate and medical students with our foreign partners. The IHI is one of several academic units involved in strengthening global health research, training and service activities at Brown University. The IHI's mission is to apply interdisciplinary perspectives to research and training to improve the health of populations in developing countries.

Institute - Norman Prince Neurosciences (NPNI)
Norman Prince Neurosciences Institute (NPNI) in RI | Brown University Health

The Norman Prince Neurosciences Institute (NPNI) at BrownHealth is a national leader in the neurosciences, providing exceptional neurological and neurosurgical care to adults with brain or spine disorders and comprehensive care for patients in need of mental and behavioral health care. NPNI renowned specialists offer innovative and collaborative approaches to treating the most complex and challenging illnesses and injuries, while our depth of experience ensures the highest level of expertise in treating the most common conditions.

Program - Biology
http://biology.brown.edu/

Program in Biology: This Program promotes basic scientific research aimed at discovery of fundamental insights into living systems at all levels of complexity with a major emphasis on relevance to human health and disease

mitigation. Faculty of the Program in Biology conduct research on all levels of biological organization: molecular, cellular, organismal and population, and concentration programs with varying degrees of multidisciplinary or specialty foci. The close administrative relationship with the Warren Alpert Medical School offers additional opportunities for blending fundamental biology and clinical sciences in research projects across the institutions. These multidisciplinary research opportunities are a hallmark of Brown University's biomedical programs. Campus-based faculty (127), with primary appointments in the life and biological sciences, collaborate regularly with hospital-based academic faculty members (626) pursuing research at area hospitals.

Program - Brown Research on Implementation and Dissemination to Guide Evidence Use (BRIDGE)

https://psych.med.brown.edu/research/research-core-facilities-and-resources/brown-research-implementation and-dissemination

The BRIDGE program, founded in 2018 as the Implementation Science Core, collaborates with the other Brown Psychiatry and Human Behavior cores, the Quantitative Science Program and Qualitative Science and Methods Training Program (QSMTP), to foster the translation, spread and scale-up of evidence-based practices into routine clinical care. Contact us at implementationscience@brown.edu.

Program - MD, PhD

https://www.brown.edu/academics/biomed/md-phd-program/

The MD, PhD Program was founded in 1979 by the inaugural Chair of the Department of Pathology, Dr. Nelson Fausto. Since its inception, the program has graduated over 60 MD/PhD students with the majority remaining in academic and research careers.

A distinguishing feature of the Brown MD/PhD program is its focus on translational research. Because translational research requires fluency across basic science and clinical medicine boundaries, a defining feature of Brown's program is its heavy integration across the MD and PhD transitions. Traditional MD/PhD programs are structured with two years of medical school followed by 4-5 years of graduate school, culminating with the final two years of medical school. Typically, there is little to no integration across these transitions.

At Brown, the curriculum is designed to inculcate scientific thinking into the MD years, while maintaining clinical perspective and skills during the PhD years. Specifically, MD/PhD students spend the summer after their first and second years of medical school with a research mentor. The students have the opportunity to select research mentors across the graduate programs within the Division of Biology and Medicine with the potential to explore programs within the School of Public Health in certain circumstances. The goal of this research integration during medical school is to enhance scientific thinking while simultaneously streamlining the process of selecting the best research environment for each student. After students matriculate into graduate school and complete their course requirements, they begin a longitudinal clinical clerkship in family medicine, seeing patients one afternoon

every 2 weeks. This clinical experience serves to maintain student's clinical skills and confidence while encouraging them to apply their burgeoning scientific skills to clinical problems.

The Brown MD/PhD program has trained many physician-scientists who occupy leadership positions in translational medicine oriented departments throughout the country. Notable accomplishments of our graduates include developing highly successful NIH-funded research programs, promotion to Chairs of several national medical school departments, as well as founding disease specific, research oriented philanthropic foundations.

The mission and goals of Brown's MD/PhD program were significantly enhanced in 2017 with a 22 million dollar endowment which will allow a marked increase the number of training slots, enhance the programmatic offerings with a particular focus on career trajectories, and, most importantly, matriculate the strongest students.

Programs - Medical Education

https://www.brown.edu/academics/medical/education-programs

Medical Education. The Warren Alpert Medical School has always reflected the ethos of Brown University,

epitomizing the university's goal of training its graduates to lead lives of usefulness and reputation. While the Warren Alpert Medical School is traditionally thought of as a training ground for leaders in primary care, its graduates have gone on to roles across the spectrum, from small town doctors to deans of medical schools to physician-scientists to leaders at the National Institutes of Health. Each year, our graduates match to top-ranked residency programs in both primary care and a wide variety of specialties. This innovation in medical education is evidenced by hallmark initiatives such as:

- The Program in Liberal Medical Education, the eight-year combined undergraduate and medical degree program that allows undergraduates to pursue the breadth and depth of a liberal arts education before entering the Warren Alpert Medical School.
- The Scholarly Concentrations Program, which enables students to focus on individual areas of interest, engaging in intellectual pursuits beyond their core medical studies through intensive, cross-disciplinary research projects. The result is a scholarly product, typically one or more publications in a peer-reviewed journal.
- The Primary Care-Population Medicine Program that leads to both the MD degree and a master's in population medicine, preparing students for careers in medicine while providing comprehensive, longitudinal training in population-level health care. The program was selected as one of the American Medical Association's first 11 Accelerating Change in Medical Education initiatives, which provided a $1 million grant for its launch.
- The two-year Doctoring course that provides students with patient contact within the first two months of medical school. Students work once a week in a community clinical setting with a physician-mentor who provides intensive grounding in medical ethics and professionalism as students master communication and cultural competencies and learn to take patient histories and other clinical skills.

Program - Qualitative Science and Methods Training Program (QSMTP)
https://psych.med.brown.edu/research/research-core-facilities-and-resources/qualitative-science-and-methods training-program

The Qualitative Science and Methods Training Program (QSMTP) methods core, founded in 2017, provides state-of-the-science training and mentoring in qualitative and mixed research methods to postdoctoral and faculty investigators in the health sciences. Qualitative methods involve the use of in-depth interviews, focus groups, cognitive interviews, and/or other procedures to optimize methodological rigor and enhance data richness. Integration of qualitative and quantitative methods ("mixed methods") is increasingly expected in successful patient-oriented research applications to the NIH and other sponsors.

Program - Quantitative Sciences (QSP)
https://psych.med.brown.edu/research/research-core-facilities-and-resources/quantitative-sciences-program

The Quantitative Science Program (QSP) is a methodological and statistical support and consulting center sponsored by the DPHB and the Brown Department of Neurology. The QSP primarily serves DPHB and Neurology faculty in the form of statistical and methodological consulting; statistical and methodological training via formal workshops and seminars; and through individual mentoring in the areas of quantitative methodology (including research and experimental design, survey and sampling methods, basic and advanced multivariate data analysis). The QSP center also actively collaborates with ongoing and proposed research at Brown and across the nation, and conducts independent and methodologically focused research projects.

Program - Wellness
https://wellness.biomed.brown.edu/about-us

The mission of the chief wellness officer is to promote wellness as a core competency for students, faculty, and staff in the Division of Biology and Medicine. The chief wellness officer serves in an advisory and supportive role to the Division by offering timely and progressive interventions to improve well-being by impacting local culture, systems, policies, and environment.

School - Engineering

https://www.brown.edu/academics/engineering/

School of Engineering: Dedicated in 2013 with a strong emphasis on biomedical research and biomedical engineering, the School emphasizes the power of interdisciplinary thought and recognizes that engineering is intertwined with every aspect of human lives. Brown Engineering is a unique place, which emphasizes the power of interdisciplinary thought and recognizes that engineering is intertwined with every aspect of human lives. The School is organized without the traditional departments or boundaries found at most schools; the School's model is focused on making unique connections between the various engineering disciplines. Along with associations with the other scholarly disciplines – biology, medicine, physics, chemistry, computer science, the humanities and the social sciences – Engineering's co-operations bring unique solutions to challenging problems. The School focuses on unique and innovative clustering of faculty; in terms of research groups, engineers of all types team together with non-engineers to tackle some of the biggest problems facing engineering and science today. The School's talents and expertise lie in the interdisciplinary domain where the seemingly diverse disciplines converge. Because of a unique structure and approach to engineering, for example, the lack of formal boundaries between engineering disciplines, research is highly interdisciplinary and often includes connections to other departments on campus outside of the School. In keeping with an interdisciplinary nature, the School of Engineering has no traditional departments and Brown does not award degrees based by specific research area. Areas of study in engineering include: Biomedical Engineering; Chemical and Biochemical Engineering; Electrical Sciences and Computer Engineering; Fluids and Thermal Sciences; Materials Science; Mechanics of Solids; Program in Innovation Management and Entrepreneurship (PRIME) (Master's only) and Executive Master in Science and Technology Leadership (EMSTL).

School - Professional Studies

https://professional.brown.edu/

School of Professional Studies: The School of Professional Studies advances Brown University's commitment to executive education and its mission to develop reflective leaders, to effect change in the world, and to improve human welfare. The School offers outstanding educational programs for executives and professionals who are ready for the challenge.

IE Brown Executive MBA – The focus is for students to learn to lead in the complex, global business environment by integrating core business studies with social sciences and humanities.

Executive Master of Healthcare Leadership – The focus is for students to prepare to transform healthcare policy and delivery with clinicians, executives, advocates, payers and other professionals who will design and implement innovative, sustainable solutions across healthcare.

Executive Master in Cybersecurity – The goal is for students to become transformative cybersecurity leaders in this rapidly evolving field by understanding and applying technical, legal, policy and human factors essential for resilient, secure organizations.

Executive Master in Science and Technology Leadership – The focus is for students to build on existing technical expertise and develop leadership and communication skills with leading professors and accomplished practitioners from science, technology and engineering.

School - Public Health

https://www.brown.edu/academics/public-health/home

Brown's School of Public Health currently occupies 80,000 square feet in an 11-story building owned by Brown University. SPH has 11 interdisciplinary research centers focused on (1) health services research and aging, (2) statistical sciences, (3) population health and clinical epidemiology, (4) evidence synthesis, (5) international health, (6) alcohol and addiction studies (7) community health promotion, (8) AIDS research, (9) environmental health and technology, (10) behavioral medicine and prevention (11) primary care and prevention and. The co location of multiple research centers in a single building presents opportunities to share resources.

The School has laboratory space at 70 Ship St Providence, Rhode Island, which is located approximately three blocks from the Public Health building. These two buildings are connected via the University shuttle system. The public health building also has access to the local area hospitals, including Rhode Island Hospital, Hasbro Children's Hospital, and Women & Infants Hospital, via university shuttle service. The scientific resources at Brown University are strong, and increasing in strength with program expansion and faculty recruitment for the new School of Public Health which opened on July 1, 2013. Led by new Dean Ashish Jha, SPH provides the administrative umbrella for both the affiliated research centers and the four Departments. Faculty and leadership across SPH are contributing significantly to Advance-CTR in mentorship and leadership roles.

School - Warren Alpert Medical School
https://www.brown.edu/academics/medical/

Warren Alpert Medical School: Established in the early 1970s, the Warren Alpert Medical School of Brown University is the State of Rhode Island's only school of medicine. It was established with the goal of training new physicians who stay and practice in the state, and attracting leaders in research and clinical medicine who would care for citizens. Though it is among the nation's youngest medical schools, the Warren Alpert Medical School has developed into a robust research powerhouse and leader in innovative medical education, and is consistently ranked in the top quartile of medical schools in the U.S. News & World Report rankings.

Mission: To support and promote the health of individuals and communities through innovative medical education programs, research initiatives, and clinical excellence in service to society and to improve the health and wellness of all.

Vision: We envision attracting, training, and sustaining diverse individuals who will work together to lead locally, nationally and internationally renowned transformative and socially responsible medical education, research, clinical care, and advocacy. We will inspire and cultivate physician scholars and leaders who positively impact the health of people and society.

Values

- Humanism and compassion
- Integrity, accountability, and collaboration
- Creativity, innovation, and discovery
- Inclusiveness, diversity, and equity
- Dedication to anti-racism
- Social responsibility, both locally and globally
- Community engagement and service
- Commitment to professional development

School - Warren Alpert Medical School – Alternative
https://www.brown.edu/academics/medical/about-us

Warren Alpert Medical School: Founded as the Brown University School of Medicine in 1972, it is ranked in the top quartile of medical schools nationally. The Division's six basic biological science departments are closely integrated with other science departments and are actively involved in the academic and research activities of the University. Fourteen clinical departments are housed at Brown's eight affiliated hospital partners in the greater Providence area. In 2007, a $100 million gift from the foundation named the Warren Alpert Medical School of Brown University. That investment continues to provide financial support for medical students, faculty members and research programs and played a major role in helping the school construct its flagship building. In 2011, Brown opened a 63,000sq. ft. renovated building in Providence's Jewelry District as the new home of the Warren Alpert Medical School. The building now anchors what has become a diversified, vibrant "knowledge district".

School and Affiliates - Warren Alpert Medical School and Affiliated Hospitals https://www.brown.edu/academics/medical/about/hospitals

Warren Alpert Medical School Affiliated Hospitals: The Alpert Medical School is affiliated with the Brown

University Health and Care New England Healthcare Systems and the VA Providence Healthcare System. The Care New England Healthcare System is comprised of Women and Infants Hospital, Butler Hospital and Kent Hospital. Brown University Health is comprised of Rhode Island Hospital, Hasbro Children's Hospital, The Miriam Hospital, Emma Pendleton Bradley Hospital and Newport Hospital

BELONGING, EQUITY, DIVERSITY, INCLUSION & WELL-BEING PROGRAMS

Initiative to Maximize Student Development (IMSD)

https://www.brown.edu/initiatives/maximize-student-development/about-program

The goal of the Initiative for Maximizing Student Development (IMSD) research training program is to strengthen research training environments and promote broader participation in the biomedical research workforce by expanding the pool of well-trained scientists earning a PhD. The Initiative for Maximizing Student Development at Brown University (IMSD@Brown) provides research training support for students to significantly increase the participation within the fields of biomedical, behavioral and physical sciences. IMSD@Brown strives for Community, Collaboration, and Excellence in an innovative interactive learning environment. Participants are identified from incoming and early stage PhD cohorts spanning 22 graduate programs across the University.

Trainees receives a unique advising plan and support structure, continuing throughout their graduate career at Brown. Skill-based training modules are designed to foster academic achievement and personal success in graduate school. These training modules focus on areas such as scientific writing, demystifying the PhD experience, statistical analysis of data, and designing and delivering scientific presentations; areas that may not have been fully developed at undergraduate institutions. Modules are open to all graduate students to enhance the training environment within the entire Graduate community.

IMSD@Brown program has also established formal partnerships with several institutions to promote broader participation within the fields of biomedical, behavioral and physical sciences. IMSD@Brown is funded by grant T32GM144926 (previously R25GM083270) from the National Institute of General Medical Sciences of the National Institutes of Health since April 2008.

Leadership Alliance

https://oied.brown.edu/initiatives/leadership-alliance

Founded at Brown in 1992, The Leadership Alliance is a leading national consortium of 41 institutions that trains, mentors and inspires students from diverse backgrounds to pursue professional research careers. With a focus on reaching students from backgrounds historically underrepresented in research fields, business and higher education, the alliance builds pathways and advances its commitment to building and sustaining a more diverse

national research workforce. The alliance has served more than 7,000 young scholars since its inception, including more than 1,000 scholars who have completed Ph.D. or MD-Ph.D. degrees, demonstrating the power of scholarship to advance justice and equity.

The Leadership Alliance is composed of a diverse array of institutional partners — from Brown to Harvard University to the University of Miami, to minority-serving institutions and historically Black colleges and universities such as Tougaloo College and Morehouse College. Through its leading-edge work, the alliance is advancing an ambitious mission to address a stark shortfall of individuals from historically underrepresented groups who earn doctoral degrees and pursue careers in research, the public sector and business.

Office of Institutional Equity and Diversity (OIED)

https://oied.brown.edu/

The Office of Institutional Equity and Diversity stewards Brown's commitment to foster equitable and inclusive working and learning environments.

Brown University's Diversity and Inclusion Action Plan (DIAP) is the comprehensive strategic plan that drives efforts across campus to create and sustain a diverse and inclusive community necessary for the advancement of knowledge, learning and discovery. The Office of Institutional Equity and Diversity (OIED) oversees the DIAP,

an ambitious action plan to ensure a more fully diverse and inclusive campus that continues to advance inclusive excellence, creates new opportunities for underrepresented scholars to teach and conduct research, and offers a campus-wide understanding of the essential roles that diversity, equity and inclusion play in Brown's success as a leading research university.

Through OIED's partnerships and collaborations with departments and individuals across the University, we advance a shared responsibility for creating a campus that is inclusive and equitable for all members of the community. We coordinate with all academic and administrative units at Brown to measure progress toward the DIAP's goals and sustain a commitment to accountability through a robust network of oversight and annual reporting.

Through the DIAP and the ongoing oversight managed by our office, Brown is committed to policies, structures and practices that advance inclusion and diversity at Brown.

Office of Well-Being
https://well-being.biomed.brown.edu/

In keeping with Brown University's mission, the Office of Well-Being focuses on supporting the Division of Biology and Medicine by building a culture of well-being through system changes that enable each of us to grow personally and professionally and to support each other. The Office of Well-Being is committed to promoting the overall health, joy, and meaning in life for individuals inclusive of patients, learners, faculty and staff.

A comprehensive approach to well-being beyond just physical health is critical to success of the Division, including physical, emotional, social, clinical, and financial health. Therefore, the Program seeks to achieve this goal by providing curriculum, workshops, confidential and accessible mental health resources, and by partnering with colleagues across the University to identify, develop, and evaluate novel strategies to improve the practice/clinical and academic environment.

Office of Women in Medicine and Science (OWIMS)
https://owims.biomed.brown.edu/

Dedicated to the advancement of women faculty, residents, students and trainees in the Division of Biology and Medicine at Brown University and The School of Public Health at Brown University, the Office of Women in Medicine and Science (OWIMS) serves to network women in medicine and science at all levels. The office offers educational programs to meet the needs of its many constituencies. The Office's primary areas of focus are:

Professional advancement of women faculty, house officers, students and trainees
Career planning
Professional/faculty development
Mentorship programs
Networking
Recognition programs for women in medicine and science
Promotion of diversity and gender equity
Women's health research and education

CAREER DEVELOPMENT AND MENTORING ACTIVITIES

BioMed Faculty Administration (BMFA)
https://www.brown.edu/about/administration/biomed/faculty-affairs/

BioMed Faculty Administration supports more than 2,000 faculty in the Division of Biology and Medicine in their teaching, research, clinical, and administrative roles. BMFA facilitates the recruitment, appointment, retention, and promotion of faculty members across 6 campus-based departments and 14 clinical departments in 7 hospitals. BMFA sponsors educational and mentoring programs such as grant writing, promotion, and peer mentoring workshops. BMFA manages faculty data and provides reporting to both internal partners and external

organizations and works collaboratively to insure that BioMed's policies and practices are consistent with University goals.

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Our institutions have robust career development mentoring programs, junior faculty development opportunities, and internal pilot award programs for junior faculty across disciplines. Faculty mentoring includes detailed oneon one interactions between junior and senior faculty with efforts at grant development as well as going through summary statements and addressing grant revisions. In addition, there are programs designed especially for women faculty, and various grant writing workshops. We have various programs in research integrity training and ethics in the conduct of research. Diversity and inclusiveness and unconscious bias training are additional features of our culture and training environment. Multiple mentoring opportunities are offered to accommodate a variety of junior faculty interests and schedules.

Career development activities, described below, are categorized as 1) Research and Scholarship, 2) Career Mentoring, 3) Grant and Manuscript Writing, 4) Ethics and Responsible Conduct of Research, 5) Educational Faculty Development, and 6) Entrepreneurship and Biomedical Small Business Training.

Research and Scholarship Mentoring via Advance-CTR

Many of the research career development activities available to junior faculty are available through the Rhode Island Center to Advance Clinical and Translational Research (Advance-CTR). Advance-CTR statewide partners were awarded an Institutional Development Award for Clinical and Translational Research (IDeA-CTR) grant by NIGMS in 2016 (Advance-CTR, U54GM115677). This grant established the Advance-CTR infrastructure, which is central to career development activities across Rhode Island universities and academic health centers. Advance-CTR serves to support and educate clinical and translational researchers in Rhode Island. The goal of Advance-CTR is to enhance collaboration and coordination of translational research in order to accelerate cross disciplinary discoveries that improve health. Advance-CTR aims to: 1) Foster coordination between translational researchers at partner institutions, 2) Bring together the diverse clinical research resources to provide a home that facilitates new collaborations, 3) Eliminate obstacles that may prevent researchers from pursuing clinical

research initiatives, 4) Educate, mentor and encourage young investigators in clinical research professional development, 5) Facilitate research to gather preliminary data necessary for developing competitive research proposals and, 6) Sustain a clinical translational research environment by providing the necessary management and coordination of resources. Advance-CTR has three research service cores that are accessed through a central online portal.

Career Development/Mentoring/Grant Writing

Advance-K Scholar Career Development Program

https://advancectr.brown.edu/events-training/advance-k-scholar-career-development-program

The Advance-K Scholar Career Development Program trains and supports highly qualified junior faculty in the preparation of individual, extramural CDA applications (NIH K series or equivalent), and connects them to resources, mentorship, and other career development opportunities. The program encourages applications that emphasize community engagement.

Up to 10 Scholars are selected annually to participate in the program. Junior faculty candidates pursuing a career in clinical research or translational research from Brown, URI, and the affiliated hospital systems are eligible to apply.

Advance-K Scholars will follow a common curriculum along with a customized set of activities to meet

individual learning goals. Advance-K Scholars are required to participate in 2-hour, bi-weekly training sessions throughout the duration of the yearlong program. Scholars are expected to submit an application for individual funding (K01, K08, K23, or CDAs from the VA or foundations) by the end of the 12-month program period.

Advance-R Program

https://advancectr.brown.edu/events-training/advance-r-program

The Advance RI-CTR's Professional Development Core is dedicated to helping early-career health researchers in Rhode Island with the resources and training needed to build competitive, independent research programs. We are therefore excited to offer faculty submitting proposals for their first R-award (and similar) the opportunity to have their proposals reviewed by an internal study section consisting of content experts and experienced NIH reviewers prior to external submission. Written NIH-style feedback, as well as additional comments on grantsmanship, from the internal study section will be provided to help researchers improve the quality of their application. Additionally, we will provide training on issues related to the submission process.

Advance RI-CTR Mentored Research Awards

https://www.atkissontraininggroup.com/research-funding

Mentored Research Scholars receive at least 50% protected time up to $90,000 to conduct clinical or translational research projects for up to two years. Scholars are also awarded an additional $25,000 each year for education or research supplies (A Certificate or Master's degree in Clinical and Translational Research at the Brown University School of Public Health is encouraged). The program provides mentoring and specialized training that will prepare scholars to make significant advances in interdisciplinary strategies devoted to clinical and translational research.

Advance RI-CTR Mentoring Training Program

https://advancectr.brown.edu/events-training/mentoring-training-programs

The Advance RI-CTR Mentoring Training Program is a 9-hour, peer-driven program that provides faculty mentors with skills and techniques to enhance communication with their mentees and improve outcomes for professional development and success.

This interactive training provides faculty mentors with an opportunity to experiment with various methods, and a forum to solve common mentoring dilemmas with colleagues. The training is based on a nationally

recognized, evidence-based curriculum from the National Research Mentoring Network (NRMN) and Center for Improvement of Mentored Experiences in Research (CIMER) that is designed to help research mentors maximize the effectiveness of their mentoring relationships. This research mentoring training program has been tested and shown to be effective in increasing mentoring knowledge, skills, and behavior (see below for more information)

The structure of the program is based on the experience of researchers who originally developed and implemented the program at the University of Wisconsin - Madison. Case studies and reading materials provide tangible starting points, and the mentors often expand from the hypothetical examples to their own experiences. This training process expands attendees' knowledge through case studies and secondhand exposure to the experiences of all participants, thus enabling attendees to engage with as many mentoring experiences as they would typically handle in a decade.

Each Advance RI-CTR Mentoring Training session is led by faculty from Brown University or the University of Rhode Island who are CIMER/NRMN-trained facilitators. They develop customized mentoring training curricula and facilitate discussions of case studies and written mentoring tools at the training sessions. Their primary role is to enable participants to take ownership of their own learning by helping them engage in self-reflection and shared discovery and learning. They help the participants work through their thoughts and ideas and share mentoring strategies and experiences.

CFAR Grant Writing Workshops

https://cfar.med.brown.edu/mentoring/grant-writing-workshops

The CFAR Developmental Core offers monthly grant proposal review sessions. The goal of these sessions is to provide HIV researchers at all levels of experience (post-doc, junior, and senior investigators) a forum in which to present their ideas for proposals and to get feedback from an interdisciplinary group of senior faculty. In addition to providing valuable, direct feedback to the presenter, these workshops offer the chance to learn about each other's research and methods. Investigators should consider this an opportunity to talk about ideas at all levels of development--from early thoughts about specific aims to a review of a fully fleshed out proposal.

CFAR K Award Workshops
https://cfar.med.brown.edu/mentoring/k-award-workshops

The K Award Mentoring Program involves a proposal development curriculum characterized by milestone driven progress and formal review by an advisory board of CFAR Senior Faculty. Participants must apply to the program with an identified primary mentor based on their career goals and objectives.

The K award Mentoring program will begin four to six months prior to the HIV/AIDS NIH deadline for a given cycle. Advisors will be experienced CFAR faculty with a track record of mentoring and successful funding. Participants present a one-page specific aims page at the first meeting with their mentor and advisory board members and further develop strategies for improvement. Prior to the NIH HIV/AIDS deadline participants will submit their full proposal for review and again meet with the advisory panel for additional feedback.

CFAR Mentor the Mentor Training Program
https://cfar.med.brown.edu/mentoring/mentor-the-mentor-program

The Mentor-the-Mentor Training program is a professional development opportunity for faculty who mentor junior investigators. This peer-driven program teaches participants how to improve their relationships with mentees and become more effective mentors to junior investigators as they grow their research careers.

The program is targeted towards faculty who mentor junior investigators with specific expertise in HIV/AIDS related research. Participants will learn how to improve their relationships with mentees and become more effective mentors to junior investigators as they pursue their research careers.

The program is broken out into two 4 hour sessions and is facilitated by Drs. Susan Cu-Uvin and Karen Tashima. Participants are required to attend both 4 hour sessions to receive certification.

The CFAR Mentor-the-Mentor Program is based on the published curriculum, Mentor Training for Clinical and Translational Researchers, which has been successfully tested by a mutli-site randomized controlled trial led by the University of Wisconsin Madison. It is now being used as a framework for training across the NIH National Research Mentoring Network (NRMN).

CFAR Pre/Post Award Mentorship
https://cfar.med.brown.edu/mentoring/pre-post-award-mentorship

Pre-award/Post-award mentorship allows junior investigators or those investigators new to HIV/AIDS to be linked with CFAR mentors prior to the submission of CFAR developmental applications. Prior to submission of an initial or pilot developmental application, applicants will receive mentorship by senior CFAR faculty members who will provide guidance on the services available through the CFAR, development of the research plan and inclusion of the necessary documents for application submission. Each applicant applying for initial or pilot funding must designate a mentor (or have one designated by CFAR).

Should the application be funded, those mentors will have two types of regular meetings with mentees. The first type of meeting are operational, problem solving meetings focused on the day to day work of completing the funded project and will occur at varying frequencies. The second type of meeting is expected to occur every six months, and is a more formal and structured interaction during which project progress is discussed; the mentor and mentee are both asked to complete written evaluations of these meetings that are reviewed by Developmental Core Directors.

In addition to this project-focused mentoring plan, one of the Core Directors will have either a telephone or face-to-face meeting with all domestic developmental grant awardee every six months to ensure that the awardee is getting sufficient support and mentoring and to make sure that intermediate term (6m to 2 years) plans for proposal writing are being made.

Grant Writing and Development Support
https://dof.brown.edu/resources/grant-writing-and-development-support

Support is available at all levels of proposal narrative development, including:

advice and mentoring for how to navigate the entire grant proposal process, including scheduling and liaising with administrative staff;

drafting, editing, and revision of proposal components such as abstracts, narratives, budget justifications, data management plans, and other technical documents;

developmental editing to help conceptualize and structure proposal narratives, especially with regard to communicating project goals as they relate to broader impacts and the objectives and missions of funders;

guidance on the inclusion of tables, charts, or other figures, plus basic graphic design

services; understanding compliance with funder guidelines and requirements;

reviews and feedback on narrative style, language, and cohesion;

copyediting and proofreading;

assistance with letters of support, letters of intent, letters of support, etc.

This support is available to all faculty from the departments and centers within the Dean of the Faculty. Early career faculty and faculty with limited grant experience are especially encouraged to ask about grant writing support.

Editorial support to faculty in other schools or departments and for other non-grant projects (e.g., book proposals and manuscripts) is also offered, depending on staff availability.

“Planning and Writing Successful Grant Proposals” Seminars**:**

The AtKisson Training Group presents several grant writing seminars multiple times each year. Sponsored by the Brown University Office of BioMed Faculty Administration, the School of Public Health, and the Office of the Vice President for Research, these seminars offer full and half-day instruction in all phases of grant writing, from deciding to submit through how to write for peer review. Seminars offered include Planning and Writing Successful Grant Proposals, including K awards and NIH R01 Renewal Applications.

Proposal Submission Resources
https://division-research.brown.edu/research-cycle

The Division of Research at Brown aims to make the research administration process less complex by supporting Brown faculty, investigators and research teams at every stage of research, from defining a new research idea to securing funding, complying with regulations, managing awards, publicizing advances and protecting intellectual property.

Sheridan Center Inclusive Mentoring Program

https://sheridan.brown.edu/resources/inclusive-anti-racist-teaching/inclusive-teaching/inclusive-mentoring

Women in Medicine Mentoring Program
https://owims.biomed.brown.edu/mentoring-professional-development/mentoring

The Women in Medicine Mentor Program promotes connections between women medical students at Alpert Medical School early in their educational and professional studies with women physicians based at Brown affiliated hospitals and in the community. This program is also open to junior faculty and provides a mentoring network for investigators of various career levels. Through events such as the WIM Mentoring Night and WIM Specialty Night, students will explore different themes in mentoring groups led by women physician faculty and residents. This is also an opportunity for students to learn about a medical specialty and consider ways in shaping career goals in medicine from the perspectives of a woman physician. An additional goal is to foster continued contact between students and physician mentors who connect at this event. Informal discussions at the WIM Mentoring Night will focus on career paths in medicine from the perspectives of women physicians, different approaches to work-life balance in shaping a career, women in academic medicine and leadership positions, and how to engage effectively with a mentor.

Workshop in Implementation Science and Health Services (WISH): Advancing Grant Writing Skills for Rehabilitation Researchers.
https://sites.brown.edu/learrn/home-2/edutrain/workshop-in-implementation-science-and-health-services wish-advancing-grant-writing-skills-for-rehabilitation-researchers-2/

Each year we host 24 talented investigators, 8 mentors, and additional faculty from across the country. We had incredible participation from Scientific Program Officers, Scientific Review Officers, and Funding Agencies

Ethics and Responsible Conduct of Research

Research Integrity Series for Junior Faculty

Research Integrity Series for Junior Faculty (most appropriate for Advance-K Scholars!): The Division of Biology and Medicine (Biomed) at Brown University offers an advanced Responsible Conduct of Research

(RCR) course customized for junior faculty, called the "Research Integrity Series for Faculty". The in-person course consists of 2-hr core and elective modules, offered approximately monthly during the Fall and Spring, and faculty must take a total of 8 hrs to receive their certification. Most of the faculty that take the course currently have mentored career development (K) awards or are applying for K awards, thus materials, case studies, and discussions are targeted toward scientists who are transitioning to independence or have recently done so. It is the expectation that trainers on Brown University's T32 programs, or those faculty who serve as mentors on NIH K and other career development awards, will participate as speakers and facilitators in the course. Records of faculty participation are kept by the Division's Office of Graduate and Postdoctoral Studies as well as the Office of the Vice President for Research.

The course covers the scope and complexity of ethical situations that confront modern biomedical, clinical, and translational researchers, including the following topics: i) the role of the scientist in society; ii) the peer review process and its purpose; iii) data acquisition, storage, and privacy; iv) legal and ethical considerations in animal research; v) publication practices and responsible authorship; vi) practical and ethical issues in human subjects research; vii) the mentoring relationship and associated responsibilities of mentors and trainees; viii) recognizing and navigating conflicts of interest and research misconduct; ix) electronic data management issues; x) copyright and intellectual property issues; xi) launching an independent research program; and xii) rigor and reproducibility of data. Discussion of the ethics of diversity is incorporated throughout to convey an appreciation for the fact that differences of race, culture, age, gender, (dis)ability, and religion can affect the conduct and interpretation of research.

Brown University BioMed also offers a refresher training that that satisfies the National Institutes of Health (NIH) and National Science Foundation (NSF) RCR training requirements. The course comprises three in person sessions lasting three hours each and is offered twice each academic year, once during the fall semester and once during the spring semester. To complete refresher training, trainees will attend all three

sessions of a cycle or participate in 2 sessions and complete online Collaborative Institutional Training Initiative training.

While training courses fulfill the necessity of focusing on discipline-specific ethical issues, Brown University feels that it is critical to bring scholars of all disciplines into dialog with each other about ethics as a 14 academy-wide aspect of graduate education. This interdisciplinary programming places the ethics of biological research in a larger context. The Academy in Context series sponsored by the Graduate School and the Office of Student Life brings graduate students, postdoctoral fellows and faculty from across the University together to discuss ethical issues with faculty speakers and outside experts. The focus on ethics has allowed us to invite speakers on a very wide range of topics - from the way computer technology is altering human bodies, or the intersections between governmental policy making and the scientific community, to the ethical dimensions of negotiating ownership of the past in archaeological excavations. The large dinner-seminar is complemented by smaller group discussions that focus on specific ethical applications. These workshops synthesize questions, identify other readings on the topic, and make suggestions for aspects that can be woven into the curriculum of courses across the campus. Rather than being divided along disciplinary lines, participants are part of teams that include engineers, humanists, social scientists, and physical scientists. They not only learn about the issues, but they also see how people with different backgrounds think about the issues.

Brown Ethics and Responsible Conduct of Research Education (BEARCORE):

The BEARCORE program is designed to educate early-career researchers and trainees from a variety of academic fields on how to conduct their scientific investigations responsibly and with integrity. It is an in-person training program that may be supplemented by online instruction through the Collaborative Institutional Training Initiative (CITI). BEARCORE is held each spring, has mandatory and elective modules, and fulfills NIH and NSF requirements. While BEARCORE is used primarily by trainees and new researchers to fulfill NIH and NSF RCR requirements, it is open to anyone in the Brown community and affiliated academic health centers.

The BEARCORE course is conducted via three, two-hour Core (mandatory) sessions and additional one-hour Elective sessions. Sessions are co-taught by Brown faculty members and subject matter experts with in-depth topic area knowledge. The sessions are predominantly case-based, and include mixed-media presentations, panel discussions, and in-class discussions of hypothetical and real scenarios drawn from current literature

and news media. Certificate of Completion course requirements for researchers and trainees with NIH and NSF grants include attendance of all in-person sessions/lectures, participation in class discussions, and completion of pre-work and homework assignments. BEARCORE training modules are focused on research misconduct, authorship, rigor, reproducibility, unconscious bias, conflict of interest, data stewardship, data management and sharing, and data use. Participants must attend at least two elective modules. Examples of electives include ethical considerations in animal research, ethical considerations in human subject’s research, grants management, and intellectual property and commercialization in academia.

BEARCORE Refresher Course:

BEARCORE can also be taken as a refresher course. NIH requires that RCR training be completed at least once during each career stage (i.e., undergraduate, graduate, postdoctoral, and faculty levels), and at a frequency of no less than once every four years. NSF defers to each institution to determine the frequency of RCR training for its NSF-supported trainees, and Brown encourages NSF trainees to follow the same training frequency requirements as those enforced by NIH. Upon completion of the in-person course of instruction to satisfy the initial RCR training requirement, the participant may then complete refresher courses to comply with the career stage requirement and/or the requirement to complete re-training no less than once every four years. Faculty enrolled in the BEARCORE refresher course must attend at least eight hours of in-person teaching to receive the RCR Refresher certificate. However, they can choose what sessions to attend in order to fulfill the eight-hour training requirement. For example, faculty can attend two Core sessions (two hours each) and four one-hour Elective sessions or they can attend one Core session and six Elective sessions.

Educator Professional Development Program

The Office of Faculty Professional Development at the Alpert Medical School recognizes and supports faculty in their role as educators. The Program strives to provide faculty educators with the knowledge and skills to best

teach our medical students in the classroom and at the bedside. The array of programming provides both seasoned and novice educators with the tools they need to instruct, guide, train, facilitate, and mentor. 15 The goal of the Program is to enhance student learning and thus impact the quality of patient care. The Program also seeks to provide faculty with a community of educators with, and from whom they can learn. The office utilizes internal resources in the form of our talented faculty educators who share their expertise with colleagues and provide a central infrastructure for faculty development across the Division of Biology and Medicine and the affiliated clinical departments at Brown. The Program's portal connects faculty to a range of offices, programs, and resources that foster personal and professional growth. Professional development opportunities are available for teaching and learning, diversity and inclusion, faculty wellness, leadership skill building, research and scholarship and career development. A sample of workshops that are available to all faculty include, Hypothesis Driven Research, Unconscious Bias Training, Presentation Basics, Crafting an Elevator Talk, Creating a Positive Learning Environment Across all Participants, and Facilitating Active Learning Across all Kinds of Teaching. Program participants can earn a Certificate and Advanced Medical Education Training status and can request services such as a Talk Review and Feedback session or Curriculum Consultation. Educators may also be eligible for funding to support their ongoing development in this area.

Entrepreneurship and Biomedical Small Business Training

Brown Biomedical Innovations to Impact (BBII): Brown Biomedical Innovations to Impact (BBII): The Brown University Office of Technology Innovation provides and manages translational development capabilities to help solidify proof of technical feasibility and of commercial relevance, both of which can de-risk an idea or discovery and turn it into more concrete product opportunities that are attractive to potential industry partners or startup creators. The Brown Division of Biology and Medicine, in collaboration with Technology Innovations, has launched a translational commercial development program, Brown Biomedical Innovations to Impact (BBII). BBII manages an academic accelerator fund dedicated to supporting academic biomedical technologies - with potential for high impact - to become well-defined product opportunities that are attractive to industry partners and investors. BBII achieves its goals by funding translational research projects focused on validation of technical feasibility and commercial relevance. BBII offers: 1) advising and coaching of investigators by an independent panel of advisors with broad expertise in evaluation, investment, and commercialization of biomedical

technologies, 2) partnering and managing with the investigator by retaining consultants and contract research organizations to leverage development expertise and to provide project management support to ensure focus and timely delivery on project milestones, and 3) exploring commercial development opportunities by working through established relationships with industry, venture capital, and entrepreneurial startup resources to find the best path for further development.

Biomedical Innovation and Entrepreneurship Certificate Program: The Institute for Biomedical Entrepreneurship (IBE) develops and delivers a variety of formal and informal educational programs for researchers and other innovators. The five-day Entrepreneurship Certificate Program provides an understanding of the execution processes involved in developing ideas into commercial successes. The format is designed for multiple audiences including faculty, researchers, and staff, with an interest in biomedical innovation and commercialization. The goal of the program is to: 1) prepare participants to readily analyze and validate commercial potential of their research, and to intelligently evaluate potential startup opportunities for personal involvement, 2) leave participants capable of beginning the implementation process on ideas that merit development, and 3) provide participants access to resources for developing their ideas and pursuing validated opportunities into commercial development.

Drug Discovery Bootcamp: The Drug Discovery Bootcamp, offered by Speid & Associates, Inc., is a two day, intensive training program designed for those that have relevant experience in the research and development of new chemical and biological entities. It is a unique and outstanding program recommended to any investigator interested in drug discovery, development, commercialization and anyone who is interested or needs to learn about the FDA approval process for new drugs or devices. The bootcamp provides an in depth look at the drug discovery process. A mixture of large pharma, small pharma and expert panel members ensure that panel discussions are relevant, responsive and applicable to everyday situations that participants face. 16

I-Trep Program: The I-Trep program (NIGMS R25GM11670) at the University of Vermont provides training, mentoring, and networking resources to promote biomedical entrepreneurship. Full participation in the I-Trep

program is open to faculty and postdoctoral fellows from Alaska, Delaware, Maine, New Hampshire, Puerto Rico, Rhode Island, and Vermont. Everyone has access to webinars and online resources through free registration at the I-Trep website. This program offers one-to-one expert consulting to assist in development of SBIR/STTR grants, webinars on discovery commercialization, a biomedical entrepreneurship summer course, and travel award opportunities to travel to meetings to aid in development of entrepreneurship.

DRIVEN: Accelerating Medical Entrepreneurship in the Northeast The DRIVEN Accelerator Hub is an NIH funded (UT2GM130176) consortium led by Celdara Medical and includes partnerships with leading research institutions in the Northeast region (Brown, Dartmouth, Maine Medical Center, Mount Dessert Island Biological Laboratory, Simbex, University of Delaware, University of New Hampshire, University of Rhode Island, and University of Vermont). The mission of the DRIVEN Accelerator Hub is to create quality-adjusted life years (QALYs) and save lives by: 1) Increasing the number of quality medical startups, 2) Decreasing their time to market, and 3) Increasing their probability of success. DRIVEN manages a Partnership Program, an Acceleration Fund, and an Ignition Fund. The Partnership Program provides specialized consulting and mentoring to entrepreneurs and startups on their company or technology. At the conclusion of this program, participants will prepare and present a slide deck to VC and industry members. Program finalists will also be eligible to apply for to the DRIVEN Acceleration Fund, which awards $50,000 to early-stage companies to accomplish strategic goals. The Ignition Fund provides $25,000 for innovations or discoveries that need additional experimentation before company formation or outlicensing is warranted. DRIVEN also maintains an online database where biomedical entrepreneurs can access resources. They can filter by location, web resource, date added to site, user type (e.g. undergrad, grad, postdoc, faculty), type of resource (e.g. expert/coach, networking, webinar, workshop), and the type of skills the resource provides (e.g. project management, leadership, accounting, regulatory, finance). DRIVEN sponsors forums for drug discovery education, networking, and industry analysis.

New England Medical Innovation Center (NEMIC): NEMIC and Advance-CTR have teamed up to bring early-stage Rhode Island academic entrepreneurs a one-on-one coaching program to teach them the various components of translating research into an eventual business plan and pitch deck with investors in mind. The

Planning Pitch Deck & Business Plan Immersion Program supports two research entrepreneurs from Rhode Island Hospital and Brown University by providing an individualized strategy of how to take their specific research innovations to market. The program helps the entrepreneurs navigate strategic decisions and hone their business plans through individualized meetings with NEMIC staff and advisors. Faculty entrepreneurs meet with NEMIC's experts for two hours every two weeks based on their schedule over 10 weeks to refine each element of their business plan and pitch deck with investors in mind. Areas of focus include market and market size, financial projections, organizational structure, and more. At the end of the program, each company will present their final pitch deck to the group. The program culminates with each investigator delivering a final presentation or "pitch" of their innovation to NEMIC experts and the Advance-CTR investigator community, where they will receive feedback, discuss lessons learned, and preview next steps for taking their innovation from the ideation stage and into the market

RI Bio Programming: RI Bio is southeastern New England's life sciences industry group. They are dedicated to galvanizing collaboration and growth among life sciences companies, hospitals, universities, sources of capital and governmental partners. They convene, catalyze and advise. With the support of their partners, they work to secure resources to support the life sciences community and provide members with exclusive access to regional/industry news, events, materials and supplies, workspaces, growth partners, training, and more. They regularly convene workshops on such topics as "Protecting Your Ideas (Patents, Trademarks, Copyrights & Trade Secrets)" or "Turning Your Scientific Discovery into a Successful Enterprise".

COLLABORATING INSTITUTIONS

Rhode Island Department of Health (RIDOH)

Rhode Island Department of Health (RIDOH)

Rhode Island Department of Health (RIDOH): Rhode Island is unusual in having a single Department of Health for the entire state rather than one for each county or city. With the primary mission to prevent disease and to protect and promote the health and safety of the people of Rhode Island, RIDOH oversees the licensure, certification, registration, and discipline of more than 72,000 individuals in 65 health occupations and 2,600

facilities. RIDOH also oversees the administrative and regulatory functions of 35 licensing boards whose 325 members represent the various professions and consumers. These responsibilities give RIDOH unique access to licensed health professionals, facilities, and other health-related resources in the state – a function that recently took the form of a department-wide Public Health Directory. RIDOH also operates more than 180 different programs and services through its seven divisions. In addition to regulatory functions, many of these programs include funding and operational links with numerous health care providers, employers, and community based organizations. Each of these relationships provides a potential linkage for the translation of clinical best practices into various components of the Rhode Island community. While communicable disease control, vital records, environmental health and other units carry out the traditional health department functions, newer and equally important functions include minority health, chronic disease prevention, health promotion, injury control, and public information. RIDOH also collects and manages large data sets used for surveillance and intervention research.

The Rhode Island Department of Health has established a population health framework, which includes three leading priorities, five strategies, and 23 population health goals. The framework is used as a road map for improving Rhode Island's health. Through the State Innovation Model (SIM) and its culture of collaboration, other state agencies are also looking at their goals and activities within this same framework. The leading priorities are 1) Address the Social and Environmental Determinants Health, 2) Eliminate the Disparities of Health and Promote Health Equity and 3) Ensure Access to Quality Health Services, Including Vulnerable Populations.

RIDOH Academic Center: The RIDOH Academic Center was created in 2015 to enhance RIDOH's capacity to integrate scholarly activities into public health policy and practice by establishing and facilitating collaborations with academic and research colleagues across the state, and building upon internal and external partnerships and synergy to establish the RIDOH Culture of Learning at the department. The RIDOH Academic Center supports two areas of engagement to achieve these goals: the Public Health Education and Research Academy (PHERA), and the Workforce and Career Development Network (WCDN).

Public Health Education and Research Academy: Through the work of the RIDOH Academic Center, RIDOH has become an Academic Health Department that looks forward to having formal affiliations with all of Rhode Island's colleges and universities. Formal affiliations currently exist with Brown University School of Public Health, University of Rhode Island, Rhode Island College, Community College of Rhode Island, Roger Williams University, and Johnson & Wales University. Collaboration between RIDOH programs and academic faculty is encouraged based on RIDOH's public health policy and practice, and similar research and teaching interests of academic faculty. These partnerships drive development of collaborative research ideas that create experiential learning opportunities for RIDOH Public Health Scholars, who are undergraduate, graduate, professional or clinical students currently enrolled in courses of study that relate to public health. RIDOH's utilization of a health equity lens for public health program planning and policy development provides multidisciplinary opportunities for collaboration with faculty and students in programs of study such as public health, healthcare, communications, graphic design, technology, housing, finance, law, urban planning, architecture, etc. The RIDOH Academic Center's PHERA also facilitates forums for collaborative state-academic partnerships to enhance statewide research and outcomes in public health-related topic areas. These research-based groups include multiple researchers from various academic institutions as well as state agencies and community partners.

Workforce and Career Development Network: The Workforce and Career Development Network works to enhance the knowledge, skills and abilities of RIDOH staff and healthcare and health-related professionals across Rhode Island through assessment of career planning and continuing education needs, development of initiatives, and utilization of collaborative and innovative methods to address Rhode Island's health workforce needs.

RIDOH Health Equity Zones: The Centers for Disease Control and Prevention and the Rhode Island Department of Health are collaborating with 10 Health Equity Zones (HEZs) throughout Rhode Island to support innovative approaches to prevent chronic diseases, improve birth outcomes, and improve the social and environmental conditions of neighborhoods across five counties statewide. Health Equity Zones are geographic areas designed to achieve health equity by eliminating health disparities using place-based strategies to promote healthy communities. Healthy communities are places where people live, work, play, and learn. These are neighborhoods consisting of social and physical environments that support healthy choices and safe living. All HEZs grantees conducted community needs assessments in year one. HEZ work plans, based on the needs

identified and prioritized in year one, focus on the residents in neighborhoods that each Health Equity Zone serves. The HEZ work plans present ideas and approaches to invest in local communities and improve population health. Community engagement is a priority in reaching these public health goals.

HealthFacts RI, Rhode Island's All-Payer Claims Database, is a new and powerful dataset that can be used to examine the use, quality, and cost of healthcare provided to Rhode Islanders. HealthFacts RI is jointly managed by the Executive Office of Health and Human Services, the Department of Health, the Office of the Health Insurance Commissioner, and HealthSource RI. The mission of HealthFacts RI is to provide actionable data to support the study and comparison of healthcare data, to identify opportunities to improve healthcare quality and health outcomes, and reduce healthcare costs; and to help Rhode Islanders make informed decisions about their healthcare. HealthFacts RI:

- Sparks innovation across the healthcare system to improve patient care and health outcomes, and lower costs
- Collects data to support the study and comparison of healthcare utilization, cost, and trends for people living in Rhode Island insured by major health insurance companies
- Requires health insurers with more than 3000 members to submit enrollment and provider data, and medical and pharmacy claims for claims dating back to 2011
- Informs people about the costs for certain healthcare procedures
- Identifies opportunities to improve healthcare quality in Rhode Island
- Ensures patient privacy by removing identifying information (names, addresses and other personal information) from patient data
- Protects the integrity and security of the database and all data transactions
- Oversees access to the data while rigorously protecting patient privacy
- Measures progress on important healthcare benchmarks

- Advances clinical improvement strategies and academic research

Rhode Island Department of Health State Health Laboratories (RISHL)

https://health.ri.gov/laboratorytesting/

The Rhode Island Department of Health (RIDOH) State Health Laboratories (RISHL) include the state's only public health laboratory and provides essential laboratory services in support of public health programs for the early detection, surveillance, and containment of infectious diseases, as well as laboratory services for environmental protection and public safety programs. The RISHL was among the first labs to detect SARS-CoV 2 and has since continued as a leading authority on COVID-19 testing in the state. The RISHL has been systematically banking (at -80°C) a high proportion of SARS-CoV-2 positive specimens provided from internal testing, as well as RI hospital and commercial laboratories, that represents a state-wide sampling from throughout the pandemic (estimated 12 000 unsequenced specimens). The RISHL also serves as the coordination hub for all of Rhode Island’s SARS-CoV-2 variant sequencing efforts: organizing and effecting ongoing specimen delivery to sequencing capable collaborators, synchronizing return sequence data flow and the merging of data with RIDOH databases. The RISHL also performs SARS-CoV-2 sequencing on site, with two Illumina MiSeq instruments, and plans to expand capacity with the imminent purchase of a high throughput Illumina NextSeq instrument and the hiring of additional sequencing-focused laboratory scientists.

Rhode Island Quality Institute (RIQI)

https://www.riqi.org/

Rhode Island Quality Institute (RIQI): Founded in 2001, Rhode Island Quality Institute (RIQI) is a 501(c)(3) nonprofit center of collaborative innovation with a mission to significantly improve the quality, safety, and value

of healthcare. RIQI exists to save lives at the speed of data, and capitalizes on Rhode Island's small size as "living laboratory" for ideation, development, testing, and scaling of innovative products and services. Few places in the nation can rival RIQI's levering of Rhode Island as a petri dish for rapid prototyping, discovery, and bringing innovative healthcare products and services into to being and facilitating research drawn from the rich database.

RIQI's unique value is created by aligning partnerships and leading-edge improvement strategies with needs and opportunities in healthcare, addressing problems that cannot be solved by single entities acting alone—no matter how large or powerful. By maintaining strong partnerships with healthcare leaders, government/industry organizations, leading researchers and academe, and forward-thinking community groups, RIQI facilitates consensus around innovative solutions to healthcare's challenges. As a catalyst for change, RIQI levers deep expertise in health information exchange that enables clinical, person-supplied, and social determinates of health data to be collected, persisted, analyzed, and accessed in real-time where it's needed and by whom it's needed. RIQI applies skill in quality improvement science and analytics to drive system transformation and accelerate healthcare's transition to value-based payment models. RIQI facilitate improvements in health and healthcare through initiatives that improve care coordination; reduce medical errors and waste; lever research, big data and machine learning; and engage with consumers, patients, and families to empower them for self-management.

RIQI operates CurrentCare, RI's statewide Health Information Exchange (HIE), a centralized data repository that collects, aggregates, normalizes, stores, and makes accessible data on more than 75% of Rhode Island residents from such entities hospitals and health systems, laboratories, pharmacies, long-term/post-acute care facilities, mental health and substance abuse treatment centers, community health centers, retail care deliver sites such as CVS Minute Clinic, community-based primary care and multispecialty care practices, the VA, and consumers statewide. CurrentCare is a secure electronic network that allows doctors and other care givers immediate access to a patient's up-to-date health information in order to provide the best possible and most comprehensive care. CurrentCare helps providers succeed in the transition to value-based payment systems, providing caregivers with clinical decision support tools, and opportunities to avoid unnecessary and expensive care, such as duplicate tests and avoidable ER and hospital admissions. RIQI's robust analytics capability supports HIT-enabled quality, cost and efficiency improvements, as well as population health improvements across RI. It offers providers feedback on their clinical outcomes compared to their peers, and enables quality reporting and sophisticated analytics to improve the outcomes of care. The system is a boon to researchers, given that Rhode Island is a microcosm of the nation, the population is extremely stable, and the database is quite unique as a result of very high levels of cooperation in the state.

Rhode Island Public Health Institute (RIPHI)
https://riphi.org/

Rhode Island Public Health Institute (RIPHI): RIPHI's mission is to promote community health and to eliminate health disparities in Rhode Island and beyond. RIPHI partners with Brown University and the Rhode Island Department of Health to develop innovative public health programs, conduct translational and policy research, and train students and public health practitioners. RIPHI maintains over 200 community partnerships across Rhode Island and the United States. RIPHI's work is grounded in five key activities that advance public health and draw on the core competencies of Brown University and the Rhode Island Department of Public Health.

1. Public Health Programs and Community Service: Improving public health requires outreach to communities that have limited access to health services and those most heavily impacted by preventable and treatable diseases. RIPHI sponsors high-impact public health programs in community and clinical settings with a focus on community services and translating research into practice.

2. Community Engagement in Programs and Research: RIPHI is committed to engaging local stakeholders in dialog about improving public health in their communities. We work with policymakers, scholars, activists, and community residents to engage communities in our programmatic and research activities.

3. Educational Training in Public Health: RIPHI provides community service and educational opportunities for students, professionals, and community members. RIPHI offers training for students and public health professionals in didactic and community settings, with a focus on public health and community service.

4. Translational Research: RIPHI's research is diverse in scope and focuses on translating research into practice, reducing disparities, and promoting health equity. Much of our research focuses on evaluating the programs we

develop to advance our goal of promoting public health.

5. Public Policy and Dissemination of Best Public Health Practices: Improving public health requires policy change. We make every effort to ensure that our research and programs have maximum impact on public policy. Policymakers are involved from the onset of each of our projects and throughout their duration. RIPHI makes every effort to disseminate lessons learned from our work in peer-reviewed articles, policy memos, community forums, and in the popular media.

RIPHI runs the Food on the Move mobile produce market. Food on the Move started as an NIH-funded clinical research trial has become one of the largest mobile markets in the U.S., with over 35 mobile markets per month. Our mobile markets provide a testing ground for innovative models to improve food access and affordability, and serve as a national model. The year-round mobile markets bring fresh, healthy produce to the people and places that need it most. Healthy food is made more accessible by bringing markets to senior housing sites and community locations, and more affordable by doubling the value of Supplemental Nutrition Assistance Program (SNAP) dollars spent on fruits and vegetables.

Published research shows that Food on the Move works – people who regularly shop at our markets significantly increase the amount of fruits and vegetables they eat, and research shows that eating ample fruits and vegetables is linked to a lower risk of obesity and chronic health conditions such as diabetes and heart disease. As a data-driven organization with a policy focus, RHPHI uses data to advance state and federal policies that make healthy foods accessible and affordable to everyone

COMMUNITY ENGAGEMENT ORGANIZATIONS

Swearer Center

https://www.brown.edu/academics/college/swearer/

The Swearer Center: The Howard R. Swearer Center of Brown University works with more than 1,200 Brown students, through and with 100+ community partners -- more than half of which are in the greater Providence

area. In its 30-year history, the center has developed and nurtured many deep — and deeply rewarding — relationships with individuals and organizations in Providence. The center connects students, faculty and community partners through community engagement, engaged scholarship and social innovation -- three key perspectives that are the foundations of its work. Swearer Center programs and fellowships provide students with community engaged, cohort-based experiential learning opportunities. Through programs and fellowships, students link their passion for social justice and community engagement with their academic and career goals. The Swearer Center partners with a wide range of organizations (nonprofit, LEAs, state and local government agencies etc.) that wish to access the resources of the Swearer Center or the university to advance their mission and work. Partnering organizations work with Swearer Center and university staff as co-educators, co-developers and co-creators of knowledge in our community engagement and engaged scholarship work.

Swearer Center partnership practices are centered around the values of Community Agency and Reciprocity. Community-based organizations are best situated to design, create and deliver programs and services in their own communities and therefore our work is that of capacity building partner, technical assistance, and conduit to access other university resources like community-based research. We work to ensure that both partners realize the desired benefits of the partnership. The Swearer Center offers partner organizations a variety of supports, resources, scholarship, student time and effort, funding for social innovation projects and membership in the Community Partner Network. In turn, partner organizations provide essential learning and engagement opportunities for students, as well knowledge and expertise to Swearer Center and institutional staff as we seek to understand and better inform the field of higher education and community engagement.

Center for Health and Justice Transformation (CHJT)

https://www.brownhealth.org/centers-services/community-health-institute/what-we-do/center-health-justice

The Center for Health and Justice Transformation (CHJT) is dedicated to advancing health equity in the criminal legal system. People incarcerated in jails and prisons suffer higher rates of chronic medical conditions and behavioral health challenges than the general population. They are disproportionately non-White and largely

come from communities where residents already report overall poor health and lack of access to care. The disparities we see in our health care system are mirrored in our criminal justice system.

Rhode Island Foundation
https://www.rifoundation.org/

Rhode Island Foundation: Founded in 1916, the Rhode Island Foundation is one of the nation's oldest and largest community foundations. Rhode Island Foundation is Rhode Island's only community foundation and the largest funder of Rhode Island's nonprofit sector. The Foundation is a proactive community and philanthropic leader dedicated to meeting the needs of the people of Rhode Island. The Rhode Island Foundation works with many partners to (1) Actively inspire philanthropy and increase permanent resources for the State of Rhode Island, (2) Invest in important community programs through grants, and (3) Provide leadership and a forum for dialog on critical community issues. In 2017, the Foundation award $43M in grants to more than 1,700 nonprofit organizations, and we continued our commitment to address the state's most pressing issues and needs of diverse communities.

COMPUTING- OFFICE OF INFORMATION TECHNOLOGY (OIT)

Office of Information Technology
https://it.brown.edu/

Brown University's network infrastructure is comprised of a state-of-the-art fiber optic backbone connecting a majority of buildings on campus. Support is available through Computing & Information Services (CIS), a centralized computing department at Brown. OIT supports a secure computing environment (referred to as "Stronghold") for sensitive and protected data that adopts HIPAA security measures. OIT also provides a high performance computing platform through the Center for Computation and Visualization. The computing platform comprises a 8,000+ core computing cluster with 266 GPU's for accelerated computing. A GPFS parallel

filesystem provides roughly 1 petabyte of disk storage, and 56/100 Gb/s Infiniband connectivity is used for all parallel applications messaging and I/O. The storage system is integrated with a 10 Petabyte Tivoli TSM backup/archival system. Redundant Internet connectivity provides high availability to the Internet and 12 research sites. Brown University utilizes Cisco networking equipment configured for high availability. An equipment renewal process is managed by the OIT organization to regularly refresh and upgrade network technology.

Advanced Research Computing (ARC): Advanced Research Computing (ARC) is a centralized group of data scientists within the Center for Computation and Visualization (CCV) in OIT that consolidates "big data" expertise to help researchers across campus apply new methods and derive insights from their data. By embedding these staff in research labs and groups and forming close partnerships with faculty, postdocs, and students, the ARC supports data-intensive projects across the physical, life and social sciences, and the humanities. In addition, the ARC builds analytic solutions with Brown's institutional data and supports data-driven decision making by senior administrators. Currently made up of thirteen full-time staff (with three more positions recently opened), the team's expertise spans machine learning, informatics, data exploration and visualization, databases and data management, and software engineering. Facilities include ~2,000 square feet of offices and conference rooms in OIT offices at 3 Davol Square.

Stronghold Research Environment for Data Compliance. Stronghold is a secure computing and storage environment that enables Brown researchers to analyze sensitive data, while complying with regulatory or contractual requirements. Stronghold is currently self-certified to meet the security requirements and controls for HIPAA (Health Insurance Portability and Accountability Act) and is undergoing the certification process for FISMA (Federal Information Security Management Act) and CJIS (Criminal Justice Information Security). This service is customized to the needs of individual users and their data use agreements. Each Principal Investigator (PI) is given a dedicated environment for their project to support their researchers, students, and collaborators. Access to the internet is restricted except for required locations for data imports or necessary software downloads. Import and export controls are in place to limit who can perform data migration, where sensitive data can come from and where desensitized or anonymized data can be moved to. Sensitive data are subject to file system auditing, and real-time alerting is available at the request of the PI.

Unified Research Data Sharing and Access (URSA) Initiative
https://www.brown.edu/initiatives/translational-research/biomedical-informatics-services

Unified Research Data Sharing and Access (URSA) Initiative: The overall goal of the Unified Research Data Sharing and Access (URSA) Initiative is to make data accessible and usable for research purposes by the clinical and translational research community through establishment of a shared technical infrastructure and common processes. This initiative is coordinated by the Brown Center for Biomedical Informatics (BCBI) that operates the Advance-CTR Biomedical Informatics Core in close collaboration with information services, compliance programs, and research offices at Brown and health data partners: Brown University Health, Care New England, VA Providence Healthcare System, Rhode Island Quality Institute, and Rhode Island Department of Health. For sensitive data, URSA utilizes the Stronghold server system at Brown (URSA Stronghold), which offers a secure computing environment for storing and analyzing data

Cybersecurity Program: The cybersecurity program at Brown University is a collaborative initiative comprised of several internal teams brought together for the purpose of proactively managing security exposures or vulnerabilities, and reactively handling incidents that may arise in Brown's computing environment. The purpose of the cybersecurity program is to develop, coordinate, drive, and maintain the cross-functional efforts necessary for Brown University to effectively manage security exposures, critical vulnerabilities, or cybersecurity incidents that span Brown's various technology platforms. The program also aims to maintain capabilities in several procedural areas, including security awareness, readiness, detection, communication, remediation, incident root cause analysis, education, and process improvement. The program includes management and procedural guidelines, policies, and training and awareness opportunities to assist staff in recognizing, identifying, and coordinating an appropriate response to attacks on Brown University information assets.

Documentation and procedures are also an integral piece of the program, designed to reduce overall security event exposure for Brown University, initiate a more effective and efficient incident response, decrease total time to incident resolution, outline basic regulatory responsibilities, and promote the ethical obligations surrounding the handling of sensitive data or personal information. It is the mission of the Cybersecurity Incident Response

Team (CIRT), a keystone of the program, to provide for the coordination of the response to, and investigation of, attacks on Brown University information assets. The CIRT also provides guidance on detecting, containing, and recovering from computer security incidents. Coordinated by the Information Security Group, the CIRT is responsible for managing responses to computer security events throughout the Brown infrastructure, including third-party-hosted systems. The degree of involvement of CIRT personnel in an event is dependent upon the event's severity or potential impact to University operations.

- Security Awareness: Any major enterprise that relies on heavy use of technology must stay aware of the vulnerabilities and emerging threats associated with those technologies. Protective techniques and safeguards must be consistently reviewed and updated using outside sources, vendors, partners, and other alliances that provide information about new technology threats.
- Readiness: Whether one's responsibilities are technological, operational, or professional, staff must understand clearly the security concerns that may exist within their realm of responsibility. Staff should be familiar with University policy, Computing and Information Services (CIS) and Information Security Group (ISG) policy, and the inherent security risks or responsibilities that exist within their job role. People, systems, policies, and processes need to remain organized to make the University computing environment suitable for effective management of threats.
- Detection: As a major computing enterprise, OIT must operate an array of monitoring systems suitable for the environment. Intrusion detection, monitoring of standard configurations, and early warnings of abnormal activity must be properly maintained to ensure that adverse events can be acted upon quickly.
- Communication: Effective communication among technology staff, professional staff, academic departments, strategic vendors, and sometimes the external community is critical when handling security incidents. Information must be communicated clearly and accurately to affected areas about any developing security crisis and the active management of an ongoing incident. Sound communications plans allow for the expedient gathering of resources when emergency efforts are needed. It is also imperative that internal Brown technical and professional teams work together when wider communications to the University community is necessary.

• Remediation, Mitigation, Eradication, Containment and Control: In the event of a cybersecurity incident, prompt remediation of the situation includes one or more of the following actions: stopping the attack, applying vendor software patches, implementing creative solutions to eliminate the risk, or containing and controlling a propagation-based malware threat. Whatever the situation, plans and scenarios need to be discussed to ensure that short-term effective strategies can be implemented quickly to contain a problem.

• Root Cause Analysis: Identification of a problem's root cause is essential to making sure the same incident does not recur. Root cause analysis is also important for regulatory reporting requirements which may be necessary in some cases. Whatever exercises are necessary, teams must work to facilitate the analysis necessary to determine problem causes. Such exercises include forensic investigations where appropriate.

• Education and Process Improvement: Teams must study the root causes of incidents and how they are handled. Process improvement and implementation of lessons learned is essential to grow cybersecurity defense capabilities. After studying incidents and the effectiveness of response to them, team must work to implement new processes as necessary to ensure better protection in the future.

Center for Computation and Visualization (CCV): The mission of CCV is to provide the scientific and technical computing expertise required to advance computational research and support Brown's academic mission. The accelerated transformation of the pace and impact of computational approaches led to Brown University's recognition of the importance of high performance computing across all of its disciplines. As a result, Brown and IBM developed in 2009 a $4M investment in a high performance computing platform, known as Oscar, that is available statewide to researchers. Through grant funding and University investment, this platform has undergone continual hardware enhancement, and now includes Intel Scalable Processors and nVIDIA GPUs of the Pascal and Volta architectures, as well as 100Gb/s EDR Infiniband. The equipment is maintained and operated by the staff of the Center for Computation and Visualization (CCV), who have extensive experience in operating shared computational clusters. CCV staff are responsible for scheduled maintenance, access control as needed, and integration with research specific hardware as required by NIH-funded researchers. CCV staff also take care of all financial aspects of operating and maintaining the facility.
The high performance computing resources at CCV equip the Brown research community to undertake complex numerical simulation, modeling, and data analysis. Oscar is the primary research computing cluster with several hundred multi-core nodes sharing a high performance interconnect and file system. Applications can be run

interactively or scheduled as batch jobs. Several large memory nodes provide substantially more memory than is available on typical workstations and laptops. A large collection of software is available on CCV systems, including:python, perl, R, Matlab, Mathematica, Maple, optimized math and science libraries, and domain specific applications. CCV staff can help acquire and install most applications upon request. The technical specifications of Oscar are:

• Two login nodes provide access for application development, debugging and batch job management • About 400 compute nodes up to current specs of dual multi-core processors and 128 GB of memory and a total of more than 8,000 cores

• Specialized nodes containing GPU processors or 512 GB of memory

• High-bandwidth/low-latency Infiniband interconnects

• -A ll nodes are diskless with I/O provided by an IBM GPFS parallel file system

• 1 PB of usable disk space

• RHEL 7.3 Linux operating system

• SLURM workload manager

CCV provides storage for large research files connected to the HPC system. A default allocation of 256 GB (also called RData) is given to all faculty members at Brown, on a per request basis, with the option of purchasing additional storage as needed. Long-term storage and backups are available on a fee basis. Storage can be purchased in increments of terabytes for periods of up to 6 years. The cost for backups is included when storage

is purchased. Data is incrementally backed up to tape on a daily basis. In addition, snapshots for the last 7 days are available online for quick restores. Long-term archiving of files to tape (one or two copies) can be purchased as needed. Tape libraries are housed at two separate locations to enable disaster/recovery scenarios. In addition, a disaster recovery copy of the non-ephemeral data is kept on a lower-performance filesystem to permit immediate recovery and limited production computing in the unlikely event of the loss of the primary filesystem. These research storage allocations can be easily mounted to desktops or other computer systems to allow for easy access and sharing files. Details of HPC file storage at CCV:

• Rdata is accessible from all CCV systems (/gpfs/data)

• Can be mounted to all desktops on Brown's campus network

• Is backed up on a daily incremental basis

• Rdata allocations can be increased by purchasing additional storage

• Home directory on Oscar: All users will have access to a home (/gpfs/home) allocation of 10 GB. This allocation is backed up on a daily basis

• Group storage: Premium accounts will be entitled to an additional allocation of 256 Gb that may be merged with RData (for primary PI). Likewise, group premium accounts will be entitled to additional 25 GB per user • Snapshots: Daily snapshots are available for both RData and Home file systems for seven consecutive days • Scratch: Space for temporary files is available as (/gpfs/scratch). These files are not backed up and scratch space is strictly for temporary files. Files may be purged after 30 days or as the file system is being utilized • This allocation will be managed by an application called xdisk (time versus space) (work in progress) • Sharing data: Sharing files that are too big to be sent via email. There is a 10 GB quota and a limit of 2 GB per file

• Users can access RData from the CIFS share. This can be mapped as a drive in Windows and mounted in Mac OS X and Linux from any campus system (off-campus use requires a VPN connection to campus) • Users can also access files by using a file transfer tool like Secure Copy (SCP), Secure FTP (SFTP), or rsync

A key benefit of using these computing resources is that CCV installs and maintains a large collection of computational research software. CCV can install most software packages upon request. A full range of statistical and other scientific software is available on the CSS system, including standard statistical packages (including SAS, Stata, S-plus), specialized statistical software (such as DBMSCopy, ROCKIT, nQuery, East), scientific programming languages and software (such as Fortran, C++, Matlab) and office software. All data stored on the CSS network is secure: access to the system from outside our network requires the use of a software client that employs a point-to-point encryption. The UNIX operating system also provides the mechanism to limit access of specific directory trees to specific groups of users. CSS will supplement the funded Administrative Coordinator for the Core with a modest amount of in-kind administrative support in the form of

existing clerical and secretarial help, assistance with grant and subcontract preparation, access to conference rooms and office equipment. The Core will pay a nominal fee to CSS to offset the cost of maintaining multiple user site licenses for statistical software and for maintaining updated operating systems, having full access to the computing network (including associated software and dedicated hardware), and software and systems support for core personnel.

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Virtual Reality Systems

CCV - YURT
https://it.brown.edu/services/type/virtual-reality-systems

YURT: The YURT Ultimate Reality Theatre (YURT) is a state-of-the-art projection based VR theatre, with over 69 HD stereo projectors that display onto 145 mirrors, full 360° surround view, floor and ceiling, and camera based tracking system with submillimeter accuracy. The system is approximately 12x8x9 feet in size, and can accommodate groups up to 10 people. The YURT is coupled to the CCV High Performance computer system, allowing for even more flexibility when visualizing large and complex data sets. The YURT displays over 100 million stereo pixels and the HD projectors are driven by 20 nodes of the CCV HPC cluster. At normal viewing distances, the pixels are smaller than are resolvable by the human retina. The screen consists of translucent polycarbonate. The front wall is 25 feet long and 8 feet high and spans 180 degrees of view. The screens are suspended, along with half of the projectors, from an aluminum superstructure, with a catwalk for maintenance. The blending and warping that create one image from many projectors is proprietary, from the Scalable Display company, but this library has been licensed to be incorporated into many different applications and software libraries. Many of the applications that run in the YURT use vrg3d, a virtual reality graphics package developed and maintained in the Computer Science Department. Other scientific and analysis packages have already been successfully incorporated into the YURT, including Blender, a popular open-source 3D modeling game engine, and Paraview, a widely-used scientific graphics and analysis package.

CCV - Cave
https://it.brown.edu/services/type/virtual-reality-systems

Cave: The Cave is the predecessor to the YURT, sharing many of the YURTs characteristics as well as applications. Arranged in an 8 foot cube, the Cave utilized 7 stereo projectors and a similar camera based tracking system. CrystalEyes LCD-shutter glasses provide stereo depth-perception, and a variety of Intersense and Polhemus tracking devices allow software to track the position of a user's hand, head, wand, etc. The Cave

also has a multi-speaker sound system that provides positional audio. Some existing software that can be used in the system currently include volume visualization, molecular visualization, and simple 3d model manipulation.

High-Bandwidth Fiber Connectivity

High-Bandwidth Optical Fiber Connectivity: An NSF-EPSCoR Infrastructure Improvement Award to Brown University (Dr. Edward Hawrot, PI) now provides 10Gbps per lambda (laser light wavelength) connection between Brown's Laboratory for Molecular Medicine at 70 Ship Street, the new Medical School building located in the heart of Providence's historic Jewelry District and the core campus. Similar high-bandwidth connectivity is provided to a nearby university branch building on the edge of the Jewelry District that is home for Statistical Sciences and the School in Public Health. Other nodes provide connection to the core Brown network on campus, the OSHEAN network terminus in the Foundry building located in downtown Providence, the University of Rhode Island Providence campus at 80 Washington Street where the URI's Providence Biotechnology Center is located. The lambda connection now connects us to other EPSCoR institutions in New England. OSHEAN access from the Foundry node provides 10 Gbps per lambda connectivity to Boston and New York and beyond.

UFunds

https://ithelp.brown.edu/kb/ufunds

UFunds is a system developed at Brown to allow for custom applications and a standardized processing workflow. Despite the name, UFunds is not just for handling financial awards. It can support anything where a given office has some initiative or program for which they wish to accept applications. For example, it has been used to support applications to participate in academic programs, as well as Brown's part in Fellowships applications for outside awards such as the Fulbright. Users can apply for various "opportunities" using UFunds. Opportunities in UFunds are managed by Brown faculty and staff. They may be available to the entire Brown community or restricted based on criteria such as student/faculty/staff or class year.

One key function UFunds provides is transparency. UFunds tracks everything that a user applies for, and by default that history is made available to approvers. This allows for more informed decisions in cases where a given applicant might have applied for funding from multiple sources. Approvers do have the ability to flag applications "private" so that they are not made visible to other approvers. Note that UFunds is not a place to publicize opportunities. UFunds only displays opportunities that are currently accepting applications, and there is no mechanism to show past or future opportunities. Because of this, you may still need an external site to provide details about your program(s), especially outside the application period.

DATA ANALYTIC RESOURCES LOCATED ACROSS RHODE ISLAND

Centers Institutes and Programs

Advance RI-CTR BIBCE Core
Advance RI-CTR BERD Core
Alcohol Research Center on HIV
Bradly Hasbro Children's Research Center
Brown Center for the Study of Children at Risk
Brown Health Biostatistics, Epidemiology, and Research Design (BERDI)
Brown Health Center for Digital Health
Center for Advancing Health Policy through Research
Center for Alcohol and Addiction Studies
Center for Alzheimer's Disease Research
Center for Behavioral and Preventive Medicine

Center for Children's Environmental Health Outcomes (ECHO) Pediatric Clinical Trials
Network Center for Computational Brain Science
Center for Epidemiological Research
Center for Evidence Synthesis in Health
Center for Gerontology and Healthcare Research

Center for Health Promotion and Health Equity
Center for Neurobiology of Cells and Circuits
Center for Neurorestoration and Neurotechnology
Center for Primary Care and Prevention
Center for Statistical Sciences
Center for Translational Neuroscience
Center for Vision Research
COBRE Center for Antimicrobial Resistance and Therapeutic
Discovery COBRE Center for Computational Biology of Human
Disease
COBRE Center for Neuromodulation
COBRE Center for Sleep and Circadian Rhythms in Child and Adolescent Mental
Health COBRE for Cardiopulmonary Vascular Biology
COBRE for Nervous System Function
COBRE for Opioids and Overdose
COBRE for Skeletal Health and Repair
COBRE for Stem Cells and Aging
COBRE STAR for Stress, Trauma, and Resilience
ECOG-ACRIN
Hassenfeld Child Health Innovation Institute
International Health Institute
Mindfulness Center
Pandemic Center
Pediatric Anxiety Research Center
Providence/Boston Center for AIDS Research
Qualitative Sciences and Methods Training Program
Quantitative Sciences Program
RI INBRE - Centralized Research Core
RI INBRE -Molecular Informatics Core
R- INBRE - Proteomics Core
RI Quality Institute
Weight Control and Diabetes Research Center

Labs and Groups

Community Noise Lab
FRESH Research
IMPACT Collaboratory
International Collaborative on Costs, Outcomes and Needs in Care
(ICCONIC) LeaRRn: Learning Health Systems Rehabilitation Research
Network
LIVE Research Lab
Merrill Lab
People Place & Health Collective
White Laboratory of Affective Neuroscience
Consortium for Research Innovation in Suicide Prevention
Vista Clinical Research Group

CORE AND SHARED RESEARCH FACILITIES

CoresRI.org.

http://www.coresri.org

Rhode Island universities, colleges and academic medical centers across the state collaborated to develop the CoresRI.org website (www.CoreRI.org); a directory of core research facilities, services and instrumentation in

Rhode Island. Development of CoresRI grew out of a need to maximize awareness and optimize utilization of these important core facility resources within the state. Besides encouraging equipment sharing and reducing duplication of services, CoresRI.org fosters collaborations and enables investigators to better assess future shared equipment needs. The CoresRI directory catalogs instruments (specific makes, models, and uses), services, resources, locations, and contact personnel. Through the directory, researchers can easily search for instruments and services and directly link to the core facility's website for more detailed information. The site currently lists over 1000 instruments, services or resources located within 100 facilities at 19 institutions and 23 centers.

Advance RI-CTR – Biostatistics and Research Design
https://advancectr.brown.edu/research-services/biostatistics-research-design-services

Advance RI-CTR – Informatics and Implementation Science
https://advancectr.brown.edu/research-services/informatics-implementation-science

Advance RI-CTR – Community Engagement and Outreach Core
https://advancectr.brown.edu/research-services/community-engagement-and-outreach-ceo

Advance RI-CTR – Qualitative Research Methods
https://advancectr.brown.edu/research-services/community-engagement-and-outreach-ceo

BioMed Core Research Facilities
https://biomedcorefacilities.brown.edu/

BioMed Core Research Facilities. Graduate student education and research training at Brown University benefits from a wide range of cutting-edge facilities, instrumentation, and other resources to support these endeavors. Brown University's Shared Technology Resource (Core) Facilities function at the level of service, research, and teaching. Serving as centers of intellectual exchange and collaboration, each technology-focused core provides a broad spectrum of investigators access to innovative instrumentation, current technologies, and expert consultation. The facilities are financed by a mixed funding model that includes grant awards, user fees, and institutional support. Additional cost effectiveness and efficiency are achieved by decreased equipment duplication, economy of scale savings, improved quality control, and rapid turnaround times. Advanced technology platforms of similar scale and productivity would not be financially feasible for any individual lab to purchase, upgrade, and maintain. Each facility is staffed by highly trained personnel that provide exceptional customer service and resource management. The timely acquisition of new instrumentation in the core facilities and the frequent implementation of new technologies facilitate faculty recruitment, education, and training of students, and support research funding. Faculty oversight and facility user committees advise the core directors. The cores are supported by a Director of Research Operations, a Core Facility Program Manager and two Financial and Administrative Coordinators. The Cores use iLabs Laboratory Management software for scheduling user services and invoicing.

BioMed - Bioimaging Facility Leduc
https://biomedcorefacilities.brown.edu/bioimaging-facility

This facility has two separate building locations, one of them being at the Laboratories for Molecular Medicine and one at the Sidney Frank Hall for Life Sciences. The facility has a PhD-level director an MS-level microscopist manager and a research technician. Instrumentation includes a Thermo Apreo Volume Scope (VS) SEM for serial block-face imaging, a Tundra Cryo-Transmission electron microscope with a Falcon detector, a Vitrobot IV Vitrofier, an FV1000 Olympus multiphoton laser scanning microscope, an Olympus FV3000 confocal imaging microscope, Zeiss LSM880, LSM800, and LSM710 confocal laser scanning microscopes, two Nikon Ti2-E high content analysis fluorescence microscopes, two Zeiss Axiovert 200M fluorescence microscopes with DIC, phase

contrast, and a stage heater for live imaging, a Zeiss Lumar fluorescence stereomicroscope, and two Olympus VS200 Research Slide Scanners. The facility provides operational oversight of the Opera Phenix high-content screening system in the Center for Alternatives in Animal Testing at the Laboratories for Molecular Medicine. The

facility also maintains equipment for sample preparation, including a Pelco microwave, critical point dryer, sputter coater, glow discharge unit, and a Leica EM UC7 ultrathin microtome. MetaMorph software is available for image analysis. Training in microscopy, image analysis, and ultrathin sectioning is provided at both sites.

BioMed - Drosophila Media Facility

https://biomedcorefacilities.brown.edu/drosophila-media-facility

This facility is located at the Biomedical Center and is overseen by the Director of the Multidisciplinary Teaching Laboratories and staffed by a full-time technical assistant. The Facility provides investigators with high- q u a l i t y media for Drosophila research and genetic stock maintenance. To provide large and small quantities of media, this centralized kitchen is equipped with a food-service quality Cleveland Range Kettle MKET-12-T. Media is pumped into trays of vials or plastic bottles u s i n g a Gilson GX281 Liquid Handler.

BioMed - Flow Cytometry and Sorting

https://biomedcorefacilities.brown.edu/flow-cytometry-cell-sorter-facility

This facility, located at the Biomedical Center, is directed by a PhD-level investigator and staffed by a full-time manager. The primary instrument is a Cytek Aurora Cell Sorter (CS), a 3 laser (Violet 405nm, Blue 488nm, and Red 640nm) 41 parameter cell sorter that includes tube and plate sorting capabilities, tube cooling, and heating, built-in primary aerosol containment, and comes with a workstation. The Aurora CS will be able to analyze 57 parameters as well as have the capacity to do 6-way sorting, single cell sorting for RNAseq, and plate sorting (96 and 384 wells). The optics and state-of-the-art low-noise electronics will result in high sensitivity and resolution of dim fluorochromes, as well as the revolutionary spectral flow analysis that allows for analyzing similar fluorochromes. Multiple collection tube capabilities include 1.5 mL, 5 mL, and 15 mL tubes.

The facility also houses a four laser Cytek Aurora with blue 488nm, red 640nm, violet 405nm and UV 355nm lasers. This instrument can analyze up to 54 channel, 57 parameters and is equipped with an auto sampler loader. Consultation is available. A computer workstation with FlowJo software is provided for facility users.

BioMed - Genomics

https://biomedcorefacilities.brown.edu/genomics-facility

This facility is located at the Laboratories of Molecular Medicine and staffed by a full-time PhD-level director. It provides investigators access to a variety of advanced instrumentation and training. DNA sequencing services are provided using an Illumina NextSeq 2000 Sequencing System. Instrumentation housed in the facility includes a Nanostring nCounter® SPRINT™ Profiler, an Affymetrix Gene Chip Workstation, two ABI ViiA™ 7 Real-Time PCR Systems, a BIO-RAD QX200 Droplet Digital PCR, an Advanced Analytical Fragment Analyzer, a Cytation 5 Plate Reader, a Synergy H1 Hybrid Multimode (H1MM) Microplate Reader, a Covaris S220 Ultra-Sonicator, an Agilent 2100 Bioanalyzer, a LI-COR Odyssey Infrared Imaging System, a Countess Cell Counter, an AXON GenePix 4000B Scanner, a Beckman Optima Max Ultracentrifuge, and a Nanodrop ND 1000.

BioMed - Herbarium

https://www.brown.edu/research/projects/herbarium/

Herbarium: The Brown University Herbarium was founded in 1869 when the University acquired the collections of Stephen Thayer Olney. The collection includes around 100,000 plant specimens and is an important repository of Rhode Island and New England collections. We also have specimens from all 50 U.S. state (plus the District of Columbia) and the collection is rich in western and southern North American plants including sets of historically valuable specimens from 19th and early 20th century western U.S. expeditions. Among other important collections, the Herbarium also includes a set of Charles Wright's Cuban plants (1856-1867), Cyrus Pringles's plants of Mexico (1885-1909) and a unique and classic collection of Carex assembled by Stephen Olney. The Herbarium continues to be active and over the past few years we have added around 2,000 specimens to the

collection. These include new collections made by faculty and students at Brown in addition to gifts from other herbaria.

BioMed - Molecular Pathology Core Research Laboratory

https://biomedcorefacilities.brown.edu/molecular-pathology-core

Molecular Pathology Core Research Laboratory. This facility, located at the Laboratories for Molecular Medicine, is staffed by a full-time manager and a research assistant. The facility provides access to histopathological, immunohistochemical and immunocytological technologies. Processing, embedding, sectioning, and staining of specimens is provided. The instrumentation includes an Epredia HistoStar Embedding Center, a Leica automated slide stainer XL, a Leica CM3050S cryostat, a Micron HM355 rotary microtome for paraffin sections, a Leica RM2265 rotary microtome for thick and semi-thin plastic sections and paraffin sections, a Leica ASP300 S Automated Vacuum Tissue Processor, a ScanScope CS digital slide scanning system from Aperio Technologies, a Nikon Eclipse TS100 inverted fluorescence microscope, a Nikon E800 microscope with a digital camera, a Leica VT1000S Vibratome for soft tissue sectioning, and an Arcturus PixCell II laser capture microdissection system.

BioMed - Transgenic and Genome Editing Facility

https://biomedcorefacilities.brown.edu/transgenic-gene-targeting-facility

This facility, located at the Laboratories for Molecular Medicine, is directed by a PhD-level research investigator and employs a full-time facility manager and research technician. Services include provision of CRISPR technologies for genome modification and editing, pronuclear injection of DNA into fertilized eggs, injection of gene targeted embryonic stem cells into blastocysts, and embryo cryopreservation. The facility provides genotyping services and individual investigators are responsible husbandry and breeding of generated mouse strains. Facility instrumentation includes a Nikon SMZ1500 dissection microscope, a Nikon Eclipse TE200 inverted microscope equipped with Eppendorf Transferman NK2 micromanipulators and an Eppendorf FemtoJet microinjector, a Nikon Eclipse TS100 inverted microscope, a Nikon SMZ800 surgical microscope, a Neon Transfection System MPK5000S, a Bio-Cool Controlled Rate Freezer, a Piezo Impact Drive, a NanoDrop Lite UV-Vis Spectrophotometer with printer, and a CBS V1500AB isothermal liquid nitrogen storage system.

BioMed - Plant Environmental Center

https://www.brown.edu/academics/ecology-and-evolutionary-biology/about-us/facilities/plant-environmental center

The Plant Environmental Center at Brown University is located atop the IBES building at 85 Waterman Street. The facility is comprised of six computer controlled research greenhouses totaling approximately 5,000 square feet. These greenhouses are used for research experiments, as well as to house various plant collections used to support biological science classes. In addition, this rooftop space includes an 1800 square-foot conservatory open year around. The collection in the conservatory includes many plant families, including a diverse collection of Cycads, Orchids, Aroids, and many plants from the Amazon region. Many of these plants have medicinal and ceremonial uses and are part of our Ethnobotanical collection. The greenhouse facility also consists of a head house, classroom, and plant growth chamber laboratory. The plant growth laboratory consists of eight E7/2 Conviron plant growth chamber units, as well as two eighty square-foot walk-in chambers and one eighty square foot cold room. These units are primarily used by graduate students and faculty performing research with very specific cultural requirements that cannot be maintained in the greenhouses

BioMed - Proteomics

https://biomedcorefacilities.brown.edu/proteomics-facility

The Proteomics Facility, located at the Laboratories for Molecular Medicine, is directed and staffed by a PhD level scientist. Facility instrumentation includes a Thermo Scientific Ascend Tribrid Orbitrap Mass Spectrometer with Vanquish and FAIMS, an Ultimate 3000 UHPLC, a Q Exactive Pus Hybrid Quadrupole-Orbitrap Mass Spectrometer, an Eppendorf epMotion Automated Liquid Handling System, and a Labconco Refrigerated

Vacuum Concentrator. Services include basic, complete protein profiling, complete CoIP interactomics, complete phosphoproteomics, TMT multiplex profiling, and custom services.

BioMed - Rhode Island Biobank

https://biomedcorefacilities.brown.edu/rhode-island-biobank

The Rhode Island Biobank, located in the Biomedical Center and Laboratories for Molecular Medicine, is a human tissue and fluid sample cryogenic storage facility for investigators located at Brown University and the affiliated hospitals of the Warren Alpert Medical School. This facility, staffed by a research technician, provides a secure, state-of-the-art biorepository to store human biological samples. Facility equipment includes four (4) -80°C freezers, three (3) 4°C refrigerators, and two (2) Taylor Warton liquid nitrogen freezers each capable of holding 40,000 1ml samples. The facility offers consultation regarding best practices in biobanking and biospecimen inventory management.

BioMed - Water Flume

https://engineering.brown.edu/fluid-dynamics-testing-facilities-fdtf

The Department of Ecology and Evolutionary Biology was awarded a grant from the NSF to establish a core research facility for a 3,500-gallon water flume. Measuring 80 cm in width, 60 cm in height, and 440 cm in length, the flume is based on a recirculating design with the flow loop arranged in a horizontal configuration. With its ability to regulate flow rate patterns up to 1 m/s, the flume offers researchers a wide array of simulated conditions. Principal investigators use the flume to replicate situations normally found in the field.

BioMed - Structural Biology

https://biomedcorefacilities.brown.edu/structural-biology-facility

Structural Biology Facility. The facility, located at the Laboratories for Molecular Medicine, is directed and managed by two PhD-level scientists. The facility houses instruments for NMR spectroscopy and X-ray crystallography. The facility instrumentation includes Bruker AVANCE III HD 850 MHz, Bruker NEO 600MHz NEO, and Bruker AVANCE II 500 MHz spectrometers. The spectrometers are equipped with TCI cryoprobes and have nitrogen liquefiers. All spectrometers are operated by Linux workstations running Bruker TopSpin software.

For protein crystallographic research, the facility instrumentation includes a Rigaku MicroMax-003 microfocus sealed tube X-ray generator and Saturn 944HG detector. The setup is equipped with ACTOR crystal mounting robot that can be operated using the J Director software from a Linux workstation.

Biophysical analytical instruments include an Nanotemper Microscale Monolith X with spectral shift and MST, a Jasco J-815 Circular Dichroism Spectropolarimeter, a MicroCal VP Differential Scanning Calorimeter, a MicroCal Isothermal Titration Calorimetry (iTC) 200, and a HORIBA Jobin Yvon FluoroMax-4 Spectrofluorometer.

BioMed - X-ray Reconstruction of Moving Morphology (XROMM)

https://biomedcorefacilities.brown.edu/xromm-facility

The XROMM facility, located at the Biomedical Center, is directed by a PhD-level scientist and staffed by a research technician. XROMM is a 3D imaging technology for visualizing rapid skeletal movement in vivo. XROMM combines 3D models of bone morphology with movement data from biplanar X-ray video to create highly accurate re-animations of the 3D bones moving in 3D space. Rapid bone motion, such as during bird flight, frog jumping and human running, can be visualized and quantified with XROMM. Facility instrumentation includes mobile C-arm OEC 9400 Fluoroscopes and a biplanar X-ray room containing two Varian model G-1086 X-ray tubes, 2 EMD Technologies model EPS 45-80 pulsed X-ray generators, two Dunlee model TH9447QQXH590 image intensifiers (16 diameter), and 2 Phanotm v10 high-speed digital video cameras.

The facility also has a veterinary Animage Fidex CT Scanner, a CT scanner designed for animals in the size range from rats to dogs, a SKYSCAN 1276 in vivo micro-CT system for scanning small laboratory animals, and GE Lightspeed 16 slice CT Scanner.

Brown Health - Biostatistics, Research Design, and Informatics Core (BERDI)

https://www.brownhealth.org/centers-services/biostatistics-epidemiology-research-design-and-informatics-berdi

The BERDI is a team of faculty and staff across several departments with diverse and extensive experience conducting a broad range of research projects. The BERDI is partially supported with funds from Advance CTR. BERDI has two main purposes: to help investigators navigate the quantitative and qualitative resource landscape at Brown University Health (and partner institutions) to identify appropriate areas for collaboration and to provide biostatistics support on projects through established collaborative teams and build additional biostatistics resources as needed.

Brown Health - Bioengineering Core

https://www.brownhealth.org/centers-services/center-biomedical-research-excellence-cobre-skeletal-health and-repair/bio

The bioengineering core provides the biomechanical expertise and resources to all of the past and future investigators comprising the Center of Biomedical Research Excellence (COBRE) in Skeletal Health and Repair at Rhode Island Hospital. The overall goal of this COBRE is to expand the multi-disciplinary research center that is focusing on the development, pathology and repair of cartilaginous tissues.

Brown Health - Extracellular Vesicle Core

https://www.brownhealth.org/centers-services/cobre-center-stem-cells-and-aging/extracellular-vesicle-core

The COBRE Center for Stem Cells and Aging (SCA) at Rhode Island Hospital has developed the unique Extracellular Vesicle Core. The aims of the Extracellular Vesicle Core are to provide the research community at Rhode Island Hospital, and researchers outside of Rhode Island Hospital, with our expertise, infrastructure and state-of-the-art EV technologies to support research in the fields of extracellular vesicle research. The COBRE Extracellular Vesicle Core staff have been successfully providing services to the research community in the Rhode Island area with their expertise in vesicle harvest, isolation, characterization, and function analysis for more than ten years.

Brown Health - Flow Cytometry Core

https://www.brownhealth.org/centers-services/cobre-center-stem-cells-and-aging/flow-cytometry-core

The core has a BD Biosciences Influx cell sorter and LSRII. An advisor is available to the investigators in experimental design and data interpretation. The core has had experience with a variety of different flow cytometry applications and protocols and will work with both experienced and novice investigators to help plan and execute successful flow cytometry experiments.

Brown Health - Imaging Molecular Biology and Nanomedicine Core

https://www.brownhealth.org/centers-services/center-biomedical-research-excellence-cobre-skeletal-health and-repair/imb

The imaging and molecular biology and nanomedicine (IMBN) core facility provides instrument and expertise for translational research. It will continue to serve the needs of this Center of Biomedical Research Excellence (COBRE) and other investigators in the community by updating research instrument and providing new service to meet new demands. Thie IMBN core will provide cutting edge technology such as biomimetic nanomaterial in collaboration with Brown University School of Engineering and Illumina sequencing in the Brown University BioMed Core Facilities.

Brown Health - Lentivirus Construct Core

https://www.brownhealth.org/centers-services/cobre-center-stem-cells-and-aging/lentivirus-construct-core