

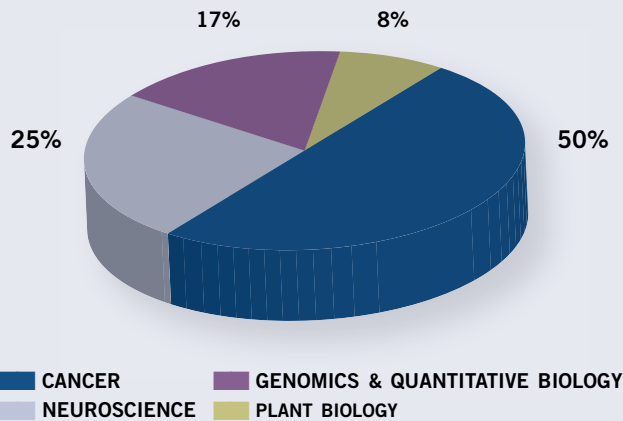


# CSH Cold Spring Harbor Laboratory

Founded in 1890, Cold Spring Harbor Laboratory (CSHL) is a preeminent international research institution, achieving breakthroughs in molecular biology and genetics and enhancing scientific knowledge worldwide.

## RESEARCH

United by the goal of alleviating major causes of human suffering, CSHL's 600 researchers and technicians focus on these areas:



## FACTS & FIGURES

- Home to eight Nobel laureates, including James D. Watson, co-discoverer of the DNA double helix
- National Cancer Institute-designated Cancer Center
- Test facility delivers drug candidates to biotech industry
- Incubator for more than 25 biotechnology start-ups
- Highest rating from Charity Navigator

Annual Operating Budget . . . . . \$155 million  
 Endowment . . . . . \$470 million

Research laboratories . . . . . 54  
 Postdoctoral fellows . . . . . 150  
 Graduate students . . . . . 100

Total employees & students . . . . . 1,100  
 Annual Meetings & Courses Attendees . . . . . 12,000  
 Annual DNA Learning Center Students . . . . . 32,000

## EDUCATION

CSHL is recognized as a pioneer in science education, training professional scientists, students and teachers:

**Watson School of Biological Sciences:** trains the next generation of scientists through an innovative Ph.D. program that fully funds the doctoral research of each student.

**Meetings & Courses Program:** attracts 12,000 scientists annually from around the world to learn the latest technologies and share advances in biological research.

**Banbury Center:** a think-tank that convenes global experts to guide science and public policy.

**DNA Learning Center:** produces web-based multimedia tools, delivers hands-on learning experiences to 32,000 middle and high school students every year, and trains teachers; over 580,000 students have been taught since 1988.

**CSHL Press:** publishes scientific journals, books, and online resources including a preprint service, used by more than 2,000 academic, government, and corporate research institutions and hundreds of thousands of scientists worldwide.



## 125+ YEARS OF BREAKTHROUGHS



- 2016** FDA approves Spinraza™—a drug based on CSHL insights into alternative RNA splicing—used to treat spinal muscular atrophy (SMA), a childhood neurodegenerative disease.
- 2016** Clinical trial initiated on a PTP1B inhibitor for treatment of metastatic breast cancer
- 2015** FDA approves breast cancer drug that works on cyclin D-dependent kinase; based on CSHL insights into the role of cyclin D in cancer progression.
- 2014** Toolkit of plant gene variations is developed, allowing breeders to maximize yield of tomato and other crops.
- 2011** Drug target discovered for lethal form of Acute Myeloid Leukemia (AML).
- 2011** First genomic profiling of single cancer cells completed.
- 2007** Exome sequencing developed; the most common tool for identifying genetic mutations in disease.
- 2007** Link identified between spontaneous genetic mutations & autism.
- 2002** shRNA technology developed to switch on & off any gene in a cell.
- 1994** Process of genome replication recreated for first time in test tube.
- 1992** Damage to ends of chromosomes (telomeres) linked to cell aging.
- 1988** Cancer-causing genes shown to interact with cancer-suppressing genes, overriding signals that keep cell growth in check.
- 1982** First human cancer-causing “oncogene” identified.
- 1977** Discovery that genes can be discontinuous or “split” reveals RNA splicing mechanism, an essential process for editing & communicating genetic information.
- 1952** DNA revealed as genetic material in bacteriophage.
- 1951** “Jumping Genes” discovered in plants, proving that genomes are subject to rearrangement.
- 1945** Wartime penicillin production significantly increased by isolation of better strain of penicillium.
- 1933** Prolactin (a hormone for milk secretion) identified and purified.
- 1929** ACTH, a key hormone produced by the pituitary gland, is isolated, benefiting Addison disease patients suffering from insufficient steroid production.
- 1908** Modern agriculture revolutionized by discovery of hybrid vigor in corn.

## \$100 MILLION ANNUAL RESEARCH BUDGET

### CANCER

Understanding fundamental cellular processes that are the basis of life, and how they go wrong in cancer. *Improving diagnosis and treatments of all major cancers: brain, breast, colon, leukemia, lung, lymphoma, melanoma, ovarian, pancreatic, and prostate.*

### NEUROSCIENCE

Exploring the brain to identify the neural networks involved in sensory processing, cognition, and decision-making. *Providing insight into disorders such as Alzheimer's, autism, schizophrenia, bipolar and depression.*

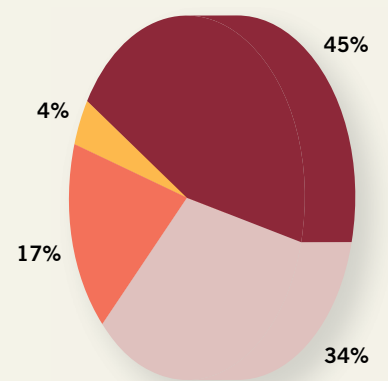
### GENOMICS & QUANTITATIVE BIOLOGY

Using cutting-edge technology to read the genome of organisms, tumors, or even single cells. *Developing innovative data analysis tools to develop disease diagnostics and therapeutics.*

### PLANT BIOLOGY

Investigating the mechanisms of plant development and genetics. *Improving crop yields, increasing biodiversity, and developing biofuels.*

### RESEARCH FUNDING BY SOURCE



FEDERAL      ENDOWMENT  
PRIVATE      CORPORATE