

Medical center institutions

Yale School of Medicine

Yale Cancer Center

Yale Child Study Center

Yale Medical Group

Yale School of Public Health

Yale School of Nursing

Yale New Haven Health System,

including: Yale-New Haven Hospital,

Children's Hospital, Psychiatric Hospital,

Saint Raphael Campus, and Smilow Cancer Hospital

Yale Health

Connecticut Mental Health Center

VA Connecticut Healthcare System

John B. Pierce Laboratory

MEDICAL CENTER

An affiliation agreement between the medical school and Grace-New Haven Hospital in 1965 created Yale-New Haven Hospital (YNHH), which expanded in 1993 with the opening of the Children's Hospital, and again in 2000 with the acquisition of the Psychiatric Hospital. The 14-story Smilow Cancer Hospital opened in 2009, and in September 2012, YNHH acquired the Hospital of Saint Raphael, adding 533 beds and making it one of the largest hospitals in the United States. The medical campus has grown over the years to include or abut the institutions listed at left. Four miles away in West Haven, the affiliated VA Connecticut Healthcare System maintains active clinical, research, and education programs in conjunction with many medical school departments. Extensive maps and directions to medical center destinations are available online at *medicine.yale.edu/maps*.

HOW TO REACH US

- **To find a Yale doctor**, visit Yale Medical Group online at *yalemedicalgroup.org*, or call (877) YALEMDS or (203) 785-4851.
- **For information on medical school admissions**, visit *medicine.yale.edu/admissions*, or call (203) 785-2643.
- **For news about the school**, visit *medicine.yale.edu*. Media inquiries should be directed to the Office of Public Affairs and Communications at *opac.yale.edu* or (203) 432-1345.
- **To find a person at Yale University**, consult the online directory at *directory.yale.edu/phonebook*, or call directory assistance at (203) 432-4771. To find a person at Yale-New Haven Hospital, call (203) 688-4242.
- **To give to the School of Medicine**, please visit *yale.edu/givemedicine* or call Jancy Houck at (203) 436-8560.

Facts and Figures 2012–13 was produced by the Office of Institutional Planning and Communications. To order copies, contact us at 1 Church Street, Suite 300, New Haven, CT 06510, or (203) 785-5824, or by e-mail at *facts.med@yale.edu*. On the Web: *medicine.yale.edu/facts*.

Photos: John Curtis, Terry Dagradi, Roshani Dhungana, Robert Lisak, Cushing/Whitney Medical Library

New Haven

Population (2011) 132,398

Distance from:  
NYC 80 miles  
Boston 137 miles

University profile

FACULTY

Yale 4,160  
YSM 2,447

STAFF

Yale 9,323  
YSM 3,314

STUDENTS

Yale 11,906  
YSM 1,161

Community service

The majority of students volunteer for at least one of the school's many community service projects, including:

Hill Regional Career High School partnership

Anatomy Teaching Program

Hunger and Homelessness Auction

HAVEN (student-run free clinic)

Free care provided to New Haven residents in FY12: \$14.2 million<sup>6</sup>

YALE UNIVERSITY AND NEW HAVEN

The School of Medicine is located immediately adjacent to the main campus of Yale University, one of the world's great institutions of higher learning. With a residential college system modeled after those of Cambridge and Oxford, the undergraduate school is complemented by the Graduate School of Arts and Sciences and 12 professional schools, including Architecture, Art, Divinity, Drama, Engineering and Applied Science, Forestry and Environmental Studies, Law, Management, Music, Nursing, and Medicine, which includes the School of Public Health. In 2007, Yale acquired the 136-acre West Campus in West Haven.

Established in 1638, New Haven was the first planned municipality in America, organized geographically in nine squares, including a picturesque Green. Today, New Haven is a vibrant coastal city located on Long Island Sound between New York and Boston. Cultural opportunities abound, from dance, theater, and music to the treasures of Yale's art and natural history museums.



New Haven's two hospitals became one in September 2012, when Yale-New Haven Hospital acquired the Hospital of Saint Raphael.

<sup>6</sup> Free care to New Haven residents increased significantly over the previous year because of changes in the way the state of Connecticut is administering the Medicaid program and reimbursing providers.

**Yale Office of International Affairs** offers support to faculty in establishing and maintaining collaborations abroad, drawing on existing relationships on six continents. It maintains an online faculty research database.

**Yale UCL Collaborative** was established in 2009 to launch joint projects in basic biomedical research, medical education, and clinical care and has subsequently expanded into other disciplines.

**Fudan-Yale Biomedical Research Center** provides a locus for cutting-edge research in the fields of genetics and molecular medicine in collaboration with Fudan University in Shanghai.

**The Yale Global Health Initiative** is part of the university's Jackson Institute for Global Affairs, which supports and coordinates the efforts of students and faculty. Projects include the Global Health Leadership Institute, in which health leaders from other nations spend a week at Yale devising strategies to overcome health problems in their home country.

By the numbers (2011-12)

International students at Yale (%)  
MD 17%  
MPH 25%  
BBS 29%  
Postdocs 70%

Yale students/trainees abroad<sup>7</sup>

MD 30  
MPH 30  
Downs Fellows 16  
Yale/Stanford Scholars 55

Visiting MD students (at Yale) from other nations 98

INTERNATIONAL ACTIVITIES

The School of Medicine is an active partner in fulfilling Yale's international goals, which include preparing students for international leadership and service, attracting the most talented students and scholars to Yale from around the world, and positioning Yale as a global university of consequence.

Faculty members conduct research abroad, teach, and design courses in global health. Their work runs the gamut from molecular studies at the nanoscale to the analysis of social networks in disease transmission and prevention, to the improvement of health care systems. Among the programs spanning the institution are:

- **Office of International Medical Student Education** facilitates the placement of Yale medical students in clinical elective clerkships at sites in Argentina, China, Columbia, Indonesia, Peru, South Africa, Thailand, Uganda, the UK, and Zambia. The office also administers the Visiting Student Elective Program.
- **Downs International Health Student Travel Fellowship** program supports students who undertake health-related research, primarily in low- and middle-income countries.
- **Yale/Stanford—Johnson & Johnson Scholars in Global Health** sponsors rotations abroad for Yale house staff and physicians from other institutions, who travel to six sites in Africa and Asia.



Community health workers in Nepal conduct screenings in a program organized by Yale medical students.

<sup>7</sup> Data refer to the 2011–12 academic year.

Endowment

Yale \$19.3 billion  
YSM \$1.8 billion

2012 operating income

Yale \$2.8 billion  
YSM \$1.3 billion

2012 capital projects

NEW CONSTRUCTION

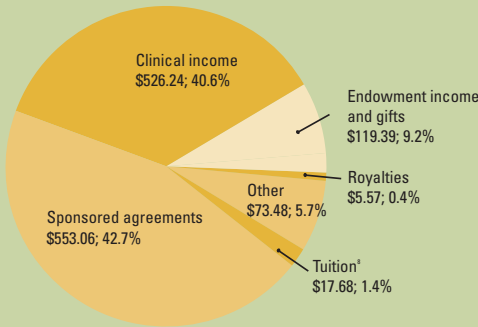
Yale \$82.4 million  
YSM \$290,000

RENOVATIONS/ALTERATIONS

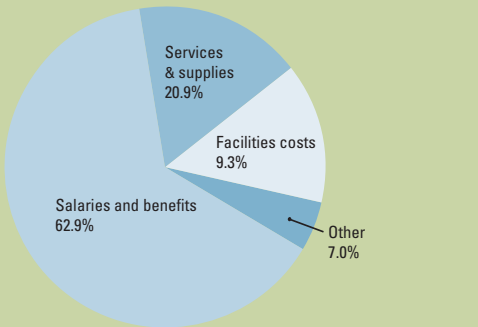
Yale \$195.7 million  
YSM \$30 million

Operating summary for the year ending June 30, 2012 (in millions)

Income:  
Total \$1,295.42



Expenditures



\* The figure for income from tuition is significantly lower this year because of a change in the way the category is now tracked. Tuition discounts are no longer included in the figure.



Yale SCHOOL OF MEDICINE

FACTS AND FIGURES 2012–13  
*medicine.yale.edu/facts*





Brief chronology

**1701** Yale College founded

**1810** Medical Institution of Yale College chartered

**1833** The State Hospital, precursor to the New Haven Hospital, opens

**1839** MD student thesis requirement formalized

**1857** First African American student graduates

**1915** Department of Public Health established and later accredited as a school of public health

**1916** First female students admitted

**1924** School moves from 150 York Street to Sterling Hall of Medicine at 333 Cedar Street

**1941** Yale Medical Library is dedicated

**1965** Medical school and hospital revise their affiliation, creating Yale-New Haven Hospital

**1970** Physician Associate Program founded

**1974** Yale Cancer Center established

**2003** Anlyan Center completed

**2007** West Campus acquired

**2009** Smilow Cancer Hospital at Yale-New Haven opens

**2010–11** Medical school celebrates 200th anniversary

**2012** YNHH acquires the Hospital of Saint Raphael

OVERVIEW AND HISTORY

The Yale School of Medicine is one of the world’s leading centers for biomedical research, advanced clinical care, and medical education. It ranks fifth among medical schools receiving funds from the National Institutes of Health (NIH) and third in NIH dollars per faculty member. More than 950 Yale physicians provide care to patients from across the region and around the world. The Yale system of medical education, with its emphasis on critical thinking and independent student research, has produced leaders in every field of academic medicine.

The sixth-oldest medical school in the United States, it was chartered by the Connecticut General Assembly in 1810 as the Medical Institution of Yale College, located first on Grove Street, then at 150 York Street. Since 1924, it has occupied Sterling Hall of Medicine at 333 Cedar Street and surrounding buildings. It has awarded 8,508 medical degrees since 1814. There are 5,309 living alumni with MD degrees, 4,219 with MPH degrees, and 1,054 alumni of the Physician Associate Program with the PA-C certificate or MMSc degree.



COVER: Sterling Hall of Medicine.  
ABOVE: Yale medical students in 1901.

Data are as of 6/30/12 unless otherwise noted.



First-year medical students applaud during the White Coat Ceremony at the start of the academic year.

Students by degree program¹

|              |              |
|--------------|--------------|
| MD           | 359          |
| MD/PhD       | 106          |
| MD/MHS       | 42           |
| MD/MBA       | 5            |
| MD/MPH       | 2            |
| MMSc (PA-C)  | 65           |
| MPH          | 222          |
| PhD          | 360          |
| <b>Total</b> | <b>1,161</b> |

MD program details

CLASS OF 2016 PROFILE

|                          |          |
|--------------------------|----------|
| Applicants               | 4,103    |
| Class size               | 100      |
| Acceptance rate          | 6.5 %    |
| Average GPA              | 3.8      |
| MCAT mean of sections    | 12.1     |
| Male-to-female ratio     | 55 to 45 |
| Faculty-to-student ratio | 3 to 1   |

|                           |                 |
|---------------------------|-----------------|
| <b>Tuition, 2012–2013</b> | <b>\$49,500</b> |
|---------------------------|-----------------|

|                                            |                  |
|--------------------------------------------|------------------|
| <b>Average debt, 2012 graduates w/debt</b> | <b>\$112,896</b> |
|--------------------------------------------|------------------|

Medical Library

|                          |         |
|--------------------------|---------|
| Volumes                  | 485,452 |
| Journals                 | 11,983  |
| Online books, biomedical | 26,427  |

EDUCATION

In its MD and other degree programs, the School of Medicine educates future leaders in medicine, public health, and biomedical science. The MD program follows a unique educational philosophy, the Yale system of medical education, which was established in the 1920s by Dean Milton C. Winternitz, MD. No course grades or class rankings are given in the first two years, examinations are limited, and students are expected to engage in independent investigation. Since 1839 Yale medical students have written a thesis based on original research. The thesis requirement grew out of the recognition that the scientific process of investigation, attentive observation, interpretation of data, and critical evaluation of literature are fundamental to the practice of medicine.

Many Yale medical students opt to take a tuition-free fifth year to complete their studies. Some pursue in-depth research or explore clinical electives and subinternships. A significant number each year are awarded fifth-year research fellowships and earn the MHS degree.

Each year, approximately 12 students enroll in the school’s MD/PhD Program, one of the original Medical Scientist Training Programs established and funded by the NIH. Graduate students in the Combined Program in the Biomedical and Biological Sciences earn a PhD degree through the Faculty of Arts and Sciences. The School of Medicine also offers joint degree programs with other professional schools including Public Health, Law, Management, and Divinity.

¹ Of the 514 students enrolled, 66 are currently on extended study pursuing a joint degree, completing research, or a combination of research and clinical rotations.

Academic departments

|               |    |
|---------------|----|
| Basic science | 10 |
| Clinical      | 18 |
| Public Health | 5  |

|              |           |
|--------------|-----------|
| <b>Total</b> | <b>33</b> |
|--------------|-----------|

Programs and centers 7

Active patents

|                      |     |
|----------------------|-----|
| U.S.                 | 397 |
| World (56 countries) | 634 |

Yale-founded biotech companies 56

Faculty²

|                     |              |
|---------------------|--------------|
| Teaching (ladder)   | 1,366        |
| Research            | 661          |
| Lecturer/Instructor | 424          |
| <i>Subtotal</i>     | <i>2,451</i> |
| Visiting            | 174          |
| Emeritus/Retired    | 226          |
| Voluntary/Adjunct   | 1,667        |
| <i>Subtotal</i>     | <i>2,067</i> |
| <b>Total</b>        | <b>4,518</b> |

Associates & Fellows

|                                     |              |
|-------------------------------------|--------------|
| Postgraduate fellows and associates | 276          |
| Postdoctoral fellows and associates | 875          |
| <b>Total</b>                        | <b>1,151</b> |

Memberships³

|                              |    |
|------------------------------|----|
| National Academy of Sciences | 62 |
| Institute of Medicine        | 40 |
| HHMI investigators           | 16 |

Faculty with endowed professorships 126

Research activity

|                              |                        |
|------------------------------|------------------------|
| <b>1,947 awards totaling</b> | <b>\$539.6 million</b> |
|------------------------------|------------------------|

NIH

|                                  |                 |
|----------------------------------|-----------------|
| Awards                           | \$338.5 million |
| Medical school ranking⁴          |                 |
| Total grant dollars              | 5th             |
| Grant dollars per faculty member | 3rd             |
| Center and program grants        | 40              |

**Laboratory space (net assignable sf)**  
**Medical School 621,877**

BASIC AND TRANSLATIONAL RESEARCH

Research at the medical school covers a broad spectrum, from fundamental studies in the life sciences, including cell biology, genetics, immunobiology, microbial pathogenesis, neuroscience, pharmacology, physiology, biophysics and biochemistry, to translational and clinical studies aimed at improving the diagnosis and treatment of human diseases. Funding for research has increased substantially over the past decade, rising from \$398 million in 2003 to \$539.6 million in 2012.

The school’s core research resources are built around the newest technologies:

- State-of-the-art tools for genomics and proteomics, including whole-genome sequencing and mass spectrometry
- High-resolution imaging and image analysis at every scale, from electron and light microscopy to fMRI and PET
- 7-Tesla MR spectroscopy
- High-throughput screening, including RNAi and chemical screens
- Construction and analysis of animal models of disease



Yale scientists use model organisms such as zebrafish to study the mechanisms of normal biology and disease.

**The Robert Wood Johnson Foundation Clinical Scholars Program at Yale** was established in 1974 to prepare future physician leaders who will improve health and health care. Graduates of the two-year fellowship earn a master of health sciences research (MHS) degree.

**The School of Public Health** offers training and conducts research in biostatistics, chronic disease epidemiology, environmental health sciences, epidemiology of microbial diseases, and health policy and administration.

**The Investigative Medicine Program** awards a PhD degree to holders of MD degrees who pursue training in either laboratory-based or clinically based human investigation.

By the numbers

|                                                           |     |
|-----------------------------------------------------------|-----|
| RWJ Scholars trained since 1974                           | 166 |
| PhDs awarded by Investigative Medicine Program since 2003 | 24  |
| YCCI Scholars trained since 2006                          | 77  |

CLINICAL INVESTIGATION

Clinical investigation at Yale bridges the gap between the basic and translational sciences and the practice of medicine. Research is focused on the factors that affect health and illness in populations, the evaluation of therapeutic interventions, and the assessment of health outcomes based on analysis of large data sets. The School of Medicine sponsors a wide range of clinical trials, with more than 300 open trials in 2012 (see yalestudies.org). The school offers superb training for clinical investigators in a number of settings, including the Yale Center for Clinical Investigation, the Robert Wood Johnson Clinical Scholars Program at Yale, the Yale School of Public Health, and the Investigative Medicine Program, along with discipline-specific training initiatives in selected departments.

The Yale Center for Clinical Investigation facilitates the training of clinical and translational scientists and provides infrastructure for innovative and collaborative research directed at improving patient care. It funds up to 20 YCCI Scholars yearly and supports investigators in the areas of biostatistics, bioinformatics, study design, core technologies, regulatory review, patient recruitment, and community-based research.



Clinical scholars in the Robert Wood Johnson program at Yale conduct research to benefit local communities.

Patient care overview

|               |                        |
|---------------|------------------------|
| <b>Income</b> | <b>\$526.2 million</b> |
|---------------|------------------------|

Yale Medical Group

|                                   |           |
|-----------------------------------|-----------|
| Office visits                     | 429,788   |
| Patient encounters                | 1,606,890 |
| Physicians                        |           |
| Full-time                         | 950       |
| Part-time                         | 131       |
| Midlevel practitioners (PA, APRN) | 299       |

Medical residents 717

Clinical fellows 301

Yale-New Haven Hospital⁵

|                     |         |
|---------------------|---------|
| Patient discharges  | 85,333  |
| Emergency visits    | 183,390 |
| Total licensed beds | 1,541   |

PATIENT CARE

More than 950 Yale physicians provide primary and specialty care for patients through Yale Medical Group. Yale Medical Group delivers advanced care in more than 100 specialties and subspecialties, and has centers of excellence in such fields as cancer, cardiac care, minimally invasive surgery, and organ transplantation. Yale physicians have made many historical contributions, including the first use of cancer chemotherapy, the first artificial heart pump, and the first insulin infusion pump for diabetes. Today they perform such groundbreaking procedures as NOTES, a surgery without incisions, and recently became the first in the country to treat a patient with a life-threatening heart defect using an engineered blood vessel made from the patient’s own cells. Yale Medical Group is a major referral center for Connecticut and New England, and treats patients from throughout the world.



Yale physicians practice in more than 100 specialty and subspecialty areas.

⁵ Yale-New Haven Hospital data as of 9/30/12; includes the Children’s Hospital, Psychiatric Hospital, Smilow Cancer Hospital, and the former Hospital of Saint Raphael, which was acquired by YNHH on 9/12/12. Licensed beds include bassinets.