



# Yale SCHOOL OF MEDICINE

FACTS AND FIGURES 2015-16

*[medicine.yale.edu/facts](http://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** Amistad Street building opens
- 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

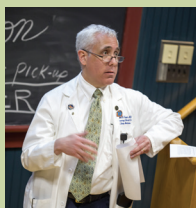
## OVERVIEW AND HISTORY

The Yale School of Medicine is one of the world's leading centers for biomedical research, advanced clinical care, and medical education. It ranks sixth among medical schools receiving funds from the National Institutes of Health (NIH) and fifth in NIH dollars per faculty member. More than 1,200 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 8,806 medical degrees since 1814. There are 5,607 living alumni with MD degrees, 4,506 with MPH degrees, and 1,113 alumni of the Physician Associate Program with the PA-C certificate or MMSc degree.



ABOVE: Students celebrated their graduation in May 2016, and advanced to top residency programs around the country.  
COVER: Sterling Hall of Medicine.



Students study under the tutelage of leading scientists and clinicians. Many students opt for a fifth year devoted to scientific or clinical research.

#### Students by degree program

MD program <sup>1</sup>	524
MD	363
MD/PhD	116
MD/MHS	29
MD/MBA	13
MD/MPH	2
MD/JD	1
MMSc (PA-C)	74
MPH	312
PhD	370
<b>Total</b>	<b>1,280</b>

#### MD program details

##### CLASS OF 2019 PROFILE

Applicants	4,118
Class size	104
Acceptance rate	6.5 %
Average cumulative GPA	3.81
MCAT mean of sections	12.0
Male-to-female ratio	56 to 48
Faculty-to-student ratio	3.4 to 1

#### Finances

Tuition, 2015-2016	\$55,680
Average debt, 2015 graduates w/debt	\$119,281

#### Medical Library<sup>2</sup>

Volumes	416,262
Journals	23,472
Online books, biomedical	36,017

## 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 pursue additional study. Some conduct 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 20 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 (BBS) 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.

<sup>1</sup> Of the 524 students enrolled in the MD program, 68 are currently on extended study pursuing a joint degree, completing a fully funded year of research, or a combination of research and clinical rotations.

<sup>2</sup> The medical library is now using the library management system to gather this data. The number of journals increased significantly from last year, but consists mostly of electronic journals.

## Academic departments

Basic science	10
Clinical	18
Public Health	5

**Total** **33**

## Programs and centers 7

### Active patents

U.S.	431
World (57 countries)	773

### Yale-founded biotech companies 71

### Faculty<sup>3</sup>

Teaching (ladder)	1,530
Clinician	214
Research	699
Lecturer/Instructor	439
<i>Subtotal</i>	<i>2,882</i>
Visiting	278
Emeritus/Retired	276
Voluntary/Adjunct	1,672
<i>Subtotal</i>	<i>2,226</i>
<b>Total</b>	<b>5,108</b>

### Postgraduate fellows and associates 1,635

### Memberships<sup>4</sup>

National Academy of Sciences	63
National Academy of Medicine	46
HHMI investigators	18

### Faculty with endowed professorships 122

### Research activity

2,510 awards  
totaling \$549.3 million

### NIH

Awards	\$319.1 million
Rank among medical schools (total grant dollars) <sup>5</sup>	6th
Rank, grants per faculty member <sup>6</sup>	5th
Centers and program grants	28

### Laboratory space (net assignable sf)

Medical School 648,239

## 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. Important research collaborations bring together scientists on the medical campus, Science Hill, and the West Campus. Funding for research at YSM has increased over the past decade, rising from \$451.0 million in 2006 to \$549.3 million in 2015.

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



*Research cores provide state-of-the-art technologies to pursue scientific knowledge and medical advances.*

<sup>3</sup> Faculty, associates, and fellows data as of 6/30/15.

<sup>4</sup> Includes faculty across Yale University.

<sup>5</sup> NIH ranking is for the federal fiscal year ending 9/30/15.

<sup>6</sup> Per faculty rank averaged over 2014 and 2015.

**The National Clinician Scholars Program** at Yale was established in 2016 to prepare future clinician leaders to improve health and health care. Graduates of the two-year interprofessional fellowship earn a master of health sciences (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 since 1974 179

PhDs awarded by Investigative Medicine Program since 2003 39

YCCI Scholars trained since 2006 110

## 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 700 open trials in 2015 with more than 5,500 volunteers enrolled (see [yalestudies.org](http://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 22 YCCI Scholars yearly and supports investigators in the areas of biostatistics, bioinformatics, study design, core technologies, regulatory review, patient recruitment, and community-based research.



*Researchers at the School of Medicine conduct a broad range of clinical trials aimed at improving patient care.*

## Patient care overview

Income **\$763.8 million**

### Yale Medicine

Patient encounters **2,438,043**

Physicians  
Full-time **1,011**  
Part-time **280**

Advanced practice practitioners (PA, APRN) **505**

Medical residents **879**

Clinical fellows **343**

### Yale New Haven Hospital<sup>7</sup>

Patient discharges **78,542**

Emergency visits **132,818**

Total licensed beds **1,541**

## PATIENT CARE

More than 1,200 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 provide such groundbreaking procedures as an “invisible incision” surgery to remove a woman’s appendix, and the use of genome-scale DNA sequencing technology to diagnose suspected genetic diseases. Yale Medical Group is a major referral center for Connecticut and New England, and treats patients from throughout the world.



*The more than 1,200 physicians in the Yale Medical Group are known for groundbreaking advances that have made the practice a major referral center in Connecticut and New England.*

<sup>7</sup> Yale New Haven Hospital data as of 9/30/15; 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.

## Medical center institutions

Yale School of Medicine

Yale Medical Group

Yale School of Public Health

Yale School of Nursing

Yale New Haven Health System, which consists of:

Yale New Haven Hospital, including the Saint Raphael Campus

Yale New Haven Children's Hospital

Yale New Haven Psychiatric Hospital

Smilow Cancer Hospital at Yale New Haven

Yale Health

Connecticut Mental Health Center

John B. Pierce Laboratory

## Facts and Figures

2015–16 was produced by the Office of Communications.

To order copies, contact us at 1 Church Street, Suite 300, New Haven, CT 06510, or (203) 785-5824, or by email at facts.med@yale.edu.

On the Web: [medicine.yale.edu/facts](http://medicine.yale.edu/facts).

Photos: John Curtis, Terry Dagradi, Ricardo Hernandez, Robert Lisak

## 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 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](http://medicine.yale.edu/maps).

## HOW TO REACH US

- **To find a Yale doctor**, visit Yale Medical Group online at [yalemedicalgroup.org](http://yalemedicalgroup.org) or call (877) YALEMDS or (203) 785-4851.
- **For information on medical school admissions**, visit [medicine.yale.edu/admissions](http://medicine.yale.edu/admissions), or call (203) 785-2643.
- **For news about the school**, visit [medicine.yale.edu](http://medicine.yale.edu). Media inquiries should be directed to the Office of Public Affairs and Communications at [communications.yale.edu/media](http://communications.yale.edu/media) or (203) 432-1345.
- **To find a person at Yale University**, consult the online directory at [directory.yale.edu/phonebook](http://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 make a gift in support of the School of Medicine**, please visit [yale.edu/givemedicine](http://yale.edu/givemedicine) or contact Charles Turner at [charles.turner@yale.edu](mailto:charles.turner@yale.edu).

## New Haven

Population (2014) 130,282  
(estimate from the U.S.  
Census Bureau)

Distance from:

NYC 80 miles  
Boston 137 miles

## University profile

*Yale totals include YSM*

### FACULTY

Yale 4,420  
YSM 2,882

### STAFF

Yale 9,455  
YSM 3,439

### STUDENTS

Yale 12,385  
YSM 1,280

## 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)

## YALE UNIVERSITY AND NEW HAVEN

The School of Medicine is located on 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.



*Yale medical, physician associate, and public health students are a common sight in New Haven classrooms, where they volunteer as tutors. At soup kitchens and food pantries, they also provide medical care under the supervision of faculty.*



**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 (2013–14)

International students at Yale (%)

MD	14%
MPH	23%
BBS	26%

Yale students/trainees abroad<sup>8</sup>

MD	35
MPH	50
Downs Fellows	19
Yale/Stanford J&J Scholars	45

Visiting MD students (at Yale) from other nations 104

## 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**, which facilitates the placement of Yale medical students in clinical electives at sites in Argentina, Chile, China, Colombia, Dominican Republic, Ghana, Indonesia, Jamaica, Mexico, Peru, South Africa, Thailand, and Uganda. The office also administers the Visiting International Student Electives Program.
- **Downs International Health Student Travel Fellowship**, which supports students who undertake health-related research, primarily in low- and middle-income countries.
- **Yale/Stanford–Johnson & Johnson Global Health Scholars**, which sponsors rotations abroad for Yale house staff and physicians from other institutions, who travel to six sites in Africa and Asia.



*International programs expose the students to other approaches to medicine and to diseases they may not encounter in the United States.*

<sup>8</sup> Data refer to the 2013–14 academic year.

## Endowment

Yale \$25.5 billion

YSM \$2.4 billion

## 2015 operating income

Yale \$3.2 billion

YSM \$1.5 billion

## 2015 capital projects

### NEW CONSTRUCTION

Yale \$86 million

YSM \$0

### RENOVATIONS/ ALTERATIONS

Yale \$210.8 million

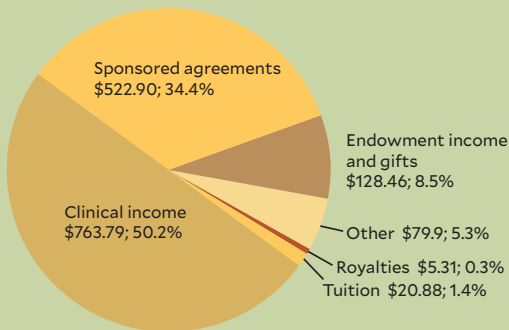
YSM \$12.6 million

## FINANCE

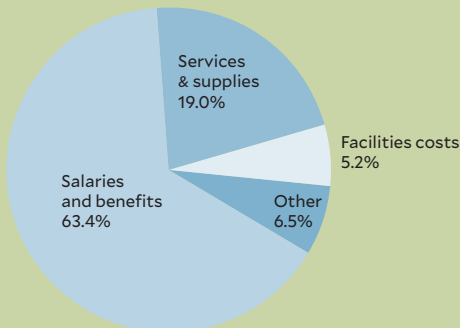
The School of Medicine had operating income of \$1.52 billion in FY15. A total of \$523 million in sponsored research funding was received and spent during the fiscal year.<sup>9</sup> Clinical income totaled \$763.8 million. The school ranked sixth among medical schools receiving research funding from the NIH in FY15 and fifth in NIH grants per faculty member. Salaries and benefits totaled 63.4 percent of expenditures.

## Operating summary for the year ending June 30, 2015 (in millions)

Income:  
Total \$1,521



Expenditures



<sup>9</sup> Research income does not equal award amounts because research dollars are not always spent in the same period in which they are awarded.