

# COLLEGE OF THE HOLY CROSS

## SELECTED SCIENCE ACCOMPLISHMENTS

- 1950 Biology building constructed; renamed O'Neil Hall in 1959.
- 1954 Joseph E. Murray, M.D. ('40) completes the world's first successful human kidney transplantation.
- 1955 James A. Shannon, M.D. ('25) appointed first Director of the National Institutes of Health.
- 1959 Haberlin Hall constructed.  
Harry J. Goett, Ph.D. ('31) appointed first director of NASA's Goddard Space Flight Center.
- 1961 C. Gordon Zubrod, M.D. ('36) named scientific director of the National Cancer Institute.
- 1965 James A. Shannon, M.D. ('25) elevated to National Academy of Sciences.
- 1972 Anthony Marlon, M.D. ('63) establishes a health care company that becomes Sierra Health Services, Inc. (publicly traded on the New York Stock Exchange).
- 1973 Joseph Kerwin, M.D. ('53) becomes the first physician in space where he conducted experiments on Skylab.
- 1974 First class of women students graduate from Holy Cross.  
James A. Shannon, M.D. ('25) was awarded the National Medal of Science, the nation's highest honor for scientific achievement, by President Gerald R. Ford.
- 1977 Joseph Califano, ('52) appointed Director of the U.S. Department of Health, Education and Welfare.
- 1982 Richard J. O'Reilly, M.D. ('64), now chair of the department of pediatrics at Memorial Sloan-Kettering, was the first to conduct a successful bone marrow transplant for an unrelated, compatible donor. In addition, he co-developed an approach now used throughout the world to effectively treat children born without an immune system (once known as "bubble babies").
- 1983 Leo A. Paquette, Ph.D. ('56) elevated to National Academy of Sciences.
- 1985 Swords Hall constructed.
- 1987 Anthony S. Fauci, M.D. ('62) elevated to Institute of Medicine.
- 1988 Holy Cross named a member of the "Oberlin Group" for its large number of science graduates who go on to earn doctorates.  
"Discovery Chemistry" program inaugurated and receives over \$2 million in grant support over the next five years.
- 1989 Pew Memorial Trust awards Science Cluster grant to Holy Cross and 15 other institutions to form the New England Consortium of Undergraduate Science Education (NECUSE).  
Henry I. Smith, Ph.D. ('58), called the "father of x-ray lithography, was elevated to National Academy of Engineering.  
Biological Psychology Concentration established.
- 1990 Joseph E. Murray, M.D. ('40) awarded the Nobel Prize in Physiology or Medicine for his pioneering work in human kidney transplantation.  
Joyce O'Shaughnessy, M.D. ('78) becomes Senior Investigator in the Medical Breast Cancer Section of the National Cancer Institute. She is now Director, Chemoprevention Research and Co-Director, Breast Cancer Research for US Oncology.
- 1991 Howard Hughes Medical Institute grant for research, teaching and outreach to the Worcester Public Schools (\$550,000).

- Kresge Foundation Science Initiative grant awarded (\$500,000 for instrumentation plus an equipment maintenance endowment of \$2,000,000).
- Thomas D'Ambra, Ph.D. ('78) founds Albany Molecular Research (publicly traded on NASDAQ) which developed and patented "Allegra."
- Joseph T. Coyle, Jr., M.D. ('65) named President of Society for Neuroscience.
- 1992 Alden Trust awards scholarship endowment in the physical sciences (\$250,000).
- Anthony S. Fauci, M.D. ('62) elevated to National Academy of Sciences.
- Charles A. Dana Foundation supports two faculty fellowships in science (\$250,000).
- W. M. Keck Foundation grant for "Discover Chemistry Complexes" (\$300,000).
- Professor Janine Shertzer (physics) awarded National Science Foundation Faculty Award for Women Scientists and Engineers grant (\$250,000).
- 1993 Clare Boothe Luce professorship in chemistry awarded (\$400,000).
- Howard Hughes Medical Institute grant for research, teaching and outreach to the Worcester Public Schools (\$600,000).
- Joseph E. Murray, M.D. ('40) elevated to National Academy of Sciences.
- Professor Daniel Bitran (psychology) receives the College's first F.I.R.S.T. award from the National Institutes of Health.
- 1994 Anthony Fauci, M.D. ('62) appointed Director of the National Institute of Allergy and Infectious Disease where he leads our country's battle against HIV/AIDS and bioterrorism.
- Discovery Chemistry named a "Program that Works" by Project Kaleidoscope.
- National Science Foundation grant (\$900,000) for construction of chemistry student research laboratories.
- Professor Mauri Ditzler (chemistry) named "Chemical Educator of the Year" from the Chemical Manufacturers Association.
- Joseph E. Murray, M.D. ('40) elevated to Institute of Medicine.
- Biochemistry Concentration established with grant support from Merck/AAAS and the Howard Hughes Medical Institute.
- 1995 *Current Contents* positions Holy Cross 24<sup>th</sup> in the nation among undergraduate colleges in the number of science articles published by science faculty; 24<sup>th</sup> in citations to those articles; and 22<sup>nd</sup> in the scientific impact of those publications. Scientific impact of articles published by our faculty in the physical sciences is ranked 11<sup>th</sup> in the nation.
- Sherman Fairchild Foundation grant for biology and physics teaching (\$434,000).
- Vincent T. Andriole, M.D. ('53) becomes President of the Infectious Diseases Society of America.
- Arthur L. Beaudet, M.D. ('63) elevated to the Institute of Medicine.
- 1996 Howard Hughes Medical Institute grant for research, teaching and outreach to the Worcester Public Schools (\$1,100,000).
- 1997 David Fienup, Ph.D. ('70) becomes Editor-in-Chief of the *Journal of the Optical Society of America*. *Yahoo Internet Life* names Holy Cross one of the nation's top 25 "most wired" campuses.
- 1998 Avon Foundation Scholarship for Women Science Students awarded.

*Baccalaureate Origins of Doctorate Recipients* (8th Ed.) ranked Holy Cross 53<sup>rd</sup> among 1036 private, four-year colleges in the number of its graduates earning doctorates in the life sciences (most go on to medical or dental schools instead of graduate schools), 26<sup>th</sup> in physics/astronomy, 17<sup>th</sup> in chemistry and 11<sup>th</sup> in mathematics.

Holy Cross is ranked among the top ten undergraduate schools nationwide in the number of American Chemical Society certified chemistry graduates and was ranked first in the nation twice during the past 15 years. *Chemical and Engineering News* (1998) ranked Holy Cross 21<sup>st</sup> in the nation on this measure among all schools; first in the nation among liberal arts colleges.

Clare Boothe Luce student science scholarship grant awarded by the Henry Luce Foundation (\$300,000).

The Camille and Henry Dreyfus Foundation make a series of awards for chemistry spanning seven years.

The Department of Chemistry receives a Major Research Instrument grant from the National Science Foundation to purchase a 400 MHz NMR spectrometer to support chemistry research and education.

1999 Edward Ludwig ('73) named President of BD (Becton Dickinson) Corporation, one of the world's leaders in medical technology, and later also becomes Chief Executive Officer and Chairman.

2000 Lisa Guay-Woodford, M.D. ('79) becomes President, Pediatric Research Council.

O'Neil Hall undergoes a complete renovation and addition of a new wing.

Alden Trust supports new teaching laboratories (cellular biology and neurobiology) in O'Neil Hall (\$600,000).

Robert Garvey, Ph.D. (physics) named "United States Professor of the Year" from the Carnegie Foundation for the Advancement of Teaching and the Council for the Advancement and Support of Education.

Richard A. Murphy, Ph.D. ('66) appointed President and CEO of the Jonas Salk Institute.

James E. Burke ('47), Chairman Emeritus of Johnson & Johnson and Chair of the Partnership for a Drug-Free America, received the Presidential Medal of Freedom from President Bill Clinton on August 9, 2000.

2001 Arthur Vining Davis Foundations grant for renovating Physics in Daily Life and Modern Physics teaching laboratories (\$200,000).

2002 Arthur L. Beaudet, M.D. ('63) receives March of Dimes Lifetime Achievement Award in the field of genetics.

Henry Cox, Sc.D. ('56) elevated to the National Academy of Engineering.

Jane Hawkins, Ph.D. ('76) appointed Chair of the American Mathematical Society Committee on Science Policy.

2003 James J. Collins, Ph.D. ('87) awarded a MacArthur "genius" grant by the John D. and Catherine T. MacArthur Foundation for research on the control of gene networks in living cells.

Professors Robert Bellin (Biology) and Kenneth Mills (Chemistry) receive a grant from the National Science Foundation (\$255,503) to establish a Biochemistry Core Facility.

Professor Mary Lee S. Ledbetter (biology) named "Distinguished Teaching Scholar" by the National Science Foundation (\$301,000), one of only five in the nation.

- 2004 The Simeon Fortin Charitable Trust awarded Holy Cross another grant in a series of grants to support cancer research on campus. The only other awardees were the Dana-Farber Cancer Center and the University of Massachusetts Cancer Research Center.
- Planning for new science building and renovations of Haberlin Hall begins.
- Tricia Striano, Ph.D. ('95) heads the research team for neurocognition and development at the Max Planck Institute for Human Cognitive and Brain Sciences and at Leipzig University's Centre for Advanced Studies. She was awarded the Sofja Kovalevskaja Prize by the Alexander von Humboldt Foundation of Germany "to young scientists and scholars from abroad with outstanding research records."
- 2005 Anthony V. Stankus ('73; the nation's most published science librarian and Holy Cross's Science Librarian) receives the Rose L. Vormelker Award from the Special Libraries Association for exceptional service to the profession of special librarianship.
- Kenneth Mills, Ph.D. (chemistry) awarded a CAREER from the National Science Foundation (\$795,000), the College's first such award and its largest faculty research award to date.
- A team of biology faculty received a \$206,000 grant from the National Science Foundation to establish a confocal microscope laboratory.
- Amy Wolfson, Ph.D. (psychology) awarded a \$1.07 million grant from the National Institute for Child Health and Human Development for research into children's sleep cycles and effects on learning. It is the largest faculty research award to date.
- James J. Collins, Ph.D. ('87) named to *Scientific American's* list of "Top 50 Science and Technology Leaders."
- Two molecular geometries of bioorganometallic compounds, the Herrick Conformation and the Semi-Herrick Conformation, are named after Professor Richard Herrick (Chemistry).
- 2006 Paul Schweitzer, S.J., ('58), professor of mathematics at Pontifical Catholic University in Brazil, elected a full member of the Brazilian Academy of Sciences.
- Joseph T. Coyle, Jr., M.D. ('65) elected President of the American College of Neuropsychopharmacology. He is Editor-in-Chief of *Archives of General Psychiatry*.
- Robert Harrington, M.D. ('82) named Director of the Duke Clinical Research Institute (DCRI), the world's largest academic clinical research organization.
- Janine Shertzer, Ph.D. (physics) named Fellow in the American Physics Society for her "groundbreaking introduction of novel finite-element techniques in calculation of bound state and scattering properties of atomic and molecular systems."
- 2007 Anthony S. Fauci, M.D. ('62) was awarded the National Medal of Science by President George W. Bush. It is the nation's highest honor for scientific achievement.
- Kathryn O'Brien (2008) was selected as the 2007 American Cancer Society Alvan T. and Viola Fuller Fellow in basic cancer research. She conducted research with Nobel Prize winner in Physiology, Craig C. Mello, Ph.D., of the University of Massachusetts Medical School.
- Anthony S. Fauci, M.D. ('62) was awarded the Lasker Foundation Award for developing President Bush's Emergency Plan for AIDS Relief, or PEPFAR, and Project Bioshield, which seeks to improve countermeasures against potential bioterror agents. He was also cited for his role "in explaining issues of great concern like the science behind emerging biological hazards" to the public.
- National Science Foundation awards Holy Cross \$586,509 S-STEM grant for scholarship for science students

The Sherman Fairchild Foundation granted the College \$225,000 to support our young science students summer research

2008 Henry I. Smith, Ph.D. ('58), the father of x-ray lithography, has been elected as Fellow of the American Academy of Arts and Science.

James J. Collins, Ph.D. ('87) was one of the 56 biomedical scientists world-wide selected as a Howard Hughes Medical Institute Investigator. He was also named by Governor Deval Patrick to the Advisory Board of the Massachusetts Life Sciences Center,

Anthony S. Fauci, M.D. ('62) was awarded the Presidential Medal of Freedom.

Elizabeth Morse ('08) was selected as the 2008 American Cancer Society Alvan T. and Viola Fuller Fellow in basic cancer research. She conducted research with Nobel Prize winner in Physiology, Craig C. Mello, Ph.D., of the University of Massachusetts Medical School. She was named the Engel Fellow, an award given to the top fellow in the program.

Henry Luce Foundation awards the College \$420,000 from the Clare Boothe Luce Fund for scholarships for eight outstanding women seniors in science

Jerauld Skotnicki, Ph.D. ('73) was honored as a "Hero of Chemistry" at the annual meeting of the American Chemical Society. He is the head of Wyeth Research at Pearl River, NY.

Kierán Suckling ('88) founded the Center for Biological Diversity and serves as its Executive Director. The Center maintains the country's most comprehensive endangered species database.

2009 Donna M. O'Brien ('77), President of Community Healthcare Strategies, LLC, has received the National Institutes of Health Director's Award in recognition of her work in developing The National Cancer Institute's Community Cancer Centers Program

Arnold and Mabel Beckman Foundation awards Holy Cross a \$77,200 grant for undergraduate science research

National Science Foundation grants Holy Cross \$900,000 from the Noyce Scholarship program for the project: *Attracting Liberal Arts STEM Students to Teaching*

Smith Laboratories completed (44,000 gsf.)

2010 Haberlin Hall renovations completed (103,000 gsf.)

James J. Collins, Ph.D. ('87) research into what is called "complexity science" has spurred new devices to treat stroke-induced brain failure, enhanced doctors' understanding of how human posture is warped by aging and Parkinson's Disease and helped invent synthetic gene networks, whose many uses include fighting bacterial infections. This work has earned him the William Fairfield Warren Distinguished Professor and College of Engineering Professor of Biomedical at Engineering at Boston University and the 2010 Lagrange-CRT Foundation Prize.

Lindsey Tonge ('11) was selected as the 2010 American Cancer Society Alvan T. and Viola Fuller Fellow in basic cancer research. She conducted research with Nobel Prize winner in Physiology, Craig C. Mello, Ph.D., of the University of Massachusetts Medical School.

2011 James J. Collins, Ph.D. ('87) professor of biomedical engineering at the Boston University College of Engineering and co-director of the Center for BioDynamics, has been elected to the National Academy of Engineering for contributions to synthetic biology and engineered gene networks.

Arthur Beaudet, M.D. ('63), chair of molecular and human genetics at Baylor College of Medicine, was elected to the National Academy of Sciences.