

BIOLOGY TEACHING AT HANOVER COLLEGE, 1832–1984

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ABSTRACT. Instruction in the biological sciences at Hanover College is traced over a century and one half. Teaching methods and innovations, buildings and rooms, curricular changes in biological subjects, and individual teachers are described. The impact of biology teaching is measured (imperfectly) by the number of alumni who earned advanced degrees in biology (89) and medicine (276).

Keywords: History, Hanover College, biology, teaching methods

Classes began at Hanover in 1827, but instruction in the earliest years was at the high school level. College level instruction probably began in 1831. The first baccalaureate degrees were conferred in 1834 (Baker 1978; Hanover College catalog 1834). Biological science first appeared in the curriculum in 1836, when one term of botany became part of the natural philosophy course. By 1857 there were three terms of biology: botany, zoology, and anatomy-physiology. The entire curriculum was prescribed until 1906, so that each student had to take each course, with very few exceptions. The biology curriculum expanded with adoption of the elective system in 1906 and later with expansion of the faculty (catalogs; Martin 1954).

The first Hanover professor with a real graduate school knowledge of biology was Frank Bradley, who came in 1868. He revolutionized the courses, using field trips and lectures rather than textbook-recitations. Regular laboratories in all biological subjects began in 1881, under Harvey Young (catalogs; Millis 1928).

The first full-time biology professor was Leonhard Huber in 1926. Before then, the biologist had to teach some other subject also—usually Latin, geology, or chemistry (catalogs; faculty minutes). A second professor position began in 1947, a third in 1949, a fourth in 1966, and a fifth in 1968 (catalogs; Baker 1988).

In the following lists and details, dates for faculty tenure are given by academic year, but other dates refer to the date of catalog publication. The college catalogs, faculty minutes, and most of the other manuscripts cited are housed in the archives of the Duggan Library

of Hanover College. The first person plural is used during my own tenure (1949–84) for departmental actions in which I participated.

Teaching methods.—Prior to 1868 all biology teaching was by recitation from assigned textbooks, with occasional lectures (S. Coulter in Millis 1928; Wiley 1917). There must have been a few demonstrations; for instance in 1859 Augustus King exhibited his collection of live “frogs, lizards, snakes, etc.” in the basement of Classic Hall to students and faculty (Garritt 1907).

Textbooks have always been chosen by the professors. Until 1888 they were listed in the catalog: in botany—1840–49 Olmstead, Vol. 2; 1850–56, 1858–59, and 1862–68 Wood; 1857, 1860–61 and 1869–87 Gray. In zoology—1851–56 Cutter; 1857–80 Agassiz or Agassiz & Gould; 1881–87 Orton. In anatomy-physiology—1849 Jarvis; 1850–63 Cutter; 1864–69 Dalton; 1870–87 Huxley. In general biology—1882–87 Huxley & Martin. Since 1887 local book lists and (since 1949) personal knowledge indicate typical textbook choices for American colleges and universities.

In 1868 Bradley joined the faculty, fresh from the graduate school of Yale University. He instituted field trips (called “excursions”) in botany (and geology) with collection and identification of specimens. Thompson Nelson, who followed Bradley and taught for two years (1869–71) continued the field trips and lectured very well (S. Coulter in Millis 1928; J. G. Coulter 1940). I have found no record of the teaching methods used by John Hussey and Manuel Drennan (1871–74). John Coulter (1874–79) extended the botany field trips and study of plant specimens with the use of his extensive personal herbarium (faculty min-

utes). Young (1879–1926) instituted the preparation and study of microscope slides by students in 1881 in botany and in anatomy-physiology and the laboratory study of specimens in zoology in 1889. (These are catalog dates; regular laboratory exercises for students in Young's biology courses probably began earlier.) By 1905 weekly two-hour laboratory periods in all biology courses were listed in the catalog. In 1925 the catalog description of a mammalian anatomy course was given as one hour of lecture and six hours of laboratory dissection per week (probably it was taught by Leonhard Huber).

In 1875, while he was on the Hanover faculty, Coulter started the *Botanical Gazette*, a respected scientific journal which continued through 1992. During the four years it was published at Hanover it included numerous short notes on the plants of Indiana by Coulter and several each by Hanover alumni Stanley Coulter (John's brother), Young, and Charles Barnes (J.M. Coulter, *Botanical Gazette* 1875–88).

Joseph Hyatt (1929–53) included thorough laboratory work or field trips in all his courses except human anatomy, physiology, hygiene, and teaching of biology. In 1952 we added experimental laboratories in animal physiology and in bacteriology. From 1952–84, all biology courses included at least one weekly laboratory or field trip except small-credit courses in cell biology (for the first three years it was taught) and human nutrition (taught only 1953–60) and seminar (1979–84). Classes were primarily lectures, with some recitations and student reports from 1949–84.

In 1962 the entire college curriculum was revised —“The Hanover Plan.” It included a requirement for a full course, 4.5 semester hours, of independent study for all seniors. For biology majors, this meant an individual research project (in laboratory or field) under a professor's direction with library reading and a written report, as well as an oral report in the senior seminar. Many of these were of high quality, both as learning experiences for the students and scientific contributions (personal recollection). At least nine of the reports (1962–84) were published in scientific journals. However, this was not the first instance of senior research projects in biology. As early as 1898 the catalog allowed for an “advanced biology” course in the senior year, taken as

an overload. In practice, under Young this usually meant that a capable student worked on a plant taxonomy project in field and herbarium (faculty minutes; Banta 1950). Even earlier, in 1871, as a senior student Young published a 52-page report on the plants of Jefferson County (Young 1871)! I am unaware of any formalized undergraduate research from 1926–1951, but a catalog listing of courses in botanical problems began in 1949 and zoological problems in 1951. Under this program (1951–1962), one to three senior students per year worked on individual research projects under faculty direction (personal recollection). At least two of these were published, and some were later expanded into graduate research projects (as were others before and since).

Public examinations in all subjects were held by a committee of the Board of Trustees from 1850 through 1878 at the close of each college year. These were sometimes oral and sometimes written, or partly written, and were for all students. Beginning in 1858, these public examinations were for freshmen and juniors only for studies of the year just being completed, but for sophomores and seniors for the entire preceding two years of study (catalogs).

“Private” examinations by the professor in the course were given monthly in 1850, but irregularly “at the pleasure of the professor” beginning in 1858. Beginning in 1865 (faculty minutes) students were graded daily on their recitations. By 1879 (faculty minutes and catalog) students were graded not only daily on their recitations, but sometimes on in-course examinations, and always on a two-hour written examination at the end of the term-course, the last counted as 20% of the course grade. Sometime in the early twentieth century the requirements of 20% for the final exam and the daily recitation grade were dropped. We began laboratory examinations (“practicals”) in 1949 in most courses.

Professors.—The professors who taught biology at Hanover College are listed in Table 1 (Baker 1988; catalogs). The long tenure of several biology professors, Young, 47 years; Webster, 35 years; Maysilles, 33 years; Mac-Millan, 32 years; Pray, 29 years; and Hyatt, 25 years, certainly made the biology program stable. Probably it also made for steady, incremental improvement in teaching.

Buildings and equipment.—From 1857–

Table 1.—Hanover College biology professors, 1835–present. (There were none from 1833–1835.)

Dunn, William McKee (None 1836–40)	1835–36	Also physics, chemistry, geology
Hynes, Thomas (None 1846–49)	1840–45	Also physics, chemistry, geology
Stone, Jared	1849–56	Also geology and chemistry
King, Augustus	1857–59	Also geology and chemistry
Scott, J. W.	1860–68	Also geology and chemistry
Bradley, Frank	1868–69	Also geology
Nelson, Thompson	1869–71	Also geology and chemistry
Hussey, John	1871–72	Also geology and chemistry
Drennan, Manuel	1872–74	Also geology and chemistry
Coulter, John	1874–79	Also geology, chemistry, Latin
Young, Harvey	1879–1926	Also chemistry and (until 1893) geology
Huber, Leonhard	1915–29	Also chemistry until fall 1926
Hyatt, Joseph	1929–53	
Dailey, Willard	1933–34	
Kent, George	1947–48	
Fuller, Thomas	1948–49	
Maysilles, James	1949–82	
Webster, Dan	1949–84 and 1995	
Pray, Enos	1953–81	
Lengel, Patricia	1954–55 (1 semester)	
Edwards, Ernest	1955–56 (1 semester)	
Skacklette, Hansford	1956–57	
Webster, Juanita	1960–62 and 1965–66 (part-time)	
Sheen, Shuh-Ji	1962–66	
Cory, Walter	1966–69	
Weatherwax, Paul	1966 (1 term)	
Guerin, Terry	1963–64 and 1968–73	
MacMillan, Paul	1969–2001	
Hafner, Gary	1972–73 (1 term)	
Sherwin, Richard	1973–79	
Smith, Bonnie	1976–77	
Schaible, Robert	1979–80 (part-time)	
Hazel, Wade	1980–81 (1 term)	
Auth, David	1981–83	
Hixson, Marilyn	1981–83 (part-time)	
Chamberlain, Dwight	1982–83 and 1986–87 and 1995 (part-time)	
Middleton, Pamela	1983–92	
McDonald, Dennis	1983–	
Karns, Daryl	1984–	
Binger, Lynetta	1991–94	
Bruyninckx, Walter	1992–	
Hughes, Jeffrey	1994–	
Faszewski, Ellen	1998–2000	
Stemke, Douglas	2000–	

1897 a basement room in Old Classic Hall served as a laboratory and museum for biology. (The building burned in 1941.) Science Hall, with a museum and classroom-laboratory on the third floor, served for biology from 1897–1919, but it burned in 1919. It was re-

built that same year, but with only two floors: biology occupied a second floor room for classes and laboratories from 1919–1947, when the building was razed (catalogs; bulletins; Young 1899). Goodrich Hall served from 1947–2000; the second floor, only, was de-

voted to biology until 1975; a renovation in 1975 expanded space for biology laboratories, classrooms, and offices to the second floor and half of the first floor (personal recollections).

The burning of Science Hall in 1919 must have been a severe blow to Harvey Young. Not only were the college herbarium and collection of mounted animals destroyed, but also Young's personal herbarium, collected and amassed over 50 years (bulletins; Banta 1950). Science Hall was soon rebuilt, but with less space for teaching, and without the museum and herbarium. How many microscopes, and of what types, there were before 1925 is unrecorded. A photograph of the biology laboratory in 1925 shows eight microscopes, with several more apparently out of the picture (bulletin 1927). My memory indicates 27 serviceable compound microscopes in 1949, and one binocular stereoscopic microscope. Also, there were three rotary microtomes, four micro-projectors, and two small incubators in the way of biological instrumentation. From 1950–1984 there was a steady acquisition of biological equipment and instruments, including many more microscopes, an autoclave, constant-temperature rooms, animal physiology equipment, centrifuges, specialized storage cabinets, Warburg apparatus, binoculars, telescope, respirometers, etc.

Curriculum.—Until 1906, the entire “classical” curriculum, which was taken by most students, was prescribed. The “scientific” curriculum, also, was prescribed; it differed from the “classical” in the language courses taken, but not in the science courses taken, with a few temporary exceptions. All biology courses offered are listed here. Credit (in the modern sense) was not stated until 1902; all credit hours are given here in semester hour equivalents. The term was a quarter-year from 1840–1926; a semester before 1840 and 1926–62; two long terms and a short spring term 1962–84. (All information is from catalogs, except minor modifications after 1949 from personal knowledge.)

1821–57: Variation from no biology in the curriculum up to two terms—botany and anatomy-physiology.

1858–1880: Three or four terms of biology—botany, zoology, and anatomy-physiology.

1881–1905: Five to seven terms of biology—botany, zoology, general biology, hy-

giene, and anatomy-physiology in various combinations.

1906–1914: Elective system began: these courses were offered—botany 4–8 hours, zoology 2.7–3.7 hours, anatomy-physiology 2.3–2.7 hours.

1915–28: Departmental majors began; 2 majors required. These courses offered—bot-

Table 2.—Hanover College alumni who earned a Ph.D. in Biology. Classes through 1984. A few outstanding scientists who lacked a Ph.D. are included. (d = deceased)

John Merle Coulter (d)	1870
Moses Stanley Coulter (d)	1871
Andrew Harvey Young (d)	1871 (A.M. only)
Orlando C. Charleton (d)	1872 (A.M. only)
Charles Reid Barnes (d)	1877
Amos Butler, (d) fellow student 1 year	1877–78 (A.M. only)
Samuel E. Monds Coulter (d)	1880
Richard E. Schuh (d)	1882
Leonard W. Williams (d)	1895
Rae E. Hoffstadt (d)	1908
Gayle H. Hufford (d)	1914
Harold C. Voris (d)	1923
Clifford E. Murphy (d)	1936
Dwight M. Lindsay (d)	1947
Leland Chandler (d)	1949
Harold E. McReynolds	1950 (M.A. Only)
Frank M. Fisher	1953
James R. Zimmerman	1953
Patricia L. Walne	1954
Robert H. Brewer	1955
Charles H. George	1955
Richard B. Parker	1958
Kurt E. Blum	1961
Donald Gordon	1962
Terry L. Guerin	1962
Harold K. Voris	1962
Philip C. Bibb	1963
Gwilyn S. Jones	1964
Philip H. Hedrick	1964
Gary L. Hafner	1965
R. Eric Lombard	1965
William A. Falls	1970
John H. Wilkins	1971
John L. Edel (d)	1972
Kristine Rector Gleason	1973
R. William Mannan	1974
Stephen H. Klemann	1975
Kemuel S. Badger	1979
John K. Davis	1979
Toni L. Poole	1979
W. Robert Revelette	1979
Mark G. Bolyard	1984

any 6–8 hours, general biology 8–10 hours, zoology 6–8 hours, anatomy-physiology 2.7–3 hours, human embryology 2.7–3 hours, bacteriology 0–2.7 hours, mammalian anatomy 0–2.7 hours, teaching of biology 0–2 hours.

1929–46: Only one departmental major (and one minor) required from 1929 on. These courses offered—general biology 10 hours, advanced zoology 8 hours, advanced botany 0–6 hours, human anatomy 0–3 hours, hygiene 0–3 hours, embryology 3–4 hours, physiology 0–5 hours, teaching of biology 2 hours, vertebrate comparative anatomy 0–4 hours, histology 0–4 hours.

1947–60: Separate departments of botany and zoology created. In botany—general 10 hours, ecology 3 hours, taxonomy 3 hours, heredity 0–3 hours, anatomy 0–3 hours, physiology 0–3 hours, botanical problems 0–3 hours, bacteriology 0–4 hours, pathogenic bacteriology 0–4 hours. In zoology—general 10 hours, entomology 4 hours, human anatomy 0–3 hours, physiology 3 hours, hygiene 0–3 hours, embryology 4 hours, histology 0–4 hours, nutrition 0–2 hours, vertebrate comparative anatomy 4 hours, teaching of biology 2 hours, ornithology 0–3 hours, parasitology 0–4 hours, vertebrate field zoology 0–3 hours, zoological problems 0–3 hours, cell biology 0–2 hours.

1961: Botany and zoology recombined as single biology department. Courses little changed from previous year.

1961–78: Curriculum completely revised in 1962 (“The Hanover Plan”). The overall intent of the curricular revision was to require the student to concentrate more on fewer courses, with each course worth the same as each other course—4.5 semester hours—and taken in a logical sequence during his or her four years. There was also an increase in the natural science requirement. Each student took three courses during each of two 14-weeks terms and one course during a 4-weeks spring term. Biology courses offered were: general biology I, general biology II, genetics-cell biology, vertebrate embryology, vertebrate field zoology, plant morphology, animal physiology, vertebrate comparative anatomy, genetics-evolution, bacteriology, animal parasitology, ecology, plant taxonomy, plant physiology, special senior general biology, independent study-seminar. For parts of this period these courses were added—radiation biology,

biogeography of plants, non-flowering plants, animal behavior, human biology, genetics (as a full course, with genetics-cell biology dropped), cell biology (as a full course).

1979–84: Curriculum completely revised (“Revised Hanover Plan”). The overall intent of the curricular revision was to decrease the concentration on particular courses, with more courses taken and the natural science requirement lessened. Each student took four courses during each of two 13½ weeks terms and one course during a 4-weeks spring term. Each course was worth 3.4 semester hours credit. Biology courses were: elementary biology, general biology I, general biology II, general biology III, biological conservation, ornithology, ecology, human anatomy-physiology, animal physiology I, animal physiology II, mammalogy, vertebrate embryology, genetics, microbiology, animal parasitology, cell biology, plant taxonomy, plant morphology, plant physiology, non-flowering plants, vertebrate comparative anatomy, independent study, seminar (¼ credit). For parts of this period these courses were added—internship, histology, animal behavior, immunology, special topics.

1906–84: The general graduation natural science requirements for all B.A. or B.Sc. candidates under the elective system were changed several times. From 1906–26 they were 4–8 hours of botany and 4–8 hours of physical science. From 1927–61 they were 10–12 hours of natural science, in some years including mathematics. From 1962–78 they were 13.5 hours in two or three natural science departments. From 1979–84 they were 6.8 hours in two natural science departments.

Hanover alumni; classes through 1984.—

One measure of the effectiveness of college teaching is the list of alumni who have earned advanced (= graduate) degrees in the subject. Using this yardstick, 43 Hanover alumni have earned a Ph.D. in biology (Table 2) and 46 additional alumni a master’s degree in biology (Table 3). Another 21 who were, or are, high school teachers of biology earned a master’s degree in education (Table 5). Four others who did not earn an advanced degree in biology (but did in medicine or chemistry; Table 4) published numerous scientific papers in physiology (Guthrie 1962). It would be misleading to imply that only biology, of a pre-medical student’s courses, prepared him or her for medical school. Nonetheless, it is relevant

Table 3.—Hanover College alumni who earned a Master's degree in Biology, but not a Ph.D. Classes through 1984. A few accomplished scientists with no earned graduate degree are included. (d = deceased)

Frederick C. Coons (d)	1887
James Carlton Nelson (d) (no earned graduate degree)	1890
Theophilus A. Tyler (d)	1893
Albert Edward Wiggam (d) (no earned graduate degree)	1893
Leonhard Louis Huber (d) (no earned graduate degree)	1915
Allen Montgomery (d)	1919
W. Howard Clashman (d)	1923
Edna Banta (d)	1924
William C. Covert (d)	1925
Charles Thayer (d)	1933
Woodrow Fleming	1936
Cecil Poe	1936
David M. Greist	1942
Beverly Maxwell Poynter	1951
John Vernon Davis	1953
Jeremy Felland	1954
Margaret Hiatt	1954
Betty Jane Gough Meadows (also Ph.D. in science education)	1962
John R. Ackland	1963
William R. Brummet	1963
Jerry L. Fishel	1963
Gerald R. Sintz	1963
Claire Kelsch Jolie	1964
Laura Gale Culbert	1967
Susan Collins Schell	1968
Charles C. Harper	1969
James Maschmeyer	1970
Marsha Sickel	1971
Diana L. Adams	1972
Rebecca Consaul Barker	1972
Nancy Gloman	1974
John B. Bailey	1975
Greg R. Bright	1975
William K. Davee	1975
Jeffrey L. Kingdon (no graduate degree)	1975
Lynn Coburn Klemann	1975
Timothy Miller	1975
Thomas A. Pray	1976
Richard Wright	1976
Sally Stoehr	1977
Mark McReynolds	1978
Beth Armstrong Amstad	1980
Christian J. Martin	1981
Andrew Murray	1981
Wendy E. Wagner	1982

Table 4.—Hanover College alumni who did not earn a graduate degree in biology (though did in chemistry or medicine), but published numerous scientific papers in physiology (Guthrie 1962). All are deceased.

James Lucien Morris	1907 (Ph.D. in chemistry)
Carl Paxson Sherwin	1909 (M.D.)
Nelse F. Ockerblad	1914 (M.D.)
Jesse Willam Cavett	1921 (Ph.D) in chemistry)

that 228 Hanover alumni earned an M.D. degree (Table 6), 10 a doctorate in veterinary medicine, 32 a doctorate in dentistry, and 6 a doctorate in osteopathic medicine (Table 7).

Tables 3–7 were compiled from various sources: alumni directories, Guthrie 1953, 1958, 1962 manuscripts, my personal records, and returns from a questionnaire sent out by the alumni office in 1999 to biology major alumni. Probably the figures are incomplete, despite these efforts. Four alumni were included in the Ph.D. list although they had only earned an M.A. in biology, and four were included in the master's degree list although they had no earned graduate degree. These

Table 5.—Hanover College alumni who earned a Master's degree in education, whose undergraduate major was biology, and who taught high school. (d = deceased)

1941	James Taflinger
1942	Laurel Hyatt Williams
1947	Edwards Billingsley Wilfred Jenkins
1948	Clyde Cook
1949	Edwin Steinkamp
1950	Merrill Scott (d) Richard Sturm
1953	Paul Chastain Ben Wernz
1954	Robert Taylor
1955	Paul Diller
1956	Pamela Patterson Morford
1957	Donal Goerlitz
1961	Robert Maudlin
1964	Julia Spencer
1965	John Bird
1966	Dennis Anderson
1967	Myra Jones Morgan
1976	Ronald Cadle
1977	Keith Gehring

Table 6.—Hanover College alumni who earned an M.D. degree. The date indicates the class year. (d = deceased)

1835	Middleton Goldsmith (d)
1836	Andrew Fulton (d)
1841	George Lyen (d)
1842	Alexander Johnston (d)
1843	John Trenchard (d)
1848	Addison Bare (d)
	Robert Shannon (d)
	Samuel Taggart (d)
1849	Jesse Higbee (d)
1950	Joshua Brengle (d)
1855	Alfred Snoddy (d)
	Thomas Tucker (d)
1860	William Collins (d)
	James Wilson (d)
1861	John Richardson (d)
	Solon Tilford (d)
1863	Amos Patterson (d)
	Benjamin Tucker (d)
1866	Thomas Heady (d)
1867	Marion Amick (d)
	James Matthews (d)
	Harvey Wiley (d)
1868	William Brandt (d)
1870	Thomas Cravens (d)
1871	W. R. Amick (d)
	Joseph Stillson (d)
1872	Henry Pettibone (d)
1873	John Shadday (d)
1874	Robert Henning (d)
	Robert Jones (d)
	Joel Wilson (d)
1875	Joseph Eastman (d)
	George Evans (d)
	Joseph Thomson (d)
1876	Allen Moore (d)
	Horace Smith (d)
1878	John Hays (d)
1879	Galen Cline (d)
	Ben Strader (d)
	Hamilton Stillson (d)
1880	John Sturgus (d)
1881	Harry Gaylad (d)
1881	John Hunt (d)
1882	John Ramsay (d)
1884	Elmer Cravens (d)
1886	Charles Bottorff (d)
	Howard Fisher (d)
1891	Alois Graham (d)
	William McKee (d)
1892	Lewis Drayer (d)
1893	Gertrude Morse (d)
1894	William Jenkins (d)
	William Richmond (d)
	Vincent Shepherd (d)
1895	Leander Riely (d)
	William Shelby (d)

Table 6.—Continued.

1896	Guy Hamilton (d)
1897	Earl Burger (d)
	James Lewis (d)
1898	Cameron Chamberlain (d)
	Henry Thompson (d)
1902	Carl Henning (d)
	Robert Shanklin (d)
1904	Frederick Greene (d)
	Sylvia Greene (d)
	Oscar Turner (d)
1905	William Wallace (d)
1907	Arthur Whallon (d)
1909	Carl Sherwin (d)
1913	Carey MacDonnell (d)
1914	Nelse Ockerblad (d)
1915	Theodore Petranoff (d)
1916	Cleon Colgate (d)
	Robert Millis (d)
1917	Francis Prenatt (d)
1918	Wayne Harmon (d)
	Hursell Manaugh (d)
1921	Clifford Keidel (d)
	Richard Schmitt (d)
1922	Harold Wilber (d)
1923	Harold Voris (also Ph.D. anatomy) (d)
1924	Harry Hensler (d)
1927	James Lewis (d)
1928	Frank Bard (d)
1929	Charles Allison (d)
	Roger Whitcomb (d)
1935	Burgess Boone
	James Shanklin (d)
1935	William Warn (d)
1936	Edward Boone
	John Lee
1937	Jack Hannah
	Jules Heritier
1939	Robert Zink
1940	Max Willis
1941	Donald Smith (d)
1942	Steven Sheppard
1943	David Baumann
	Roy Behnke
1944	Thomas Hamilton
	Morris Shenk (d)
1948	Thomas Roberts
1949	Richard Carr
	Edward Morris
1950	Bernard Cooper
	William Howard (d)
	Ronald Moore (d)
	Ezra Shaya
	John Moore
1951	Jack Riner
	Alfred Hauersperger
1952	John MacDonnell
1953	Marian Hsueh Doering

Table 6.—Continued.

1955	Carl Bogardus
	James Massman
1956	Tony Solazzo
1958	Carl Moore
	Gary Lowe
	Gary Babcoke
1959	Larry Allen
1960	James Peterson
	John Williams
1961	Matthew Neal
	Robert Weetman
	Ron Myers
1962	James Jackson
	Lewis Thomas
1963	Robert Heasty
	Frederick Kuemmerle
1965	Vincent Couden
	Charles Montgomery
	Stephen Olvey
	Frank Cummins
	Robert Larson
1966	Beverley Carpenter (d)
	Karl Klein
	Steven Lenn
	Thomas Moretto
	James Hunt
1967	Rex Parent
	Paul Rider
	Brenda Igo Townes
1968	Andrew Burgess
	Annette Gralia Burst
	Thomas Jamison
	John Stene
	Gregory Weber
1969	Rick Banta
	David Henderson
	Richard Kimbler
	William Loop
	Talmage Porter
	Timothy Costich
	David Rasmussen
	George Schwemlein
	John Swarner
	Douglas Tuttle
	Barry Wright
1970	William Culp
	Rex Gentry
	Robert Clements
	Judith Nation Koehler
1971	Curtis Stine
	Donna Alford Wilkins
1972	Joseph Beardsley
	Marvin Bowers
	Wylie McGlothlin
1973	William Baker
	Deborah Givan
	Thom Mayer
	Galen Poole

Table 6.—Continued.

1974	Itzhak Shasha
	Robert Alonso
	Craig Elliott
	Brian Haag
	Carol Schobert
	Robert Thornberry
1975	Kathy Schilling Coletta
	Horace Hambrick
	Douglas Moeller
	Mark Wessling
	Steven Goff
	Wesley Ratliff
1977	Ricky Adams
	Wade Clapp
	Jeffrey Christie
	Jon Bevers
	Ricky Kime
1978	Craig Banta
	Michael Bush
	Michael Chitwood
	Terry Fenwick
	James Hussey
	Thomas Eccles
	Howard Schafer
	Peter Wells
1979	Stephen Ash
	Michael Hollifield
	Steven Norris
	Kathleen Miller
	Robert Revellette (also Ph.D., physiology)
	Anthony Perkins
	Betty Roberts Raney
1981	Jill Abrams
	Michael Butt
	Stephen Grohmann
	Timothy Kosfeld
	Gerald Lucus
	Donna Metz Metz-Dunn
	Curtis Shinabarger
	Glen Hastings
	James Knopp
1982	Avneet Bawa
	David Heimburger
	Julie Phillips Mark
1983	Eric Beier
	Scott Clark
	Lori Davidson
	Anna Fisher
	Christine Tremper Later
	Michael Miller
	James Rice
	John Ramsey
	Brian Ward
1984	Wendell Bailey
	Carol Cardonna
	Kara Wools

Table 7.—Hanover College alumni, classes through 1984, who earned a doctorate in a medically-related field (other than MD). (d = deceased)

1937	Robert Davis DDS	1964	Richard Waltz DVM
	George Gingles DMD (d)	1965	Michael Farkas DDS
1941	Herbert Alton DMD	1966	Charles Broughton DMD
	Robert Ward D Ost	1967	Alan Kolb DMD
1944	Charles Vincent DDS		William Priddy DDS
	William Stucker DDS		Alvars Vitols DDS
1945	Robert Hallowell DMD	1968	Ronald Bowman DVM
1946	Charles Denton DDS (d)		Susan Collins Schell DDS
1950	Frank Barnes D Ost		Cy Young D Ost
	Elbert Combs DDS	1969	Woodrow Oakes DDS
	Emery Alling DDS		Robert Scott D Ost
	Richard Newton DDS	1971	Peter Claussen DDS
	Richard Thomas Newton DDS		Lawrence Watts DVM
1951	John Walker DMD	1972	Alan Scheidt DVM
1952	Joseph Clark DDS	1973	Gary Ball DDS
	Donnell Marlin DDS		Laura VanWinkle Chapman DMD
1953	Richard Henderson DDS	1974	Mark Thompson DDS
	Jim Hennegan DVM	1975	William Davee DDS
1957	Robert Gillespie DVM	1976	Richard Sievers D Ost
	Donald Merryman DVM	1978	Kathleen Hennegan DVM
1958	Philip Richardson DDS		Stephen Stiller DDS
1960	Jack Gillespie DVM	1983	Suzanne Cooper Lee DVM
1963	Deborah Turner DDS		James McConnell DDS
	Ned Underwood D Ost		William Princell DDS

step-ups were mostly from Visher's (1951) accounts of important Indiana scientists.

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