

THE BULLETIN

Volume 6

MOUNT DESERT ISLAND
BIOLOGICAL LABORATORY

Salisbury Cove, Maine

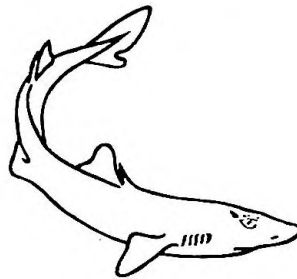


1966



THE BULLETIN OF
THE MOUNT DESERT ISLAND
BIOLOGICAL LABORATORY
SALISBURY COVE, MAINE
1966

Volume 6



Issued 1967

CONTENTS

DESCRIPTION OF FACILITIES	iii
PERSONNEL 1966	vii
BOARD OF TRUSTEES 1966-67	x
RESEARCH PROGRAMS 1966	xi
SEMINARS 1966	xvi
MEMBERSHIP LIST 1966	xviii
RESEARCH REPORTS	1
INDICES 1931-65	
Subject Index	39
Author Index	55
INDEX TO VOLUME 6	61

DESCRIPTION OF FACILITIES

The Mount Desert Island Biological Laboratory is an independent marine biological station on the coast of Maine near the mouth of the Bay of Fundy which provides a seasonal research facility for investigations on local flora and fauna. Basic laboratory space for 27 research programs, simple glassware, common chemicals and certain specialized equipment are available for investigators. During 1966 there were 63 scientific personnel in 29 research groups representing 22 institutions in 16 states. There were 38 professional scientists with 14 students in the 1966 programs.

No formal courses are offered, but some advanced undergraduate, graduate, and medical students spend the summer as assistants to senior investigators, thereby gaining research training. Most of these students are selected by the investigators from their home institutions.

History and Organization

The Laboratory was founded in 1898 by J. S. Kingsley, of Tufts College, and its original location was at South Harpswell, Maine. The site at Salisbury Cove was donated to the Laboratory by the Wild Gardens of Acadia, a group instrumental in the establishment of Acadia National Park, and removal to this location was completed in 1921. The first laboratory buildings, the original salt water system and some of the residential cottages were constructed or obtained by the gifts of local summer residents.

The Mount Desert Island Biological Laboratory was incorporated in 1914 under the laws of the State of Maine as a nonprofit scientific and educational institution, and it is owned and operated by the Trustees and members of the Corporation. At present there are 262 members of the Corporation. It functions without full time professional administrative personnel and in most ways it is a cooperative enterprise. Income is derived from membership dues, laboratory fees, cottage rentals, investments, private and corporate donations, and grants. The business and scientific management of the Laboratory is in the hands of the Director and the Board of Trustees.

The Directors have been: Ulrich Dahlgren, Princeton University (1920-26); H. V. Neal, Tufts College (1926-31); William H. Cole, Rutgers University (1931-40); Roy P. Forster, Dartmouth College (1940-47); J. Wendell Burger, Trinity College (1947-50); Warner F. Sheldon, University of Pennsylvania (1950-56); Raymond Rappaport, Jr., Union College (1956-59); Alvin F. Rieck, Marquette University (1959-64); William L. Doyle, University of Chicago (1964-).

Location

Mount Desert Island lies in the Gulf of Maine about 150 miles northeast of Portland, Maine, and is connected to the mainland by a short bridge. Year round air service is available to Bangor, Maine with seasonal service to Bar Harbor Airport. The island has an area of more than 100 square miles and is traversed east to west by a range of glaciated mountains and north to south by a narrow fiord six miles long that partially divides the east and west halves. Among the mountains lie several deep fresh water lakes and shallow ponds. Much of the mountainous area is a part of Acadia National Park. The Island is separated from the mainland and adjacent islands by narrow deep bays. Spring tides average 13.2 feet and neap tides 8.7 feet.

The many varied biological resources of the Acadian area are readily available. In summer, the cold waters of the Gulf of Maine are rich in marine life. The rocky shores, mud flats and strong tidal currents provide a variety of habitats. Fresh water lakes and ponds and the mixed terrain give further diversity to the forms available. Certain forms are abundant, others are scarce. The research abstracts in past Bulletins will give a good indication of the common forms. (See especially Vol. 5, No. 1.) The director will be glad to furnish an estimate of the availability of any special forms.

Physical Plant

The Laboratory is situated on a tract of about 150 acres fronting on Frenchman Bay at Salisbury Cove in the Township of Bar Harbor. In addition to shore frontage, the Laboratory owns part of a fresh water pond and brook, and its land varies from meadow and forest to sphagnum bog.

Investigation is carried on in single story buildings of frame construction located along the shore. These buildings are as follows:

(1) The Neal Laboratory. This, the oldest and largest of the laboratory buildings was remodeled in 1955 and now contains eight laboratories: four large rooms that will each accommodate 3 to 4 persons, and four small rooms suitable for single investigators. All rooms are provided with gas, and fresh and salt water. Water troughs, aquaria, and larger tanks are located along the north wall outside.

(2) The Halsey Laboratory was remodeled in 1961 and consists of four rooms each capable of accommodating 3 to 4 persons. The rooms all have gas, fresh and salt water. Refrigerators, ovens and aquaria are located on a common terrace at the entrance to the building.

(3) The Lewis Laboratory consists of two adjacent rooms each capable of accommodating 3 to 4 persons.

(4) The Kidney Shed is a single large laboratory that was used for several years by Dr. Homer Smith's research group.

(5) The Hegner Laboratory contains 10 laboratory rooms provided with salt and fresh water each accommodating 1 to 2 persons.

(6) The Darkroom-Laboratory was erected in 1962 and contains one laboratory suitable for 2 to 3 persons and equipped with salt and fresh water, and a photographic darkroom for general use.

(7) The Instrument Room was renovated in 1955 for the purpose of housing equipment used in common by members of the Laboratory. It contains a refrigerated centrifuge (International PR2), Warburg apparatus (circular), Baird flame photometer, pH meters, Coleman spectrophotometer (Junior), Beckman spectrophotometer DU, muffle furnace, clinical centrifuges, small autoclave, deep freezes, ice makers, refrigerators and stills.

(8) Biophysics Building. This building was erected in 1965. It houses isotope counting systems, ultracentrifuges, spectrophotometers, and space for chromatography.

(9) Shop and Stockroom. The shop contains power and hand tools for woodworking; the stockroom has chemical, glassware, analytical balances, a fume hood and an area for glassworking.

(10) Office and Library. A separate building was constructed in 1955 to contain the Director's Office and to house the business records and library. The library is small, comprising reference texts for biology and medicine, a few complete journals (Biological Abstracts, Biolog-

ical Bulletin and the Journal of the Marine Biological Association), as well as monographs and a sizable reprint collection.

(11) Dahlgren Hall, the former village schoolhouse, was purchased and converted to use as a meeting hall. The single large room can seat about 120 persons. It is equipped with projectors for regular lantern slides, 35 mm slides, and 16 mm silent motion pictures.

(12) The Dining Hall. This dining hall and living room for about 20 junior investigators and students was built in 1963. It is operated by a cook-manager. A small general library of books and records, and a record player have been furnished by private donation.

(13) Bowen Hall is one of the finest remaining examples of early 19th century Island architecture. Formerly used as the Dining Hall, it now serves as a dormitory and common room for young women.

(14) Dock. The dock consists of two floats with livewells and attached live cars for storage of specimens. It is attached to the shore by an inclined ramp and a bridge and abutment.

(15) Collecting Boats. A 32' gasoline powered collecting boat, the Squalus, was purchased in 1958. It is provided with a circulating water tank for the transportation of specimens. Some simple dredging gear is available for collecting purposes and arrangements can be made with local fishermen for offshore specimens. A Nova Scotia skiff with an outboard motor is also used for collecting and a few hand powered skiffs are available to investigators.

Housing

Sixteen cottages suitable for families with children stand on land owned by the Laboratory and are within easy walking distance of it. The cottages are rented by the season, or occasionally for shorter periods. Occupants must supply their own blankets, linen, and silver, pay for utilities (electricity and gas), and pay the Laboratory for the use of the cottage (including water rent and garbage disposal). Rent is \$350 to \$450 per season, depending upon the size of the cottage. A few privately owned cottages are also available for rental near the Laboratory, and in other communities on the island. An automobile is essential for family mobility in the area.

Single investigators, student assistants, and couples without children rent rooms in the village and take their meals in the Laboratory Dining Hall. The weekly charge for meals is based on self-sustaining nonprofit operation.

In order to encourage private construction and ownership of cottages by workers, the Laboratory has a policy of issuing leases on certain plots of laboratory land. Provision is made for sale or rental of the cottages to other workers in case the owner finds it impossible to continue to work at the Laboratory. In this way, the Laboratory is able to encourage capital investment by individuals and at the same time ensure that the land will remain under its own jurisdiction. Privately owned cottages on leased land are currently held by Doyle, Forster, Hogben, Rall, Rappaport, Rieck, Sheldon, and Wilde.

Recreational Activities

Mount Desert Island has long been known to have one of America's most desirable summer climates. The ocean, rocky shores, and mountains provide scenery of unexcelled beauty. The distance from large metropolitan areas has so far helped to keep it relatively unspoiled.

Swimming, hiking, mountain climbing, picnicking, boating and sailing, tennis, golf, and other sports are readily available. Acadia National Park with its excellent naturalists' program con-

tributes to the general interest. There are small museums of Indian and local lore, public gardens, a good public library and cultural exhibits. Proximity to the Jackson Laboratory adds scientific interest and resources.

Salisbury Cove is an old fishing and farming community on the northern shore of the Island near the main road from Bar Harbor to Ellsworth. It has one general store. The Laboratory colony comprises about 100 adults and 60 children of assorted ages, and forms a considerable portion of the summer population of the village.

Bar Harbor, the largest town on Mount Desert Island, is about six miles from the Laboratory and provides many of the services of a city including excellent shopping facilities and a good hospital. The fire of 1947 did no damage to the Laboratory area, nor are its visible effects on the Island as marked as might be expected. For biologists, the ecological changes produced by this fire are of great interest.

Acknowledgments

The Mount Desert Island Biological Laboratory is indebted to the National Science Foundation for substantial support during the past decade. Funds for renovations of buildings and new construction have permitted the laboratory to expand and upgrade its facilities. Contributions to operating costs and for specialized research equipment have greatly improved the efficiency of research activities. National Science Foundation support for the Bulletin has made possible a change to an annual basis instead of the former triennial period. The individual research projects which have been served by this laboratory are variously funded by private and government agencies and by individuals and all of these projects have benefited from the National Science Foundation grants to the laboratory. Current support under grant GB 4701 is gratefully acknowledged.

The research reports and index for 1966 were compiled by Dr. H. V. Murdaugh. The indices for 1931-65 were prepared by Dr. Thomas Maren and Dr. Leon Goldstein.

Applications

Fees for research space vary according to the demand made on the facilities. They range from \$150 to \$600 depending on the space assigned and the number of workers. All investigators have the use of the general facilities, but special arrangements are necessary if unusual demands are anticipated. Investigators are urged to bring their own specialized equipment and chemicals. On occasion, the Laboratory may be able to provide apparatus which would have long term usefulness for other workers. Since the Laboratory is closed for nine months of each year, the general policy has been to maintain as little delicate or especially valuable equipment as possible. Isotope counting systems and ultracentrifuges are available on a fee basis. Persons planning to use isotopes must make prior arrangements in conformity with our Radiation Safety Committee requirements.

Limited fellowships are supported by funds from the Ulrich Dahlgren Memorial Fund (a gift from the American Philosophical Society) and by The National Science Foundation.

Application and inquiries should be addressed to the Laboratory Director, Dr. William L. Doyle:

June 1 - September 1

Mount Desert Island Biological Laboratory
Salisbury Cove, Maine

September 1 - June 1

Department of Anatomy
University of Chicago
Chicago, Illinois 60637

Personnel 1966

OFFICERS 1965-66

President	Roy P. Forster	Dartmouth College
Vice President	J. Wendell Burger	Trinity College
Secretary	Leon Goldstein	Harvard University
Treasurer	Albert Cunningham	Bar Harbor
Clerk	John Whitcomb	Bar Harbor
Director	William L. Doyle	University of Chicago

Elected members of the Executive Committee:

C. Adrian M. Hogben
H. V. Murdaugh

STAFF

Assistant Director	R. J. Hylander	Bar Harbor
Caretaker	R. E. Dolliver	Bar Harbor
Collector	Charles E. Wilde, III	Yale University
Crew	John Tewell	Hulls Cove
	Michael Williams	Sand Point
Secretary	Dariel G. Davis	Mount Holyoke College
Dining Hall Manager	Mary Cunningham	Bar Harbor

SCIENTIFIC PERSONNEL

Name	Institution
Dorothy Antkowiak	S.U.N.Y. at Buffalo
Dr. Nicholas Bachur	NIH-Cancer
William Beauman	Washington University
Dr. Edward Bellis	Pennsylvania State University
Dr. John Boylan	S.U.N.Y. at Buffalo
Dr. Neal Bricker	Washington University
Larry Broder	University of Florida
Dr. Maurice Burg	NIH-Heart
Dr. J. W. Burger	Trinity College
Judy Cholewa	Loyola University, Chicago
Dr. R. B. Crawford	University of Pennsylvania
Dr. Carroll E. Cross	University of Pittsburgh
Dr. W. L. Doyle	University of Chicago
Rebecca Embry	University of Florida

Name	Institution
Dr. Roy P. Forster	Dartmouth College
Dr. J. B. L. Gee	University of Pittsburgh
Barbara Gerstein	S.U.N.Y. at Buffalo
Dr. Irving Goodman	Columbia University
Alex Goodman	
Dr. Leon Goldstein	Harvard University
Dr. C. L. Greenblatt	NIH
Dr. Levi Guerra	Washington University
Dr. S. C. Hartman	Harvard University
Fred J. Hendler	S.U.N.Y. Downstate Medical Center
Dr. Robert Hiatt	Columbia University
Dr. C. A. M. Hogben	University of Iowa
Leslie Hogben	
Dr. Paul Horowicz	Duke University
Dr. Charles W. Huver	University of Minnesota
Maria Somjen Jones	Duke University
Dr. M. E. Kaplan	Washington University
Dr. David A. Karnofsky	Sloan-Kettering Institute
Dr. W. B. Kinter	S.U.N.Y. at Syracuse
Scott Long	Western Reserve University
Dr. Bassett Maquire	New York Botanical Garden
Dr. Carlos Marchena	Cornell University
Dr. Thomas Maren	University of Florida
J. Eugene Millen	University of Pittsburgh
Anne Moore	Columbia University
Dr. H. V. Murdaugh	University of Pittsburgh
Marjorie Neppel	Harvard University
Lucy Nelson	University of Pittsburgh
Dr. Edward Palincsar	Loyola University, Chicago
Valerie Phillips	University of Pittsburgh
Dr. D. P. Rall	NIH-Cancer
Dr. R. Rappaport	Union College
Jeffrey Ratner	University of Pennsylvania
Dr. A. F. Rieck	Marquette University
Mary Rieck	Marquette University
Dr. E. D. Robin	University of Pittsburgh
Gerhard Rumrich	Western Reserve University
Elinor Saulter	University of California
Dr. Bodil Schmidt-Nielson	Western Reserve University
Dr. Warner F. Sheldon	University of Pennsylvania
Andrew Silverman	S.U.N.Y. at Buffalo
Phillip Skehan	Yale University
Dr. Thomas M. Stevens	Rutgers Medical College

Name	Institution
Dr. Victor Stollar	Rutgers Medical College
Mike Waggoner	Duke University
Joan Walls	Mount Holyoke College
Linda Walls	Hood College
Peter Weller	Harvard University
Dr. C. E. Wilde, Jr.	University of Pennsylvania
Dr. C. W. Young	Sloan-Kettering Institute

Short Term Investigators:

Dr. Helen Cserr	Harvard University
-----------------	--------------------

The Mount Desert Island Biological Laboratory
Salisbury Cove, Maine

Board of Trustees 1966-67

J. Wendell Burger	Trinity College, Hartford
Richard Crawford	University of Pennsylvania
Albert H. Cunningham	Bar Harbor Banking and Trust Co.
William L. Doyle	University of Chicago
Roy P. Forster	Dartmouth College
Leon Goldstein	Harvard University
Earl L. Green	Jackson Laboratory, Bar Harbor
C. Adrian M. Hogben	University of Iowa
David Karnofsky	Sloan Kettering Institute
William B. Kinter	S.U.N.Y. at Syracuse
Thomas H. Maren	University of Florida
H. Victor Murdaugh	University of Pittsburgh
David P. Rall	National Cancer Institute
Raymond Rappaport	Union College, Schenectady
Alvin F. Rieck	Marquette University
Eugene Robin	University of Pittsburgh
Bodil Schmidt-Nielsen	Western Reserve University
Warner F. Sheldon	University of Pennsylvania
Edwin Smith	Bar Harbor
Charles E. Wilde, Jr.	University of Pennsylvania

Officers 1966-67

President	Roy P. Forster
Vice President	J. Wendell Burger
Secretary	Leon Goldstein
Treasurer	Albert H. Cunningham
Clerk	Donald E. Hobbs
Director	William L. Doyle

Executive Committee of the Board of Trustees

Roy P. Forster	ex officio
Albert H. Cunningham	ex officio
William L. Doyle	ex officio
C. Adrian M. Hogben	by election
Charles E. Wilde, Jr.	by election

Research Programs - 1966

Edward D. Bellis, Ph.D.
Associate Professor of Zoology
Pennsylvania State University
Department of Zoology
University Park, Pennsylvania 16802

Program: Ecology of Plankton and Barnacles in Tide Pools

John W. Boylan, M.D.
Associate Professor of Physiology and Medicine

E. J. Meyer Memorial Hospital
462 Grider Street
Buffalo, New York

Program: (1) Glucose TMG in Squalus acanthias
(2) Osmoregulation in Squalus acanthias

Associates: Miss Dorothy Antkowiak
Miss Barbara Gerstein
Andrew Silverman

Neal S. Bricker, M.D.
Professor of Medicine

Washington University School of Medicine
660 S. Euclid
St. Louis, Missouri 63110

Program: Ion Transport Across Biologic Membranes

Associates: Levi Guerra, M.D.
Carlos Marchena, M.D.
William Beauman

Maurice B. Burg, M.D.
Senior Investigator

National Heart Institute
Bethesda, Maryland

Program: Kinetics of Organic Acid Transport in Isolated Renal Tubules of the
Flounder

Associate: Peter Weller

J. Wendell Burger, Ph.D.
Professor of Biology

Trinity College
Hartford, Connecticut 06106

Program: Electrolyte Equilibria in Dogfish

Richard B. Crawford, Ph.D.
Associate Professor of Microbiology

School of Dental Medicine
University of Pennsylvania
Philadelphia, Pennsylvania 19105

Program: Cytology, Energetics and Metabolism of Differential Cellular Systems

Associate: Fred Hendler

William L. Doyle, Ph.D.
Professor of Anatomy

Department of Anatomy
University of Chicago
Chicago, Illinois 60637

Program: Fine Structure and Salt Regulation

Roy P. Forster, Ph.D.
Ira Allen Eastman Professor

Department of Biological Sciences
Dartmouth College
Hanover, New Hampshire 03755

Program: Trimethylamine Oxide: Synthesis, Metabolism, and Excretion in
Marine Vertebrates

Leon Goldstein, Ph.D.
Assistant Professor of Physiology

Harvard Medical School
25 Shattuck Street
Boston, Massachusetts

Program: Trimethylamine Oxide Biosynthesis in Fishes of the Gulf of Maine

Associates: Standish Hartman, Ph.D.
Miss Marjorie Neppel
Miss Linda Walls

Irving Goodman, Ph.D.
Assistant Professor of Biochemistry

Department of Biochemistry
Columbia University, College of Physicians and Surgeons
630 West 168th Street
New York, New York 10032

Program: A Comparative Study of Bivalent Sulfur in Smooth Muscle Contraction

Associate: Alex Goodman

Charles L. Greenblatt, M.D.
Surgeon U.S.P.H.S.

National Institute of Arthritis and Metabolic Diseases
Building 2, Room SB-13
Bethesda, Maryland 20014

Program: Host Defense Systems in Invertebrates

Robert B. Hiatt, M.D.
Associate Professor of Surgery

Department of Surgery
Columbia University, College of Physicians and Surgeons
630 West 168th Street
New York, New York 10032

Program: Comparative Study of the Control of Intestinal Motility

Associate: Miss Anne Moore

C. Adrian M. Hogben, Ph.D.
Professor and Head, Department of Physiology and Biophysics
Department of Physiology and Biophysics
University of Iowa
Iowa City, Iowa 52240

Program: Comparative Physiology: Gastric Secretion
Associates: Mrs. Maria Somjen Jones
Miss Leslie Hogben

Paul Horowicz, Ph.D.
Associate Professor of Physiology
Department of Physiology
Duke University Medical Center
Durham, North Carolina 27706

Program: Electrical and Ionic Properties of Crustacean and Fish Muscle
Associate: D. Michael Waggoner

Charles W. Huver, Ph.D.
Associate Professor of Zoology
Department of Zoology
University of Minnesota
Minneapolis, Minnesota 55455

Program: Teleost Development: Activation and Blastodisc Formation
Associate: Phillip Skehan

Manuel E. Kaplan, M.D.
Assistant Professor of Medicine, Washington University School of Medicine
and Director of Hematology, The Jewish Hospital of St. Louis
216 South Kingshighway
St. Louis, Missouri 63110

Program: Vitamin B12 Absorption in Fishes and Other Aquatic Vertebrates

William B. Kinter, Ph.D.
Professor of Physiology
Department of Physiology
State University of New York Upstate Medical Center
766 Irving Avenue
Syracuse, New York 13210

Program: Kinetics of Bidirectional Dye Transport in Isolated Renal Tubules of
Flounder

Thomas H. Maren, M.D.
Professor and Chairman of Pharmacology
Department of Pharmacology
College of Medicine
University of Florida
Gainesville, Florida

Program: Function of Gill Carbonic Anhydrase in In Vitro Secretion in Rectal
Gland
Associates: Miss Rebecca Embry
Larry Broder

H. V. Murdaugh, Jr., M.D.
Associate Professor of Medicine

University of Pittsburgh School of Medicine
Pittsburgh, Pennsylvania 15213

Program: (1) Physiology of the Diving Seal
(2) Respiratory and Metabolic Studies in Dogfish
Associates: Dr. Carroll E. Cross
Lucy Nelson

Edward E. Palincsar, Ph.D.
Associate Professor of Biology

Department of Biological Sciences
Loyola University
6525 North Sheridan Road
Chicago, Illinois 60626

Program: The Physiology of Aging and Growth in Colonial Hydroids
Associate: Judith Cholewa

David P. Rall, M.D.
Medical Director

National Cancer Institute
Bldg. 10, Room 6N115
Bethesda, Maryland 20014

Program: Permeability of Dogfish Gills to Drugs and Steroids
Associates: Jeffery Ratner
Nicholas Bachur, M.D., Ph.D.
(1) N-substituted amino acids in marine forms
(2) Membrane lipids during cell division

Raymond Rappaport, Ph.D.
Professor of Developmental Biology

Department of Biological Sciences
Union College
Schenectady, New York 12308

Program: Cytokinesis in Animal Cells

Alvin F. Rieck, Ph.D.
Associate Professor

Department of Physiology
Marquette University School of Medicine
516 North 15th Street
Milwaukee, Wisconsin 53233

Program: Changes of the Ultra-Violet LD₅₀ During the Cell Cycle in Zygotes
of Echinarachnius parma and Its Photoreactivation
Associate: Mary Rieck

Eugene D. Robin, M.D.
Professor of Medicine

Department of Medicine
University of Pittsburgh
School of Medicine
Pittsburgh, Pennsylvania 15213

Program: (1) Physiology of the Diving Seal
(2) Respiratory and Metabolic Studies in Dogfish
Associates: J. B. L. Gee, M.D.
J. Eugene Millen
Valeria Phillips

Bodil Schmidt-Neilsen, Ph.D.
Professor of Biology

Western Reserve University
Department of Biology
Cleveland, Ohio 44106

Program: Micropuncture Study of Urea Transport in the Shark Renal Tubule
Associates: Karl Ullrich, Ph.D.
Gerhard Rumrich
Scott Long

Thomas M. Stevens, Ph.D.
Assistant Professor

Department of Microbiology
Rutgers Medical School
c/o Colgate Palmolive Research Center
909 River Road
Piscataway, New Jersey

Program: (1) Characteristics of Dogfish Lymphocytes In Vitro
(2) Dogfish Embryo Tissue Culture
Associate: Victor Stollar, Ph.D.

Warner F. Sheldon, M.D.
Professor of Pathology

University of Pennsylvania
School of Medicine
Philadelphia, Pennsylvania 19104

Program: Gill Circulation in Dogfish

Charles E. Wilde, Jr., Ph.D.
Professor and Chairman of Histology and Embryology

Department of Histology and Embryology
School of Dental Medicine
University of Pennsylvania
Philadelphia, Pennsylvania 19104

Program: Cytology, Energetics, and Metabolism of Differentiating Cellular Systems
Associate: Fred Hendler

Charles W. Young
Associate

Sloan-Kettering Institute
410 East 68th Street
New York, New York 10021

Program: Pharmacologic Studies on Molecular Events Occurring During Prolif-
eration and Differentiation in Embryos of Echinarachnius parma
Associates: David A. Karnofsky, M.D.
Miss Joan Walls

The Mount Desert Island Biological Laboratory
Tuesday Evening Seminars
1966

July 5	Dr. William L. Doyle Department of Anatomy University of Chicago	"The 45th Season of MDIBL"
July 12	Dr. A. C. Barger Department of Physiology Harvard Medical School	"Renal Blood Flow"
July 19	Dr. C. Adrian M. Hogben Department of Physiology and Biophysics University of Iowa	"Landing A Probe on A Cell"
July 26	Dr. Barbara R. Rennick Department of Pharmacology State University of New York at Buffalo	"Renal Tubular Transport of Organic Acids and Bases"
August 2	Dr. John W. Boylan Department of Physiology and Medicine State University of New York at Buffalo	"The Myth of Tubular Transport Maximum"
August 9	Dr. Benjamin F. Trump Department of Pathology Duke University Medical Center	"Correlation of Structure and Function in Normal and Injured Flounder Tubules <u>In Vitro</u> "
August 16	Dr. Bernard Weinstein Department of Medicine College of Physicians and Surgeons Columbia University	"Fidelity in the Translation of the Genetic Code"
August 23	Dr. Alvin F. Rieck Department of Physiology Marquette University of Medicine	"Photobiology Studies on Cleavage Early Development in <u>Echinarachius parma</u> "
August 30	Dr. David P. Rall Laboratory of Chemical Pharmacology National Cancer Institute	Problems in Extrapolating Drug Toxicity Data from Laboratory Animals to Man

Friday Afternoon Informal Seminar Series
1966

July 8	Research project descriptions, senior investigators, A-K	
July 15	Research project descriptions, senior investigators, L-Z	
July 22	Dr. R. W. Rappaport	Micrurgical Study of the Cleavage Furrow in Invertebrate Eggs
	Dr. C. W. Young	Effects of Antimetabolites on Development of Sand-Dollar Embryos

July 29	Dr. Neal Bricker Dr. J. Wendell Burger	Sodium Transport in Dogfish Erythrocytes Renal Function in Myxine
August 5	Dr. Robert B. Hiatt Dr. W. B. Kinter	Phylogeny of Intestinal Motor Control Bidirectional Transport in Flounder Renal Tubule
August 12	Dr. Thomas H. Maren Dr. Eugene Robin	Comparative Biochemistry of Carbonic Anhydrase Kinetics pH in Cold (and Hot) Blood
August 19	Dr. H. V. Murdaugh Dr. Maurice Burg	Of Ships and Seals Diodrast Transport by Isolated Perfused Flounder Renal Tubules
August 26	Dr. C. E. Wilde, Jr. Dr. Peter A. Janssens	How the Fundulus Got That Way Nitrogen Metabolism in Estivating Lungfish

MEMBERSHIP LIST - 1966

Name	Year Elected	Name	Year Elected
Richard Adamson	1962	Betty Danes	1952
Daniel Albert	1960	Alden B. Dawson	1948
Dorothy Antkowiak	1962	Earl H. Dearborn	1952
Irwin Arias	1961	Vincent De Vita	1959
Norman K. Arnold	1940	Robert Dixon	1965
		Frederick Dodge, Jr.	1955
Merrill A. Baratz	?	Don S. Douglas	1958
Ross S. Basch	1958	Margot E. Doyle	1954
E. Lovell Becker	1951	William L. Doyle	1950
C. D. Beers	1948	William Drewry	1963
G. S. Berenson	1950		
Fredrik Berglund	1953	Mrs. Paul Erickson	1963
Edgar A. Bering	1964	George M. Fanelli	1963
Robert W. Berliner	1948	Ragnar Fange	1957
Leah Berliner	1954	Frederick P. Ferguson	1952
Joel E. Berne	1955	Alfred P. Fishman	1950
Gerrit Bevelander	1954	Florence Fishman	1954
M. P. Blaustein	1961	Roy P. Forster	1939
Bartley Block	1955	Dorothy Forster	1954
Jerome B. Block	1953	Ernest C. Foulkes	1956
John A. Blum	1956	Karl Fox	1963
George Bohigian	1963	Stanton Friedman	1960
Hans G. Borei	1955	Hubert Frings	1952
Mrs. Hans G. Borei	1960	Mable Frings	1952
Robert L. Bowman	1952	Harry Fritts	1954
Saul Boyarsky	1954	Irving Fritz	1961
John W. Boylan	1959		
Mrs. John Boylan	1960	Phillip Gallagher	1963
Stanley E. Bradley	1940	Mary S. Gardiner	1939
Geraldine Bradley	1964	Edward G. Gerbic	1949
Jane Bradley	1964	Perry Gilbert	1957
Mary Brandes	1964	H. Earl Ginn	1961
James Brennon	1961	Louis J. Goldberg	1957
Neal Bricker	1962	Herman Gold	1962
James W. Brown	1955	Leon Goldstein	1957
Elmer D. Bueker	1953	Barbara Goldstein	1963
Elizabeth A. Bueker	1954	Richard Goss	1957
Maurice Burg	1965	Mrs. Richard Goss	1961
J. Wendell Burger	1937	Carl W. Gottschalk	1958
Ruth Burger	1954	W. C. Grant, Jr.	1959
Judith Burger	1963	Earl L. Green	1958
E. G. Butler	1948		
E. J. Cafruny	1964	Mary A. Hahn	1963
Danielle Carlisle	1963	B. Vincent Hall	1953
Nestor Carlisky	1961	Jack E. Harclerode	1958
Charles Chidsey	1956	Richard M. Hays	1952
Jane Chidsey	1957	David Hearn	1963
James Clifton	1964	H. C. Heinemann	1952
John Cohen	1959	Fre Heinemann	1963
Linda Cohen	1961	Fred Hendler	1964
David Colley	1962	Richard C. Herold	1962
Barbara Colley	1963	Robert Hiatt	1965
Dale R. Coman	1958	Robert Hobson II	1960
Gary Conrad	1962	Jurg E. Hodler	1952
John Cook	1959	Mrs. Adrian Hogben	1961
Edwin L. Cooper	1961	C. A. M. Hogben	1957
Beverly L. Cox	1954	Suk Ki Hong	1956
Richard Crawford	1962	T. Richard Houpt	1958

Name	Year Elected	Name	Year Elected
Robert Howe	1956	Alan Yale Newhoff	1958
K. C. Huang	1960	Doris M. Nicholls	1950
Robert Hylander	1963	Stanley J. Nowak	1936
Nancy Hylander	1963		
Edmund Jacobson, Jr.	1956	Roberta O'Dell	1957
Oscar C. Jaffee	1953	W. Walter Oppelt	1962
E. Kenneth Jenkins	1955	Humio Osaki	1956
Eunice Johnson	1954		
Joan Johnston	1960	Lot B. Page	1950
William P. Jollie	1965	Constance Paige	1963
		Edward Palincsar	1962
John Kalas	1963	Roger F. Palmer	1965
Benjamin B. Kamrin	1955	Clifford S. Patlak	1962
Marvin Karno	1957	Robert Patterson	1961
David A. Karnofsky	1953	Valeria Phillips	1964
Elesa Karnofsky	1954	E. Converse Pierce	1962
Lisa Karnofsky	1963	David Ploth	1964
Norman Kemp	1950	Aaron S. Posner	1965
Rudolf T. Kempton	1936	William Pyron	1961
Thomas J. Kennedy, Jr.	1948		
Anthony J. Kerin	1953	Lawrence Rabinowitz	1963
Kenneth Kim	1963	David Rall	1957
William B. Kinter	1963	Mrs. David Rall	1960
Marianne Schuelein	1956	Barbara Rappaport	1947
Marcus Krupp	1956	Raymond Rappaport	1958
Howard Kutchai	1962	James Rawls	1960
		Warren Rehm	1963
Mrs. George Lange	1957	Barbara Rennick	1956
Willoughby Lathem	1951	Johannes Rhodin	1954
Eva S. Lehman	1961	Alvin Rieck	1954
Margaret Lewis	1950	Mrs. Alvin Rieck	1959
William G. Lindsay, Jr.	1956	Mrs. P. C. Rizzo	1955
Steven Lipson	1958	Mrs. Eugene Robin	1963
Clarence C. Little	1936	Eugene D. Robin	1960
Franklin Little	1955	William R. Rout	1964
Richard A. Liversage	1959	Martin Rubin	1954
T. L. Loo	1962		
William Lotspeich	1956	Stanley N. Salthe	1959
Preston Lowrance	1950	Elinor Saulter	1961
David B. Ludlum	1959	John W. Saunders	1954
Ethel S. Lumb	1948	Mrs. John W. Saunders	1957
L. C. Lustenberger, Jr.	1958	John J. Sayen	1949
		David Schachter	1952
Richard L. Malvin	1956	David Schafer	1961
Theresa Mangold	1964	Leo Schatz	1959
James Manis	1961	Walter Schlesinger	1959
Thomas H. Maren	1953	Robert Schlesinger	1964
Ruth Maren	1954	Carol Schmid	1961
Berry C. Marshall	1954	Bodil Schmidt-Neilsen	1952
Gordon W. McKey	1950	James M. Schooler	1964
Eugene Millen	1963	George Schreiner	1947
Helena Miller	1947	J. P. Scott	1948
Stuart Mudd	1924	Joan D. Scott	1957
H. V. Murdaugh	1957	James A. Shannon	1945
Mrs. H. V. Murdaugh	1961	Margaret Sheldon	1956
David Musher	1962	Warner F. Sheldon	1946
Allen Myers	1962	Clarence Shub	1963
J. D. Myers	1948	Eve C. Shy	1956
Jessica L. Myers	1950	Eva Simmel	
		Margaret H. D. Smith	1949

Name	Year Elected	Name	Year Elected
Willie Smith	1961	I. Bernard Weinstein	1963
Robert Soley	1954	Edgar J. Weiss	1962
Stephen Soldes	1960	Phillip R. White	1946
Anthony Steffek	1959	Charles E. Wilde, Jr.	1950
Bruce Stevens	1964	Betsy Wilde	1954
Thomas Stevens	1953	Charles E. Wilde III	1964
Steven Strong	1963	Deborah Wilde	1963
Eugene Surasky	1956	Walter S. Wilde	1956
Marianne Schuelin		Per Wistrand	1959
Roy Swan	1962	Robert Wolbach	1957
		Nancy Wolfson	1963
John V. Taggart	1948	James Wood	1960
Bruce Thayer	1962	Mrs. James Wood	1961
James Theodore	1965	George W. Woolley	1948
R. Amory Thorndike	1945		
John Torrey	1963	Charles W. Young	1965
Dan C. Tosteson	1959	William S. Yamamoto	1950
Bruno Truniger	1963		
John Weber	1965	C. Gordon Zübrod	1948

Honorary Members

Albert H. Cunningham
Mrs. Robert W. Hegner
Donald E. Hobbs
Mrs. Herbert V. Neal
Edwin R. Smith

Associates

Name	Year Elected
Frank L. Babbott	1947
Robert E. Blum	1938
Thurlow M. Gordon, Jr.	1938
Thurlow M. Gordon, Sr.	1938
David Rockefeller	1947