

CARNEGIE INSTITUTE OF TECHNOLOGY

SIXTY-SIXTH COMMENCEMENT



CAMPUS MALL

June 10, 1963

NINE O'CLOCK

SIXTY-SIXTH COMMENCEMENT

CARNEGIE INSTITUTE OF TECHNOLOGY

PROGRAM

Processional

(The audience will rise and remain standing at the conclusion of the Processional music.)

Kiltie Band

RICHARD EUGENE STRANGE, *Director*

Commencement Declaration

ROBERT RANDLE ROTHFUS, *Faculty Marshal*

Presentation of Colors

The Star Spangled Banner

Posting of Colors

Invocation

THE REVEREND W. SCOTT McMUNN

*Secretary for Special Services, Department of Stewardship and Promotion
The General Council, The United Presbyterian Church*

(The audience will be seated at the conclusion of the Invocation.)

Announcements

JOHN CHRISTIAN WARNER

President, Carnegie Institute of Technology

Address

HAROLD EDGAR CLURMAN

Director, Drama Critic and Author

Conferring of Bachelors and Masters Degrees

(It is requested that the audience refrain from applause until all degrees have been conferred.)

Conferring of Doctor of Philosophy Degrees

Presentation of Candidates for Honorary Degrees

HAROLD EDGAR CLURMAN
DOCTOR OF FINE ARTS

Presented by Robert W. Corrigan, *Andrew Mellon Professor and Head, Drama*

CALVIN EDWARD GROSS
DOCTOR OF HUMANE LETTERS

Presented by John R. Coleman, *Dean, Division of Humanities and Social Sciences*

ROY ARTHUR HUNT
DOCTOR OF LAWS

Presented by James M. Bovard, *Chairman, Board of Trustees*

FREDERICK SEITZ
DOCTOR OF SCIENCE

Presented by Julius Ashkin, *Professor and Head, Physics*

The President's Charge to the Graduates

Alma Mater

CHARLES NORMAN GILLESPIE, *Baritone*

(The audience will rise and remain standing until the Recessional is completed.)

Here where spangled wildernesses
Robed the mountains of the west,
Where the savage strife and stresses
Brought the settlers' crimson quest
Land of legend, glory, graces,

Gypsy tide and toiling shore,
'Mid thy hilltops Alma Mater,
Stand enthroned for evermore.
All Hail Carnegie Alma Mater
Stand enthroned for evermore.

Recessional

Families and friends of the graduates are invited to attend Diploma Ceremonies in the following locations.

COLLEGE OF ENGINEERING AND SCIENCE

Physics, *All-Purpose Room, Hunt Library*
Mathematics, *First Floor (Frew Street side), Hunt Library*
Chemistry, *Second Floor (Frew Street side), Hunt Library*
Chemical Engineering, *Ballroom, Skibo*
Civil Engineering, *Ballroom, Skibo*
Electrical Engineering, *Wherrett Room, Skibo*
Mechanical Engineering, *Lobby, Scaife Hall*
Metallurgical Engineering, *Room 1324, Engineering Hall*

MARGARET MORRISON CARNEGIE COLLEGE

Sylvan Theater, Tech Street (In case of rain, Gymnasium)

COLLEGE OF FINE ARTS

Fine Arts Lawn (In case of rain, College of Fine Arts Building)

SCHOOL OF PRINTING MANAGEMENT

Room 100, Porter Hall

GRADUATE SCHOOL OF INDUSTRIAL ADMINISTRATION

Graduate School of Industrial Administration Building

HONORARY DEGREE RECIPIENTS

HAROLD EDGAR CLURMAN, theater critic, director, and author, will receive the honorary degree of Doctor of Fine Arts and will deliver the commencement address. He received his education at Columbia University and the University of Paris at Sorbonne. He is currently theater critic of *The Nation*. Actor, stage manager, and play reader from 1924 to 1931, he became co-founder of the Group Theatre in 1931 and remained with that organization until 1941. From 1941 to 1944, he was a producer-director in Hollywood. In 1946 he became critic of the arts for *Tomorrow Magazine* and in 1949 he also became theater critic for the *New Republic*. In 1953, he left both those positions to join *The Nation*. In 1959, he was guest critic for the *London Observer*. He has written three books.

Mr. Clurman has received the French Legion of Honor, The George Jean Nathan Award for Dramatic Criticism, and an honorary degree from Bard College. During the past year, he was Visiting Andrew Mellon Professor of Drama at Carnegie Institute of Technology. He has directed both in England and the U. S. A. Among the plays: "A Member of the Wedding," "Heartbreak House," "Desire Under the Elms," "Awake and Sing," "Bus Stop," "Time of the Cuckoo," "Orpheus Descending," "Tiger at the Gates," "Touch of a Poet," "A Shot in the Dark," "The Autumn Garden," and "Judith."

CALVIN EDWARD GROSS, superintendent of schools, New York City, will receive the honorary degree of Doctor of Humane Letters. Prior to accepting his New York appointment, Mr. Gross was superintendent of Pittsburgh Schools from 1958 to 1963. He received his A.B. from the University of California at Los Angeles in 1940, his M.S. from the University of Southern California in 1947, and his Ed.D. from Harvard University in 1955. During World War II, he served with the U. S. Army anti-aircraft artillery and also developed research programs for Army University Centers in France and England. After the war, Mr. Gross was a teacher and administrator in the Los Angeles public schools. In 1950, he was one of five Education Fellows chosen by Harvard University through national competition. From 1951 to 1956, he was superintendent of schools, Weston, Massachusetts; from 1956 to 1958, he was superintendent of schools, Niskayuna Central School District, Schenectady, New York.

In Pittsburgh, Mr. Gross was a member of the citizens' sponsoring committee of the Allegheny Conference on Community Development, director of WQED educational television, and executive board member of the Urban League of Pittsburgh, Inc., in addition to participating in other civic and cultural activities.

COMMENCEMENT

ROY ARTHUR HUNT, former chairman of the executive committee, Aluminum Company of America, will receive the honorary degree of Doctor of Laws. He received his A.B. from Yale University in 1903 and then began his life-long career with the company which his father, Captain Alfred E. Hunt, founded in 1888 as the Pittsburgh Reduction Company and which was later named Alcoa. In 1928, Mr. Roy Hunt was elected president of Alcoa and held that post for 23 years until he was elected chairman of the executive committee in 1951. He is a director of the Mellon National Bank and Trust Company, National Union Fire Insurance Company, and the Pittsburgh Testing Laboratory. He is a trustee of Carnegie Institute, Carnegie Institute of Technology, Shadyside Academy, Grove City College, Elizabeth Steel Magee Hospital, and Pittsburgh Skin and Cancer Foundation.

In 1943, Mr. Hunt received the American Society for Metals medal for advancement of research; in 1944, an honorary degree from the University of Pittsburgh; and in 1953, an honorary degree from Oberlin College.

On October 29, 1958, Carnegie Institute of Technology announced a gift of \$2,800,000 from Mr. and Mrs. Hunt for construction of a new campus library, which now stands at the head of the campus mall—to the right of today's commencement ceremonies.

FREDERICK SEITZ, president of the National Academy of Sciences, will receive the honorary degree of Doctor of Science. Mr. Seitz received his A.B. in mathematics from Stanford University in 1932 and his Ph.D. in physics from Princeton University in 1934. Successively, he has been instructor, then assistant professor in physics, University of Rochester; research physicist, General Electric Company; assistant, then associate professor of physics, University of Pennsylvania; professor and chairman of the physics department, Carnegie Institute of Technology (1942-49). Since 1949, he has been research professor of physics, University of Illinois, and since 1957, he has been head of the physics department at Illinois. His major professional interest has been in the theory of solids and nuclear physics.

Mr. Seitz is a member of the Defense Science Board; the Naval Research Advisory Committee (chairman, 1960-62); the Policy Advisory Board, Argonne National Laboratory; the Statutory Visiting Committee for the National Bureau of Standards; and consultant to the Air Force Office of Scientific Research. He has previously held such positions as director of the training program in atomic energy, Oak Ridge National Laboratory; consultant to the Secretary of War; science advisor to the North Atlantic Treaty Organization; and civilian member of the National Defense Research Committee.

CARNEGIE INSTITUTE OF TECHNOLOGY

A complete list of candidates for degrees on June 10, 1963 is published in this program. The degrees of candidates who have not completed their programs will be bestowed upon the completion of the requirements.

CANDIDATES FOR THE BACHELOR'S DEGREE
MARGARET MORRISON CARNEGIE COLLEGE

The candidates will be presented by
DEAN ERWIN R. STEINBERG

BACHELOR OF SCIENCE

BIOLOGICAL SCIENCES

PROFESSOR DUANE T. MAUNDER

Head of the Department

BACTERIOLOGY

Carol Anne Hammond, Pittsburgh

Patricia Marie Naughton, Orange, N. J.

Elaine Nancy Polosky, Monessen

BIOLOGY

Frances Hope Davis, Cleveland, O.

Linda Louise Horstman, Sharpsville

Margaret Helen Steranka, Aliquippa

BUSINESS AND SOCIAL STUDIES

PROFESSOR DAVID R. DAY

Head of the Department

BUSINESS STUDIES

Barbara Anne Arnold, Camp Hill
Carolyn Ruth Freed, Pittsburgh
Susan Pekruhn Clotfelty, Pittsburgh
Marcia Ann Harnicar, Trafford
Camille Anne Hyland, Mt. Lebanon
Joanne Carson Johnson, Pittsburgh
Margaret Campbell Lehmann, Pittsburgh
Helen Louise McAleese, Fox Chapel

Patricia Jean Murray, Ashtabula, O.
Kathleen Marie Nord, Whitehall
Barbara Lynn Rubenstein, Pittsburgh
Patricia Alda Ryan, Pittsburgh
Judith Leah Schiffer, Crossville, Tenn.
Kathleen Page Sheedy, Pittsburgh
Carol Ann Smith, Mt. Lebanon
Marilyn Alice Whitaker, McKeesport

ECONOMICS

Lois Pamela Croco, Mt. Lebanon

COMMENCEMENT

PSYCHOLOGY

Elaine Patricia Vezzani, Rocky River, O.

HOME ECONOMICS

PROFESSOR MELVA B. BAKKIE

Head of the Department

Ida Marie Banko, Ross Twp.
Carol Ann Bannon, Meadville
Janice Rae Berg, Kutztown
Nancy Ann Broslet, Rixford
Margaret Elizabeth Burger, Pittsburgh
Susan Marie Caddick, Wexford
Janet Morrison Cochran, Pittsburgh
Margrit Lange Fieler, Pittsburgh
Nancy Jean Hanna, Xenia, O.
Patricia Hershner, Mechanicsburg
Janet Mary Homer, Washington
Marilyn Jean Lester, Swissvale
Jean Lippman, Silver Spring, Md.
Zoenda Louise Long, McKeesport
Rebecca Jane Lytle, Ben Avon

Niki Helen Manos, Ellwood City
Joan Gail Marshall, Westmont, N. J.
Jeannette J. Martire, Whitehall Borough
Carolyn Sheffield McKelvey, Suffern, N. Y.
Rebecca Sue McMahan, Washington
Mary Paula Miller, Pittsburgh
Virginia Lee Ohringer, Pittsburgh
Ronnie Sharon Ottenstein, Cleveland, O.
Patricia Amelia Pajerski, Springdale
Jean Schwartz Piper, Pittsburgh
Lola Anne Sobak, Westminster, Md.
Elva May Uyak, Pittsburgh
Joy Burrier Welch, Beaver
Martha Buckley Whitten, Wilkinsburg
Mary Kathryn Wince, Middlebourne, W. Va.

HUMANITIES

PROFESSOR ROBERT C. SLACK

Head of the Department

ENGLISH

Elaine Carol Grumer, Pittsburgh
Claudia Jo Manuele, Irwin
Barbara Levaur Morrow, Pittsburgh
Mary Elizabeth Parkinson, Fox Chapel

Jean Ann Presnar, Valparaiso, Ind.
Nancy Jane Shaw, New Kensington
Elizabeth Shepler, Edgewood
Judith Ann Zoltak, Irwin

MODERN LANGUAGES

Roberta Dawn Hayer, Pittsburgh

Mariellen Dougherty Stierheim, Pittsburgh
Nancy Carol Cleopha Voltz, Sarver

TECHNICAL WRITING AND EDITING

Judith Eleanor Gilbert, Canonsburg
Elaine Carol Grumer, Pittsburgh

Carol Lewis Kessler, Pittsburgh
Sandra Lou Lancaster, Ingram
Suzanne Wizenberg, Titusville

CARNEGIE INSTITUTE OF TECHNOLOGY

BACHELOR OF ARTS

HUMANITIES

PROFESSOR ROBERT C. SLACK

Head of the Department

ENGLISH

Gretchen Haller, Thornburg

Patricia Kay Hummel, Pittsburgh

Pauline Speighman Kipp, Pittsburgh

Joyce Ann Minor, Fowler, O.

Janice Ann Mraz, Lorain, O.

Mary Alexandra Navarro, Pittsburgh

Andrea Lou Nether, West Deer Twp.

Judith Elaine Slye, Hartford, Conn.

Susan Joy Weisshaus, Clearfield

HISTORY

Linda Alexander, New York, N. Y.

Dorothy Anne Graves, Pittsburgh

Maureen Renee Marks, Pittsburgh

Catharine Anne O'Dea, Mt. Lebanon

Joyce Spindler, Scarsdale, N. Y.

Rosemary Szeman, Pittsburgh

Mary Elizabeth Zakucia, Johnstown

MODERN LANGUAGES

Kay Ann Cassell, Allison Park

Elizabeth Ann Cure, Weston, W. Va.

Carol Margaret Dauber, San Salvador, El. Sal.

Susan Jane Morgan, Irwin

COMMENCEMENT

COLLEGE OF FINE ARTS

The candidates will be presented by

DEAN NORMAN LEWIS RICE

BACHELOR OF ARCHITECTURE

PROFESSOR PAUL SCHWEIKHER

Head of the Department

David Nathaniel Bilow, Clifton, N. J.

Francis Booth, Islington, Mass.

A. B., *Harvard College*, 1954

Walter Rostyslav Boykowycz, Chicago, Ill.

Donn Allen Carter, Butler

Robert Anthony Colavolpe, New Haven, Conn.

Terence John Cox, Albany, N. Y.

David George Eisenhauer, Palmerton

David Goodyear Ewing, Peninsula, O.

Raymond L. Gindroz, Parma, O.

Frederick John Gottemoeller, Dearborn, Mich.

Kenneth Harold Kantrowitz, Pittsburgh

William Edward Kerr, Edgewood

B.A., *University of Virginia*, 1959

Gordon Paul Ketterer, Bellevue

Robert Louis Stephen Konuch, Bethlehem

Joseph Pell Lombardi, Irvington-on-Hudson,

N. Y.

Louis Arthur Lubetz, Pittsburgh

Samir Baran Mukherjee, West Bengal, India

Paul Ernest Parkinson, Monroeville

Fernando Pérez Canto hijo, Caracas, Venezuela

Carl Joseph Piekarski, Apollo

Donal Royal Pierucci, Haverford

B.A., *Trinity College*, 1955

Gwin Richards, Pittsburgh

Ronald James Roggenburk, Lakewood, O.

Ira Jay Rubin, Far Rockaway, N. Y.

Raymond John Schinhofen, Pittsburgh

Kenneth Walter Schwarz, Kew Gardens Hills,

N. Y.

Gary Stuart Schwerzler, Chagrin Falls, O.

James Roy Tomlinson, Mt. Lebanon

Alan Merl Walmer, Harrisburg

Stephen Hardy White, Hudson, O.

BACHELOR OF FINE ARTS

DRAMA

PROFESSOR ROBERT W. CORRIGAN

Head of the Department

Don Porter Beck, Penn Hills

Dean Edgar Brown, III, Chevy Chase, Md.

Constance Parker David, Canton, Mass.

Louis Edgar (Jeff) David, Philadelphia

John Herbert Döepp, Buffalo, N. Y.

Noël Shapard Dowling, Brooklyn, N. Y.

Carolyn Fireside, Clayton, Mo.

Edra Lynn George, Oliver, British Columbia,

Canada

Sara Bacon Harris, New York, N. Y.

June Edith Helmers, Pittsburgh

Joseph Matthew Klimowski, McKeesport

Joseph Francis Leonardo, East McKeesport

Kenneth Allen Lieberman, Philadelphia

Dinah Jean Mathias, Scranton

Susan Thayer Mitchell, Buffalo, N. Y.

Peter Joel Nevard, Poughkeepsie, N. Y.

Charles Donnell Oberdorf, Aldan

Howard Gray Peters, Peoria, Ill.

Philip Earl Price, St. Petersburg, Fla.

Israel Shaked, Tel-Aviv, Israel

Frank Barre Silberstein, Jr., Jersey City, N. J.

Russell Thurn Zoccola, Pittsburgh

CARNEGIE INSTITUTE OF TECHNOLOGY

MUSIC

PROFESSOR SIDNEY HARTH

Head of the Department

Lawrence Philip Beile, Jr., Buffalo, N. Y.	Paul Joseph Ross, Pittsburgh
Lorraine Jean Gaal, Pittsburgh	Vincent James Sanzotti, Butler
Frances Orr McLaren, Pittsburgh	James Kerry Valdesalice, Pittsburgh
Bruce Dennis Young, Pittsburgh	

MUSIC AND MUSIC EDUCATION

Ralph Anthony Bluhm, Pittsburgh	John David Grebos, Wilkinsburg
Bruce Eugene Burleson, Pittsburgh	Elaine Lucille Hinkel, Johnstown
Charles Kendal Cavett, Massillon, O.	Susan Jean Priestley, Pittsburgh
Dorothy Louise Cantos, Johnstown	Robert Samios, McKeesport
Judith Eva Geder, Homestead	Julie Stevens Sammt, Pittsburgh
June Marlene Gibson, Pittsburgh	James August Stivanson, Pittsburgh
Wesley Allan Ward, Clairton	

PAINTING, DESIGN AND SCULPTURE

PROFESSOR LEE GOLDMAN

Head of the Department

ART EDUCATION

Adele Loew Arnold, Whitehall Borough	Susan Rita Lacey, Munhall
Jane Ellis Barber, Beaver Falls	Frances Mazur Levin, Pittsburgh
Audrey Pearl Buonocore, Pittsburgh	Donna Rae Loraine, Zelienople
Pamela Joan Chidester, Canton, O.	Gloria Petrillo, Monroeville
Linda Lou Cover, Cumberland, Md.	Barbara Lois Rumaner, Jamesville, N. Y.
Barbara Jean Daugherty, Brentwood	Joan Laurel Sabo, Pittsburgh
Carole Ann Dennison, Reynoldsville	Sharon Rubenstein Segal, Mt. Lebanon
Gordon Edward Garnhart, Pittsburgh	Barbara Joyce Stoller, Pittsburgh
Marilyn Frances Geier, Pittsburgh	Meta Strick Sylvester, Chagrin Falls, O.
Nancy Hurlston, Dormont	Patricia Ann Waxman, Penn Hills
Dean Robert Klotz, Sandusky, O.	Cynthia Kay Wolfson, Cleveland, O.
Helen Zasloff Kotler, Pittsburgh	Roberta Albina Wordtt, Baltimore, Md.

GRAPHICS DESIGN

Patricia Joan Barnett, Pittsburgh	Leilani Lenz, Allison Park
Richard Allan Desberg, Shaker Heights, O.	Ildiko Nemeth, Wilkinsburg
Thomas Michael Dross, Conshohocken	Katherine Ellen Ross, Pleasant Hills
Donna Lee Flynt, Charleston, W. Va.	Rena Gail Schacht, Monticello, N. Y.
Susan Leslie Gronich, New York, N. Y.	Andrew Joseph Stefani, Jr., Penn Hills
Sheldon Earle Kaplan, Silver Spring, Md.	Alice Diane Werboff, East Meadow, N. Y.
Aileen Beth Krause, Pittsburgh	Penelope Gibson Williams, Pittsburgh
Sandra Anne Yerke, Nanuet, N. Y.	

INDUSTRIAL DESIGN

Lois Irene Cassen, New York, N. Y.	Fred C. Mayhew, Pittsburgh
Gary Herbert Jaffae, Lancaster	Glenn Edward Perlakowski, Baden
David Paul Kramer, East McKeesport	William Joseph Walthour, Erie
Mark Ross Weitzman, Shaker Heights, O.	

COMMENCEMENT

PAINTING

Linda Barnes, Clarinda, Iowa
Sally Jean Barnes, Cleveland Heights, O.
Nancy Jean Colborn, Chevy Chase, Md.
Stephen Richard Creyke, Chevy Chase, Md.
Gail Mills Detrick, Westport, Conn.
Barbara Elaine Ehrlich, Great Neck, N. Y.

Ruth Freeman, Pittsburgh
Mary Andrea Kalberer, Pittsburgh
Virginia Alice Mayer, Teaneck, N. J.
Myra Opal Posner, Mt. Pleasant
Richard Gregory Shurtz, Pittsburgh
Barbara Volas, McKeesport

SCULPTURE

Anthony Campagna, Erie

Sister Josefa Mary Filkosky, Greensburg
B.A., Seton Hill College, 1955

Karen Adèle Petersen, Cleveland Heights, O.

ART EDUCATION AND PAINTING

Linda Lee Coffeen, McCandless Twp.

BACHELOR OF SCIENCE

GRAPHIC ARTS

PROFESSOR KENNETH GEORGE SCHEID
Head of the Department

GRAPHIC ARTS MANAGEMENT

William Warren McKnight, III, Normal, Ill.

CARNEGIE INSTITUTE OF TECHNOLOGY

DEPARTMENT OF INDUSTRIAL MANAGEMENT

The candidates will be presented by

DEAN RICHARD M. CYERT

BACHELOR OF SCIENCE

INDUSTRIAL MANAGEMENT†

PROFESSOR MYRON L. JOSEPH

Head of the Department

- *Anthony Andrew Achkio, Natrona Heights
B.S., *University of Notre Dame*, 1960
- George William Baylor, La Grange, Ill.
- Bruce Edward Becker, Orchard Park, N. Y.
- Joseph Niel Browne, Forest Hills
- *Charles Preston Brush, Pittsburgh
B.S., *Carnegie Institute of Technology*, 1958
- Ronald Bruce Carlson, Wilkinsburg
- David Edward Dresner, Warren, O.
- *Francis Chalmers Duvall, Monaca
B.S., *U. S. Coast Guard Academy*, 1952
- Rolando Eisen, Panama, R. P.
- Gordon Edward Ewald, Cleveland, O.
- *George Ernest Fischer, Monroeville
B.S., *Carnegie Institute of Technology*, 1956
- *Raymond Pattison Geinzer, Mt. Lebanon
- Martin James Goff, Ellwood City
- *John Hudy, Jr., Bruceton
B.S., *Pennsylvania State University*, 1954
- *David Harry Johnston, Pittsburgh
B.S., *Carnegie Institute of Technology*, 1960*
- *Frank Andrew Kelleher, Jr., Scott Twp.
B.S., *Carnegie Institute of Technology*, 1962*
- *William Criswell Kernahan, Jr., Canonsburg
B.S., *Carnegie Institute of Technology*, 1958
- *Paul Titus Kilhefner, Jr., Monroeville
B.S., *Pennsylvania State University*, 1952
- *Ralph Wayne Klug, Verona
B.S., *University of Pittsburgh*, 1956
- Michael Rudner Leib, Brooklyn, N. Y.
- *Malcolm Lindsay, Jr., O'Hara Twp.
B.S., *United States Merchant Marine Academy*, 1950
- Arthur Ernest Lippmann, Pittsburgh
- *Warren Paige McClure, Ross Twp.
B.S., *University of Pittsburgh*, 1951
- *Richard Bradley McLellan, McKeesport
B.S., *Purdue University*, 1957
- Stewart John McMullan, Bethel Park
- Nelson Jay Merwitzer, Pittsburgh
- Robert Lynn Mills, Greensburg
- *Joseph Lewis Nock, Natrona Heights
B.S., *Pennsylvania State University*, 1957
- *Albert Francis Plant, Pittsburgh
B.S., *Carnegie Institute of Technology*, 1955
- William Walter Powell, Jacksonville, Fla.
- Ronald John Reed, Braddock Hills
- *John Brian Roose, Forest Hills
B.S., *Carnegie Institute of Technology*, 1959
- Robert Thomas Rosche, Sharon
- *Dante A. Salvetti, Jr., O'Hara Twp.
B.C.E., *University of Virginia*, 1953
M.C.E., *Rensselaer Polytechnic Institute*, 1954
- Richard Alan Scott, Washington
- Eric Jared Seff, Fairmont, W. Va.
- Roger Irwin Simon, Scarsdale, N. Y.
- *Marelyn Hazel Snyder, Carnegie
- *Charles Constant Sprumont, Duquesne
B.S., *Carnegie Institute of Technology*, 1955
- *Adam Daniel Sweda, Natrona Heights
B.S., *West Virginia University*, 1956
- Michael John Thurston, Arcadia, Calif.
- *George William Tippins, Fox Chapel
B.Eng., *Yale University*, 1946
- *William Suppes Unger, Pittsburgh
B.S., *University of Pittsburgh*, 1951
- *Ronald Gordon VanVoorhis, Mt. Lebanon
B.S., *Carnegie Institute of Technology*, 1957
- *Edward H. Weber, III, Pittsburgh
B.S., *Lehigh University*, 1956
- Lester Lansing Wheeler, New Kensington
- *Rex Jacob Youse, Ross Twp.
B.S., *University of Michigan*, 1957

† The Department of Industrial Management is under the direction of the Graduate School of Industrial Administration in cooperation with the College of Engineering and Science.

* Graduate of Evening and Part-time Courses.

COMMENCEMENT

SCHOOL OF PRINTING MANAGEMENT

The candidates will be presented by

DEAN GLEN U. CLEETON

BACHELOR OF SCIENCE

PRINTING MANAGEMENT

PROFESSOR KENNETH R. BURCHARD

Assistant Dean of the School

Clinton G. Anglin, Tucson, Ariz.
Peter Jan Anstatt, Ridgewood, N. J.
Valentine Thomas Brandner, Jr., Buffalo, N. Y.
Peter Lawrence Brotman, Weston, Mass.
Benjamin Caplan, Pittsburgh
Aron Jacob Collons, Santa Monica, Calif.
Michael James Davis, Ingram
Joseph David Fell, Winnetka, Ill.
Michael Laurie Friedman, Brooklyn, N. Y.
Richard Harrison, Pittsburgh
B.S., State University of New York, 1957
John Joseph Herd, Pittsburgh
Barry Jay Hershaft, Yonkers, N. Y.
Harvey Allan Hoechstetter, Pittsburgh
David Perry Hull, Grand Rapids, Mich.
Alfred Robert Klinke, Palo Alto, Calif.
Allan Samuel Kullen, Washington, D. C.

Clifford Lee McCue, Eastchester, N. Y.
Guy Carlton Mellick, Glenview, Ill.
Per Moestue, Oslo, Norway
Donald Peter Monti, Pittsburgh
Hugh Gordon Noble, Grand Island, N. Y.
Jon Gordon Parker, Trenton, N. J.
Richard Carl Pizer, Jackson Center
Clarence Overend Ritchie, Westfield, N. J.
Charles Einar Schatvet, Jr., Darien, Conn.
Walter Gerard Scott, Jr., Jersey City, N. J.
Earl Harry Seitz, Jr., Monroeville
Barry Leonard Shane, West Hartford, Conn.
Kenneth Roy Simonetta, Peterborough, N. H.
Fred John Skwirut, Natrona
John Albert Weyer, Elmhurst, N. Y.
Douglas Holton Wigle, Waterdown, Ontario,
Canada

CARNEGIE INSTITUTE OF TECHNOLOGY

COLLEGE OF ENGINEERING AND SCIENCE

The candidates will be presented by

DEAN BENJAMIN RICHARD TEARE, JR.

BACHELOR OF SCIENCE

CHEMICAL ENGINEERING

PROFESSOR CARL CORYDON MONRAD

Head of the Department

- | | |
|---|--|
| Stephen Jay Achs, Villanova | William Lowell Kurtz, Louisville, Ky. |
| Robert Gerald Anderson, Northfield, O. | *Ronald Brooks Large, Bethel Park |
| Glenn William Baggeley, Brentwood | *Robert Carl Locke, Pittsburgh |
| Richard Werner Baier, Clarks Green | Jack Lurowist, Bloomsburg |
| Franklin Stuart Barry, Jr., Hatboro | William McCardle, Indiana |
| Rodney Philip Becker, Erie | Stanley Michael Mezynski, Pittsburgh |
| Alvin Ira Blake, Newark, N. J. | David Louis Murdock, Johnstown |
| William Calvin Breneman, New Alexandria | David Charles Nagy, Monaca |
| Charles Peter Costanza, Charleroi | Joseph Charles Pellegrino, Saddle Brook, N. J. |
| *Richard Andrew Danesi, New Alexandria | Howard William Pifer, III, Pittsburgh |
| David Alan Evans, Philadelphia | *John Harry Powers, Arnold |
| Daniel Charles Frantz, Antwerp, Belgium | Bryan Arthur Pyle, Coshocton, O. |
| Patrick John Giannetti, Verona, N. J. | *William John Sewalk, Bethel Park |
| Richard Mark Goldman, Pittsburgh | Stephen Arthur Sidells, Warren, O. |
| David James Graves, Lakewood, O. | B.A., <i>Denison University</i> , 1962 |
| Terry Walter Hanushek, North Olmsted, O. | Ronald William Skeddle, Jefferson Borough |
| Anthony Frank Hausner, Reading | David Furman Smith, Indiana |
| George Robert Hill, Tarentum | Raymond Ronald Smith, Weirton, W. Va. |
| James Emerson Hilyard, New Castle | Carl Elias Subrick, Eighty-Four |
| Frank Shearer Jones, Canton, O. | Alan Wayne Tamarelli, Forest Hills |
| Jeshtaram Chunilal Kathrani, Bombay, India | Kenneth Barry White, New York, N. Y. |
| B.S., <i>University of Bombay, India</i> , 1961 | Michael Bruce Yablon, Flushing, N. Y. |
| Alan David Kornfeld, Nanuet, N. Y. | Michael Jonathan Zigmund, Belmont, Mass. |

CIVIL ENGINEERING

PROFESSOR THOMAS EUGENE STELSON

Head of the Department

- | | |
|---------------------------------------|---|
| Ronald David Althoff, Baldwin Borough | Darrell Eugene Ferguson, Pittsburgh |
| Eugene Anthony Ardine, Gibsonia | *Max George Fischer, Penn Hills |
| Lawrence John Arendas, Homestead | Ronald David Flach, Penn Hills |
| *Charles D. Atkins, Pittsburgh | Ronald Franklin Foland, Frederick, Md. |
| Kenneth Wayne Bechtel, Roaring Spring | Wallace Gerald Johnson, New Kensington |
| Russell Karl Broschious, Jr., Sunbury | Edward Jacob Kant, Pittsburgh |
| Owen S. Cecil, Ben Avon Heights | *George Raymond Kemp, Jr., White Oak |
| Michael John Demetsky, Brentwood | Borough |
| David Alan DeVos, Baltimore, Md. | B.S., <i>Pennsylvania State University</i> , 1953 |
| Joseph Smith Drake, Leetsdale | Rodney Thaddeus Koza, Elizabeth, N. J. |

* Graduate of Evening and Part-time Courses.

COMMENCEMENT

- Michael Edward Mahoney, Takoma Park, Md.
 *James Michael Miles, Pittsburgh
 *Jack Wesley Morgan, Beaver Falls
 B.S., Geneva College, 1957
 Ernest William Parti, Forest Hills
 *Harry Anthony Pelco, McKeesport
 Indravadan Trambaklal Ravani, Rajkot, India
 B.E., Walchand College of Engineering, India, 1961
 Joseph Michael Ritt, Rockville Centre, N. Y.
 Paul Carl Rizzo, Castle Shannon
 Brian Edward Scanlon, New Castle
 Dorse Odessa Seiple, III, Youngstown, O.
 Thomas Paul Sokol, New Kensington
 *William Joseph Sommerfield, Brentwood
 Paul Theodore Steinhaus, Brooklyn, N. Y.
 Michael James Taylor, Meadow Brook
 Thomas Jerome Tepper, Cleveland, O.
 *Walter Manor Stafford Tresville, Jr., Pittsburgh
 B.A., Pennsylvania State University, 1952
 John Cullum Wilson, Jr., Washington, D. C.
 Ronald Francis Zollo, Brooklyn, N. Y.

ELECTRICAL ENGINEERING

PROFESSOR EVERARD M. WILLIAMS Head of the Department

- David William Abmayr, Reserve Twp.
 James Lee Baker, Cleveland, O.
 Gerard Bashein, Albuquerque, N. M.
 David Allen Bauerle, Avon Lake, O.
 Joachim Benjamin, Sosua, Dominican Rep.
 William Andrew Boag, Jr., Charleston, W. Va.
 B.A., Ohio Wesleyan University, 1961
 Virgil Floyd Boerio, Plum Borough
 *Richard Joseph Boncuk, Pittsburgh
 William Aubrey Brinsfield, Washington, D. C.
 Nels Anders Broste, Wilton, N. D.
 Thomas L. Brunson, Kittanning
 Philip Chau, New York, N. Y.
 Ralph Spaulding Coffin, Mt. Lebanon
 B.S., Carnegie Institute of Technology, 1957
 Jerome James Cohen, Garden City, N. Y.
 Arthur Ralph Cominio, Penn Hills
 *Lawrence Philip Connors, White Oak Borough
 B.S., Gonzaga University, 1956
 Victor Edward Dobras, II, Brookline, Mass.
 Harry Paul Dobroski, Burgettstown
 Allan Anthony Dudash, Duquesne
 Edgar Douglas Ebenbach, Philadelphia
 Michael William Economidis, Greenville
 Ronald James Edmundson, Clearfield
 Frederick John Eversley, New York, N. Y.
 Lloyd Dale Fagan, Green Forest, Ark.
 LeRoy Rupert Fanning, Larimore, N. D.
 *David Timothy Fife, Green Tree
 Joseph Paul Fugina, Crafton
 Jesse Woodrow Fulton, Jr., Willoughby, O.
 Michael Alan Gendel, Washington, D. C.
 John Anthony Gonsowski, Pittsburgh
 Terry Lance Grant, Cleveland, O.
 *Peter Paul Hadfalvi, Greensburg
 Thomas Marjan Hajduk, Madison, N. J.
 Warren Lewis Harkness, Pittsburgh
 *Joseph Harwood, New Kensington
 George Lee Haverstraw, Zelenople
 David Eli Henkin, East Rockaway, N. Y.
 Philip Herbert Hoff, McKees Rocks
 James Joseph Hurny, Clairton
 Howell Conrad Jaynes, Dayton, O.
 George Christian Jernstedt, Forest Hills
 James Kenneth Jubinski, Fair Oaks
 Charles Wayne Koman, Maple Heights, O.
 John George Komlenic, Baldwin Borough
 Stephen Melvin Kosovac, McKeesport
 Daniel Frank Kostishack, Pittsburgh
 Joseph Merle Laird, Homestead
 Allen Jay Levy, Pittsburgh
 Harold Jay Liff, Pittsburgh
 David Howard MacAnlis, Beaver Falls
 Joseph Raymond Macioce, Verona
 Walter Makowicz, New York, N. Y.
 *Michael Angelo Maola, Sharpsburg
 Joseph Anthony Marino, Whitehall Borough
 Gleny Spurgeon Marshall, Moncks Corner, S.C.
 David Mathews, III, Scott Twp.
 Patrick Thomas McNulty, Braddock
 Francis LeRoy McWhorter, Clarksburg, W. Va.
 Robert Henry Meyn, Wheeling, W. Va.
 Glen Morgan Moon, Wichita, Kan.
 William Robbins Moore, Mt. Lebanon
 *Robert James Mullen, Pittsburgh
 Reino John Niemela, Jr., Garden City, N. Y.
 Samuel James Passafiume, Pittsburgh
 Phillip Armand Pavesi, Wildwood
 Joseph Angelo Pepe, Bridgeville
 Paul William Pheneger, Jr., Cleveland, O.
 John Richard Pittner, West View
 Albert Riker Plantz, Pittsburgh
 Henry John Rauch, Jr., Millwood, N. Y.
 Raymond Vladimir Rogalski, Coraopolis
 Michael Rosen, New York, N. Y.
 Ralph G. Rudolph, Thornburg
 *Russell Lloyd Scott, Pittsburgh
 James Michael Serapiglia, McKees Rocks
 Joseph Paul Sitarik, Pittsburgh
 Bruce Howard Stein, Forest Hills, N. Y.
 John David Taylor, Lancaster, N. Y.
 John Richard Thalimer, Fox Chapel Borough
 Frank Edward Wallace, Irwin
 Benjamin M. Watkins, Springdale

* Graduate of Evening and Part-time Courses.

CARNEGIE INSTITUTE OF TECHNOLOGY

MECHANICAL ENGINEERING

PROFESSOR MILTON C. SHAW

Head of the Department

PROFESSOR J. FLETCHER OSTERLE

Associate Head of the Department

Richard Walter Aaron, Highland Park, Ill.
 William H. Albright, Muncie, Ind.
 *Robert Franklin Alverson, Penn Hills
 John Thomas Blackwood, Cincinnati, O.
 James Neale Brecker, Willow Grove
 John Hansen Carey, Rocky River, O.
 Gustav Albert Carlson, Oakmont
 Thomas Paul Crooks, Clarion
 Anthony James Devine, New York, N. Y.
 James Harry Dittmar, Dormont
 Dale Alan Douglass, Euclid, O.
 Philip Charles Doyle, Jr., Rocky River, O.
 William Henry Elsey, III, Smithfield
 *Ralph Vincent Emery, Jr., Pittsburgh
 Richard Norman Feldman, Beachwood, O.
 Thomas Patrick Ference, East Pittsburgh
 Harold Lydic Fraser, Washington
 William Benjamin Gardner, St. Louis, Mo.
 Dennis Allen Gary, Campbell, O.
 Mark Paul Haffner, Baltimore, Md.
 Richard Alan Hann, Homestead
 William Thompson Hanna, Aliquippa
 Dennis Michael Haraczak, Arnold
 Regis William Harrington, Jr., Ross Twp.
 William Arthur Harrison, Forest Hills
 Philip Worthington Hodge, Babylon, N. Y.
 William Love Houck, Jr., Muncie, Ind.
 John Andrew Hritz, Homestead
 Paul Huzyak, Jr., Monaca
 James Allen Jennings, Washington
 Kurt Sheldon Johnson, Menlo Park, Calif.
 †Bejan Khajeh-Nouri, Teheran, Iran
 *John Gaylord Kirkpatrick, Pittsburgh
 Egon Klatt, Pittsburgh
 Ronald Nicholas Koch, Pittsburgh
 Peter George Kost, Meadville

Richard Gene Kotler, Chicago, Ill.
 John Donald Krest, Baldwin Borough
 Leo Francis Litzinger, North Braddock
 Subhash Chandra Lonial, Meerut Cantt, India
 James Edward Martin, Munhall
 Alfred Charles Maynard, Glendora, Calif.
 Alan James McElhinny, Pittsburgh
 Andrew John McGill, Lakewood, O.
 Thomas Albert McLaughlin, Duquesne
 Fred Michael Mergendahl, Verona
 Philip Orin Metz, Monroeville
 Carl Wineman Michael, Wilkinsburg
 Rudolf Max Molck-Ude, Nampa, Idaho
 Frank Albert Morrison, Jr., Greensburg
 Donald Henry Mueller, West View
 Richard William Olshavsky, Cleveland, O.
 *Thomas Victor Owczarzak, Pittsburgh
 Ronald Charles Pellman, Mt. Lebanon
 William Richard Pierce, Pittsburgh
 Francis John Edward Raudasaw, Painesville, O.
 Henry Peyton Rianhard, New York, N. Y.
 John Rivers, Jr., Gibsonia
 Nelson Mark Solow, Pittsburgh
 William Edgar Stratton, Cuyahoga Falls, O.
 Michael Dean Sweeney, St. Louis, Mo.
 Francis Robert Szecskay, Baldwin Borough
 Bruce Kummel Thaeler, Chatham, N. J.
 John Alexander Thompson, Weirton, W. Va.
 Alan Lewis Thurman, Pittsburgh
 David Douglas Tischler, Bethel Park
 *John William Toperzer, Baldwin Borough
 *Richard John Weinzierl, Emsworth
 Daniel Whalen, West Mifflin
 Robert Harry Williams, Ross Twp.
 Robert Joseph Wright, Canfield, O.
 John Richard Zelonka, Avalon

* Graduate of Evening and Part-time Courses.

† As of August 31, 1962

COMMENCEMENT

METALLURGICAL ENGINEERING

PROFESSOR CHARLES LAW McCABE
Head of the Department

PROFESSOR RICHARD H. LAMBERT
Assistant Head of the Department

- | | |
|---|--|
| Robert Leroy Baker, Hanover | John English Hartmann, Pittsburgh |
| Ronald Jordan Beinlich, Monongahela | Phillip L. Hembree, South Plainfield, N. J. |
| John Richard Bertucci, New Castle | Richard James Henry, Worthington |
| Richard Kraig Burkett, Pittsburgh | Raymond Richard Kubalak, Munhall |
| *Elio DaPos, Arnold | George Lazzaris, Clairton |
| John Thomas Davis, St. Clairsville, O. | Edward Theodore Madjaric, Braddock Hills |
| Charles Eugene Donaldson, III, Bristol, Tenn. | Christopher Lyman Magee, Pittsburgh |
| B.S., <i>United States Naval Academy</i> , 1946 | *John Charles Majetich, Plum Borough |
| B.S., <i>United States Naval Postgraduate School</i> , 1952 | Thomas Harry McGough, Dormont |
| M.S., <i>United States Naval Postgraduate School</i> , 1953 | Sumantrai Lalbhai Patel, Navsari, India |
| Philip Lovering Dowd, Jacksonville, Fla. | B.S., <i>Gujarat University</i> , 1958 |
| Robert Edward Forbes, Pleasant Hills | Elliott Malcolm Philofsky, Pittsburgh |
| Larry Lee Grush, Latrobe | Michael Pirchesky, Monongahela |
| *James Ronald Handyside, Pittsburgh | John Adam Spitznagel, Green Tree |
| *Joseph Henry Hart, Pleasant Hills | Arthur Arnold Stein, Framingham, Mass. |
| B.Mgt.E., <i>Rensselaer Polytechnic Institute</i> , 1952 | *Robert David Weller, Overbrook |
| | Robert Lee Wolfe, Rebersburg |
| | Joseph Philip Yorkoski, Jr., Brockton, Mass. |

CHEMISTRY

PROFESSOR ROBERT BURNELL CARLIN
Head of the Department

PROFESSOR DAVID SCROGGS MCKINNEY
Associate Head of the Department

- | | |
|--|---------------------------------------|
| Martin Nicholas Ackermann, Williamstown, N. J. | Kenneth Edwin Hyde, Stowe Twp. |
| Mark Irwin Appelbaum, Canton, O. | Colin Elliott Jones, Pittsburgh |
| Edward James Barwick, Pittsburgh | Richard Michael Kopchik, Beaver Falls |
| Richard Vance Cartwright, Honeoye Falls, N. Y. | Anthony John Krzysik, Pittsburgh |
| Loretta Alice D'Alo, Crafton Heights | Carol Ann McKee, New Castle |
| Robert Ralph Engel, Baldwin Borough | Richard Paul Messmer, Pittsburgh |
| Janice Carol Engeman, Ridgway | Paul Stuart Ossip, Cumberland, Md. |
| Charles Matthew Erikson, Erie | Richard Ghrist Parker, Cheswick |
| Robert Anthony Ference, Trafford | Christopher G. Root, Erie |
| Thomas Boyd Garrett, Scott Twp. | Charles John Rostek, Greensburg |
| Cyrus Pershing Henry, Jr., Big Run | Robert Smith Runk, Forest Hills |
| | Laura Jane Scott, Middletown, O. |
| | Judith Marie Suhay, Bedford, O. |

* Graduate of Evening and Part-time Courses.

CARNEGIE INSTITUTE OF TECHNOLOGY

MATHEMATICS

PROFESSOR ALAN J. PERLIS

Head of the Department

PROFESSOR DAVID MOSKOVITZ

Associate Head of the Department

Henry William Block, Newark, N. J.
Polly Ann Breza, Baldwin Borough
Paul Lawrence Carnahan, Jr., Pittsburgh
Charles B. Chriss, Natrona Heights
Edward Walter Deveck, Jr., New Kensington
Arthur Michael Evans, Pittsburgh
Donald Gordon Foulk, Pedricktown, N. J.
Samuel Leo Geffner, Pittsburgh
Jerome Arthur Goldstein, Pittsburgh
Frank Reese Harvey, Atlantic Beach, Fla.
Joel Morris Kaufmann, Greensburg
Katherine Jane Laughton, Uniontown
Robert David LeVine, Chicago, Ill.

William Eugene Lorenzo, Sagamore
Edwin Ralph Mance, Irwin
William Robert McMunn, Ridgewood, N. J.
John Hays Moore, Jr., Pleasant Hills
James Hiram Morris, Jr., Pittsburgh
Marilyn Miller Mosier, Youngstown, O.
Dennis Whitmore Myers, Harrisburg
Timothy Richard Neal, Curwensville
Robert Nowikowski, Natrona Heights
Ellis Brooks Rittenhouse, Jr., Honolulu, Hawaii
Robert Lewis Rosenberg, Cleveland, O.
John Robert Smith, West Mifflin
Donald Edward Stitzenberg, Dormont
Janet Louise Williamson, Johnstown

PHYSICS

PROFESSOR JULIUS ASHKIN

Head of the Department

PROFESSOR EMERSON M. PUGH

Associate Head of the Department

Jéré Edward Beasley, Falls Church, Va.
Michael Douglas Campbell, Irwin
Patrick Arthur Crowley, Titusville
William Martin Evancko, Braddock
James William Kennedy, Cincinnati, O.
David Mathews, III, Scott Twp.
Gerald Lee McIntyre, Superior, Neb.
Roger Lloyd Mohrlang, Hastings, Neb.
James Bennett Moorhead, Wilkinsburg
Timothy Richard Neal, Curwensville
Ronald Allen Nieman, Mt. Lebanon
Gordon Enslo Pike, Emsworth
Arthur Philip Raiche, Coral Gables, Fla.

Robert Eugene Revay, New Kensington
B.A., *St. Fidelis College*, 1959
Gerald Rosenblatt, Pueblo, Colo.
Doyle Lynn Shaeffer, Apollo
Albert Edwin Smith, Rochester, N. Y.
Randall William Smith, Utica, Mich.
Charles Henry Steinmeyer, Monongahela
Robert Bernhart Stocking, Riverside, Ill.
Arthur Charles Tarr, Verona
Robert Paul Thomas, Harrisburg
Decker Fannin Walker, Kenova, W. Va.
Robert Vernon Wendlandt, Port Washington,
N. Y.

* Graduate of Evening and Part-time Courses.

COMMENCEMENT

COLLEGE OF FINE ARTS
AND
THE COMMITTEE ON GRADUATE DEGREES

The candidates will be presented by

DEAN NORMAN LEWIS RICE

MASTER OF ARCHITECTURE IN URBAN DESIGN

Gerhard Josef Sixta, Vienna, Austria

Diplom Ingenieur in Architektur, Technical University of Vienna, Austria, 1961

MASTER OF FINE ARTS IN DRAMA

- | | |
|--|--|
| Gerald Sidney Bradley, Jr., Charleston, W. Va.
<i>B.A., Wittenberg University, 1958</i> | Sydney S. Walter, II, Niagara Falls, N. Y.
<i>A.B., Antioch College, 1958</i> |
| Jack Warren Byer, Philadelphia
<i>B.F.A., Boston University, 1961</i> | Margaret Linn Wilbur, Haverford
<i>B.A., Brown University, 1961</i> |
| John Herbert Döepp, Buffalo, N. Y. | Frederic Sidney Youens, Pittsburgh |
| John David Steyers, Bethlehem
<i>B.F.A., Carnegie Institute of Technology, 1961</i> | <i>B.A., University of Washington, 1955</i> |

MASTER OF FINE ARTS IN MUSIC

- | | |
|--|---|
| Lois Elizabeth Barber, Pittsburgh
<i>B.F.A., Carnegie Institute of Technology, 1942</i> | *Robert Eugene Rearick, New Kensington
<i>B.F.A., Carnegie Institute of Technology, 1956</i> |
| Patricia Adrienne Prattis, Pittsburgh
<i>B.F.A., Carnegie Institute of Technology, 1962</i> | <i>B.F.A., Carnegie Institute of Technology, 1960</i> |
| | Kathryn Wick, Forest Hills
<i>B.A., Wellesley College, 1941</i> |

MASTER OF FINE ARTS IN MUSIC COMPOSITION

- David Frederick Stock, Pittsburgh
B.F.A., Carnegie Institute of Technology, 1962
B.F.A., Carnegie Institute of Technology, 1962

MASTER OF FINE ARTS IN MUSIC EDUCATION

- | | |
|--|--|
| *Frank Leroy Cummings, Ingomar
<i>B.F.A., Carnegie Institute of Technology, 1953</i> | *Thomas William Jeffries, Greenville
<i>B.S., Indiana, Pa., State College, 1958</i> |
| *Lesley Lauterbach Herdt, West View
<i>B.F.A., Carnegie Institute of Technology, 1959</i> | Harrison Martin Schlee, Baltimore, Md.
<i>B.M., Peabody Conservatory of Music, 1954</i> |
| <i>B.F.A., Carnegie Institute of Technology, 1959</i> | *Arnold Eugene Yeske, Trafford
<i>B.S., Indiana, Pa., State College, 1952</i> |

* Graduate of Evening and Part-time Courses.

CARNEGIE INSTITUTE OF TECHNOLOGY

MASTER OF FINE ARTS IN CERAMICS

*John W. Conrad, Johnstown
B.S., Indiana, Pa., State College, 1958

MASTER OF FINE ARTS IN DESIGN

Marie Vescial, Carnegie
B.F.A., Carnegie Institute of Technology, 1961

MASTER OF FINE ARTS IN PAINTING

Harry Charles Holland, Childress, Texas
B.F.A., Art Institute of Chicago, 1962

Florence Jacobs Moore, Pittsburgh
B.F.A., Syracuse University, 1952

* Graduate of Evening and Part-time Courses.

COMMENCEMENT

COLLEGE OF ENGINEERING AND SCIENCE AND THE COMMITTEE ON GRADUATE DEGREES

The candidates will be presented by

PROFESSOR CHARLES LAW McCABE
Associate Dean—Graduate Studies

MASTER OF SCIENCE IN CHEMICAL ENGINEERING

- | | |
|--|---|
| <p>Kenneth Ralph Arnold, Medford, Ore.
B.S., <i>Oregon State University</i>, 1961</p> <p>Herbert Eugen Barner, Union, N. J.
B.S., <i>Newark College of Engineering</i>, 1958</p> <p>Reid Bowen Crookston, Carnegie
B.S., <i>University of Pittsburgh</i>, 1961</p> <p>Harry Thomas Cullinan, Jr., Manhasset, N. Y.
B.S., <i>University of Detroit</i>, 1961</p> <p>David Dunthorn, Bloomingburg, N. Y.
B.S., <i>Carnegie Institute of Technology</i>, 1961</p> | <p>George Davis Gross, Pittsburgh
B.S., <i>Carnegie Institute of Technology</i>, 1959</p> <p>Joel Heisler, Trenton, N. J.
B.S., <i>Lehigh University</i>, 1961</p> <p>Paul John La Rosa, Hicksville, N. Y.
B.S., <i>The City College of New York</i>, 1961</p> <p>James Francis Leahy, Jr., Beverly, Mass.
B.S., <i>Northeastern University</i>, 1961</p> <p>David Nahmias, New York, N. Y.
B.S., <i>Carnegie Institute of Technology</i>, 1961</p> |
|--|---|

MASTER OF SCIENCE IN CIVIL ENGINEERING

- | | |
|---|--|
| <p>Melvin William Anderson, Baltimore, Md.
B.S., <i>Virginia Military Institute</i>, 1959</p> <p>David John Ayres, Penn Hills
B.S., <i>Carnegie Institute of Technology</i>, 1962</p> <p>Mohammad Yusaf Hassan Bangash, Hangu,
Pakistan
B.S., <i>University of Peshawar, Pakistan</i>, 1953</p> <p>B.E., <i>University of Peshawar, Pakistan</i>, 1957</p> <p>* Frank Charles Brace, Glenshaw
B.S., <i>Carnegie Institute of Technology</i>, 1958</p> <p>Alan Brandt, New York, N. Y.
B.C.E., <i>Cooper Union</i>, 1961</p> <p>Joseph Francis Dolowy, Jr., Scranton
B.S., <i>Pennsylvania State University</i>, 1961</p> <p>Joseph Manly Evans, III, Charleston, S. C.
B.S., <i>The Citadel</i>, 1960</p> <p>Manuel Grimberg, Bogota, Colombia
B.S., <i>Carnegie Institute of Technology</i>, 1960</p> <p>James Howard Poellot, Bridgeville
B.S., <i>Carnegie Institute of Technology</i>, 1961</p> | <p>Marthi Krishnaswami Gurunath, Secunderabad,
India
B.A., <i>Madras University, India</i>, 1950</p> <p>B.E., <i>Osmania University, India</i>, 1953</p> <p>Leroy Raymond Hettche, Baltimore, Md.
A.B., <i>Bucknell University</i>, 1961</p> <p>B.S., <i>Bucknell University</i>, 1961</p> <p>Taze Wilson Lamb, Jamaica, West Indies
B.S., <i>University of Puerto Rico, Puerto Rico</i>, 1959</p> <p>Robert Stanton Over, Hollidaysburg
B.S., <i>Carnegie Institute of Technology</i>, 1957</p> <p>Nalinikant Karsandas Parekh, Ahmedabad,
India
B.E., <i>Gujarat University, India</i>, 1960</p> <p>Gedeon George Picher, Oakland, Me.
B.A., <i>Colby College</i>, 1957</p> <p>B.S., <i>Carnegie Institute of Technology</i>, 1959</p> |
|---|--|

* Graduate of Evening and Part-time Courses.

CARNEGIE INSTITUTE OF TECHNOLOGY

William James Riffe, Cincinnati, O.
C.E., *University of Cincinnati*, 1961
Vilis Vitols, Caracas, Venezuela
C.E., *Universidad Central de Venezuela*,
1956

*Richard Edward White, Crafton
B.S., *Otterbein College*, 1956
B.S., *Carnegie Institute of Technology*, 1958

MASTER OF SCIENCE IN ELECTRICAL ENGINEERING

Thomas Richard Armstrong, Ross Twp. B.E.E., <i>Cornell University</i> , 1962	John Hugh Murphy, Pittsburgh B.S., <i>Carnegie Institute of Technology</i> , 1962
John Stanley Ballas, Jr., Hopkinton, Mass. B.S., <i>Northeastern University</i> , 1962	Sundaram Narayanan, Madras, India B.Tech., <i>India Institute of Technology</i> , India, 1960
Sarkis Barkhoudarian, Warren, Mich. B.E.E., <i>University of Detroit</i> , 1962	Robert Duane Packard, Pittsburgh B.S., <i>Carnegie Institute of Technology</i> , 1961
Joseph S. Barrera, Fontana, Calif. B.S., <i>Harvey Mudd College</i> , 1962	Chester Fred Page, Jr., Staten Island, N. Y. B.S., <i>Carnegie Institute of Technology</i> , 1961
Uwe Georg Dreiss, Esslingen, Germany <i>Diplom-Ingenieur, Technische Hochschule</i> <i>Stuttgart, Germany</i> , 1961	William Edward Priore, Pittsburgh B.S., <i>Carnegie Institute of Technology</i> , 1962
Scott Holzhauser, Wilmington, Del. B.S., <i>University of Delaware</i> , 1962	Morton Ray, Owensboro, Ky. B.S., <i>United States Military Academy</i> , 1950
B.A., <i>University of Delaware</i> , 1962	Kan Bhagwandas Ramchandani, Bombay, India B.E., <i>Victoria Jubilee Technical Institute</i> , India, 1959
Robert Leon Hutchins, San Angelo, Texas B.S., <i>University of Notre Dame</i> , 1962	Lawrence Eugene Rayher, Chicago, Ill. B.S., <i>Northwestern University</i> , 1961
Mark Elliott Jacobs, Atlantic City, N. J. B.S., <i>Carnegie Institute of Technology</i> , 1962	Kenneth Bruce Riepe, Burbank, Calif. B.S., <i>Harvey Mudd College</i> , 1962
Dale Keith Jadas, Cambridge Springs B.S., <i>Carnegie Institute of Technology</i> , 1962	Peter Edward Solender, Mt. Vernon, N. Y. B.S., <i>Lehigh University</i> , 1962
Walter Stanley Klara, Coraopolis B.S., <i>Carnegie Institute of Technology</i> , 1961	Paul Victor Teplitz, Penn Hills S.B., <i>Massachusetts Institute of Technology</i> , 1962
Gerard Robert LaCroix, Lowell, Mass. B.S., <i>Lowell Technological Institute</i> , 1962	David Allen Thompson, Devils Lake, N. D. B.S., <i>Carnegie Institute of Technology</i> , 1962
James William Layland, La Crosse, Wis. B.S., <i>Carnegie Institute of Technology</i> , 1962	Alan Robert Washburn, Pittsburgh B.S., <i>Carnegie Institute of Technology</i> , 1962
Martin Golden Lichtenstein, Baltimore, Md. B.S., <i>Johns Hopkins University</i> , 1961	Thomas Granville Williams, Edgewood B.S., <i>Carnegie Institute of Technology</i> , 1962
Robert Bruce Mangold, Wilkinsburg B.S., <i>Carnegie Institute of Technology</i> , 1960	Kenneth William Zweifel, St. Louis, Mo. B.S., <i>Washington University</i> , 1962
Ralph Allan Marlett, Latrobe B.S., <i>Carnegie Institute of Technology</i> , 1962	

* Graduate of Evening and Part-time Courses.

COMMENCEMENT

MASTER OF SCIENCE IN MECHANICAL ENGINEERING

- | | |
|--|---|
| <p>*Arthur Joseph Bush, Murrysville
B.S., <i>Carnegie Institute of Technology</i>, 1955</p> <p>James Charles Corman, Rebersburg
B.S., <i>Pennsylvania State University</i>, 1961</p> <p>Gabriel Joseph DeSalvo, Pittsburgh
B.S., <i>University of Pittsburgh</i>, 1961</p> <p>Thomas James Fagan, Jr., Penn Hills
B.S., <i>Pennsylvania State University</i>, 1962</p> <p>Robert Patrick Harrill, Warren, O.
B.S., <i>University of Notre Dame</i>, 1962</p> <p>Howard Arthur Kuhn, Monroeville
B.S., <i>Carnegie Institute of Technology</i>, 1962</p> <p>William Paul Lentz, Harrisburg
B.S., <i>Carnegie Institute of Technology</i>, 1962</p> <p>*Fritz Ottenheimer, Forest Hills
B.S., <i>Oklahoma State University</i>, 1949</p> | <p>Johannes Gerhardus Pape, Meppel, Holland
<i>Ingenieur, Technische Hogeschool Delft</i>, Holland, 1962</p> <p>*Donald Paul Porter, Pittsburgh
B.S., <i>Carnegie Institute of Technology</i>, 1956</p> <p>*James Andrew Prepelka, West Homestead
B.S., <i>Carnegie Institute of Technology</i>, 1957</p> <p>Edward Dale Schlessinger, Columbus, O.
B.S., <i>Pennsylvania State University</i>, 1960</p> <p>Albert Lawrence Stiehl, Pittsburgh
B.S., <i>University of Pittsburgh</i>, 1960</p> <p>Michael Nicholas Vallidis, Brooklyn, N. Y.
B.S., <i>Stevens Institute of Technology</i>, 1962</p> <p>*Raymond Norbert Zogran, West Mifflin
B.S., <i>U. S. Merchant Marine Academy</i>, 1954</p> |
|--|---|

MASTER OF SCIENCE IN METALLURGICAL ENGINEERING

- | | |
|--|---|
| <p>*Maurice Francis Baldy, Penn Hills
B.S., <i>Carnegie Institute of Technology</i>, 1948</p> <p>*Robert Carl Bates, Monroeville
B.S., <i>University of Utah</i>, 1953</p> <p>Herman Charles Burghard, Jr., Verona
B.S., <i>The Rice Institute</i>, 1950
M.S., <i>The Rice Institute</i>, 1953</p> <p>Stephen William Carter, Media
B.Met.E., <i>Rensselaer Polytechnic Institute</i>, 1959</p> <p>James Avery Clum, Sidney, N. Y.
B.Met.E., <i>Ohio State University</i>, 1960</p> <p>Edward George Coleman, West Allis, Wis.
B.S., <i>Michigan State College</i>, 1953
M.S., <i>University of Wisconsin</i>, 1959</p> <p>Henry Edward Collins, Cherry Hill, N. J.
B.S., <i>Drexel Institute of Technology</i>, 1960</p> <p>*James Warren Cunningham, Vandergrift
B.S., <i>Carnegie Institute of Technology</i>, 1950</p> <p>Joseph Dominic Defilippi, Leechburg
B.S., <i>Carnegie Institute of Technology</i>, 1960</p> <p>William Tadao Ebihara, Strongsville, O.
B.Met.E., <i>Ohio State University</i>, 1960
M.S., <i>Ohio State University</i>, 1960</p> | <p>Nicholas Francis Fiore, Pittsburgh
B.S., <i>Carnegie Institute of Technology</i>, 1960</p> <p>*Stephen Richard Goodman, Pitcairn
B.S., <i>Massachusetts Institute of Technology</i>, 1960</p> <p>Robert Raymond Judd, Rochester, N. Y.
B.S., <i>University of Rochester</i>, 1959</p> <p>Paul Jon Konkol, McKeesport
B.S., <i>Carnegie Institute of Technology</i>, 1962</p> <p>*Fred Arlen Nichols, Lexington, Ky.
B.S., <i>University of Kentucky</i>, 1954
M.S. <i>University of Kentucky</i>, 1958</p> <p>John Edwin Pavlick, Kokomo, Ind.
B.S., <i>Purdue University</i>, 1960</p> <p>*Carl Edward Spaeder, Jr., Pittsburgh
B.S., <i>Pennsylvania State University</i>, 1957</p> <p>*Donald Richard Thornburg, Castle Shannon
B.S., <i>Rensselaer Polytechnic Institute</i>, 1955</p> <p>Robert Kenneth Williams, Ontario, Ore.
Met.E., <i>Colorado School of Mines</i>, 1957</p> <p>Timothy Lucian Wilson, Vandergrift
B.S., <i>Carnegie Institute of Technology</i>, 1960</p> |
|--|---|

MASTER OF SCIENCE IN NUCLEAR ENGINEERING

- | | |
|--|--|
| <p>Raymond Emil Gaugler, Ross Twp.
B.S., <i>Carnegie Institute of Technology</i>, 1962</p> <p>*James Stanton Moore, Forest Hills
B.S., <i>Carnegie Institute of Technology</i>, 1961</p> | <p>*Howard Hartley Norman, Greenock
B.S., <i>Carnegie Institute of Technology</i>, 1961</p> <p>Reginald William Steer, Cadiz, O.
B.S., <i>Carnegie Institute of Technology</i>, 1962</p> |
|--|--|

* Graduate of Evening and Part-time Courses.

CARNEGIE INSTITUTE OF TECHNOLOGY

MASTER OF SCIENCE IN CHEMISTRY

- | | |
|---|--|
| Donald Guy Davis, Homestead
B.A., <i>Lehigh University</i> , 1961 | George Elmer Milliman, Rochester, N. Y.
B.S., <i>University of Rochester</i> , 1959 |
| Gerst Alan Gibbon, Detroit, Mich.
B.A., <i>Albion College</i> , 1961 | Theodore Phillips, II, Cambridge, Md.
B.A., <i>Yale University</i> , 1961 |
| Berenice McGrew, Charleston, W. Va.
B.S., <i>Chatham College</i> , 1960 | *Ronald Robert Rabenold, Allison Park
B.S., <i>Oberlin College</i> , 1957 |
| Georg Heinrich Megerle, Tenafly, N. J.
B.S., <i>University of Rochester</i> , 1961 | Ingeborg Ida Schuster, Philadelphia
B.A., <i>University of Pennsylvania</i> , 1960 |

MASTER OF SCIENCE IN MATHEMATICS

- | | |
|---|---|
| John Robert Ball, Huntington, W. Va.
B.S., <i>University of Pittsburgh</i> , 1959 | Nilo Anthony Niccolai, Pittsburgh
B.S., <i>Carnegie Institute of Technology</i> , 1962 |
| Michael Alan Howarth Dempster, Brockville,
Ontario, Canada
B.A., <i>University of Toronto, Canada</i> , 1961 | R. Dale Shipp, Pittsburgh
B.S., <i>Carnegie Institute of Technology</i> , 1962 |
| Frank Reese Harvey, Atlantic Beach, Fla.
Kenneth Eugene Kloss, Loudonville, O.
B.S., <i>Carnegie Institute of Technology</i> , 1962 | Wayne VanBuren, Barnstable, Mass.
B.S., <i>Rensselaer Polytechnic Institute</i> , 1961 |
| William Theodore Kraynek, West Newton
B.S., <i>Carnegie Institute of Technology</i> , 1961 | Maurice Dean Weir, Seattle, Wash.
B.A., <i>Whitman College</i> , 1961 |
| Felix Magnotta, Monaca
B.S., <i>Geneva College</i> , 1961 | Jack Williamson, Santa Monica, Calif.
B.S., <i>Carnegie Institute of Technology</i> , 1962 |
| James Okey Montague, Pittsburgh
B.S., <i>Carnegie Institute of Technology</i> , 1949 | Mary Jean Kuryla Winter, Erie
A.B., <i>Vassar College</i> , 1960 |
| M.S., <i>Carnegie Institute of Technology</i> , 1950 | |

MASTER OF SCIENCE IN NUCLEAR SCIENCE

- Robert Ashby Armistead, Jr., Roanoke, Va.
B.S., *Virginia Military Institute*, 1962

MASTER OF SCIENCE IN PHYSICS

- | | |
|---|--|
| Gerald Bennett Brandt, Edgewood
A.B., <i>Harvard University</i> , 1960 | Arnys Clifton Lilly, Jr., Beckley, W. Va.
B.S., <i>Virginia Polytechnic Institute</i> , 1957 |
| Parshotam Dass Gupta, Chandigar, India
B.S., <i>Panjab University, India</i> , 1958 | George Theodore Mallick, Jr., Rapid City, S. D.
B.A., <i>Grinnell College</i> , 1960 |
| M.S., <i>Panjab University, India</i> , 1959 | .. Ronald Murl Sundelin, Pittsburgh
B.S., <i>Massachusetts Institute of Technology</i> , 1961 |
| David Harry Hall, St. Charles, Mo.
B.S., <i>Carnegie Institute of Technology</i> , 1960 | Richard Anthony Uher, McKeesport
B.S., <i>Carnegie Institute of Technology</i> , 1961 |
| Benoit Jean, Quebec, Quebec, Canada
B.A., <i>Laval University, Canada</i> , 1955 | John Vance Weaver, Arlington, Va.
B.S., <i>Carnegie Institute of Technology</i> , 1962 |
| B.S., <i>Laval University, Canada</i> , 1959 | Robert William Weinert, Pittsburgh
B.S., <i>University of Illinois</i> , 1960 |
| Glenn Marcenia Julian, Apalachin, N. Y.
B.S., <i>Carnegie Institute of Technology</i> , 1961 | Roy Wilson Whitehouse, III, Hampton, Va.
B.S., <i>Virginia Military Institute</i> , 1961 |
| Lawrence Walter Kreps, Cleveland, O.
B.S., <i>Fenn College</i> , 1961 | |

* Graduate of Evening and Part-time Courses.

GRADUATE SCHOOL OF INDUSTRIAL ADMINISTRATION
William Larimer Mellon, Founder

AND

THE COMMITTEE ON GRADUATE DEGREES

The candidates will be presented by

DEAN RICHARD M. CYERT

MASTER OF SCIENCE IN INDUSTRIAL ADMINISTRATION

- | | |
|--|--|
| Michael Adler, Ramat Gan, Israel
B.S., <i>Carnegie Institute of Technology</i> , 1962 | Cyrus F. Freidheim, Jr., Chicago, Ill.
B.S., <i>University of Notre Dame</i> , 1957 |
| David Howard Ahl, Malverne, N. Y.
B.E.E., <i>Cornell University</i> , 1961 | Irwin Z. Friedman, Pittsburgh
B.S., <i>University of Pittsburgh</i> , 1961 |
| Manuel Araneta Alcuaz, Quezon City,
Philippines
B.S., <i>De La Salle College</i> , 1961 | Edmund Cook Glover, West Point, Ga.
B.C.E., <i>Georgia Institute of Technology</i> , 1960 |
| Paul Francis Anderson, Yonkers, N. Y.
B.S., <i>University of Notre Dame</i> , 1959 | Roy Douglas Boyd Harman, Fort Plain, N. Y.
A.B., <i>Hamilton College</i> , 1961 |
| Burnham Haven Baker, Milton, Mass.
B.S., <i>Worcester Polytechnic Institute</i> , 1959 | Theodore Otto Johnson, McKeesport
B.S., <i>Lehigh University</i> , 1960 |
| Samuel Decatur Beard, Ripley, Tenn.
B.E., <i>Vanderbilt University</i> , 1961 | Thomas Cashion Jordan, Evanston, Ill.
B.S., <i>University of Notre Dame</i> , 1961 |
| J. Kent Blair, Jr., Binghamton, N. Y.
A.B., <i>Colgate University</i> , 1961 | James Howard Letsinger, Cincinnati, O.
B.S., <i>Miami University</i> , 1954 |
| James William Buddle, Dover, N. J.
B.S., <i>U. S. Naval Academy</i> , 1956 | Arthur Frederick Malek, Cleveland, O.
B.E.E., <i>Ohio State University</i> , 1953 |
| M. Eugene Carlisle, Jr., Ben Avon
B.S., <i>Carnegie Institute of Technology</i> , 1955 | Charles Joseph Merlo, Jr., Nanty-Glo
B.S., <i>University of Pittsburgh</i> , 1961 |
| George William Craven, Flushing, N. Y.
B.S., <i>University of Notre Dame</i> , 1961 | Murray Philip Naditch, Baltimore, Md.
B.S., <i>Carnegie Institute of Technology</i> , 1962 |
| John Patrick Crecine, Lansing, Mich.
B.S., <i>Carnegie Institute of Technology</i> , 1961 | Joel Thomas Presby, Hillside, N. J.
B.S., <i>Rutgers University</i> , 1961 |
| H. Ronald DaPrano, Utica, N. Y.
B.S., <i>St. Lawrence University</i> , 1960 | Jerome Emanuel Schnee, Brooklyn, N. Y.
B.S., <i>Rensselaer Polytechnic Institute</i> , 1961 |
| Georges Dupasquier, Crepieux-la-Pape, France
<i>Diploma, Ecole Polytechnique, France</i> , 1959 | Robert Lewis Shakun, Brooklyn, N. Y.
B.S., <i>Brooklyn College</i> , 1958 |
| George Jay Engelhart, Hewlett, N. Y.
B.S., <i>Polytechnic Institute of Brooklyn</i> , 1961 | Robert G. Shaw, Western Springs, Ill.
A.B., <i>Stanford University</i> , 1961 |
| Bruce Paul Fitch, Oak Park, Mich.
B.A., <i>Albion College</i> , 1961 | Herbert Alan Siegel, Chelsea, Mass.
B.M.E., <i>Rensselaer Polytechnic Institute</i> , 1961 |
| Michael David Fox, Pittsburgh
B.S., <i>Carnegie Institute of Technology</i> , 1962 | John Joseph Villarreal, Gallitzin
B.S., <i>Pennsylvania State University</i> , 1961 |
| Robert Edward Fox, Kearney, Neb.
B.S., <i>University of Notre Dame</i> , 1959 | Jon Zakrzewski, Brentwood
B.S., <i>Carnegie Institute of Technology</i> , 1962 |

CARNEGIE INSTITUTE OF TECHNOLOGY

MASTER OF SCIENCE IN ECONOMICS

Bruno Contini, Milan, Italy
D.S., *University of Bocconi, Italy*, 1960
James Robert Crotty, New York, N. Y.
B.S., *Fordham University*, 1961
John Robert Dowdle, Deming, N. M.
B.S., *New Mexico Institute of Mining and Technology*, 1960

Theodore Carl Rojahn, York
B.A., *Lehigh University*, 1960
B.S., *Lehigh University*, 1960
David Alexander Whinston, Flushing, N. Y.
B.A., *University of Michigan*, 1961
William Wilfred Whitehurst, Jr., Baltimore, Md.
B.A., *Princeton University*, 1958

MASTER OF SCIENCE IN PSYCHOLOGY

Lewis Barton Alexander, Lakewood, O.
B.S., *Carnegie Institute of Technology*, 1960
Alan Lee Patz, Pittsburgh
B.S., *Carnegie Institute of Technology*, 1961
John Garland Williams, Roanoke, Va.
B.S., *University of Virginia*, 1961

COMMENCEMENT

CANDIDATES FOR THE DOCTOR'S DEGREE COLLEGE OF ENGINEERING AND SCIENCE AND THE COMMITTEE ON GRADUATE DEGREES

The candidates will be presented by
PROFESSOR CHARLES LAW McCABE
Associate Dean—Graduate Studies

DOCTOR OF PHILOSOPHY

- | | |
|--|--|
| <p>Thomas Ira Agnew, Irwin
<i>B.S., Carnegie Institute of Technology, 1955</i>
<i>M.S., Carnegie Institute of Technology, 1959</i>
Major: Electrical Engineering
Subject of Dissertation: An Investigation of Some Parameters Influencing the Buildup of Pulsed Discharges into Sparkover</p> | <p>Robert J. Brungraber, Birmingham, Mich.
<i>B.S., University of Michigan, 1951</i>
<i>M.S., Cornell University, 1956</i>
Major: Civil Engineering
Subject of Dissertation: Mechanics and Viscometry</p> |
| <p>Kenneth L. Ashley, Wichita, Kan.
<i>B.S., University of Wichita, 1959</i>
<i>M.S., Carnegie Institute of Technology, 1960</i>
Major: Electrical Engineering
Subject of Dissertation: Investigation of Space-charge-limited Currents in Semiconductors containing Deep-lying Impurities</p> | <p>David Thomas Camp, Pittsburgh
<i>B.S., Carnegie Institute of Technology, 1958</i>
<i>M.S., Carnegie Institute of Technology, 1960</i>
Major: Chemical Engineering
Subject of Dissertation: Physical Adsorption of Argon and Nitrogen on Fixed Beds of Activated Silica Gel</p> |
| <p>James Melvin Barnewall, Sr., Lakewood, O.
<i>B.S., Baldwin Wallace College, 1958</i>
<i>M.S., Carnegie Institute of Technology, 1960</i>
Major: Chemistry
Subject of Dissertation: Composition of the Mononuclear Aromatic Material in the Light Gas Oil Range, Low Refractive Index Portion 230°-305°C</p> | <p>Richard Powell Carter, Jr., Bal Harbour, Fla.
<i>B.S., Washington and Lee University, 1959</i>
<i>M.S., Carnegie Institute of Technology, 1962</i>
Major: Chemistry
Subject of Dissertation: Part I. The Heats of Reaction of Antimony Pentachloride with Alkyl Substituted Pyridines. Part II. A Proton Nuclear Magnetic Resonance Investigation of Methylaminophines and Their 1:1 Triethylborane Adducts</p> |
| <p>Erich Carl Blosssey, Maumee, O.
<i>B.S., Ohio State University, 1957</i>
<i>M.S., Iowa State University, 1959</i>
Major: Chemistry
Subject of Dissertation: Steric Effects on the 20-Keto-Steroid Side Chain</p> | <p>Yih-Ping Chiu, Taipei, China
<i>B.S., National Taiwan University, China, 1955</i>
<i>M.S., University of Illinois, 1960</i>
Major: Mechanical Engineering
Subject of Dissertation: The Elastic Stresses and Deformations of Cylinders</p> |
| <p>Richard Anthony Brandewie, Sidney, O.
<i>B.E.E., University of Detroit, 1959</i>
<i>M.S., Carnegie Institute of Technology, 1960</i>
Major: Electrical Engineering
Subject of Dissertation: The Interaction of Electromagnetic Waves with a Shock Heated Plasma</p> | <p>William Tongil Chu, Seoul, Korea
<i>B.S., Carnegie Institute of Technology, 1957</i>
<i>M.S., Carnegie Institute of Technology, 1959</i>
Major: Physics
Subject of Dissertation: Radiative Capture of Mu Mesons in Copper</p> |

CARNEGIE INSTITUTE OF TECHNOLOGY

Nickander James Damaskos, New York, N. Y.
B.S., College of the City of New York, 1956
M.S., University of Wichita, 1958
M.S., University of Wichita, 1961
 Major: Electrical Engineering
 Subject of Dissertation: The Magnetohydrodynamics of Induction Stirring

Alexander Charles Ehrlich, New York, N. Y.
B.S., College of the City of New York, 1956
M.S., Carnegie Institute of Technology, 1960
 Major: Physics
 Subject of Dissertation: The Hall Effect and Magnetoresistance in Some Nickel-Copper-Iron Alloys

Thomas Dunstan Patrick English, Pittsburgh
B.S., Carnegie Institute of Technology, 1958
M.S., Carnegie Institute of Technology, 1962
 Major: Electrical Engineering
 Subject of Dissertation: An Investigation of Superconductive Films of Tin in the Electrical Intermediate State and Some Applications

Leo Matthew Fatur, West Aliquippa
B.S., Carnegie Institute of Technology, 1956
M.S., Carnegie Institute of Technology, 1959
 Major: Physics
 Subject of Dissertation: A Bubble Chamber Study of Absorption of Negative Muons in C^{12}

Alexander John Federowicz, Hartford, Conn.
B.S., Carnegie Institute of Technology, 1957
M.S., Carnegie Institute of Technology, 1958
 Major: Mathematics
 Subject of Dissertation: A Generalized Algorithm for Solution of a Class of Non-Convex Programming Problems

Mudhafar Ali Ghalib, Baghdad, Iraq
B.S., University of Baghdad, Iraq, 1952
M.S., University of Illinois, 1956
 Major: Civil Engineering
 Subject of Dissertation: An Analytical Determination of Bond Stress in Reinforced Concrete

Vinod Bhushan Goyal, Aligarh, India
B.A., University of Allahabad, India, 1953
M.A., University of Allahabad, India, 1956
 Major: Mathematics
 Subject of Dissertation: Bounds for Solutions of Certain Classes of Nonlinear Partial Differential Equations

Ronald David Gretz, Freeport
B.S., Carnegie Institute of Technology, 1957
 Major: Metallurgical Engineering
 Subject of Dissertation: Vapor-Solid Nucleation

John David Grozier, Whitehall Borough
B.S., Purdue University, 1954
M.S., Carnegie Institute of Technology, 1962
 Major: Metallurgical Engineering
 Subject of Dissertation: The Growth of Austenite into Ferrite in the Iron-Nitrogen System

Peter Hauk, Chevy Chase, Md.
B.S., University of Maryland, 1958
M.S., Carnegie Institute of Technology, 1961
 Major: Chemistry
 Subject of Dissertation: A One-Center Perturbation Approach to Molecular Electronic Energies

John W. Hayden, Penn Hills
B.S., Carnegie Institute of Technology, 1958
M.S., Carnegie Institute of Technology, 1959
 Major: Civil Engineering
 Subject of Dissertation: The Flow Properties of Non-Newtonian Fluids. Part I. Hydraulic Transportation of Solids in Pipes. Part II. Flow Properties of Blood in Glass Capillaries

Laszlo Aladar Herédy, Pittsburgh
Diploma in Ch. Eng., Technical University, Hungary, 1944
M.S., Carnegie Institute of Technology, 1961
 Major: Chemistry
 Subject of Dissertation: I. Studies on the Chemistry and Mechanism of Transbenzlation. II. Extraction of Bituminous Coal with Phenanthrene

COMMENCEMENT

George Edward Hipps, Carrolltown
B.S., *Saint Francis College*, 1958
Major: Chemistry
Subject of Dissertation: Photochemical Di-
merization of 4,6-diene-3-keto Steroids

George Henry Hofmann, Croton-on-Hudson,
N. Y.
B.S., *Union College*, 1959
Major: Chemistry
Subject of Dissertation: Compounds in the
Pyrrolo [3,4-d] pyrimidine Series

Gilbert Richard Hoy, Webster, N. Y.
B.S., *Davis and Elkins College*, 1954
M.S., *Cornell University*, 1958
Major: Physics
Subject of Dissertation: Valence and Size
Contributions to Electric Field Gradients in
Dilute Silver Alloys

Samuel Joseph Hruska, Allen Park, Mich.
B.S., *Purdue University*, 1959
M.S., *Carnegie Institute of Technology*, 1962
Major: Metallurgical Engineering
Subject of Dissertation: Effect of Thermal
Energy of Metallic Vapor Beams on Deposi-
tion Behavior

Donald Jaffe, Pleasant Hills
B.S., *Massachusetts Institute of Technology*,
1952
M.S., *Massachusetts Institute of Technology*,
1953
Major: Metallurgical Engineering
Subject of Dissertation: Thermal Diffusion
of Substitutional Impurities in Copper, Gold
and Silver

Donald Ray Kerr, Washington, Iowa
B.A., *Geneva College*, 1958
B.S., *Carnegie Institute of Technology*, 1958
M.S., *Carnegie Institute of Technology*, 1959
Major: Electrical Engineering
Subject of Dissertation: Theory and Appli-
cations of Piezoresistance of Diffused Layers
in Silicon and Germanium

Robert Herbert Klein, New York, N. Y.
A.B., *Columbia University*, 1953
Major: Physics
Subject of Dissertation: Theory of Total
Muon Capture Rates in Complex Nuclei

Robert Roy Kuntz, Columbia, Mo.
B.A., *Culver-Stockton College*, 1959
M.S., *Carnegie Institute of Technology*, 1962
Major: Chemistry
Subject of Dissertation: Mercury Photosen-
sitized Decomposition of Some Liquid Al-
kanes

Robert Walter Lade, Campbellsport, Wis.
B.E.E., *Marquette University*, 1958
M.S., *Marquette University*, 1961
Major: Electrical Engineering
Subject of Dissertation: A Study of High-
Low Junctions and High-Low Junction Semi-
conductor Devices

Jean Marie Alexandre Le Mée, Ploufragan,
France
Officier, *Nationale Marine Marchand*,
France, 1955
Ingenieur, *French Navy*, France, 1955
M.S., *Carnegie Institute of Technology*, 1959
Major: Mechanical Engineering
Subject of Dissertation: Studies in Sea-
Water Conversion—Problems of Scale For-
mation and Dynamics of Evaporators

Regis Francis Leonard, Irwin
B.S., *Carnegie Institute of Technology*, 1959
M.S., *Carnegie Institute of Technology*, 1961
Major: Physics
Subject of Dissertation: Studies of M1 Tran-
sitions in Some Odd A Nuclei

CARNEGIE INSTITUTE OF TECHNOLOGY

- Hyman Joseph Levinstein, New Providence, N. J.
B.S., University of Michigan, 1953
B.S., University of Michigan, 1953
M.S., Carnegie Institute of Technology, 1961
 Major: Metallurgical Engineering
 Subject of Dissertation: The Arrangement and Density of Dislocations in Deformed Silver Single Crystals
- Gordon Ross Love, Kingston, Tenn.
B.S., Case Institute of Technology, 1958
M.S., Carnegie Institute of Technology, 1961
 Major: Metallurgical Engineering
 Subject of Dissertation: Self-Diffusion of Silver in Twist Boundaries
- John Perry Martin, Jr., Connellsville
B.S., Carnegie Institute of Technology, 1947
M.S., Carnegie Institute of Technology, 1955
 Major: Chemistry
 Subject of Dissertation: An Infrared Study of Interaction Between Certain Secondary Amines and Other Polar Compounds
- Theodore Jack Mayer, Yankton, S. D.
B.A., University of South Dakota, 1955
M.S., Pennsylvania State University, 1961
M.S., Carnegie Institute of Technology, 1962
 Major: Chemistry
 Subject of Dissertation: Composition of the Dinuclear Aromatics, C_{12} to C_{14} , in the Light Gas Oil Fraction of Petroleum
- Alan David Modine, Tulsa, Okla.
B.S., University of Illinois, 1959
M.S., Carnegie Institute of Technology, 1961
 Major: Chemical Engineering
 Subject of Dissertation: Ternary Mass Transfer
- Rocco Carmen Musso, Barnesboro
B.S., Saint Francis College, 1956
 Major: Chemistry
 Subject of Dissertation: The Neighboring Cyclopropane Ring in Solvolytic Reactions
- Hiromi Niki, Tokushima-Pref., Japan
B.A., International Christian University, Japan, 1959
M.S., Carnegie Institute of Technology, 1962
 Major: Chemistry
 Subject of Dissertation: I. The Formation of Benzene in the Radiolysis of Acetylene. II. Ultraviolet and X-Rayed Induced Exchange Reaction Between Hydrogen and Deuterium
- John Joseph O'Donnell, Boston, Mass.
B.S., Northeastern University, 1956
 Major: Electrical Engineering
 Subject of Dissertation: Investigation of Problems in the Optimal Control of Linear Multidimensional Systems
- William George Oldham, Monroe City, Mo.
B.S., Carnegie Institute of Technology, 1960
M.S., Carnegie Institute of Technology, 1961
 Major: Electrical Engineering (Systems and Communication Sciences)
 Subject of Dissertation: Semiconductor Heterojunctions
- Duane Howard Parker, Eau Claire, Wis.
B.S., University of Minnesota, 1954
M.S., Carnegie Institute of Technology, 1956
 Major: Chemistry
 Subject of Dissertation: An Investigation of Synthetic Methods Directed Toward the Synthesis of 2-Phenyl-3a,5-Dimethyl-3a,4,7,7a-Tetrahydro [3a] Pseudoindolone-4 and Some Reactions of 2-Phenacyl-2-Methylcyclohexan-1,3-Dione
- Benjamin William Patz, Johnson City, N. Y.
B.E.E., Rensselaer Polytechnic Institute, 1957
M.S., Carnegie Institute of Technology, 1958
 Major: Electrical Engineering
 Subject of Dissertation: Some Examples of Breakdown with Imperfectly Insulated Anodes at Low Average-Voltage Gradients in Room Air
- Stuart Stanley Perlman, Brooklyn, N. Y.
B.E.E., Rensselaer Polytechnic Institute, 1959
M.S., Carnegie Institute of Technology, 1960
 Major: Electrical Engineering
 Subject of Dissertation: P-N Heterojunctions with Experiments on Germanium-Gallium Arsenide Structures
- Joseph Anthony Pirog, Brooklyn, N. Y.
B.S., Saint John's University, 1957
M.S., Carnegie Institute of Technology, 1960
 Major: Chemistry
 Subject of Dissertation: The Mercury Sensitized Photolysis and Radiolysis of Ethane
- Robert Edward Probst, Kerhonkson, N. Y.
B.S., Lafayette College, 1959
M.S., Carnegie Institute of Technology, 1960
 Major: Electrical Engineering
 Subject of Dissertation: Dipole Phenomena and Particle Size Effects in Electrostatic Precipitation

COMMENCEMENT

Donald John Reuland, Collingdale
B.S., Saint Joseph's College, 1959
M.S., Carnegie Institute of Technology, 1961
 Major: Chemistry
 Subject of Dissertation: A 2π -Differential Recoil Study of the $\text{Cu}^{65}(\text{p}, \text{pn}) \text{Cu}^{64}$ Reaction at Incident Proton Energies of 396 MeV and 130 MeV

Curtis Alvin Rhodes, Raymondville, Texas
B.S., Agricultural and Mechanical College of Texas, 1955
M.S., University of Pittsburgh, 1960
 Major: Mechanical Engineering
 Subject of Dissertation: Hydrodynamic Lubrication of Porous Bearings

Wayne Marvin Robertson, Fremont, Mich.
B.S., Michigan State University, 1957
M.S., Michigan State University, 1959
 Major: Metallurgical Engineering
 Subject of Dissertation: The Crystallography of Impurity Adsorption on Copper Surfaces

John Howard Schelleng, Interlaken, N. J.
B.S., Lehigh University, 1955
M.S., Carnegie Institute of Technology, 1958
 Major: Physics
 Subject of Dissertation: The Magnetic Field Dependence of the Low Temperature Thermal Properties of $\text{MnBr}_2 \cdot 4\text{H}_2\text{O}$ and $\text{Mn}(\text{C}_2\text{H}_3\text{O}_2)_2 \cdot 4\text{H}_2\text{O}$

Romeo Antonio Segnan, Torino, Italy
M.S., University of Torino, Italy, 1957
 Major: Physics
 Subject of Dissertation: Mössbauer Studies in I^{129} and Sm^{149}

Alexander Simkovich, Jacobs Creek
B.S., Pennsylvania State University, 1955
M.S., Pennsylvania State University, 1956
 Major: Metallurgical Engineering
 Subject of Dissertation: Kinetics of Dissolution of Solid Oxides in Liquid Iron

Frank Beckley Smith, Jr., Mt. Lebanon
B.S., Carnegie Institute of Technology, 1950
M.S., Carnegie Institute of Technology, 1952
 Major: Mathematics
 Subject of Dissertation: A Bayesian Procedure for Detection of Slippage

Nicholas Joseph Sopkovich, Canfield, O.
B.S., Carnegie Institute of Technology, 1959
M.S., Carnegie Institute of Technology, 1959
 Major: Physics
 Subject of Dissertation: Nucleon Anti-Nucleon Annihilation into Two-Particle Final States

James Howe Swisher, Youngstown, O.
B.S., Carnegie Institute of Technology, 1959
M.S., Carnegie Institute of Technology, 1962
 Major: Metallurgical Engineering
 Subject of Dissertation: The Behavior of Cr_2O_3 in CaO-SiO_2 Melts with Special Reference to Foaming

John Robert Szedon, Eighty-Four
B.S., Carnegie Institute of Technology, 1959
M.S., Carnegie Institute of Technology, 1960
 Major: Electrical Engineering
 Subject of Dissertation: An Investigation of the Static and Dynamic Properties of the Avalanche Injection Diode

Richard Andrew Tauson, Bradfordwoods
B.S., Carnegie Institute of Technology, 1959
M.S., Carnegie Institute of Technology, 1960
 Major: Electrical Engineering
 Subject of Dissertation: A Study of a Finite-Difference Solution Technique Applied to a Class of Electromagnetic Eigenvalue Problems

CARNEGIE INSTITUTE OF TECHNOLOGY

Manoo Veeraburus, Bangkok, Thailand
B.S., *Chulalongkorn University, Thailand*, 1950

A.R.S.M., *University of London, England*, 1953

B.S., *University of London, England*, 1953

B.S., *Imperial College of Science and Technology, England*, 1953

B.S., *Carnegie Institute of Technology*, 1959

M.S., *Carnegie Institute of Technology*, 1960

Major: Metallurgical Engineering

Subject of Dissertation: Thermal Conductivity of Molten Sulfides of Silver and Nickel

Walter Leon Winterbottom, Conshohocken
B.S., *Drexel Institute of Technology*, 1958

M.S., *Carnegie Institute of Technology*, 1961

Major: Metallurgical Engineering

Subject of Dissertation: Some Considerations of Surface Phenomena

Richard Alan Wolfe, Pleasant Hills

B.S., *University of Cincinnati*, 1952

M.S., *Carnegie Institute of Technology*, 1956

Major: Metallurgical Engineering

Subject of Dissertation: Anomalous Diffusion in Body-Centered Cubic Transition Metals

James Anthony Voytuk, Pittsburgh

B.S., *Carnegie Institute of Technology*, 1958

M.S., *Carnegie Institute of Technology*, 1959

Major: Mathematics

Subject of Dissertation: Singularities for Piecewise Analytic Boundary Conditions and Boundary Curves

Clara Ching-hsien Wu, Taipei, China

B.S., *National Taiwan University, China*, 1959

M.S., *University of Virginia*, 1961

Major: Chemistry

Subject of Dissertation: Calorimetric Investigations and Molecular Orbital Calculations

David Lawrence Winter, Philadelphia

A.B., *Temple University*, 1958

M.S., *Carnegie Institute of Technology*, 1960

Major: Mathematics

Subject of Dissertation: Finite Groups with a Faithful Representation of Degree less than $(2p+1)/3$

William Yeniscavich, Pleasant Hills

B.S., *Drexel Institute of Technology*, 1957

M.S., *Carnegie Institute of Technology*, 1962

Major: Metallurgical Engineering

Subject of Dissertation: The Equilibrium Shapes of Metal Crystals

Raymond Louis Zahradnik, Ford City

B.S., *Carnegie Institute of Technology*, 1959

M.S., *Carnegie Institute of Technology*, 1961

Major: Chemical Engineering

Subject of Dissertation: The Dynamic Optimization of a Cyclic Catalytic Gas Reformer

COMMENCEMENT

CANDIDATES FOR THE DOCTOR'S DEGREE GRADUATE SCHOOL OF INDUSTRIAL ADMINISTRATION *William Larimer Mellon, Founder* AND THE COMMITTEE ON GRADUATE DEGREES

The candidates will be presented by

DEAN RICHARD M. CYERT

DOCTOR OF PHILOSOPHY

Andrew Paul Chenzoff, Valencia
A.B., University of Pennsylvania, 1950
M.A., University of Texas, 1955

Major: Psychology
Subject of Dissertation: The Interaction of
Meaningfulness with S and R Familiariza-
tion in Paired-Associate Learning

Gordon Francis Pitz, Lichfield, England
B.A., Leeds University, England, 1958
M.A., Dalhousie University, Canada, 1960
Major: Psychology
Subject of Dissertation: Stimulus and Re-
sponse Variables in Scales of Psychological
Proportion

William Stanton Gere, Jr., Cheshire, Conn.
B.M.E., Cornell University, 1951
M.I.E., Cornell University, 1958
M.S., Carnegie Institute of Technology, 1959
Major: Industrial Administration
Subject of Dissertation: A Heuristic Ap-
proach to Job Shop Scheduling

Theodore Anderson Van Wormer, Long Beach,
N. Y.
B.A., Yale University, 1958
Major: Industrial Administration
Subject of Dissertation: The Trimmer—A
Heuristic Approach to the Trim Problem in
the Corrugated Container Industry

John Francis Hale, Pittsburgh
A.B., Brown University, 1957
M.A., Brown University, 1959
Major: Psychology
Subject of Dissertation: The Effects of Vari-
ous Amounts of Early Experience upon Later
Responsiveness to Stress

Jerome Douglas Wiest, Salt Lake City, Utah
B.S., University of Utah, 1951
M.B.A., Harvard University, 1958
M.S., Carnegie Institute of Technology, 1962
Major: Industrial Administration
Subject of Dissertation: Computer Models
for the Scheduling of Large Projects

Frederick Stuft Hammer, Mineola, N. Y.
A.B., Colgate University, 1958
M.S., Carnegie Institute of Technology, 1960
Major: Economics
Subject of Dissertation: The Demand for
Physical Capital: Application of a Wealth
Model

Oliver Eaton Williamson, Superior, Wis.
*S.B., Massachusetts Institute of Technology,
1955*
M.B.A., Stanford University, 1960
M.S., Carnegie Institute of Technology, 1962
Major: Economics
Subject of Dissertation: The Economics of
Discretionary Behavior: Nonpecuniary Ob-
jectives in the Theory of the Firm

Yuji Ijiri, Kyoto, Japan
L.L.B., Ritsumeikan University, Japan, 1956
M.S., University of Minnesota, 1960
Major: Industrial Administration
Subject of Dissertation: Activity Analysis
and Activity Accounting

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