

CURRICULUM VITAE

Robert C. Brasted

Professor of Chemistry

University of Minnesota
207 Pleasant Street S.E.
Minneapolis, MN 55455

1915 Born, Lisbon, North Dakota, August 26
Married Corinne Meuse, 4 children

Elementary and Secondary Education - Virginia, Texas,
Philippine Islands, Colorado, Minnesota

I. Academic Career

1938 B.S. - The George Washington University, Washington, DC

1939 M.A. - The George Washington University, Washington, DC

1942 Ph.D. - The University of Illinois - Inorganic Chemistry
with Professor John C. Bailar, Jr.

1942-43 Physical Research Chemist - The Celanese Corp. of America,
Cumberland, Maryland, Plastics field

1943-47 Instructor and Assistant Professor, The University of Hawaii

1947-86 Assistant Professor, Associate Professor, Professor since
1954 and Director of General Program, University of
Minnesota

1949 Operations Research Office - Johns Hopkins University,
Department of Defense

1961 Guest Professor, University of Heidelberg (See also II)

1961 Senior Research Scholar, Heidelberg, Germany (See also II)

1961 Guest Professor, University of Costa Rica, San Jose, C.R.

1964 Guest Professor, Jadavpur University, India

1965 Guest Professor, Poona University, India

1966-69 University Grants Commission of India and USAID Science and
Mathematics Supervisor for India Institutes

1970 Guest Professor, Taiwan National University, Taipei, Taiwan

1971 Guest Professor and Fulbright Lecturer, Stuttgart University,
Germany

1972 & '74 Guest Professor, California State at Bakersfield

- 1974 Guest Professor, Colorado State University
- 1977 Guest Professor, University of Tokyo - Society Promotion
 of Science, Komaba and Hongo Campuses
- 1982 Guest Professor, University of Natal, Durban, Republic of
 South Africa

II. Recognitions and Awards

Sigma Xi (Honorary Research)
Phi Lambda Upsilon (Honorary Chemical)
Omicron Delta Kappa (Honorary Activities)
Fulbright Award, Senior Research Scholar, Heidelberg University, 1961
National Science Foundation Fellow, Senior Research Scholar, 1961
Distinguished Teaching Award for Institute of Technology, University of
Minnesota, Citation, 1969
Horace T. Morse Award for Contributions to Education, University of
Minnesota, Council on Liberal Education, 1970
Fulbright Award, Lecturer, Stuttgart University, 1971
Manufacturing Chemistry Association Medal "for Excellence in College
Teaching", 1971
Listing in Who's Who in America, 1970-71, et seq.
American Chemical Society Award in Chemical Education, 1973
Alumni Achievement Award for The George Washington University, 1975
The George Taylor Award for Educational Development, 1975
"Gold Key" of the American Chemical Society, for contributions to
International Education, 1976 (Part of Centennial Celebration of ACS)
Foreign Scholar's Award, Japan Society of Promotion of Science, 1977
Elected Fellow - American Association of Advancement of Science, 1977
Taylor Developmental Award in Education of University of Minnesota, 1979
(for work reported at the Biennial Conference in International Chemical
Education, Dublin)
Awardee of the Minnesota Section of the ACS for Outstanding Contributions to
Chemical Education, 1979 (Triennial Award)
James Flack Norris Awardee of the Northeastern Section of the American Chemical
Society for "Outstanding Achievements in the Teaching of Chemistry", 1980
Awardee, Carol & Harry Mosher Award for Contributions to Chemistry and Service
to the American Chemical Society, Santa Clara Valley Section of the American
Chemical Society, 1981-82
Awardee, Minnesota Award, 1981, Outstanding Contributions in Chemistry

III. Consultantships (Past and Present)

- 1954-56 Gould National Batteries
- 1949-58 Operations Research Office - Johns Hopkins University
- 1955-58 Olin Mathieson Chemical Co., Aviation (Electrochemical) Div.
- 1959-61 Fremont Industries of Minneapolis
- 1960 General Mills Research Division
- 1967-70 National Science Foundation, International Activities Program

1970-71 Cargill Company
1972-74 California State College, Bakersfield (Curriculum Development)
1969-76 American Chemical Society, Div. Chem. Ed., Educational Consultant Service
1980 Control Data Corporation, Microcircuits Division

IV. Society Memberships

American Chemical Society (Inorganic and Chemical Education Divisions)
Alpha Chi Sigma (Prof. chemical)
National Geographic Society, Audubon & Minnesota Historical Societies
Minnesota Academy of Science, Board of Directors (see below)
American Association for Advancement of Science (Fellow)

V. Miscellaneous Services - National

1956-65 Visiting Scientist Panel for the American Chemical Society Division of Chemical Education
1959 Chairman--Elect, Minnesota Section of the American Chemical Society
1960-67 Member of Visiting Scientist Committee - Treasurer
1960 Chairman, Minnesota Section of the American Chemical Society
1961-69 Advisory Council on College Chemistry (AC₃)
1964- Visiting Associate, Professional Training Committee of American Chemical Society
1964-66 Chairman-Elect & Chairman, Division of Chemical Education
1968-72 Publication Board of Journal of Chemical Education, Chairman
1969-72 American Chemical Society, Council Committee on Education, Educational Policy (Subcommittee)
1970 Golden Anniversary Symposium Snowmass - Aspen, Division of Chemical Education
1970-76 Visiting Consultant, ACS - Division of Chemical Education Consultants Service
1971-78 American Chemical Society, Council Committee on Nominations and Elections (Elected by Council), re-elected '72 & '75
1971-78 Board of Directors (elected), Minnesota Academy of Science
1975- Board Council Committee on International Activities

- 1975 Canvas Committee, ACS Award in Chemical Education - CH. 1977-78
- 1976 Board Council Committee on International Activities - Subcommittee on International Chemical Society
- 1976 Award Chairman Great Lakes Region ACS
- 1977- Board Council Committee on International Activities - Subcommittee India - Sri Lanka Workshop (et al)
- 1980 Cooperative Research Project, Indo/American, CO-Principle Invest. New Delhi, Calcutta, et al
- 1980 Global Seminar on the Role of Scientific and Engineering Societies in Development, AAAS Indian National Science Academy and Indian Science Congress Association
- 1980 Board - Council Committee on Publication, American Chemical Society (Chair Books Subcommittee 1981, Chair Books and Magazines Subcommittee 1982)
- 1981 Japan/USA Seminar on Education - Principle Investigator "Chemistry for Non-Majors" (NSF ACS Grants)
- 1983 Elected to Council Policy Committee, American Chemical Society
- 1983 Nominee, President of American Chemical Society
- 1985 Elected to Vice-Chair, Council Policy Committee
- 1985-87 Appointed to Committee on Professional Training
- 1986 Nominee, President Elect, American Chemical Society
- 1986-88 Board of Directors, ACS, Region V
- 1986-88 Society Committee on Chemical Education
- 1986-88 Society Committee on Grants and Awards
- 1986-88 Audit Committee Board (ACS)

VI. Special Lectureships - Colloquia, ACS Tours, Visiting Scientists, etc. in the United States

John Swan Memorial Lecturer - University of Mississippi

William L. Haines Lecturer - University of South Dakota

Northwestern United States ACS Local Section Speaker (e.g. Red River Valley, Portland, Richland, Seattle, Utah, Montana, Oregon, Hawaii, etc.)

Southwestern United States ACS Local Section Speaker (e.g. Colorado, Arizona, San Diego, Fresno, Nevada, Idaho)

Sigma Xi Lectures - South Dakota State, South Dakota, North Dakota, Iowa State University, Montana Tech., Montana University - et al

Merck Lecturer, Bucknell University

Thomas Alva Edison Lecturer, Atlanta, Georgia

Vth International Coordination Conference on Coordination Chemistry, Discussion Chairman, Detroit, MI - Wayne State University, 1961

Bailar Symposium on Coordination Chemistry, General Chairman & Speaker, University of Illinois, 1969

Great Lakes Regional ACS Meeting, Education Chairman & Speaker, 1969

Conference on General Chemistry, Plenary Speaker, Vanderbilt University, 1969

Honors Convocation Speaker, University of Kansas, 1969

Japanese-American Education Conference, University of California, Berkeley, 1968

Miscellaneous Lecture Series, Invited Lectures, Educational Consultantships, etc., (Domestic)(*indicates multiple visits)

Gettysburg College (ACS sect. Address)	St. Joseph's of Philadelphia
U of Minnesota, Duluth*	University of Mississippi
U of California, Riverside	St. Mary's of Texas
U of Hawaii*	St. Mary's of Minnesota*
Lebanon Valley (PA)	Sacramento State
South Dakota Mines	Regis College of Denver
U of South Dakota*	University of Wyoming
South Dakota University*	Montana State University*
Concordia of Minnesota	University of Montana
Wisconsin State at Superior	Fort Hayes State College*
U of New Mexico	Kansas State University
New Mexico Mines	Southern Illinois University
Coe College of Iowa	Grand Rapids College
Augustana College	San Diego State
Augsburg College	Long Beach State
U of North Dakota*	N. Carolina State University
N. Dakota State University*	St. Theresa College of Minnesota
St. Ambrose College (Iowa)	Creighton University
Wofford College	Dordt College of Iowa
Centenary College	Ohio University
Texas A and M	Mount Marty College of S. Dakota
Florida Presbyterian	Ohio Wesleyan
Oregon State University*	Fresno State
Bemidji State College	N. Illinois University*
Wartburg College of Iowa	Rose Polytechnical Institute
Carthage College	Montana State at Billings
Minot State*	Air Force Academy*
University of Colorado	University of Denver

Colorado State University	SUNY - Oswego
St. Scholastica, Duluth	Monmouth College
1974 Chicagoland Affiliated Colleges	Wheaton College
Illinois Benedictine College	Beloit College
Lake Forest	Ripon College
University of Arizona, Tucson	Virginia Commonwealth University
Miami Dade, Florida	William and Mary University
San Jose State University	U of Wisconsin, Stevens Point
University of California - Santa Cruz	

More Plenary Addresses, American Chemical Society Meetings:

"University Faculty Role in Continuing Education," Boston, 1971

"Science and the Citizen," New York, 1972

American Chemical Society, Los Angeles Meeting, Petroleum Division,
Invited Paper, "Cyclic Sulfur-Imides," 1974

Regional Meeting, Great Lakes, ACS Invited Papers, Western Michigan University,
1973

Regional Meeting, Great Lakes, ACS, Purdue University, Invited Paper, 1974

Regional Meeting, Great Lakes, ACS, St. Thomas College, Invited Paper, 1975

Minnesota Section, ACS, College of St. Catherine, Speaker, 1975

Hawaii Section, ACS, 1977

VI International Conference on Chemical Education, University of Maryland, In-
vited Paper, "Use of Color Video-tapes in the Demonstration Mode of In-
struction," 1981

New York Meeting of the ACS, Invited Paper, "Use of Color Video-tapes....," 1981

Invited Panelist, Washington Meeting of ACS, Computers in Chemical Education
Symposium, 1983

Award Address (Stanford Research Institute), Sulfur-Nitrogen Heterocyclics, 1982

Foreign: Invited Lectureships and Research Consultations

University of Munster, Germany - Lecture, 1961

Eig. Tech. Hoch., Zurich - Lecture, 1961

University of Rome, Italy - Research Conference, 1961

Anorg. Inst. Karl Ruprecht University, Heidelberg, Germany - Lecture and
Research Series, 1961

University of Costa Rica, Chemistry Seminar Series, 1961

Bose Scientific Institute, Calcutta, India - Lectureships, 1964

Jadavpur University, Jadavpur, India - Lecture Series, 1964

Ramakrishna Cultural Mission, Calcutta, India - Invited Lecturer, 1964

Kyushu University, Fukuoka, Japan - Coordination Compound Symposia, 1965
Oiso, Japan - Conference on Japan-American Cooperation, 1965
Tokyo University, Japan - Panel Discussion on Japan-American Cooperative
Conference, 1965
University of New South Wales, Sydney, Australia - Invited Lecturer, 1965
S.P. College of Science, Poona, India - Lecture, Chemical Society, 1965
Canterbury University, Christchurch, New Zealand - Research Conference and
Lecture, 1965
Auckland University, Auckland, New Zealand - Research Conference and
Lecture, 1965
Marathwada University, Aurungabad, India - Education Conference, 1965
Poona University, Poona, India - Lecture Series and Research Seminars, 1965
Fergusson College, Poona, India - Lecture, Chemical Society, 1965
National Chemical Laboratories, Poona, India - Seminar and Research con-
ference, 1965 and 1967
University of Philippines, College of Pharmacy - Lecture, 1966
Lomonsov University, Moscow, USSR - Research Conference, 1966
Academy of Science, German Democratic Republic (East Germany), Physical Methods
of Analytical Chemistry, Research Conference, 1966
Aligarh Muslim University, India - Research Conferences and Seminar, 1966
Indian Chemical Society, Calcutta, India, 1966
Osmania University, Hyderabad, India - Research Conference and Seminar, 1966
Jaipur, Nagpur, Gorakpur, Cuttuck (Utkal), Banares Hindu, Kanpur, Delhi,
Bangalore, Kurushetra, Chandigarh Universities - Research Seminars, 1967
New Asia College of Chinese University, Hong Kong - Educational Seminar, 1967
Taiwan National University, Semina Lecture, 1967
Kyoto University, Seminar, 1967
Xth International Coordination Conference, Nikko and Tokyo, Japan, 1967
Tokyo University, Sendai, Research Seminars, 1968
Tohoku University, Sendai, Research Seminars, 1968
Waltair, Mysore, Ajmer, Jaipur, Jadavpur, Utkal, Bhubaneshwar, Osmania,
(Universities of India) - Research and Educational Conferences, lecture
series, consultations on curricula, 1968
Xth Latin American Chemical Congress, Guest Speaker, San Jose, Costa Rica, 1965
Indo-American Conference on Chemistry - Planning Board, 1969
The National University of Taiway - Tsing Hua - Sienca Quimica (Research Center)
Summer Seminar Series, Guest Professor and Lecturer, 1970
The University of Hong Kong, The New Asia, United and Chung Chi Colleges of
the Chinese University of Hong Kong - Seminars and discussions, 1970
Chinese Chemical Society, Taipei, Taiwan - Lecture, 1970
Bonn University, Inorganic Institute - Seminar, 1971
Zagreb University - Yugoslovian (Croatian) Chemical Society, Seminar, 1971
IUPAC (XXIV), Hamburg and IUPAC and UNESCO 1973, Wroclaw, Poland
IUPAC, Madrid Meeting, Technology in Education, Speaker and Session Chair, 1975
Gesellschaft Deutscher Chemiker, Frankfurt, Conference on Examinations, 1975
Zagreb University, seminars, 1975
Institute for Dissemination of Information (TIT), Budapest, Hungary, and
University for Horticulture, Seminar and Research Discussion, 1975
Institute for Pedagogy, Nitra, Czechoslovakia and Institute for Agriculture,
Nitra, Seminars and Research Discussions, 1975
Universitat Kaiserslautern, Anorganisches Chemisches Institut, Seminar, 1975
Kinki University, Osaka, Seminar, 1977
Sophia University, Tokyo, 1977
Hongo Campus University of Tokyo, Seminar, 1977
Komaba Campus, University of Tokyo, Seminar, 1977

Waseda University, Seminar, 1977
Hongo Campus, Tokyo, Japanese Chemical Society, DIVCHED, 1977
Nagoya University, Seminar, 1977
Tohoku University, Sendai, Seminar, 1977
Miyagi University, Sendai, Seminar, 1977
Hokkaido University, Seminar, 1977
Nagasaki University, Seminar, 1977
Kyushu University, Seminar, 1977
Hiroshima University, Seminar, 1977
Kinki University, Osaka, Seminar, 1977
Nara Womens' University, Seminar, 1977
Kanazawa University, Seminar, 1977
Hokuriku University, Seminar, 1977
Kanazawa University, Seminar, 1977
Akademogorodok, Novosibirsk, Catalyst Institute, " N_2-O_2 Fixation by Transition Metal Homogeneous Catalysis," 1977
University of Moscow Institute, Research and Education Exchange, 1977
Oceanographic Research Vessel, Hakuho Maru Expedition to Japan Trench, 1977
Dublin Biennial Conference, Invited paper, Secondary School Preparation Related to Performance in General Chemistry, 1979
University of Glasgow and University of Edinburgh, Research Seminars, Sulfur-Nitrogen Heterocyclic Compounds, 1979
Osmania University, Hyderabad, Research Seminar, 1980
Delhi, Calcutta, Hyderabad, Pune, Indo/USA Cooperative Research Program, 1980
South African Chemical Institute, Seminar on Teaching Inorganic Chemistry, Consultant and guest lecturer on USA-RSA comparative systems, 1982
South African Chemical Society, Lecture, "Mount St. Helen's Eruption", 1982
University of Natal, Continuing sequence of lectures on Inorganic Chemistry, 1982
University of Natal, Departmental Seminar on "TransSiberian Railroad", 1982
University of Zululand, Empangeni, QuaZulu, "Educational Wheel of the '80's", 1982
Mongosutho Technikon, QuaZulu, "Mt. St. Helen's Eruption, Chemist's View", 1982
University of Durban, Westville, "Sulfur-Nitrogen Heterocyclics", 1982
University of Transkei, Umtata, "Sulfur-Nitrogen...", "Curriculum Studies", 1982
Fort Hare University, Alice, Ciskei, "Trends in Education...", "Fine Line Dividing Basic and Applied Research", 1982
Rhodes University of Grahamstown, Eastern Cape, Curriculum and Teaching Conference, School of Education, "Sulfur-Nitrogen...", 1982
Port Elizabeth University, Port Elizabeth, Eastern Cape, "Sulfur-Nitrogen...", 1982
University of Cape Town, Cape Town, Cape Province, "Macrocyclic Metal Complexes", 1982
Stellenbosch University, Stellenbosch, Cape Province (Afrikaans), "Mt. St. Helens...", 1982
The University of Witwatersrand, Johannesburg, Transvaal, "Macrocyclic Metal Complexes", "Profiles in Learning - Secondary School Background and Achievement in the First Year Course", "Sulfur-Nitrogen...", 1982
African Explosives and Chemical Industry (Pty), Ltd., Explosives Research and Environmental Research Laboratories, Modderfontein, Transvaal, 1982
South African Synthetic Oil, SASOL II and III, Secunda, Transvaal, plant site visit on production of hydrocarbons and other organic compounds from coal by Fischer-Tropsch catalytic route, 1982
Rand Afrikaans University, Johannesburg, Transvaal, site visit only, 1982
Pretoria University, Pretoria, Transvaal, site visit only, 1982
Council for Scientific and Industrial Research, Pretoria, Transvaal, laboratory site visit only, 1982

University of Nairobi, Nairobi, Kenya, Departmental Conferences on 1983
African Congress; Departmental Seminar, "Sulfur-Nitrogen...", 1982
ETH (Technical University), Zurich, Switzerland, Research Visit, 1982
University of Stuttgart, Stuttgart (Vaihingen), FRG, Research Visit, 1982
The Gmelin Institute (Inorganic literature), Conference on publications, 1982
The German Chemical Society, Education and Personnel Division, 1982
The University of Gronigen (Rjiek), Gronigen, The Netherlands, Seminar on
the Republic of South Africa, 1982
Plenary address - Conference on Teaching Chemistry in the French Language,
University of Poitiers, Poitiers, France, 1985
VIII International Conference on Chemical Education, Tokyo, Principle Investi-
gator, NSF, 1985
"Wheel of Education", Seminar - Kanazawa University, Kanazawa, Japan, 1985
"Sulfur-Nitrogen...", Seminar, Hokoriku University, Hokoriku, Japan, 1985

VII. Authorships

Books

- Volume I. Comprehensive Inorganic Chemistry: "Principles of Atomic and Molecular Structure, Theoretical and Applied Nuclear Chemistry, The Actinide Series", Co-editor. D. Van Nostrand and Co., Publishers, 1953
- Volume II. Comprehensive Inorganic Chemistry: "Copper, Silver, and Gold", Co-editor and co-author. D. Van Nostrand and Co., Publishers, 1954
- Volume III. Comprehensive Inorganic Chemistry: "The Halogens", Co-editor and author. D. Van Nostrand and Co., Publishers, 1954
- Volume IV. Comprehensive Inorganic Chemistry: "Zinc, Cadmium, and Mercury, Scandium, Yttrium and the Lanthanide Series", Co-editor and Co-author. D. Van Nostrand and Co., Publishers, 1955
- Volume V. Comprehensive Inorganic Chemistry: "Nitrogen, Phosphorus, Arsenic, Antimony and Bismuth: Nonaqueous Chemistry", Co-editor and co-author. D. Van Nostrand and Co., Publishers, 1956
- Volume VI. Comprehensive Inorganic Chemistry: "The Alkali Metals - Hydrogen and its Isotopes", Co-editor and co-author. D. Van Nostrand and Co., Publishers, 1957
- Volume VII. Comprehensive Inorganic Chemistry: "The Elements and Compounds of Group IV. A Carbon, Silicon, Germanium, Tin and Lead; The Metallic Borides, Carbides, Silicides, and Related Compounds", Co-editor and co-author. D. Van Nostrand, Publishers, 1958
- Volume VIII. Comprehensive Inorganic Chemistry: "Sulfur, Selenium, Tellurium, Polonium and Oxygen", Editor and author. D. Van Nostrand and Co., Publishers, 1961.
- "General College Chemistry:", Text Co-author (with Drs. Sneed and Maynard), 1954. Also in Spanish edition.

"The Chemistry of the Coordination Compounds", ACS Monograph, Nov. 31 (Reinhold Publ.) Contributing Author, John C. Bailar, editor. Also in Russian edition.

"General Chemistry Laboratory Operations" (with Conroy and Tobias), Macmillan, 1971, 2nd. edition. Third edition, 1977

"Allgemeine and Anorganische Chemie (Fachbereich Chemie)", with Professor E. Fluck, Stuttgart University. (Quelle-Meyer, Heidelberg), 1974. (in German). 2nd edition, 1977. Third edition, 1982. Fourth edition, 1985.

Technical Publications, Reviews, and Educational Aids (since 1951).

1. "Iodopermanganate Determination of Nitrates in the Presence of Nitric Acid", Analytical Chemistry, Vol. 23, 980 (1951)
2. "The Effect of Nitrous Acid on the Oxidizing Power of Nitric Acid", J. Chem. Ed., 28, 592 (1951)
3. "The Detection of Nitrite and Sulfamate Ions in Qualitative Analysis", J. Chem. Ed., 28, 592 (1951)
4. "Iodometric Codetermination of Copper and Iron", Analytical Chemistry, 24, 1040, (1952)
5. "The Reaction Sodium Nitrite and Sulfamic Acid - An Indirect Gravimetric Determination of Nitrites", Analytical Chemistry, 24, 1111 (1952)
6. "Sulfuric Acid as a Variable in the Permanganate - Oxalate Titration", Analytical Chemistry, 25, 673 (1953)
7. "Amperometric Titration of Sulfamates", Analytical Chemistry, 25, 221 (1953)
8. "Achievement in First Year College Chemistry Related to High School Preparation", J. Chem. Ed., 34, 552 (1957)
9. "Revised Inorganic (Stock) Nomenclature for the General Chemistry Student", J. Chem. Ed., 35, 136 (1958)
10. "Solubility of Nitrogen in Metal-Acetate Solutions", J. Phys. Chem., 62, (1958) (with Chikara Hirayama)
11. "The Cis-Trans Isomerization of Dichlorobis - (ethylenediamine) cobalt(III) Chloride and Dichlorobis(propylenediamine)cobalt(III) Chloride in Alcohols", J. Am. Chem. Soc., 80, 788 (1958) (with Chikara Hirayama)
12. "Atomic Architecture for the General College Chemistry Student", Ohio J. Sci., 59(1), 15-25 (1959)
13. "An Examination of the Absorption Spectra of Some Cobalt(III) Amine Complexes, Effect of Ligand and Solvents in Absorption", J. Phys. Chem., 43, 780 (1959) (with Chikara Hirayama)

14. "Some Recent Developments in the Chemistry of a Selected Group of Sulfur Nitrogen Compounds",
 - I. Minnesota Chemist, 13(4), 9 (1961)
 - II. Ibid, 13(5), 9 (1961)
15. "Advances in the Chemistry of Coordination Compounds", Stanley Kirschner, Editor, Macmillan, 1961. A review, J. Chem. Ed., 39, 163 (1962)
16. "Molar Reactions of Aqueous Solutions of Some Condensed Phosphates", (with Arthur K. Nelson), J. Phys. Chem., 66, 377 (1962)
17. "Technik der Experimental Chemie", Siebente Auflage, Arendt-Dormer, Quelle and Meyer, Heidelberg, 1962. A review, J. Chem. Ed., 40(4), 230 (1963)
18. "Über den Austausch von Schwefel in den Systemen Sulfat-Amidosulfonsäure and Sulfat-Amidosulfonsäurederivat", Robert C. Brasted and John F. Bates, Journal für Praktische Chemie, 4, Reihe, 19 Ed., Heft 3-4, 131-34 (1963)
19. "Die Reaktion zwischen Phosphooxochlorid and Natriumnitrit", Robert C. Brasted, Charles R. Naeser, and John W. Gilje, Journal für Praktische Chemie, 4, Reihe, 19 Ed. Heft 3-4, 135-89, 485 (1963)
20. "Absorption Spectra and Chemical Bonding in Complexes", C.K. Jorgensen, Addison Wesley, 1962. A review, J. Am. Chem. Soc., 89, 485 (1963)
21. "Gmelin's Handbook of Inorganic Chemistry", Cobalt Supplement Volume, Part A., 8th Ed., Inorganic Chemistry, 1, 976, (1962) A review.
22. "Vanadium-A Transition Element", 16 mm color and sound film, produced by Wexler Studios, Hollywood, CA, A Chemical Education Materials Study Committee Film, March 1963 (actor and collaborator)
23. "The Visiting Scientists Program in Chemistry", J. Chem. Ed., 40, (6) 329 (1963)
24. The Chemical Elements, Colliers Encyclopedia, Crowell-Colliers Publishing Co., 1963 Ed., 9, 33-77 (1963)
25. Nitrogen, ibid, 17, 560-567 (1963)
26. Oxygen, ibid., 18, 267-271 (1963)
27. Carbon, ibid., 5, 388 (1963)
28. Hydrogen, ibid., 12, 428-432 (1963)
29. "The Chemist and Changing Educational Patterns", Chemical & Engineering News, 42(4), 71-76 (1964)
30. "Expanded Ring Metal Complexes of o-Xylylenediamine and Homo-o-xylylenediamine" (with W. Heino and T.D. O'Brien) Inorg. Chem. 3, 503 (1964)
31. "The General Chemistry Program at the University of Minnesota", J. Chem. Ed., 41 139 (1964)

32. "Experiments in Science Education in America", Bull. Ramakrishna, Mission Institute of Calcutta, XV(12) (Dec.) 408-417 (1964)
33. "Some Observation on Chemical Education in India", J. Chem. Ed., 42, 358 (1965)
34. "The System Trisulfur Dichloride and Methylamine - The Preparation of N-N-Dimethyl-Cyclohexasulfur-1,5-Diimide", (with Judson Pond) Inorg. Chem., 4, 1163 (1965)
35. "Units of Measurement: An Early Application of Avogadro's Number", J. Chem. Ed., 42(9) 476 (1965)
36. "An Exercise in Glass Manipulation - Preparation of a Hypodermic Syringe", J. Chem. Ed., 42(9) 476 (1965)
37. "Die Chemische Bindung: Drei Vorlesungen Fur Chemiker", A review, Journal of Chemical Education, 43 (3) (1966)
38. "Serial Publication of the Advisory Council on College Chemistry - Author, Co-author and/or Contributor"
 - a. Report. "Instruction in General Chemistry and the Expanding Student Population", (Distributed - September 1964) 12 pages.
 - b. Report. "The Content of Introductory College Chemistry", (Distributed - January 1965) 22 pages.
 - c. "Modern Experiments for Introductory College Chemistry", Reprinted from September 1965 Journal of Chemical Education, 32 pages.
 - d. "Guidelines and Suggested Title List for Undergraduate Chemistry Libraries", (Distributed - April 1966) 44 pages.
 - e. "The Role of the Junior Staff in the Undergraduate Chemistry Program", (Distributed - July 1967)
 - f. "Modern Teaching Aids for College Chemistry", December 1966
39. "Some Recent Developments in the Chemistry of Cyclic Sulfur-Nitrogen Imides", Journal of Philippine Pharmaceutical Society (Souveniere Ed.) Jan-Feb 1968, pp. 27-33
40. "Environmental Aspects of the Pfeiffer Effect", Coordination Chemistry, Ed., S. Kirschner, Plenum Press, NY, 1969, pp. 64-91
41. "X Latin American Chemical Congress", J. Chem. Ed., 46(4), 251 (1969)
42. Chemical Vignettes - J. Chem. Ed., 47, 447 (1970), author and editor, 47, 574 (1970), 47, 624 (1970) (Continuing series.)
43. "Supply and Demand - Another Education Crisis", Catalysts of a Profession, MCA (1971) pp. 10-16. Award Address.
44. Video (color) cassettes for General Chemistry students, Lecture Experiments and Demonstration. 19 cassettes, Media Resources Center, University of Minnesota (See also #50 below)

45. Audio-cassettes for the Underprepared Chemistry Student.
46. "Further Evidence on the Origins of the Pfeiffer Effect Using Circular Dichroism", (with L. Mayer) J. Coordination Chem., 3, 85-90 (1973)
47. "Impact" Column for J. Chem. Ed., (continuing series) starting 50, 663 (1973) (Interviews Edited and Conducted)
48. "Have We Innovated the Teacher Out of the Classroom?", (ACS Award in Chemical Education Address), J. Chem. Ed., 50, 580 (1973)
49. "Oxygen Family Elements and Their Compounds", Encyclopedia Britannica, (Current)
50. Video (color) cassettes for General Chemistry students, continuation of series. Periodicity and the Periodic Table. 12 units - 8 hours. Produced with Rarig Media Resources Center, University of Minnesota, 1977
51. "Provocative Opinion", J. Chem. Ed., 54, 30 (1977)
52. "Educational Technology in Teaching Chemistry", Report National IUPAC 1975, J. Chem. Ed., 53, 296 (1976)
53. "Discussions on Chemical Education", (with Hiroshi Minato, KagakuKyiku, J. Chem. Ed. of Japan, 25, (3) 250-55 (1977)
54. "The Introductory Course in Chemistry" in "Excellence in University Teaching", Edited by Buxton, T.H. and Prichard, K.W., pp. 109-119 (1974)
55. "Profiles in Learning - How Well Do We Teach?", J. Chem. Ed., 57, 82-87 (1980)
56. "Scientific and Technological Education and Training", Report on the Global Seminar on the Role of Scientific and Engineering Societies in Development, Gulab Press, New Delhi, AAAS, INSA, and ISCA, 1981
57. The IIIrd Japan/USA Seminar on Education, "Fundamentals of Chemistry for the Non-Major", J. of Chem. Ed., 60, 29-32 (1983)
58. Impact Interview, Harry B. Gray, J. Chem. Ed., 59, 828 (1982)
59. Impact Interview, R.C. Mehrotra and C.N.R. Rao, *ibid*, 59, 828 (1982)
60. "Guide to Chemical Education in the United States for Foreign Students", American Chemical Society Publication, Co-author and editor, 1980
61. Guidelines and Suggested Title List for Undergraduate Chemistry Libraries, Published by Division of Chemical Education, American Chemical Society, 1983
62. TV Special, Matrix (hosted by Peter Graves), University of Minnesota, Channel 5, March 4, 1984
63. "Education Today", Analytical Sciences, 2, pp. 103-7 1986

64. "Secondary and Tertiary Education in the United States", Proceedings, Recherches Cooperatives en Didectique de le Chimie, 57 pp. 1985, Potieriers Press

VIII. Research Students

M.S.

Robert Graham, Head, Dept. Chem., Mankato State (now PhD)	1950
Stanley T. Hirozawa, Wyandotte Chemical Co., Division of BASF-Mannheim, Michigan (now PhD)	1952
Fred Foss, Winona State (now PhD)	1953
James C. Mickus (see below, now PhD)	1960
V. Dighe	1976
Jane Chatterjee	1983

Senior Postdoctoral Fellows and Associates

Professor Charles Estee, Head, Dept. Chem., U of South Dakota	1960
Professor Jack Austin, Dept. Chem., Canterbury, U of New Zealand	1965
Professor Walden Heino, Luther College	1976-77
Wayne Haage, Lakewood Community College	1983

PhD

Chikara Hirayama, Westinghouse Research, Pittsburgh, PA	1957
Vincent J. Landis, San Diego State University, California	1957
Walden Heino, Luther College, Decorah, IA 52101	1957
John F. Bates, Olin Mathieson Chem. Co., Lake Charles, LA	1959
Eugene Kuhajek, Morton Chemical Co., Chicago, IL	1962
Paul Nordquist, Naval Research Labs, Washington, DC	1964
Judson Pond, Dept. of Chem., U of Pittsburgh, PA 15213	1964
James Mickus, Cargill Corp., Minneapolis, MN	1965
Joseph Kanamueller, Western Michigan U., Kalamazoo, MI	1965
G. Paul Richter, W. Virginia Wesleyan University	1968
Ludwig Mayer, San Jose State, San Jose, CA	1969