



E000541

ARTHRITIS PROGRAM

Names Referred for Consultants

<u>Source and Name</u>	<u>Recommended Selection</u>	<u>Pahl Approval</u>
A. <u>Present Council Members</u>		
Hiroto, Edwin C.	Member	
Mars, Audrey M	Member	
Merrill, John P.	Chairman/member	
Morgan, Mariel S.		
Ochsner, Alton		
Ogden, C. Robert		
Schreiner, George E.		
Musser, Marc J. (VA)		
B. <u>Former Council/Committee Members</u> (Partial list assembled by Mrs. Handel)		
Ancrum, Gladys (Nursing)	Member	
Brindley, George V. (Thoractic Surg.)		
• Cannon, Bland W. (Neurosurg)		
Ellis, Effie C. (Child health)	Member	
• Evarist, Bruce W. (Ped.)		
Hunt, William (Surg)		
• James, Grace M. (Ped)		
• Kerr, Elizabeth E. (Nursing)		
Komaroff, Anthony L. (Internal Med)		
Kralewski, John E. (Hlth Admin)	Chrman or Member	
Luginbuhl, William H. (Pathology)		
• Mayer, William O. (Pathology)		
• McPhedron, Alexander M. (Neuro)		
• Nutliken, Sewell P. (P.H. Admin)		
Roth, Russell B. (Urology)		
Scherlis, Leonard (Cardio)		
Schreiner, George E. (Neph)		
Slater, Robert J. (Ped)		
• Thurman, William G. (Ped)		
• Toomey, Robert E. (Hosp. Admin)		
Watkins, Benj. W. (Podiatry)		
• White, Philip T. (Nemo)		

SOURCE & NAME

RECOMMENDED
SELECTION

PAHL
APPROVAL

C. AMERICAN RHEUMATISM ASSOC.

BROWN, CURLAND C.

DUFF, IVAN F.

ENGLEMAN, EPHRAIM P.

SHULMAN, LAWRENCE E.

SMYTH, CHARLEY J.

WEISS, THOMAS E.

MEMBER

MEMBER

X?

Ms Kewen →

INTERNATIONAL CHEMISTRY. B.S. Miss. Col. 54; Ph.D. (chem. Engr. 1957).
FEL. UNIV. TENN. 59-60; PHS. CHEMIST. Bldg. Dept. exp. sta. E.I. DU PONT
DE NEMOURS & CO. 60-62; CHEM. BRIT. JACKSON LAB. 65-
AAAS. Am. Chem. Soc. Res. Soc. Am. X-ray crystallography; poly-
meric. Address: E.I. du Pont de Nemours & Co, Jackson Lab, P.O. Box
525, Wilmington, Del. 19836.

BROWN, CHARLES LEONARD, b. Ranger, Tex. June 30, 20; m. 46; c. 2.
MECHANICAL ENGINEERING. B.S. Rice Inst. 40; M.S. Purdue Univ. 43.
Ph.D. (mech. eng.) 49. PROF. MECH. ENG. PURDUE UNIV. 59- Am. Soc.
Mech. Eng. Am. Soc. Eng. Educ. Thermodynamics; engineering analysis.
Address: School of Mechanical Engineering, Purdue University, Lafayette,
Ind. 47907.

BROWN, C(HARLES) M, b. Niagara Falls, N.Y., Nov. 23, 19; m. 43; c. 3.
METALLURGY. B.S. Univ. Mich. 41. Res. metallurgist, Metals Res.
Lab. 41-52; metall. engr. tech. serv. & develop. Electro Metals Co. 52-
55; asst. to mgr. 52-57; mgr. fine metals & chem. dept. Union Carbide
Metals Co. 57-61. asst. to gen. mgr. refractory metals dept. 61-63; mgr.
specialty prod. & develop. 63-69. MGR. NEW PROD. DEVELOP. MINING &
METALS DIV. UNION CARBIDE CORP. 69- Am. Soc. Metals (Howe award,
50); Am. Inst. Mining, Metall. & Petrol. Eng. Mechanical properties and
corrosion resistance of austenitic stainless steels; melting, fabrication,
properties and use of steels and reactive metals. Address: Union Carbide
Corp, Mining & Metals Division, P.O. Box 579, Niagara Falls, N.Y. 14302.

BROWN, CHARLES MYERS, b. Oswego, S.C. Oct. 16, 27; m. 57; c. 2.
PLANT BREEDING. B.S. Clemson Col. 50; M.S. Univ. Wis. 52. Ph.D.
(Agron.) 54. Asst. AGRON. Univ. Wis. 50-54; first asst. UNIV. ILL.
URBANA-CHAMPAIGN, 54-55; asst. prof. 55-59; assoc. prof. 59-68. PROF.
66- U.S.A. 46-47. Am. Soc. Agron. Out breeding; genetics; cytogenetics.
Address: Dept. of Agronomy, University of Illinois, Urbana-Champaign,
Urbana, Ill. 61801.

BROWN, CHARLES QUENTIN, b. Roanoke Rapids, N.C. Sept. 12, 28;
m. 59; c. 2. GEOLOGY. B.S. Univ. N.C. 51; M.S. 53; Ph.D. (geol.) Va.
Polytech. Inst. 53. INSTR. GEOL. Clemson Univ. 54-55; asst. prof. 55-59.
assoc. prof. 59-67. PROF. E.CAROLINA UNIV. 65-. DIR. INSTNL. DE-
VELOP. 69-. chmn. dept. geol. 67-69. Mem. N.C. Marine Sci. Coun. 71-75.
U.S.A.F. 46-49. Res. Maj. Geol. Soc. Am. Soc. Econ. Paleont. & Mineral.
Sedimentation; clay mineralogy of recent deposits. Address: Dept. of Ge-
ology, East Carolina University, Greenville, N.C. 27834.

BROWN, CHARLES SAVILLE, b. Orange Co, Va. Oct. 1, 20; m. 46; c. 3.
CHEMICAL ENGINEERING. B.S. Va. Polytech. Inst. 41; fel. Univ. Wis.
41-44, Ph.D. (chem. eng.) 46; Lake Forest Col. 52-54; Harvard Sch. Bus. 56.
Control engr. Nat. Aniline & Chem. Co. N.Y. 41; dept. mgr. fermentation
unit, ABBOTT LABS. 44-58, dir. & supt. prod. 58-60, v. pres. prod. 60-61.
U.S. & Can. Co's. 61-64, pharmaceut. ops. 64-66, EXEC. V. PRES. sci.
& mfg. ops. 66-68. sci. ops. 68-70, ADMIN. 70- Fel. AAAS; Am. Chem.
Soc.; Am. Inst. Chem. Eng. Aerobic fermentations; fermentation engineer-
ing; pharmaceutical manufacturing. Address: Abbott Labs, 14th St. & Sher-
idan Rd, North Chicago, Ill. 60064.

BROWN, CHARLES T(OMAS), b. Paterson, N.J., Oct. 27, 25; m. 53; c. 2.
PHYSICAL CHEMISTRY. B.A. Ohio Wesleyan. 53; M.S. Rensselaer Poly-
tech. 55, Ph.D. 57. Prin. chemist electrochem. eng. Battelle Mem. Inst.
57-58, radioisotopes & radiation, 58-60; mgr. chem. sect. nuclear div.
Combustion Eng. Corp. 60-61; RES. CHEMIST, UNITED AIRCRAFT CORP.
RES. LABS. 61- U.S.N. 46-49. Am. Chem. Soc. Electrochem. Soc. Elec-
trochemistry of fused salts. Address: United Aircraft Corp. Research
Labs. Propulsion Lab, Chemical Section, 460 Main St, East Hartford, Conn.
06103.

BROWN, CHRISTOPHER W, b. Maysville, Ky, Apr. 13, 38; m. 61; c. 3.
PHYSICAL CHEMISTRY. B.S. Xavier Univ. 60; M.S. 62; Ph.D. (phys. chem.)
Univ. Minn. 67. Res. fel. CHEM. Univ. Md. 66-68; ASST. PROF. UNIV.
RI. 68- Award. Chicago sect. Soc. Appl. Spectros. 66. Am. Chem. Soc.
Am. Phys. Soc. Infrared and Raman spectroscopy; molecular structure;
intermolecular interactions; solid state infrared and Raman; vibrational-
rotational interactions; pressure effects on optical properties; chemical
applications of lasers. Address: Dept. of Chemistry, University of Rhode
Island, Kingston, R.I. 02881.

BROWN, CLAIR A(LAN), b. Port Allegany, Pa, Aug. 16, 03; m. 26, 63; c. 1.
BOTANY. B.S. Syracuse Univ. 25; A.M. Univ. Mich. 26. Ph.D. (bot.) 34.
Asst. herbariana, Univ. Mich. 25-26; instr. bot. La. State Univ. 26-29; asst.
Univ. Mich. 29-31; asst. prof. La. State Univ. Baton Rouge. 31-35; assoc.
prof. 35-43, prof. 43-70. BOT. CONSULT. 70- State surv. Isle Royale,
Mich. 30; Guggenheim fel, Europe, 52; Edmund Niles Hayck fel, 58, 59.
Nat. Sci. Found. summer fells. advan. biol. Univ. Costa Rica, 61 & 62.
Award, Conserv. Educ. Assn. Bot. Soc. Am; Am. Soc. Plant Taxon; Am.
Fern Soc. (fresh Int. Assn. Plant Taxon; Bot. Soc. France (hon. pres. 50).
Wood rotting fungi; flora of Louisiana; chemical control of weeds; mor-
phology and biology of some species of Odonata; Tertiary palynology. Ad-
dress: 1180 Stanford Ave, Baton Rouge, La. 70802.

BROWN, C(LARENCE) ERVIN, b. Lancaster, Pa, Dec. 25, 25; m. 49; c. 3.
GEOLOGY. B.S. Franklin & Marshall Col. 50; Harvard, 51. GEOLOGIST.
U.S. GEOL. SURV., 51-. U.S.A.A.F. 44-45. Geol. Soc. Am; Soc. Econ. Geol.
Structure, stratigraphy and ore deposits in Saint Lawrence County, New
York; industrial talc, zinc and lead. Address: Bldg. 10, U.S. Geological
Survey, Washington, D.C. 20242.

BROWN, CLAUD L(AFAYETTE), b. Cumming, Ga, Sept. 19, 25; m. 53; c. 2.
GENETICS. B.S.F. Univ. Ga. 48, M.S. 54; Ph.D. Harvard. 58. With State
Forestry Comm. Ga. 48-51; asst. Univ. Ga. 52-54; Cabot Found. Harvard,
54-57; head forest genetics lab, Tex. A&M Univ. 57-60; assoc. prof. BOT.
UNIV. GA. 60-69, PROF. 69- U.S.N. 44-46. Soc. Am. Foresters; Bot.
Soc. Am; Am. Soc. Plant Physiol. Forest genetics; tree physiology; physio-
logy; morphology; morphogenesis. Address: Dept. of Botany, University
of Georgia, Athens, Ga. 30602.

34; Ph.D. (math), Univ. Kans. 49. Teacher, pub. schs, Kans. 26-28, 37-39,
prin. 29-37; asst. instr. math, Univ. Kans. 38-40; superv. stud. teacher,
West. Ill. State Teachers Col. 40-43; prof. CENT. MO. STATE COL. 43-44;
head dept. 46-69, chmn. div. sci. & math. 47-69, DEAN COL. ARTS & SC.
69- AAAS. Teaching of mathematics; analysis. Address: Central Miss. State
College, Warrensburg, Mo. 64693.

BROWN, CLAUDEOUS J(ETHRO) DANIELS, b. Farr West, Utah, Aug. 15,
04; m. 31; c. 2. ZOOLOGY. B.S. Brigham Young Univ. 27. M.S. 28; Ph.D.
(zool.) Univ. Mich. 33. Instr. zool. Univ. Mich. 31-33, res. assoc. 33-34;
asst. aquatic biologist. Bur. Fisheries, Utah, 34-35; instr. zool. Mont. State
Col. 35-37; asst. dir. inst. fisheries res. State Dept. Conserv. Mich. 37-44;
tech. dir. State Pollution Comm. Wash. 44-45; aquatic biologist, U.S. Fish
& Wildlife Serv. Wash. & Ore. 45-47; assoc. prof. ZOOLOG. MONT. STATE
UNIV. 47-50, PROF. 50- Fisheries adv. Food & Agr. Orgn. Paraguay, 57;
fisheries consult. Ford Found. Egypt, 64 & 66. Am. Soc. Limnol. &
Oceanog; Am. Micros. Soc. (secy-ed. 52-56, pres. 59); Am. Fisheries Soc.
(pres. 70); Am. Soc. Ichthyol. & Herpet. Wildlife Soc. fel. Am. Inst. Fishery
Res. Biol; fel. Int. Acad. Fishery Sci. Limnology and freshwater fisheries
management; fishes of Montana. Address: Dept. of Zoology, Montana State
University, Bozeman, Mont. 59715.

BROWN, COLIN BERTRAM, b. London, Eng. Jan. 15, 29; m. 54; c. 1. CIVIL
ENGINEERING. B.Sc. London, 53; Ph.D. (mech. materials), Minnesota, 52.
Eng. asst. D.H. Lec. Eng. 53-55; bridge designer, Lindsey County Coun.
55-57; design engr. Prov. of B.C. 57-59; res. fel. enr. mech. Minnesota,
55-57; asst. prof. civil eng. Univ. Calif. Berkeley, 62-66; ASSOC. PROF.
59-61; asst. prof. civil eng. Univ. Calif. Berkeley, 66-69; CIVIL ENG. UNIV. WASH.
69- Am. Soc. Civil Eng.; Soc. Rheol; Am. Concrete Inst; Int. Assn. Bridge
& Struct. Eng. Structural mechanics; theory of interface friction; incremen-
tal problems in elasticity; statistical methods in structural engineering. Ad-
dress: Dept. of Civil Engineering, University of Washington, Seattle, Wash.
98105.

BROWN, CONNELL J(EAN), b. Everton, Ark, Mar. 6, 24; m. 46; c. 2.
ANIMAL HUSBANDRY. B.S.A. Univ. Ark. 48; M.S. Okla. State Univ. 50.
Ph.D. 56. ASST. ANIMAL HUSB. Okla. State Univ. 48-50; asst. prof. Univ.
Ark. Fayetteville. 50-53; asst. Okla. State Univ. 53-54; asst. prof. UNIV.
ARK. FAYETTEVILLE. 54-56, assoc. prof. 56-61, PROF. 61- Am. Soc.
Animal Sci; Genetics Soc. Am. Classification of beef type; performance
records of beef cattle; swine and beef carcass quality; sheep breeding.
Address: Division of Animal Sciences, University of Arkansas, Fayette-
ville, Ark. 72701.

BROWN, CURTLAND CHESTER, JR, b. Cambridge, Mass, Jan. 7, 23; m. 48;
c. 3. INTERNAL MEDICINE. A.B. Harvard, 44, M.D. Harvard Med. Sch.,
48. Intern med, Albany Hosp. 48-49, teaching fel. physiat., Albany Med. Col.
49-50, resident asst. med. Albany Hosp. 50-51, resident, 51-52, res. fel.
Albany Med. Col. 52-53, asst. dean, 53-54; clin. & res. fel. rheumatology,
Mass. Gen. Hosp. 56-57; asst. prof. MED. Albany Med. Col. 57-64, assoc.
prof. 64-70; ASSOC. CLIN. PROF. SCH. MED. YALE, 70- Med.C. 54-56,
Res. 56-, Lt. Comdr. AAAS; Am. Rheumatism Assn; N.Y. Acad. Sci. Clini-
cal and basic research in the rheumatic diseases. Address: The Gaylord
Hospital, Wallingford, Conn. 06492.

BROWN, DAIL W(OODWARD), b. Columbus, Ohio, Aug. 11, 42; m. 65; c. 1. BIO-
LOGICAL OCEANOGRAPHY. B.A. Denison, 64; Ph.D. (biol.) California.
Santa Barbara, 65. Res. asst. biol. oceanog. Lamont Geol. Observy, 68-69;
OCEANOGRAPHER. SMITHSONIAN INST. 69- U.S. Nat. correspondent.
Coop. Invests. of the Mediter. 71- AAAS; Am. Soc. Ichthyol. & Herpet.
Marine Tech. Soc; Am. Soc. Limnol. & Oceanog. Ichthyology; marine ecology.
Address: Oceanography & Limnology Program, Smithsonian Institution,
Washington, D.C. 20560.

BROWN, DALE H(ENRY), b. Oak Grove, Mo, Apr. 30, 22; m. 44; c. 2. ME-
CHANICAL ENGINEERING. B.S. Rensselaer Polytech. Inst. 42, M.S. 50.
Instr. mech. eng. & mech. Rensselaer Polytech. Inst. 43-44, asst. prof.
thermodyna. & heat eng. 46-50; thermodyn. engr. GEN. ELEC. CO. 50-55,
thermal systems. consult. eng. 56-67, systs. engr. RES. & DEVELOP. CTR.
67-69, THERMAL & ENVIRON. SYSTs. CONSULT. ENGR, 69- U.S.N.R.
44-46, Lt. Am. Soc. Mech. Eng; Soc. Automotive Eng; N.Y. Acad. Sci;
Nat. Soc. Prof. Eng. Energy production and environmental effects in the
biosphere; system dynamics; transient thermodynamics; simulation of
power and process apparatus. Address: 5 Berkeley Square, Scotia, N.Y.
12302.

BROWN, DANIEL A(NSLEE), b. Wilmington, Del, Oct. 21, 10. CHEMISTRY.
B.A. Univ. Del. 35, M.A. 37. Technician, res. staff, exp. sta. E.I. DU
PONT DE NEMOURS & CO. 35-37, electrochem. dept. 37-44, Jackson Lab,
44-50, CHEMIST, EXPLOSIVES DEPT, SAVANNAH RIVER LAB, 50- Civ-
ilian with C.W.S. AAAS; Am. Chem. Soc. Organic chemicals; general
dry cleaning solvents; dye intermediates; radiochemical analysis. Ad-
dress: E.I. du Pont de Nemours & Co, Savannah River Lab, 677-G, Aiken,
S.C. 29801.

BROWN, DANIEL G(ROVER), b. Miss. Jan. 19, 23; m. 47; c. 3. VETERI-
NARY MEDICINE. D.V.M. Auburn Univ. 56. Asst. prof. VET. MED. UNIV.
TENN. KNOXVILLE, 58-59, assoc. prof. 59-60, PROF. 60- U.S.N. 43-46.
Am. Vet. Med. Assn; Radiation Res. Soc. Effects of external irradiation on
domestic animals. Address: 1299 Bethel Valley Rd, Oak Ridge, Tenn. 37830.

BROWN, DANIEL JOSEPH, b. Elwood, Ind, June 3, 41; m. 66; c. 2. PHAR-
MACOLOGY, TOXICOLOGY. B.S. Marian Col. 63; Ph.D. (toxicol.) Ind.
Univ. 68. Fel. PHARMACOL. & TOXICOL. Univ. Wash. 68-69; ASST.
PROF. MED. CTR. IND. UNIV. INDIANAPOLIS, 69- Am. Acad. Forensic
Sci. Methanol intoxication, metabolism and excretion. Address: Dept. of
Toxicology, Indiana University Medical Center, 1100 W. Michigan St,
Indianapolis, Ind. 46207.

BROWN, DANIEL MAFON, b. Roanoke, Va, May 26, 39; m. 61; c. 2. CIVIL
ENGINEERING. B.S.C.E. Duke Univ. 61. Nat. Defense Educ. Act fel. &

Sagr. Biol. Co. fel. 55-56; M.S. 55; Am. Soc. Microbiol. fel. Univ. Ill. 55; Ph.D.(bact), Univ. Wis., 55; Asst. microbiol. Univ. B.C. 53-57; Law. Mich. 55-56; bact. Univ. W. Va. 55-56; asst. prof. Univ. Kans. 60-64; assoc. prof. sch. med. 64-70; PROF. BIOL. UNIV. CALGARY, 70- Nat. Insts. Health res. grant, 61-67; spec. res. fel. 60-70; Kans. Cancer Inst. rfs. grant, 67-69; Can. Nat. Res. Coun. grant, 70- Am. Soc. Microbiol.; Am. Soc. Cell Biol.; Can. Soc. Cell Biol.; Can. Soc. Biochem. Can. Soc. Microbiol. Genetic regulatory mechanisms in biosynthesis, growth and development in both prokaryotic and eukaryotic cells. Address: Dept. of Biology, University of Calgary, Calgary 44, Alberta, Can.

DUEKSEN, JOHN HUGO, b. Chilliwack, B.C. Dec. 23, 34; m. 60; c. 2. CHEMICAL ENGINEERING. B.A.S. Univ. B.C. 58; Athlone fel. Eng. 58-60; dipl. Imp. Col. Sci. & Technol. Univ. London, 60; Ph.D.(chem. eng), McMaster Univ. 62. CHEM. RES. ENGR. Atomic Energy of Can. 61-64. CHEVRON RES. CO. STANFORD OIL CO. CALIF. 67- Am. Inst. Chem. Eng.; Am. Chem. Soc. Polymerization kinetics and reactor modeling; petroleum hydrocracking—process and catalyst research and development. Address: Process Research Dept, Chevron Research Co, 576 Standard Ave, Richmond, CA 94802.

DUERR, FREDERICK G, b. St. Paul, Minn. May 17, 35; m. 54; c. 3. ZOOLOGY, COMPARATIVE PHYSIOLOGY. B.A. Minnesota, 56, Ph.D.(zool), 65. ASSOC. PROF. zool, South Dakota, 61-67; BIOL. Univ. Sask. Regina, 67-68; UNIV. N.DAK. 68- AAAS; Am. Soc. Zool.; Am. Soc. Parasitol. Comparative physiology of digestive tract parasitism; physiology of respiration and nitrogen excretion. Address: Dept. of Biology, University of North Dakota, Grand Forks, ND 58202.

DUERRE, JOHN A, b. Webster, S.Dak. Aug. 21, 30; m. 57; c. 3. MICROBIAL BIOCHEMISTRY, PHYSIOLOGY. B.S. S.Dak. State Col. 52, M.S. 56; Ph.D. (bact), Minnesota, 60. Atomic Energy Comm. fel. Argonne Nat. Lab. 60-61; res. bacteriologist, Rocky Mt. Lab. Nat. Inst. Allergy & Infectious Diseases, 61-63; asst. prof. MICROBIOL. SCH. MED. UNIV. N.D. 63-65, assoc. prof. 65-71, PROF. 71- Nat. Sci. Found. res. grant, 68-71; vis. scientist, neuropsychiat. res. unit, Med. Res. Coun. Labs. Eng. 69-70; Nat. Insts. Health career develop. award, 70-; res. grant, 71- Sulfur amino acid metabolism in mammalian systems; methylation of brain histones; microbiology. Address: Dept. of Microbiology, University of North Dakota, Grand Forks, ND 58201.

DUERST, RICHARD WILLIAM, b. Rice Lake, Wis. Aug. 18, 40; m. 64; c. 2. PHYSICAL & ANALYTICAL CHEMISTRY. B.A. St. Olaf Col. 62, Nat. Insts. Health Summer grant, 62; Ph.D.(chem), California, Berkeley, 66. Fel. phys. chem, Lawrence Radiation Lab, California, 66-67; Nat. Res. Coun-Nat. Bur. Standards res. fel. Nat. Bur. Standards, Md. 67-69; ASST. PROF. DEPT. CHEM. WIS. STATE UNIV. EAU CLAIRE, 69- Summers, tech. student, Union Carbide Chem. Co. 61 & res. asst. Lawrence Radiation Lab, California, 63-66. Am. Chem. Soc.; The Chem. Soc. Am. Phys. Soc. Nuclear magnetic resonance studies of inorganic systems; dissociation of strong acids; hydration of ionic species in aqueous solution; metal-metal pair interactions; effect of isotopic substitution on physical properties. Address: Dept. of Chemistry, Wisconsin State University, Eau Claire, WI 54701.

DUESEL, BERNARD FRANCIS, b. Webster, Mass. June 18, 07; m. 38; c. 4. CHEMISTRY. A.B. Clark, 29. A.M. 30. Res. chemist, Pyridium Corp, 30-43, asst. dir. develop, 43-48; sr. res. chemist, Nopco Chem. Co. Div. Warner-Lambert Pharm. 46-57, chief develop. chemist, 57-59, sr. develop. chemist, 59-61, res. mgr. 61-69; RETIRED. Am. Chem. Soc. Pharmaceutical; sulfa drugs; vitamins; pharmaceutical chemistry. Address: 512 Valley Ave, Yonkers, NY 10703.

DUESING, CONSTANTIN MICHAEL, b. Berlin, Ger. Dec. 15, 32; m. 59. PETROLOGY, MINERALOGY. B.Sc. & M.Sc. Munich, 54, Ph.D.(geol), 59. NATO fel. geol, McGill, 60-62; RES. GEOLOGIST, J. ROY GORDON RES. LAB, INT. NICKEL CO. CAN, LTD, 62- Can. Inst. Min. & Metall.; Mineral. Assn. Can.; German Geol. Assn. German Mineral. Soc. Igneous and metamorphic petrology; economical geology of ore deposits. Address: J. Roy Gordon Research Lab, International Nickel Co. of Canada, Ltd, Clarkson, Ont, Can.

DUESTERHOEFT, WILLIAM CHARLES, JR. b. Austin, Tex. Dec. 10, 21; m. 49; c. 1. ELECTRICAL ENGINEERING. B.S. Texas, 43, M.S. 49; Ph.D. (elec. eng), Calif. Inst. Tech, 53. Elec. engr, Gen. Elec. Co, 43-46; instr. elec. eng, Texas, 46-48, asst. prof. 48-49; instr. Calif. Inst. Tech, 49-52; aerophysics engr, Gen. Dynamics Convair, 52-54; assoc. prof. ELEC. ENG, UNIV. TEX, AUSTIN, 54-60, PROF. 60- Corp. consult, 54- Inst. Elec. & Electronics Eng; Am. Soc. Eng. Educ; Am. Phys. Soc. Plasma dynamics; geophysics; power and energy conversion systems. Address: Dept. of Electrical Engineering, University of Texas at Austin, Austin, TX 78712.

DUFF, DALE THOMAS, b. Ross Co, Ohio, Dec. 26, 30; m. 58; c. 1. CROP PHYSIOLOGY. B.S. Ohio State Univ, 57, M.S. 64; Ph.D.(crop sci), Mich. State Univ, 67. Trainee, Soil Conserv. Serv, U.S. Dept. Agr, 55-57; agronomist, Clinton County Farm Bur. Coop Assn, Ohio, 58-61; asst. instr. agron, Ohio State Univ, 61-64; teaching asst. crop sci, Mich. State Univ, 64-67; ASST. PROF. PLANT & SOIL SCI, UNIV. R.I., 67- U.S.N. 49-52. AAAS; Am. Soc. Agron; Crop Sci. Soc. Am; Am. Inst. Biol. Sci. Stress physiology of turf grasses, especially high temperature and low temperature effects upon growth. Address: Dept. of Plant & Soil Science, University of Rhode Island, Kingston, RI 02881.

DUFF, DAVID CECIL BUCHANAN, b. Edinburgh, Scotland, Oct. 15, 01; m. 32; c. 1. BACTERIOLOGY, IMMUNOLOGY. B.A. Toronto, 26, M.A., 27, Ph.D., 30. From instr. to prof. bact. & immunol, British Columbia, 23-70; RETIRED. Consult. pathologist, Pac. Biol. Sta, 30-40; Inwestr. Atlantic Biol. Sta, 26; Fisheries Exp. Sta, Prince Rupert, 29. R.C.A.F., 43-44, Flight Lt. Brit. Soc. Gen. Microbiol. Microbial physiology; marine microbiology; roles of marine micro-organisms in relation to the turnover of elements in the seas. Address: 4687 W. 5th Ave, Vancouver 8, B.C., Can.

Force, 43-44, dir. training & chief trop. med. dept, U.S. Air Force Sch. Aerospace Med, 43-47, wpt. surgeon & chief print. serv. br. Far East Air Force, Japan, 47-49; prof. med. sci. & tactics, Hopkins, 49-51, mem. staff, hq. Sarrion General's Off, 51-53, commandant, U.S. Air Force Sch. Aerospace Med, 53-59, dep. surgeon, Germany, 59-62, command surgeon, Air Force Systs. Command, 62-64, Technical Air Command, 64-68; DEP. COMDR. PROG. PLANNING, TEX. STATE DEPT. HEALTH, 63- U.S.A.F., 49-66, Brig. Gen. Am. Med. Assn. Am. Pub. Health Assn; fel. Am. Col. Physicians; Am. Col. Prev. Med; Aerospace Med. Assn; Am. Soc. Parasitol; Royal Soc. Trop. Med. & Hyg. Military preventive and aviation medicine. Address: State Dept. of Health, 1100 W. 49th St, Austin, TX 78756.

DUFF, GEORGE FRANCIS (DENTON), b. Toronto, Ont. July 28, 26; m. 51; c. 5. MATHEMATICS. B.A. Toronto, 48, M.A., 49; Ph.D.(math), Princeton, 51. Moore instr. Mass. Inst. Tech, 51-52; asst. prof. MATH, UNIV. TORONTO, 52-57, assoc. prof. 57-61, PROF., 61-, CHMN. DEPT., 68- Ed. Can. J. Math, 57-61. Am. Math. Soc; Can. Math. Cong.(pres, 71-73). Differential equations. Address: 26 Buckingham Ave, Toronto 317, Ont, Can.

DUFF, JAMES GORDON, b. Rosetown, Sask. Apr. 3, 30. PHARMACEUTICAL CHEMISTRY. B.S.P. Saskatchewan, 53, M.Sc. 55; Ph.D.(pharmaceut. chem), Florida, 59. Instr. pharm. Saskatchewan, 58-59, spec. lectr, 59-61; DIR. COL. PHARM, DALHOUSIE UNIV, 61- PROF. PHARMACEUT. CHEM, 63- Am. Assn. Col. Pharm. synthesis of organic medicinal compounds. Address: College of Pharmacy, Dalhousie University, Halifax, N.S., Can.

DUFF, IVAN FRANCIS, b. Pendleton, Ore. July 20, 15; m. c. 2. INTERNAL MEDICINE. A.B. Oregon, 38; M.D. Michigan, 40. Intern. univ. hosp, UNIV. MICH, 40-41, asst. resident INTERNAL MED, 41-42, resident, 42-46, instr. MED. SCH, 46-48, asst. prof. 48-53, assoc. prof. 53-60, PROF., 60-, PROF. IN CHARGE ARTHRITIS DIV, UNIV. HOSP., 60-, asst. physician, 48-53. Dir. Regional Arthritis Control Prog, Mich, 69-71. Med.C. 42-46. Comdr. Am. Fedn. Clin. Res. Am. Rheumatism Assn; fel. Am. Col. Physicians. Rheumatic and thromboembolic diseases. Address: Arthritis Division, Bldg. 9, Room 920, University Hospital, Ann Arbor, MI 48104.

DUFF, JACK D(ROLL), b. Baltimore, Md. May 17, 18; m. 47. ELECTRONICS. U.S. Case Inst. Technol. 33. Jr. engr. HOOVER CO, 39-41, sr. engr, 41-45, dir. elec. sect, 45-54, res. coord, 54-55, DIR. RES. 55- With Off. Sci. Res. & Develop. U.S.N., 44. Inst. Elec. & Electronics Eng. Small series motor design; industrial electronic control and inspection equipment design; analysis of multivibrator circuits; electrostatic heating-thermal control; frequency multiplier. Address: Engineering Dept, Hoover Co, 101 Eastern St, North Canton, Oli 44720.

DUFF, JAMES THOMAS, b. Sandusky, Ohio, Jan. 23, 25. MICROBIOLOGY. B.S. Ohio State, 47, M.S. 49; Ph.D. Texas, 60. Microbiologist, immunol. br. med. invest. div, U.S. Army Biol. Lab, Ft. Detrick, 49-50, 59-60; microbiologist, NAT. CANCER INST, 63-66; ASSOC. CHIEF, VIRAL CARCINOGENESIS BR, 66- Res. scientist, dept. bact. Univ. Tex, 57-59. U.S.N. 43-46, Res. 46-, Comdr. AAAS; N.Y. Acad. Sci; Tissue Culture Assn; Am. Soc. Microbiol; Sci. Res. Soc. Am; Brit. Soc. Gen. Microbiol. Azotobacter bacteriophage; Clostridium botulinum toxins and toxoids; tissue culture; psittacosis group vaccines; viral oncology. Address: Viral Carcinogenesis Branch, National Cancer Institute, Bethesda, MD 20014.

DUFF, Mc(GEE) A. b. Moran, Tex. Aug. 22, 26; m. 51; c. 2. ANALYTICAL CHEMISTRY. B.S. Southern Methodist, 50, M.S. 52; Ph.D.(anal. chem), La. State, 56. Res. anal. chemist, CELANESE CHEM. Co, 55-58. GROUP LEADER, 58- U.S.N. 44-46. Am. Chem. Soc. Process development. Address: Celanese Chemical Co, P.O. Box 9077, Corpus Christi, TX 78408.

DUFF, RAYMOND STANLEY, b. Hodgdon, Maine, Nov. 2, 23; m. 45; c. 3. PEDIATRICS, SOCIOLOGY. B.A. Maine, 46; M.D. Yale, 52, M.P.H. 59. Intern & res. pediat, Yale-New Haven Hosp, 52-55; dir. bur. med. serv. New Haven Health Dept, 55-56; instr. pediat. & pub. health, sch. YALE, 56-59, asst. prof. pediat. & social, 59-67, ASSOC. PROF. PEDIAT. SCH. MED. 67- Asst. dir. ambulatory serv, Yale-New Haven Hosp, 56-59. U.S.A. 43-46, 2nd Lt. AAAS; fel. Am. Pub. Health Assn; fel. Am. Acad. Pediat; Am. Sociol. Assn. Behavioral aspects of health, especially health or illness care in large hospitals as influenced by patients, families, physicians, nurses, administrators and others. Address: Dept. of Pediatrics, School of Medicine, Yale University, New Haven, CT 06520.

DUFF, ROBERT HODGGE, b. Durand, Mich. Oct. 21, 29; m. 58; c. 3. INORGANIC & PHYSICAL CHEMISTRY. B.S. Mich. State, 51; Ph.D.(inorg. chem), Indiana, 61. Control chemist, Am. Agr. Chem. Co, Mich, 51-53; asst, Indiana, 53-59; electron microscopist & phys. chemist, Nat. Bur. Standards, 59-61; staff scientist electron micros, Avco Corp, Wilmington, 61-66; res. assoc. LEDGEMONT LAB, KENNECOTT COPPER CORP, LEXINGTON, 66-70, ANAL. CHEMIST, 70- AAAS; Am. Chem. Soc; fel. Am. Inst. Chem; Electron Micros. Soc. Am; Int. Soc. Stereology; Int. Metallographic Soc. Use of electron microscopy in all phases of material science; use of x-rays for elemental analysis with the electron microscope. Address: 21 Robin Hood Rd, Arlington, MA 02174.

DUFF, RUSSELL E(ARL), b. Grand Rapids, Mich. Nov. 28, 26; m. 47; c. 5. PHYSICS. B.S.E. Michigan, 47, M.S. 48, Ph.D.(physics), 51. Res. assoc. eng. res. inst. Michigan, 47-51; mem. staff, Los Alamos Sci. Lab, 51-61; Inst. Defense Anal, 61-62; proj. leader, Lawrence Radiation Lab, 62-64, div. leader, 64-67; DIR, SYSTS, SCI. & SOFTWARE & GEN. MGR. APPL. NUCLEAR DIV, 67- U.S.N.R., 44-46. Am. Nuclear Soc; Am. Phys. Soc. Shock and detonation hydrodynamics; high temperature chemistry. Address: Applied Nuclear Division, Systems, Science & Software, P.O. Box 1620, La Jolla, CA 92037.

DUFF, WILLARD MOYLE, b. Canon City, Colo. July 20, 39; m. 63; c. 1. PHYSIOLOGY. B.S. Midland Col. 61; M.S. Nebraska, 63. U.S.P.H.S. fel, 65-67, Ph.D.(physiol), 67. Res. assoc. physiol. sch. med. Creighton, 63-65, assoc. instr. 64-65; asst. prof. BIOL. UNIV. HARTFORD, 67-70, ASSOC.

Am. Acad. Pediat.; Am. Heart Assn. Soc. Pediat. Res.; Am. Col. Physicians; Am. Pediat. Soc.; Assn. Europ. Pediat. Cardiol.; Am. Col. Pediatric Cardiology, especially congenital malformations of arterial vessels. Address: New York Hospital, 525 E. 68th St, New York 10021.

PAUL R (ANDAL), b. Newton, Iowa, Oct. 16, 19; m. 45; c. 1. ASTRONOMY. B.A., Pan Am. Col. 58; Nat. Sec. Found. summer 1950-51, Arizona. 61 & Georgetown, 62; summers, State Univ. N.Y. 63, 69, Mich. State Univ. 70, 71. Jr. engr. & instr. astron. New Mexico State, 48-51; flight instr. & asst. to dir. Calif. State Univ., Tex. 51-52; I.R. OBSERV. PAN AM. UNIV. 56-. GEOG. PROG. 66- Prin. Invest. Nat. Sci. Found. grants, 62-65; dir. Harvard Minitrack Optical Tracking Sta. 66- U.S.A.A.F.R. Assn. Planetary Observers; Am. Astron. Soc.; Am. Assn. Physics; Am. Astron. Soc.; Brit. Astron. Assn.; Pan Am. Soc. Astrophys. (1-). Astronomical instrumentation; development of course program in astro-science and astronomy for college and high school levels. Observatory & Astro-Science Center, Pan American University, TX 76359.

RALPH (ANDIS), JR. b. Phila, Pa, June 11, 20; m. 45; c. 2. MEDICINE. B.S., Florida, 42; M.D., Hopkins, 45. Intern path. Hosp. 45-49, med. 49-51, asst. res. 49-51, res. hematol. 50-51, asst. physician, 54-57, assoc. attend. physician, 57-69, ATTEND. MED. 69-. PROF. MED. COL. CORNELL UNIV. 69-. asst. 49-51, asst. prof. med. 52-57, assoc. prof. 57-69. Am. Cancer Soc., Washington (St. Louis), 51-52; Markle scholar, 52-57; chief hemat. dept. New York Hosp. 61-67; consult. Vet. Admin. Hosp. New York 64; chief div. med. systs. & comput. sci. dept. med. New York Hospital Univ. 67; dir. dept. med. systs. & comput. serv. New York Hosp. Mem. cancer clin. invest. rev. comm. Nat. Cancer Inst. 68-; com. sci. comman. Nat. Acad. Sci-Nat. Acad. Eng. 67-70. Dipl. Am. Bd. Intern. Med. C. 46-48, Capt. AAAS; Am. Soc. Hemat.; Am. Physiol. Soc.; Fedn. Clin. Res.; Am. Med. Assn. Soc. Exp. Biol. & Med.; Assn. Mach.; Am. Soc. Info. Sci. Hematology; pathology; computer applications to medicine. Address: New York Hospital, 525 E. 68th St, New York, NY 10021.

ROBERT B. b. Decatur, Ill, Apr. 10, 31; m. 53; c. 4. APPLIED MECHANICS. B.S., Purdue, 53, M.S., 53; Ph.D.(appl. mech), Mich. State, 67. Mech. appl. mech, Mich. State, 58-66; MECH. ENGR, LAWRENCE RADIATION LAB, 66- Ord. C., U.S.A., 53, Res, 57-, Maj. Acoustic emission-research dealing with basic mechanisms and application of techniques to material evaluation; creep behavior of composite materials-development of test techniques and equipment. Address: 1024 Via Madrid, Livermore, CA 94550.

ROBERT (ROBERT) (FRY), JR. b. Phila, Pa, Jan. 6, 10; m. 40; c. 3. CHEMISTRY. B.S., Haverford Col., 32; Ph.D.(phys. chem), Cornell, 37. Asst. Chem. Cornell, 38-39; res. chemist, Solvay Process Co., N.Y., 37-43; Associate Inst. Pa., 44-46; TEXTILE FIBERS DEPT., E.I. DU PONT DE NEMOURS & CO, INC., 45-63, PATENT ASSOC., 63-. Am. Chem. Soc. Phase studies; electrochemistry; corrosion; process development; combustion of solid fuels; synthetic fiber research and development; patent liaison. Address: Textile Fibers Dept., E.I. du Pont de Nemours & Co, Inc, Wilmington, DE 19880.

ROBERT RUFUS, b. Sullivan Co. Ind, Jan. 29, 30; m. 54; c. 6. ORGANIC CHEMISTRY. B.A., DePauw, 51; Am. Platinum Works fel, Wayne Ave, 52-53, M.S., 53, fel, 55-59, Ph.D.(chem), 58. Asst, Wayne State, 51-53; sr. res. chemist, Riker Labs, Inc, 52-55; HEAD, CHEM. & DRUG PROCUREMENT SECT., CANCER CHEMOTHER. NAT. SERV. CTR., NAT. CANCER INST., 65- Chem. C., 53-55. Am. Chem. Soc.; Am. Assn. Cancer Res. Synthesis; chemistry of natural products; structure determination; pharmaceuticals; cancer chemotherapy. Address: 8365 Tuckerman Lane, Pocomac, MD 20684.

RICHARD (RICHARD) (WILSON), b. Sept. 2, 38; m. 64; c. 2. NUCLEAR ENGINEERING. B.S. Carnegie-Mellon Univ. 60; Nat. Sci. Found. coop. fel, Pa. State Univ. 62 & 63, M.S., 63, Atomic Energy Comm. traineeship, 67; Ph.D.(nuclear eng), 63. Mech. engr, Atlantic Res. Corp, summer 60; prof. U.S. Army reactors group, Atomic Energy Comm, 64-66; ASST. PROF. NUCLEAR ENG, UNIV. FLA, 68- Reactor superv. Univ. Fla, 69-71; sr. nuclear engr, Fla. Power Corp. summer 71; Am. Soc. Eng. Educ-Ford Found. resident fel. prog. consult. engr, Gilbert Assoc., Inc, 71-72. C.Eng. U.S.A., 44-69, Capt. Am. Nuclear Soc.; Am. Soc. Eng. Educ. Nuclear reactor power calibrations; neutron diffraction from vibrating crystals; thermal and hydraulic analysis; radionuclide transport through the environment; environmental aspects of electric power plants; teaching methods. Address: 22 Nuclear Sciences Bldg, University of Florida, Gainesville, FL 32601.

EDWIN THOMAS, JR. b. Johnstown, Pa, Aug. 7, 21; m. 51; c. 1. CHEMISTRY. B.S., Pa. State, 43. Res. engr. corrosion, res. labs., Aluminum Co. of Am., 43-59, SECT. HEAD CHEM. METALL. DIV., ALCOA RES. LABS., 59-. Fel. Am. Inst. Chem. Sci. Res. Soc. Am. Solution of fundamental and practical corrosion problems dealing with aluminum, its alloys and other metals. Address: 450 Dakota Dr, New Kensington, PA 15063.

CHRISTIAN L. b. Vancouver, Wash, Apr. 3, 09; m. c. 5. PHYSICS. B.S., U.S. Naval Acad., 30; M.S., Harvard, 39. Mem. mat. surv. anal. group, U.S. Navy, Australia & Japan, 45, mem. staff, electronics coord. group, Bikini Atomic Tests, 49, dir. Bikini sci. resurvey, 47, command. & elec. system, Bikini Atomic Tests, 49, res. & develop. eng. U.S. Navy, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 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95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 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- SHULMAN, HERMAN L. b. N.Y.C. Feb. 24, 22; m. 42; c. 2. B.Ch.E. City Col. New York, 42; Du Pont fel. Pennsylvania, 47-48. M.S. 48, Ph.D.(chem. eng.), 50. Chem. engr. Gen. Motors Corp., 42-43; Barron Div. Allied Chem. & Dye Corp., 43-46; res. chem. engr. Publicker Indus. Inc. 46-47; asst. prof. CHEM. ENG., CLARKSON COL. TECHNOL., 48-51. assoc. prof., 51-54. PROF., 54-. DIR. DIV. RES., 59-. DEAN GRAD. SCH., 64-. V. PRES. & DEAN SCH. ENG., 68-. assoc. dir. div. res., 54-59, chmn. dept., 59-64. Am. Soc. Eng. Educ.; Am. Chem. Soc.; Am. Inst. Chem. Eng. Mass transfer absorption; packed columns; ion exchange; gas-bubble columns; organic processes; flowmeters. Address: Clarkson College of Technology, Potsdam, NY 13676.
- SHULMAN, HYMAN L. b. Warren, Ohio, Feb. 25, 19; m. 43; c. 2. ELECTRONICS. B.A. California, Los Angeles, 48, M.A. 51. Mem. staff, Northrop Aircraft Corp., 51-54; Hughes Aircraft Corp., 54-55; sr. mem. tech. staff, Space Tech. Labs. Inc., 55-58; mem. sr. staff, electronics dept., Rand Corp., 58-59; dir. res. & develop. labs, AC Spark Plug Div. Gen. Motors Corp., 59-63; MEM. TECH. STAFF, RAND CORP., 63-. Guidance and navigation; flight control and weapons systems; dynamics. Address: 10426 Lindbrook Dr., Los Angeles, CA 90024.
- SHULMAN, JONAS ALVIN, b. Baltimore, Md., Sept. 5, 38; m. 58; c. 2. INTERNAL MEDICINE. Dartmouth Col., 53-56; M.D. Univ. Md., 60. Intern. internal med., Univ. Md. Hosp., Baltimore, Md., 60-61; asst. resident med., Univ. Wash., 61-62; R.G. Petersdorf fel. infectious diseases & med., 62-64, instr. & chief resident med., Univ. Wash. Hosp., 66-67; asst. prof. INFECTIOUS DISEASES, SCH. MED., EMORY UNIV., 68-70. ASSOC. PROF. & COORD. CLIN. CURRICULUM, 70-. DIR. DEPT. MED. & PREV. MED., 72-74, Am. Bd. Internal Med. 63. U.S.P.H.S., 64-66. Infectious Disease Soc. Am. Epidemiology of hospital infections; antibiotics; clinical pharmacology and efficacy studies. Address: Division of Infectious Diseases, Emory University School of Medicine, 69 Butler St., S.E., Atlanta, GA 30303.
- SHULMAN, LAWRENCE E(DWARD), b. Boston, Mass., July 25, 19; m. 49; c. 1. INTERNAL MEDICINE. A.B. Harvard, 41; Ph.D.(pub. health), Yale, 45; M.D., 49. Res. assoc., John B. Pierce Found., Conn., 42-45; intern MED., Hopkins Hosp., 49-50, asst. res. hosp., 52-53, physician, 53-54, SCH. MED., JOHNS HOPKINS UNIV., 50-52, instr., 53-56, asst. prof., 58-63, ASSOC. PROF., 63-. DIR., CONNECTIVE TISSUE DIV., DEPT. MED., 54-. Sr. investigator, Arthritis & Rheumatism Found., 57. Consult., Nat. Inst. Arthritis & Metab. Diseases. AAAS; Am. Rheumatism Assn.; Assn. Am. Med. Colls.; Am. Fedn. Clin. Res.; N.Y. Acad. Sci. Connective tissue disorders, including rheumatic diseases, especially collagen disorders; immunologic and epidemiologic studies. Address: 916 Clinical Science Bldg., Johns Hopkins Hospital, Baltimore, MD 21205.
- SHULMAN, LEON J., b. Los Angeles, Calif., Sept. 22, 13; m. 49; c. 1. MEDICINE. B.A. California, Los Angeles, 35; M.D. Southern California, 40. Intern., Los Angeles County Hosp., Calif., 39-41; from intern to chief res., Margaret Hague Maternity Hosp., 42-45; instr. OBSTET. & GYN. SCH. MED., UNIV. SOUTH. CALIF., 45-56, asst. clin. prof., 54-59, ASSOC. CLIN. PROF., 59-. Private practice. Mem. attend. staff & consult., St. John's Hosp., 45-; jr. attend. staff, Los Angeles County Gen. Hosp., 45-55, sr. attend. 55-; attend. staff, Santa Monica Hosp., 59-. Dipl., Am. Es. Obstet. & Gynec., 47. Fel. Am. Med. Assn.; fel. Am. Col. Obstet. & Gynec.; fel. Am. Col. Surg. Address: 2200 Santa Monica Blvd., Santa Monica, CA 90404.
- SHULMAN, MORTON, b. Chicago, Ill., July 7, 33; m. 55; c. 3. MEDICINE, ANESTHESIOLOGY. B.S. Illinois, 55, M.D. 58. Asst. ANESTHESIOLOG., UNIV. ILL., 59-61, res. fel., 61-62, instr., 63-64, asst. prof., 64-70, ASSOC. PROF., 70-. Attend. anesthesiologist, Vet. Admin., 64-; vis. prof., Louisville, 69. Consult., col. vet. med., Illinois, 68-. U.S.A.F., 61-63, Capt. Am. Soc. Anesthesiol.; Int. Anesthesia Res. Soc. Cardiovascular pharmacology of vasoactive drugs; pharmacology of respiratory drugs; new general anesthetics; local anesthetics and analgesics. Address: Dept. of Anesthesiology, Illinois Masonic Hospital, 836 Wellington, Chicago, IL 60657.
- SHULMAN, NAHUM RAPHAEL, b. Hartford, Conn., June 23, 25; m. 49; c. 4. HEMATOLOGY, IMMUNOLOGY. Hopkins, 41-43. M.D. 47. Intern med., Harvard Med. Serv., Boston City Hosp., Mass., 47-48; asst. res., Cornell Med. Serv., Mem. Hosp., New York, 48-49, res., 49-50, chief res., 50-51; chief hemat. div., Naval Med. Res. Inst. & hematologist, Naval Hosp., Bethesda, Md., 55-57; CHIEF CLIN. HEMAT. BR., NAT. INST. ARTHRITIS, METAB. & DIGESTIVE DISEASES, 57-. Inst. & Damon Runyon clin. res. fcls. Sloan Kettering Inst., 49-51; prof. clin. med., Georgetown, 51-. Dipl., Am. Bd. Internal Med., U.S.N.R., 51-55; U.S.P.H.S.R., 57-. Lt. Am. Soc. Clin. Invest.; Am. Fedn. Clin. Res.; Int. Soc. Hemat.; Am. Assn. Immunol.; Transplantation Soc.; Assn. Am. Physicians. Blood clotting; enzymology; mechanisms of complement fixation; problems of immunohematology and blood cell physiology; drug sensitization; hepatitis. Address: National Institute of Arthritis, Metabolic & Digestive Diseases, Bethesda, MD 20014.
- SHULMAN, ROBERT GERSON, b. N.Y.C., Mar. 3, 24; m. 52; c. 3. CHEMICAL PHYSICS. A.B. Columbia, 43, A.M., 47, Ph.D.(chem), 49. Atomic Energy Comm. fel., Calif. Inst. Tech., 49-50; head semiconductor res., Hughes Aircraft Co., 50-53; MEM. TECH. STAFF, BELL TEL. LABS. INC., 53-. Rask Oersted lectr., Copenhagen, 59; Guggenheim fel. lab. molecular biol., Med. Res. Coun. Eng., 61; vis. prof., Ecole Normale Supérieure Univ. Paris, 62; Appleton lectr., Brown Univ., 65; summer vis. prof., Univ. Tokyo, 65; Reilly lectr., Univ. Notre Dame, 69; vis. lectr., Princeton, 71-72. U.S.N.R., 44-46, Lt. Jg. Fel. Am. Phys. Soc.; Biophys. Soc. Microwave superconductors; semiconductors; nuclear magnetic resonance; molecular orbital theory of transition metal complexes; transition state theory; DNA; metallo-enzymes; phage genetics; paramagnetic methods; synthesis of nucleic acids. Address: Biophysics Dept., Bell Labs., Murray Hill, NJ 07974.
- SHULMAN, SETH DAVID, b. Lynn, Mass., Mar. 11, 41; m. 69; c. 1. ASTROPHYSICS. B.A. Harvard, 33; Ph.D.(physics), Columbia Univ., 70. RES. PHYSICIST, E.O. HULLBERT CTR. SPACE RES., NAVAL RES. LAB., 70-. Am. Astron. Soc.; Am. Phys. Soc. X-ray astronomy and studies of the intergalactic medium. Naval Research Lab., Washington, DC
- SHULMAN, SIDNEY, b. Baltimore, Md., Aug. 22, 23; m. 45, 68; c. 6. IMMUNOCHEMISTRY. B.S. George Washington, 44; Ph.D.(chem), Wisconsin, 49. Assoc. Allegany Ballistics Lab., U.S. Army Ballistics Missile Agency, Md., 44-46; asst. chem., Wisconsin, 46-48, proj. assoc., 49-52, assoc. immunoch. sch. med., State Univ. N.Y. Buffalo, 52-54, asst. prof., 54-58, assoc. prof. immunoch. & biophys., 58-65, PROF., immunoch. 65-68; MICROBIOL., NEW YORK MED. COL., 68-. chmn. dept., 68-69. Lederle med. faculty fel., 54-57; U.S. Pub. Health Serv. sr. res. fel., 58-62; Nat. Insts. Health res. career award, 63-68; consult. immunol., Buffalo Vet. Admin. Hosp., 64-. Fulbright travel award, 65; Commonwealth Fund travel award, 65; mem. Int. Coord. Com. Immunol. Reproduction. AAAS; Am. Chem. Soc.; Am. Soc. Biol. Chem.; Am. Soc. Microbiol.; Am. Acad. Allergy; Am. Soc. Hemat.; Soc. Exp. Biol. & Med.; Soc. Cryobiol.; N.Y. Acad. Sci.; Brit. Biochem. Soc.; Am. Fertil. Soc.; Soc. Study Reproduction. Tissue proteins; autoantibodies; physical chemistry of proteins; cryobiology; urogenital tract antigens and enzymes; immunology of reproduction and infertility. Address: Dept. of Microbiology, New York Medical College, New York, NY 10029.
- SHULMAN, SOL, b. Smorgon, White Russia, Nov. 6, 29; U.S. citizen; m. 53; c. 4. ORGANIC & POLYMER CHEMISTRY. B.S. Washington (Seattle), 52; M.S. Wisconsin, 54; Ph.D.(chem), N.Dak. State, 63. Teaching asst. chem., Wisconsin, 53-54; res. chemist, Archer-Daniels-Midland Co. Minn., 54-59; instr. N.Dak. State, 59-64, asst. prof., 64-65; assoc. prof. CHEM., Mourhead State Col., 65-66, prof., 67-69, chmn. dept., 68-69; PROF. & HEAD DEPT., ILL. STATE UNIV., 69-. Fel. AAAS; Am. Chem. Soc.; fel. Am. Inst. Chem. Chemistry of lipids; synthesis. Address: Dept. of Chemistry, Illinois State University, Normal, IL 61761.
- SHULMAN, YECHIEL, b. Tel Aviv, Israel, Jan. 28, 30; nat. m. 59; c. 3. ENGINEERING, MANAGEMENT. S.B.(aeronaut. eng.), S.B.(bus. & eng. admin) & S.M. Mass. Inst. Tech., 54, Du Pont fel., 53-54, 56-57, Sc.D.(aeronaut. & astronaut. eng.), 59; Univ. Chicago, 71-72. Res. engr., aeroelastic & struct. res. lab., Mass. Inst. Tech., 54-56, asst., 57-59; asst. prof. mech. eng. tech. inst., Northwest Univ., 59-62, assoc. prof. mech. eng. & astronaut., 62-67; res. consult., ANOCUT ENG. CO., 67-68, V. PRES. ADVAN. ENG. 69-. DIR. ELECTRONIC SYSTEMS GROUP, 70-. Consult., Am. Mach. & Foundry Co., 60-62; res. div., Gen. Am. Transportation Corp., 62-67; mem. res. & develop. com. Nat. Mach. Tool Builders Assn. Israel Defense Army, 48-50. Am. Inst. Aeronaut. & Astronaut.; Soc. Mfg. Eng.; Am. Soc. Eng. Educ.; Am. Soc. Mech. Eng. Electrochemical machining; digital control systems for process machinery; laser metrology, aerothermoelasticity; shell structures; aerodynamics and optimization; structural dynamics; flight mechanics. Address: 1248 Ash St., Winnetka, IL 60093.
- SHULT, ERNEST E., b. Tonica, Ill., Sept. 29, 35; m. 57; c. 2. ALGEBRA, MICROBIAL GENETICS. B.A. Southern Illinois, 58, M.A. 60; Nat. Sci. Found. fel. & Ph.D.(math), Illinois, 64. Res. assoc. genetics of yeast, biol. res. lab., Southern Illinois, 54-57, chief theoretician, 58-61, instr. math, 63-64, asst. prof., 64-65; Nat. Sci. Found. fel., Chicago, 65-66; assoc. prof. MATH., South. Ill. Univ., 66-69, PROF., 69-70; UNIV. FLA., 70-. Mem. Inst. Advan. Study, 68-69. U.S.A., 57-58, Res., 58-63. Am. Math. Soc. Abstract algebra; microbial genetics, especially yeast genetics; theory of finite groups. Address: Dept. of Mathematics, University of Florida, Gainesville, FL 32601.
- SHULTS, MAYO (LENWOOD), b. Kans., Oct. 20, 17; m. 43; c. 2. MATHEMATICS. A.B., Ft. Hays Kans. State Col., 38, fel., 38-39, M.S., 39; M.S., Calif. Inst. Technol., 44; Kansas, 47-48, 64-65, Nat. Sci. Found. summer grant, 59, 60, summers, 61, 62, Okla. State, 51, 52. Instr. math, high sch., Kans., 39-41; Garden City Jr. Col., 41-43, 46-47; asst. instr., Kansas, 47-48; instr., North. Okla. Jr. Col., 48-58, chmn. dept., 57-58; asst. prof. MATH., PANHANDLE STATE COL., 58-63, assoc. prof., 63-. ACTING HEAD DEPT., 72-U.S.N.R., 43-46. Address: 202 N. Perkins, Guymon, OK 73942.
- SHULTS, WILBUR D(OTRY), II, b. Atlanta, Ga., Nov. 24, 29; m. 50; c. 3. ANALYTICAL CHEMISTRY. A.B., Emory, 50, M.S., 51; Ph.D.(chem), Indiana, 66. From jr. chemist to assoc. chemist, OAK RIDGE NAT. LAB., 51-55, CHEMIST & GROUP LEADER ANAL. CHEM., 57-. Chem. C. U.S.A., 55-57. Am. Chem. Soc. Instrumental analysis. Address: Oak Ridge National Lab., Oak Ridge, TN 37830.
- SHULTZ, ALLAN R., b. Huntington, Ind., Jan. 8, 26; m. 49; c. 4. PHYSICAL CHEMISTRY. A.B. Manchester Col., 48; Ph.D.(chem), Cornell, 53. Res. assoc. chem. Mass. Inst. Tech., 52-54; RES. CHEMIST, Minn. Min. & Mfg. Co., 54-63; GEN. ELEC. RES. & DEVELOP. CTR., SCHENECTADY, 63-AAAS; Am. Chem. Soc. Polymer chemistry and physics; radiation chemistry of polymers. Address: 111 Acorn Drive, Scotia, NY 12302.
- SHULTZ, CHARLES H., b. Lancaster, Pa., May 29, 36. GEOLOGY. B.S. Franklin & Marshall Col., 53; univ. summer fel., Ohio State, 60, Nat. Sci. Found. fcls. 61-62, Ph.D.(petrol), 62. Geologist, Humble Oil & Ref. Co., 62-64; asst. prof. GEOL., Ohio State Univ., 64-70; ASSOC. PROF., SLIPPERY ROCK STATE COL., 70-. Geol. Soc. Am.; Am. Geophys. Union. Tertiary volcanic petrology; radar as a remote sensing device for geologic data; tectonics and metamorphism of the Appalachian Mountains. Address: Dept. of Geology, Slippery Rock State College, Slippery Rock, PA 16057.
- SHULTZ, C(LIFFORD) G(LEN), b. Wichita, Kans., Sept. 9, 24; m. 50; c. 3. ANALYTICAL & WATER CHEMISTRY. B.A. McPherson Col., 49; Ph.D.(chem), New Mexico, 57. Asst. prof. chem., Eastern New Mexico, 55-56; res. chemist, Mich. Chem. Corp., 56-57, group leader anal. res., 57-60; asst. prof. chem., Evansville Col., 60-66; CONSULT., 66-. PRES. NAT. LAES. INC., 69-. Nat. Sci. Found. res. grants, Univ. Colo., 61, Ore. State Univ., 62, 63 & Ind. Univ., 64. U.S.A., 43-48. Am. Chem. Soc. Am. Inst. Chem. Educ. Pollution Control Found. Water and industrial waste treatment and management. Address: 610 S. Rotherwood, Evansville, IN 47714.
- SHULTZ, FRED T(OWNSEND), b. Grinnell, Iowa, Mar. 5, 23; m. 61; c. 4. GENETICS. A.B., Stanford, 47; Ph.D.(genetics), Univ. Calif., Berkeley, 52. Asst. POULTRY HUSB. Univ. Calif., 49-52, jr. res. geneticist, 52-53, Res. assoc., 53; DIR. BIOL. FRONTIERS INST., 60-. Pres. Annual Broodling Consult., 52-. U.S.A.A.P., 42-45, 2nd Lt. Am. Poultry Sci. Assn. (Pres. 1949-53); Genetics Soc. Am.; Am. Genetics Assn.; Soc. Study Evolution; Biochem. Soc. (Pres. 1952-53); Genetics Soc. Can. World Poultry Sci. Assn.; Nat.

SMULYAN, HAROLD, b. Phila, Pa, Jan. 2, 29; m. 52; c. 3. INTERNAL MEDICINE, CARDIOLOGY. A.B., Pennsylvania, 49; M.D., Buffalo, 53. Instr. MED. STATE UNIV. N.Y. UPSTATE MED. CTR., 59-60, asst. prof. 60-65, ASSOC. PROF., 65- U.S.A.F. 55-57, Capt. Am. Fedn. Clin. Res. Am. Heart Assn. Hypertension; circulatory control; exercise physiology. Address: Dept. of Medicine, State University of New York Upstate Medical Center at Syracuse, 750 E. Adams St, Syracuse, NY 13210.

SMURA, BRONISLAW B, b. Syracuse, N.Y., Aug. 9, 30; m. 52; c. 2. CHEMICAL ENGINEERING. B.Ch.E., Syracuse, 52, M.Ch.E. 54; Ph.D.(chem. eng), 68. CHEM. ENGR. ALLIED CHEM. CORP, 57- Nat. Guard, 48-51, Capt. Am. Inst. Chem. Eng. Rates of physical adsorption; detonation hazards in tail gas from commercial chlorine liquefiers; mechanism of reaction between organic compounds and halogen acids; mass transfer by diffusion through a high temperature inert gas; high temperature fluid bed operation; chlorine plant technical advisement. Address: Allied Chemical Corp, P.O. Box 6, Solvay, NY 13209.

SMUTNEY, ROBERT (ROOSEVELT), b. Chicago, Ill, Sept. 7, 27; m. 53; c. 3. CHEMICAL ENGINEERING. B.S., Illinois, 51. Chem. engr, exp. sta, Hercules Powder Co, 51; ABBOTT LABS, 52-60, group leader, develop. eng. sect, 60-64, sect. head, chem. eng. sect. 64-66, biochem. & pharmaceut. eng. 66-68, mgr. develop. eng. 68-70, MGR. PHARMACEUT. PROD. ENG. 70- Start-up team leader, P.R. Fermentation plant, 68. U.S.M.C. 44-47. Assoc. mem. Am. Inst. Chem. Eng. Engineering aspects of biological-biochemical synthesis; fractional distillation; electrochemical operations; ion exchange processes; pyrolytic syntheses. Address: Abbott Labs, D550, 1400 Sheridan Rd, North Chicago, Ill 60064.

SMUTNY, E(DGAR) JOSEF, b. N.Y.C., Apr. 20, 28. ORGANIC CHEMISTRY. B.A., Colorado, 48; Allied Chem. & Dye Corp. fel., Minnesota, 52-53, Ph.D. (chem), 53. Mem. staff, Allied Chem. & Dye Corp, 48-49; asst. org. chem., Minnesota, 50-52; res. fel., Calif. Inst. Tech, 53-55; res. chemist, SHELL DEVELOP. CO, 55-63, RES. SUPVR, 68- Am. Chem. Soc; The Chem. Soc. Small ring compounds; strain energy; photochemistry; free radical chemistry; heterocyclic chemistry; organometallic chemistry; sulfur compounds; homogeneous palladium catalysis; heterogeneous catalysis. Address: General Chemistry Dept, Shell Development Co, Houston, TX 77001.

SMUTZ, MORTON, b. Twin Falls, Idaho, Jan. 10, 18; m. 45. CHEMICAL ENGINEERING. B.S., Kans. State Col, 40, M.S. 41; Ph.D.(chem. eng), Wisconsin, 50. Chem. engr, Monsanto Chem. Co, 41; asst. prof. chem. eng, Bucknell, 49-51; assoc. prof., Iowa State, 51-55, prof. & head dept, 55-61; asst. dir, Ames Lab, U.S. Atomic Energy Comm, 53-64, dep. dir, 64-69; ASSOC. DEAN ENG. RES, UNIV. FLA, 69- U.S.A., 41-46, Maj. Am. Chem. Soc; Am. Soc. Eng. Educ. Am. Inst. Chem. Eng. Solvent extraction. Address: 300 Engineering Bldg, University of Florida, Gainesville, FL 32601.

SMYLLIE, DOUGLAS EDWIN, b. New Liskeard, Ont, June 22, 36; m. 64; c. 2. GEOPHYSICS. B.Sc., Queen's (Ont), 58; M.A., Toronto, 59, Ph.D.(physics), 63. Fel. GEOPHYS., Toronto, 64; asst. prof., Western Ontario, 64-68; UNIV. B.C., 68-71, ASSOC. PROF., 71- Nat. Res. Coun. Can. operating grant, 65-68. Am. Geophys. Union; fel. Royal Astron. Soc. Rotation of the earth; Chandler wobble; main magnetic field; elasticity theory of dislocations. Address: Dept. of Geophysics, University of British Columbia, Vancouver 8, B.C., Can.

SMYLLIE, ROBERT EDWIN, b. Lincoln County, Miss, Dec. 25, 29; m. c. 3. MECHANICAL ENGINEERING. B.Sc., Miss. State Univ, 52, M.Sc. 56; Sloan fel., Mass. Inst. Technol., 66-67, M.Sc. 67. Indust. engr, Ethyl Corp, Tex, 52-54; instr. mech. eng., Miss. State Univ, 54-56; lead engr, Skybolt Missile Syst. thermo-conditioning syst., Douglas Aircraft Co, Calif, 56-62; chief, Apollo Support Off, Crew Sys. Div, MANNED SPACECRAFT CTR, NASA, 62-66, asst. chief div, 67-68, acting chief, 68-70, CHIEF, CREW SYSTEMS, DIV, 70- Mem. U.S. Del. engaged in discussions with U.S.S.R. to establish common docking systems for spacecraft of the two countries. Except. serv. medal, NASA, 69; Victor Prather Award, 71. Am. Inst. Aeronaut. & Astronaut. Analyses, design and development in specific advanced system areas such as space suits, extravehicular activity support hardware and environmental and thermal control subsystems. Address: 1215 Woodland, Seabrook, TX 77568.

SMYRK, CHARLES M(CAHAN), JR, b. Baltimore, Md, June 18, 27; m. 52; c. 4. CHEMISTRY. B.A., Hopkins, 51; Temple, 52-54. Chemist, Marshall Lab, E.I. DU PONT DE NEMOURS & CO, INC, 51-55, develop. chemist, 55-60, assoc. 60-62, supvr. Marshall Lab, 62-66, TECH. COORD. TEFLON FINISHES, 66- U.S.A.F., 45-47. Organic coatings; resins; polymers. Address: 308 E. Lancaster Ave, Wynnewood, PA 19096.

SMYRNOTIS, P(AULINE) Z(OE), b. Williamsport, Pa, Mar. 21, 24. BIOCHEMISTRY. B.S., George Washington, 48, M.S., 53; Ph.D., Georgetown, 56. BIOCHEMIST, NAT. INSTS. HEALTH, 49- Am. Soc. Microbiol. Intermediary metabolism. Address: Lab. of Biochemistry, Bldg. 3, Room 106, National Heart & Lung Institute, National Institutes of Health, Bethesda, MD 20014.

SMYSER, GERALD STANLEY, b. Phila, Pa, Nov. 23, 44; m. 67; c. 1. ANATOMY. B.S., Muhlenberg Col, 66; Nat. Insts. Health trainee & Ph.D.(anat), Temple Univ, 71. ASST. PROF. ANAT. COL. MED. & LECTR. ORAL BIOL. COL. DENT, UNIV. SASK, 71-, Med. Res. Coun. Can. grant, col. med, 71-73. Neuroanatomy, especially central nervous system terminations of vagus nerve afferent fibers. Address: Dept. of Anatomy, University of Saskatchewan College of Medicine, Saskatoon, Sask, Can.

SMYTH, CHARLES P(HELPS), b. Clinton, N.Y., Feb. 10, 95; m. 55. PHYSICAL CHEMISTRY. A.B., Princeton, 16, A.M. 17; Ph.D.(chem), Harvard, 21; Hon. D.Sc., Univ. Toronto, 70. Asst. Chemist, Nat. Bur. Stand., 37, instr. CHEM., PRINCETON, 20-24, asst. prof. 23-27, assoc. prof. 27-38, prof. 38-58, David B. Jones prof. 58-63, EMER. DAVID B. JONES PROF. 63-, chemist, Manhattan Dist. Proj. 43-45. Corp. expert, Int. Critical Tables, 24; expert consult, Europ. Theater of Oper., U.S. Army, 45; chmn. Fulbright fel. adv. comt. chem, fel. bd. Nat. Sci. Found., 50-54; consult, Off. Naval Res, 63-, liaison scientist, London Off, Off. Naval Res, 69-70. Cert. apprecia-

tion, War Dept, 45; Off. Sci. Res. & Develop, 45; Medal of Freedom, U.S. Army, 47; cert. recognition pub. serv. U.S. Dept. State, 58. C.W.S. U.S.A., 18; U.S.N.R. 37-41, Lt. Comdr. Nat. Acad. Sci; Am. Chem. Soc.(Nichols Medal, 54); fel. Am. Phys. Soc; Am. Philos. Soc; fel. The Chem. Soc; Royal Inst. Gt. Brit. Electromotive forces of amalgams; vapor pressures; refraction; heat capacities; dipole moment and molecular structure; molecular rotation in solids; microwave absorption in liquids; dielectric constant and loss; molecular relaxation times. Address: Frick Chemical Lab, Princeton University, Princeton, NJ 08540.

SMYTH, CHARLEY J(OHNSON), b. Mart, Tex, Feb. 7, 09; m. 38; c. 3. MEDICINE. A.B., Michigan, 31, M.S. 38; M.D., Jefferson Med. Col, 35. Asst. physician Rackett arthritis res. Michigan, 38-41; instr. INTERNAL MED, Wayne, 41-49; asst. prof. SCH. MED, UNIV. COLO., DENVER, 49-54, asst. soc. prof., 54-67, PROF., 67-, dir. grad. & postgrad. med. educ., 49-54. Med. dir, Wayne County Gen. Hosp, 41-49; consult, U.S. Army. Am. Soc. Clin. Pharmacol. & Therapeut; fel. Am. Med. Assn; Am. Rheumatism Assn; Am. Fedn. Clin. Res; master Am. Col. Physicians. Arthritis and rheumatism; amino acid. Address: Dept. of Medicine, University of Colorado Medical Center, 4200 E. Ninth Ave, Denver, CO 80220.

SMYTH, DONALD M(ORGAN), b. Bangor, Maine, Mar. 20, 30; m. 51; c. 2. SOLID STATE CHEMISTRY. B.S., Maine, 51; Ph.D.(inorg. chem), Mass. Inst. Tech, 54. Sr. engr, Sprague Elec. Co, 54-61, head, solid state res., 61-71; ASSOC. PROF. METALL. MAT. SCI. & CHEM. & DIR. MAT. RES. CTR, LEHIGH UNIV, 71- Vis. instr., Williams Col.(Mass), 59-61; mem. mat. adv. panel, Gov. Sci. Adv. Comn, Commonwealth Pa. Am. Chem. Soc; Electrochem. Soc.(battery div. res. award. 60); Am. Inst. Chem; Am. Ceramic Soc. Defect structure and electrochemistry of inorganic solids. Address: Materials Research Center, Lehigh University, Bethlehem, PA 18015.

SMYTH, HAROLD THOMAS, b. Lisburn, North. Ireland, Feb. 7, 10; nat; m. 37, 60; c. 5. CERAMICS. B.Sc., Queen's (Ireland), 31, Porter scholar & M.Sc., 32; fel. Mass. Inst. Technol., 32-36, univ. scholar & Ph.D.(physics), 36. Jr. demonstr. physics, Queen's (Ireland), 31-32; res. physicist, Corhart Refractories Co, Ky, 36-45, dir. res., 45-48; res. physicist, applied physics lab, Hopkins, 48-49; res. specialist CERAMICS, RUTGERS UNIV., NEW BRUNSWICK, 49-58, PROF., 56- Physicist, Silver Spring Lab, Kellogg Corp, 48-49. AAAS; Am. Ceramic Soc. Spectroscopy; refractories; intensity measurements in arc spectrum of copper; structure of glass; mechanical properties of ceramic materials. Address: Wood Circle, East Brunswick, NJ 08816.

SMYTH, H(ENRY) D(WOLF), b. Clinton, N.Y., May 1, 98; m. 36. PHYSICS. A.B., Princeton, 18, S.M., 20, Ph.D.(atomic physics), 21; Ph.D.(atomic physics), Cambridge, 24; hon. Sc.D., Drexel Inst. Tech., 50. Case, 53, Hamilton Col, 65; hon. L. D., Rutgers Univ, 68. Nat. Res. Coun. fel. physics, Cambridge & Princeton, 21-24; instr. PRINCETON, 24-25, asst. prof. 25-29, asst. prof. 29-36, prof. 36-68, chmn. dept. 35-49, bd. sci. & eng. res., 54-59, univ. res. bd, 59-66, EMER. PROF. PHYSICS, 66- Mem. subcomt. physics, Nat. Res. Coun, 28-35; Guggenheim fel., Univ. Göttingen, 31-32; mem. U.S. Atomic Energy Comm, 49-54; U.S. rep. & ambassador, Int. Atomic Energy Agency, Vienna, 61-70. Civilian with Off. Sci. Res. & Develop; Nat. Defense Res. Comt; Consult, Manhattan Dist. Proj, U.S. Engrs, 43-45. Fel. Am. Phys. Soc.(pres, 57); fel. Am. Philos. Soc; Am. Nuclear Soc; Am. Acad. Arts & Sci. Ionization of gases; positive ray analysis; molecular structure; matter, motion and electricity; atomic energy. Address: 5 Lafayette Rd. W., Princeton, NJ 08540.

SMYTH, HENRY F(ELLD), JR, b. Phila, Pa, June 5, 03; m. 29; c. 2. TOXICOLOGY. B.S., Pennsylvania, 25, Ph.D.(med. scis), 34. Special investr, State Dept. Labor & Indust, Pa, 25-26; consult, 28-28; instr. sanit. chem., Pennsylvania, 28-37; fel. MELLON INST, 37-40, sr. fel., 40-47, admin. fel., 47-67, ADV. FEL., 67-; ADJ. PROF. OCCUP. HEALTH, GRAD. SCH. PUB. HEALTH, UNIV. PITTSBURGH, 67-, lectr. med. sch. & grad. sch. pub. health, 51-67. Partner, Smyth Lab, Pa, 26-37; secy-treas, Am. Bd. Indust. Hyg, 60-67. Civilian with Off. Rubber Reserve, 44. AAAS; Am. Chem. Soc; Am. Indust. Hyg. Assn.(dir, 46-49, exec. secy, 47-54, pres, 53-54, Donald E. Cummings Mem. Award, 56); Soc. Toxicol.(merit award, 66). Toxicity of organic industrial chemicals. Address: 41 Bel Aire Rd, Delmont, PA 15626.

SMYTH, JOHN B(RIDGES), b. Pembroke, Ga, June 8, 14; m. 38; c. 4. PHYSICS. B.S., Georgia, 34, M.S. 37; Ph.D.(physics), Brown, 42. Teacher, high sch, Ga, 34-35; asst. physics, Georgia, 35-37; physicist, Tenn. Eastman Corp, 37-38; asst. physics, Brown, 38-42; from assoc. physicist to physicist, U.S. Navy Electronics Lab, 42-55; PRES. & TECH. DIR. SMYTH RES. ASSOCS, 55- Mem. int. com. II, Int. Sci. Radio Union. AAAS; Am. Phys. Soc; Acoust. Soc. Am; fel. Inst. Elec. & Electronics Eng. Galvanomagnetic effects; supersonics; theory of wave propagation; transmission of supersonic waves through stratified media. Address: 5011 Helix Terr, La Mesa, CA 92041.

SMYTH, JOSEPH RICHARD, b. Louisville, Ky, Oct. 10, 41. GEOLOGY. MINERALOGY. B.S., Va. Polytech. Inst, 66; S.M., Univ. Chicago, 68, NASA trainee, 68-70, Ph.D.(mineral), 70. Res. fel. geol, Harvard, 70-72; Vis. FEL., LUNAR SCI. INST, 72- Mineral. Soc. Am; Geol. Soc. Am; Am. Geophys. Union. High temperature crystallography of rock-forming silicates. Address: Lunar Science Institute, 3303 NASA Rd. 1, Houston, TX 77058.

SMYTH, MICHAEL PAUL, b. Albany, N.Y., Oct. 2, 34; m. 59; c. 1. ELECTRICAL ENGINEERING, SYSTEMS ANALYSIS. B.S., Syracuse, 57; M.S., 59; Ph.D.(elec. eng), Pennsylvania, 63. Elec. engr, Gen. Elec. Co, 57, res. asst. radar display, Syracuse, 57-59, instr. elec. eng. Pennsylvania, 59-64, asst. prof. 64-66, asst. prof. ENG., WEDGWOOD COL, 67-71, PROF. & DIR. 71-; asst. consult. Res. Div. Co. Pa. Univ. Sch. Eng. Phila, 68-69, Mem. Franklin Inst., 64, Inst. Electrical & Electronic Eng. Methods of systems analysis; industrial educational methods. Address: School of Engineering, Widener College, Chester, PA 19013.

SMYTH, NICHOLAS PATRICK DILLON, b. Dublin, Ireland, Apr. 1, 24; nat; m. 55; c. 5. MEDICINE. B.Sc., Nat. Univ. Ireland, 46, M.Sc., 48, M.B., B.Ch.

- SHULMAN, HERMAN L, b. N.Y.C. Feb. 24, 22; m. 42; c. 2. B.Ch.E. City Col. New York, 42; Du Pont fel. Pennsylvania, 47-48. M.S. 48, Ph.D.(chem. eng.), 50. Chem. engr. Gen. Motors Corp., 42-43; Barrett Div., Allied Chem. & Dye Corp., 43-46; res. chem. engr., Publicker Indus. Inc., 46-47; asst. prof. CHEM. ENG. CLARKSON COL. TECH. POL., 48-51. Assoc. prof., 51-54, PROF., 54-. DIR. DIV. RES., 59-. DEAN GRAD. SCH., 54-. V. PRES. & DEAN SCH. ENG., 65-. assoc. dir. res., 54-59, chmn. dept., 59-64. Am. Soc. Eng. Educ.; Am. Chem. Soc.; Am. Inst. Chem. Eng. Mass transfer absorption; packed columns; ion exchange; gas-bubble columns; organic processes; flowmeters. Address: Clarkson College of Technology, Potsdam, NY 13676.
- SHULMAN, HYMAN L, b. Warren, Ohio, Feb. 25, 19; m. 43; c. 2. ELECTRONICS. B.A., California, Los Angeles, 48, M.A., 51. Mem. staff, Northrop Aircraft Corp., 51-54; Hughes Aircraft Corp., 54-55; sr. mem. tech. staff, Space Tech. Labs, Inc., 55-58; mem. sr. staff, electronics dept., Rand Corp., 58-59; dir. res. & develop. labs, AC Spark Plug Div., Gen. Motors Corp., 59-63; MEM. TECH. STAFF, RAND CORP., 63-. Guidance and navigation; flight control and weapons systems; dynamics. Address: 10426 Lindbrook Dr, Los Angeles, CA 90024.
- SHULMAN, JONAS ALVIN, b. Baltimore, Md., Sept. 5, 36; m. 58; c. 2. INTERNAL MEDICINE. Dartmouth Col., 53-56; M.D., Univ. Md., 60. Intern. internal med., Univ. Md. Hosp., Baltimore, Md., 60-61; asst. resident med., Univ. Wash., 61-62; R.G. Petersdorf fel. infectious diseases & med., 62-64, Instr. & chief resident med., Univ. Wash. Hosp., 66-67; asst. prof. INFECTIOUS DISEASES, SCH. MED. EMORY UNIV., 68-70. ASSOC. PROF. & COORD. CLIN. CURRICULUM, 70-. DIR. DEPT. MED. & PREV. MED., 72-Dipl. Am. Bd. Internal Med. 63. U.S.P.H.S., 64-66. Infectious Disease Soc. Am. Epidemiology of hospital infections; antibiotics, clinical pharmacology and efficacy studies. Address: Division of Infectious Diseases, Emory University School of Medicine, 69 Butler St, S.E., Atlanta, GA 30303.
- SHULMAN, LAWRENCE E(DWARD), b. Boston, Mass., July 25, 19; m. 59; c. 1. INTERNAL MEDICINE. A.B., Harvard, 41; Ph.D.(pub. health), Yale, 45, M.D., 49. Res. assoc., John B. Pierce Found., Conn., 42-45; intern med., Hopkins Hosp., 49-50, asst. res. hosp., 52-53, physician, 53, fel. SCH. MED., JOHNS HOPKINS UNIV., 50-52, instr., 53-56, asst. prof., 58-63, ASSOC. PROF., 63-. DIR., CONNECTIVE TISSUE DIV., DEPT. MED., 54-. Sr. investigator, Arthritis & Rheumatism Found., 57. Consult. Nat. Inst. Arthritis & Metab. Diseases. AAAS; Am. Rheumatism Assn.; Am. Med. Cols.; Am. Fedn. Clin. Res.; N.Y. Acad. Sci. Connective tissue disorders, including rheumatic diseases, especially collagen disorders; immunologic and epidemiologic studies. Address: 916 Clinical Science Bldg., Johns Hopkins Hospital, Baltimore, MD 21205.
- SHULMAN, LEON J, b. Los Angeles, Calif., Sept. 22, 13; m. 49; c. 1. MEDICINE. B.A., California, Los Angeles, 35; M.D., Southern California, 40. Intern., Los Angeles County Hosp., Calif., 39-41; from intern to chief res., Margaret Hague Maternity Hosp., 42-45; instr. OBSTET. & GYNEC. SCH. MED., UNIV. SOUTH. CALIF., 45-56, asst. clin. prof., 55-59, ASSOC. CLIN. PROF., 59-. Private practice. Mem. attend. staff & consult., St. John's Hosp., 45-; jr. attend. staff, Los Angeles County Gen. Hosp., 45-55, sr. attend., 55-; attend. staff, Santa Monica Hosp., 59-. Dipl. Am. Bd. Obstet. & Gynec., 47. Fel. Am. Med. Assn; fel. Am. Col. Obstet. & Gynec; fel. Am. Col. Surg. Address: 2200 Santa Monica Blvd, Santa Monica, CA 90404.
- SHULMAN, MORTON, b. Chicago, Ill., July 7, 33; m. 55; c. 3. MEDICINE, ANESTHESIOLOGY. B.S., Illinois, 55, M.D., 58. Asst. ANESTHESIOLOGIST, UNIV. ILL., 59-61, res. fel., 61-62, instr., 63-64, asst. prof., 64-70, ASSOC. PROF., 70-. Attend. anesthesiologist, Vet. Admin., 64-. vis. prof., Louisville, 69. Consult. col. vet. med., Illinois, 68-. U.S.A.F., 61-63, Capt. Am. Soc. Anesthesiol; Int. Anesthesia Res. Soc. Cardiovascular pharmacology of vasoactive drugs; pharmacology of respiratory drugs, new general anesthetics, local anesthetics and analgesics. Address: Dept. of Anesthesiology, Illinois Masonic Hospital, 836 Wellington, Chicago, IL 60657.
- SHULMAN, NAHUM RAPHAEL, b. Hartford, Conn., June 23, 25; m. 49; c. 4. HEMATOLOGY, IMMUNOLOGY. Hopkins, 41-43, M.D., 47. Intern med., Harvard Med. Serv., Boston City Hosp., Mass., 47-48; asst. res., Cornell Med. Serv., Mem. Hosp., New York, 48-49, res., 49-50, chief res., 50-51; chief hemat. div., Naval Med. Res. Inst. & hematologist, Naval Hosp., Bethesda, Md., 55-57; CHIEF CLIN. HEMAT. BR., NAT. INST. ARTHRITIS, METAB. & DIGESTIVE DISEASES, 57-. Inst. & Damon Runyon Clin. Res. fcls. Sloan Kettering Inst., 49-51; prof. clin. med., Georgetown, 51-. Dipl. Am. Bd. Internal Med. U.S.N., 51-55; U.S.P.H.S.R., 57-. Lt. Am. Soc. Clin. Invest.; Am. Fedn. Clin. Res.; Int. Soc. Hemat.; Am. Assn. Immunol.; Transplantation Soc.; Assn. Am. Physicians. Blood clotting; enzymology; mechanisms of complement fixation; problems of immunohematology and blood cell physiology; drug sensitization; hepatitis. Address: National Institute of Arthritis, Metabolic & Digestive Diseases, Bethesda, MD 20814.
- SHULMAN, ROBERT (GERSON), b. N.Y.C., Mar. 3, 24; m. 52; c. 3. CHEMICAL PHYSICS. A.B., Columbia, 43, A.M., 47, Ph.D. (chem.), 49. Atomic Energy Com. fel., Calif. Inst. Tech., 49-50; head senior conductor res., Hughes Aircraft Co., 50-53; MEM. TECH. STAFF, BELL TEL. LABS, INC., 53-Rask Orsted lectr., Copenhagen, 59; Guggenheim fel. lab. molecular biol., Med. Res. Coun. Eng. 61; vis. prof., Ecole Normale Supérieure (Univ. Paris, 62; Appleton lectr., Brown Univ., 65; summer vis. prof., Univ. Tokyo, 63; Reilly lectr., Univ. Notre Dame, 69; vis. lectr., Princeton, 71-72. U.S.N.R., 44-46, Lt. Jg. Fel. Am. Phys. Soc.; Biophys. Soc.; Microwave spectroscopy; semiconductor; nuclear magnetic resonance; molecular orbital theory of transition metal complexes. Visiting fellow to ONR; metallo-enzymes; phage genetics; paramagnetic metal ions; probes of membrane activity. Address: Biophysics Dept., Bell Labs., Murray Hill, NJ 07974.
- SHULMAN, SETH DAVID, b. Lynn, Mass., Mar. 11, 45; m. 69; c. 1. ASTROPHYSICS. B.A., Harvard, 63; M.D.(physics), Columbia Univ., 70. RES. PHYSICIST, E.O. HULL BEAT CTR. SPACE RES. NAVAL RES. LAB., 70-. Am. Astron. Soc.; Am. Phys. Soc. X-ray astronomy and studies of the interstellar medium. Address: Naval Research Lab., Washington, DC
- SHULMAN, SIDNEY, b. Baltimore, Md., Aug. 22, 23; m. 45, 68; c. 6. IMMUNOCHEMISTRY. B.S., George Washington, 44; Ph.D.(chem), Wisconsin, 49. Assoc., Allegheny Ballistics Lab., U.S. Army Ballistics Missile Agency, Md., 44-46; asst. chem., Wisconsin, 46-48, prof. assoc., 49-52, assoc. immunoch. chem., sch. med., State Univ. N.Y. Buffalo, 52-54, asst. prof., 54-58, assoc. prof. immunoch. & biophys., 58-65, PROF. immunoch. chem., 65-68; MICROBIOL., NEW YORK MED. COL., 68-. chmn. dept., 68-69. Lederle med. faculty fel., 54-57; U.S. Pub. Health Serv. sr. res. fel., 58-62; Nat. Insts. Health res. career award, 63-68; consult. immunol., Buffalo Vet. Admin. Hosp., 64-; Fulbright travel award, 65; Commonwealth Fund travel award, 65; mem. Int. Coord. Com. Immunol. Reproduction. AAAS; Am. Chem. Soc.; Am. Soc. Biol. Chem.; Am. Soc. Microbiol.; Am. Acad. Allergy; Am. Soc. Hemat.; Soc. Exp. Biol. & Med.; Soc. Cryobiol.; N.Y. Acad. Sci.; Brit. Biochem. Soc.; Am. Fertil. Soc.; Soc. Study Reproduction. Tissue proteins; autoantibodies; physical chemistry of proteins; cryobiology; urogenital tract antigens and enzymes; immunology of reproduction and infertility. Address: Dept. of Microbiology, New York Medical College, New York, NY 10029.
- SHULMAN, SOL, b. Smorgon, White Russia, Nov. 6, 29; U.S. citizen; m. 53; c. 4. ORGANIC & POLYMER CHEMISTRY. B.S., Washington (Seattle), 52; M.S., Wisconsin, 54; Ph.D.(chem), N.Dak. State, 63. Teaching asst. chem., Wisconsin, 53-54; res. chemist, Archer-Daniels-Midland Co. Minn., 54-59; instr., N.Dak. State, 59-64, asst. prof., 64-65; assoc. prof. CHEM., Moorhead State Col., 65-66, prof., 67-69, chmn. dept., 66-69; PROF. & HEAD DEPT., ILL. STATE UNIV., 69-. Fel. AAAS; Am. Chem. Soc.; fel. Am. Inst. Chem. Chemistry of lipids; synthesis. Address: Dept. of Chemistry, Illinois State University, Normal, IL 61761.
- SHULMAN, YECHIEL, b. Tel Aviv, Israel, Jan. 28, 30; nat. m. 50; c. 3. ENGINEERING, MANAGEMENT. S.B.(aeronaut. eng.), S.B.(bus. & eng. admin.) & S.M., Mass. Inst. Tech., 54, Du Pont fel., 53-54, 56-57, Sc.D.(aeronaut. & astronaut. eng.), 59; Univ. Chicago, 71-72. Res. engr., aeroleastic & struct. res. lab., Mass. Inst. Tech., 54-56, asst., 57-59; asst. prof. mech. eng. tech. inst., Northwest Univ., 59-62, assoc. prof. mech. eng. & astronaut., 62-67; res. consult., ANOCUT ENG. CO., 67-68, V. PRES. ADVAN. ENG., 69-. DIR. ELECTRONIC SYSTS. GROUP, 70-. Consult. Am. Mach. & Foundry Co., 60-62; res. div., Gen. Am. Transportation Corp., 62-67; mem. res. & develop. comt., Nat. Mach. Tool Builders Assn., Israel Defense Army, 48-50. Am. Inst. Aeronaut. & Astronaut.; Soc. Mfg. Eng.; Am. Soc. Eng. Educ.; Am. Soc. Mech. Eng. Electrochemical machining; digital control systems for process machinery; laser metrology, aerothermoelasticity; shell structures; astrodynamics and optimization; structural dynamics; flight mechanics. Address: 1248 Ash St, Winnetka, IL 60093.
- SHULT, ERNEST E, b. Tonica, Ill., Sept. 29, 35; m. 57; c. 2. ALGEBRA, MICROBIAL GENETICS. B.A., Southern Illinois, 58, M.A., 60; Nat. Sci. Found. fel. & Ph.D.(math), Illinois, 64. Res. assoc. genetics of yeast, biol. res. lab., Southern Illinois, 54-57, chief theoretician, 58-61, instr. math, 63-64, asst. prof., 64-65; Nat. Sci. Found. fel., Chicago, 65-66; assoc. prof. MATH., South. Ill. Univ., 66-69, PROF., 69-70; UNIV. FLA., 70-. Mem. Inst. Advan. Study, 68-69. U.S.A., 37-58, Res., 58-63. Am. Math. Soc. Abstract algebra; microbial genetics, especially yeast genetics; theory of finite groups. Address: Dept. of Mathematics, University of Florida, Gainesville, FL 32601.
- SHULTS, MAYO G(LENWOOD), b. Kans., Oct. 20, 17; m. 43; c. 2. MATHEMATICS. A.B., Ft. Hays Kans. State Col., 38, fel., 38-39, M.S., 39; M.S., Calif. Inst. Technol., 44; Kansas, 47-48, 64-65, Nat. Sci. Found. summer grant, 59, 60, summers, 61, 62, Okla. State, 51, 52. Instr. math, high sch., Kans., 39-41; Garden City Jr. Col., 41-43, 46-47; asst. instr., Kans., 47-48; instr., North Okla. Jr. Col., 48-58, chmn. dept., 57-58; asst. prof. MATH., FANHANDLE STATE COL., 58-63, assoc. prof., 63-. ACTING HEAD DEPT., 72-U.S.N.R., 43-46. Address: 202 N. Perkins, Guymon, OK 73942.
- SHULTS, W(ILBUR) D(OTRY), II, b. Atlanta, Ga., Nov. 24, 29; m. 50; c. 3. ANALYTICAL CHEMISTRY. A.B., Emory, 50, M.S., 51; Ph.D.(chem), Indiana, 66. From jr. chemist to assoc. chemist, OAK RIDGE NAT. LAB., 51-55, CHEMIST & GROUP LEADER ANAL. CHEM., 57-. Chem. C, U.S.A., 55-57. Am. Chem. Soc. Instrumental analysis. Address: Oak Ridge National Lab., Oak Ridge, TN 37830.
- SHULTZ, ALLAN R, b. Huntington, Ind., Jan. 8, 26; m. 49; c. 4. PHYSICAL CHEMISTRY. A.B., Manchester Col., 48; Ph.D.(chem), Cornell, 53. Res. assoc. chem., Mass. Inst. Tech., 52-54; RES. CHEMIST, Minn. Min. & Mfg. Co., 54-63; GEN. ELEC. RES. & DEVELOP. CTR., SCHENECTADY, 63-AAAS; Am. Chem. Soc. Polymer chemistry and physics; radiation chemistry of polymers. Address: 111 Acorn Drive, Scotia, NY 12302.
- SHULTZ, CHARLES H, b. Lancaster, Pa., May 29, 36. GEOLOGY. B.S., Franklin & Marshall Col., 58; univ. summer fel., Ohio State, 60, Nat. Sci. Found. fcls., 61-62, Ph.D.(petrol), 62. Geologist, Humble Oil & Ref. Co., 62-64; asst. prof. GEOL., Ohio State Univ., 64-70; ASSOC. PROF., SLIPPERY ROCK STATE COL., 70-. Geol. Soc. Am.; Am. Geophys. Union. Tertiary volcanic petrology; radar as a remote sensing device for geologic data; tectonics and metamorphism of the Appalachian Mountains. Address: Dept. of Geology, Slippery Rock State College, Slippery Rock, PA 16057.
- SHULTZ, C(LIFFORD) G(LEN), b. Wichita, Kans., Sept. 9, 24; m. 50; c. 3. ANALYTICAL & WATER CHEMISTRY. B.A., McPherson Col., 49; Ph.D.(chem), New Mexico, 57. Asst. prof. chem., Eastern New Mexico, 55-56; res. chemist, Mich. Chem. Corp., 56-57, group leader anal. res., 57-60; assoc. prof. chem., Evansville Col., 60-66; CONSULT., 66-. PRES. NAT. LAQS. INC., 69-. Nat. Sci. Found. res. grants, Univ. Colo., 61. Ore. State Univ., 62, 63 & Ind. Univ. Ct., U.S.A., 42-45. Am. Chem. Soc.; Am. Inst. Chem. & Metall. Pollution Control F. M. Water and wastewater treatment and management. Address: 810 S. Rotherwood, Evansville, IN 47111.
- SHULTZ, FRED T(OWNSEND), b. Grinnell, Iowa, Mar. 5, 23; m. 61; c. 4. GENETICS. A.B., Stanford, 47; Ph.D.(genetics), Univ. Calif., Berkeley, 52. Asst. POULTRY HUSB., Univ. Calif., 49-52, jr. res. geneticist, 52-53, res. assoc., 53-. DIR. BULL. FRONTIERS INST., 60-. Pres. Animal Breeding Consult., 52-. U.S.A.F., 42-45, 2nd Lt. Am. Poultry Sci. Assn.; pres., 53; Genetics Soc. Am.; Am. Genetics Assn.; Soc. Study Evolution; 1940-60.