

Executive Registry

65-4125/A

20 July 1965

DD/ST# 3294-65

ADM-10,1

Correspondence

Dear Bill:

I do appreciate so much your thoughtfulness in sending me additional information on the Defense Science Seminar which convenes on Monday, August 2nd. I would certainly love to be with you but unfortunately my assignment here in Washington just will not permit.

I do wish for you, however, the very best turn-out for the occasion, for it is a most worthwhile endeavor.

Warmest best wishes.

Sincerely,

W.F. Raborn

W. F. Raborn

Dr. W. G. McMillan
Department of Chemistry
University of California
Los Angeles, California 90024

lcc - DCI chrono
lcc - DCI alpha (official) STATINTL
lcc - ER w/cy incoming letter
lcc - [redacted] w/cy incoming letter for information only
lcc - Dr. Wheelon w/all basic for information.

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DEPARTMENT OF CHEMISTRY
LOS ANGELES, CALIFORNIA 90024
15. VII. 65

Vice Admiral William F. Raborn, Director
Central Intelligence Agency
Washington, D. C.

Dear Admiral Raborn:

I am sorry I was unable to reach you yesterday on the phone to explain the mission of the Defense Science Seminar and to extend more directly this invitation to address the Seminar on its opening day, Monday, 2 August. As described in last year's brochure (enclosed), our aim is to locate new, young and specially promising university scientists who have enough interest in defense problems to warrant bringing them up to speed in an intensive one-month exposure to the status, problems and potentialities in U.S. defense.

It has seemed very important at the outset to provide an overview from a lofty perspective on what I have called "U.S. Aims and the Threat". As godfather of the Seminar, Dr. Harold Brown will lead off with a discussion of the role of R&D in defense. I had thought to follow him with the kind of global military-technical-political overview which you could do so ably.

I realize that this invitation comes on short notice and at what is probably a hectic time for you. However, the Seminar is one of the more important long-range contributions to the future strength of our country, and represents a unique opportunity to inspire and proselytize this hand-picked group. A further consideration is that these bright young men are available as future consultants not only to the Department of Defense but also to your agency. I hope therefore you will weigh these advantages in with the dislocation in your schedule which your acceptance would undoubtedly involve. I might mention that if Dr. Brown follows last year's procedure, he will fly out on an Air Force jet; I have no idea of its feasibility, but if you could come together, perhaps even your travel time could be put to good use.

In the hope that you may be able to accept, I am enclosing several circulars containing information for Seminar visitors and an approximate list of attendees as well as the schedule as it now stands. You will see from last year's roster of speakers that we have very high-level support.

I look forward to your reaction, not only to this invitation but also to the concept of the Seminar and whether you feel its alumni might be useful to you in some way. I would appreciate it if you would let me know if there is anything we can do to make your acceptance easier or more likely. We would deem it a very real honor if you could come.

STATINTL
Sincerely yours

[Redacted signature]

W. G. McMillan, Chairman

WGM/esd

Enclosures

*the Defense
Science
Seminar*

August 1964



Approved For Release 2000/08/25 : CIA-RDP69B00596R000100190045-7

1965 DEFENSE SCIENCE SEMINAR

SCHEDULE SUMMARY

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	2. NATIONAL AIMS & THE THREAT	3. MISSILES & SPACE	4. NUCLEAR WEAPONS PHYSICS	5. COMMAND, CONTROL & COMMUNICATIONS	6. FIELD TRIP	
	9. NUCLEAR WEAPONS PHENOMENOLOGY & EFFECTS	10. FIELD TRIP	11. FIELD TRIP	12. RADAR & RE-ENTRY	13. ABM	
	16. CIVIL DEFENSE	17. CONVENTIONAL ARMS	18. COIN OPERATIONS	19. WORLD HOT SPOTS	20, FIELD TRIP	
	23. NAVAL SYSTEMS	24. ASW	25. FIELD TRIP	26. ABC WARFARE	27. ARMS CONTROL	

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DEPARTMENT OF CHEMISTRY
LOS ANGELES, CALIFORNIA 90024

30. VI. 65

NOTE: THIS DOCUMENT CONSTITUTES YOUR
OFFICIAL INVITATION: PLEASE
BRING IT WITH YOU.

TO: Attendees, 1965 UCLA/ARPA Defense Science Seminar

RE: Some Last-minute Details

This 11th-hour bulletin will be the last general announcement prior to the start of the Seminar, which will run from Monday, 2 August through Friday, 27 August 1965. Please respond promptly by answering, and returning in the enclosed envelope, the brief questionnaire on the last page of this bulletin.

ROSTER - Following is an updated roster of attendees:

<u>Name</u>	<u>Affiliation</u>	<u>Name</u>	<u>Affiliation</u>
L/Col Thomas J. Agnor, Jr.	Ft. Clayton	Alan J. Heeger	U Pennsylvania
Fred C. Anson	Cal Tech	W. E. Hicks	NOTS
Eugene C. Ashby	Georgia Tech	Carl R. Johnson	Wayne State U
Roy Austin	LRL	Miles V. Klein	U Illinois
Capt Thomas P. Baker, Jr.	AFBSD	Walter J. Lehmann	U Massachusetts
J. Douglas Balcomb	LASL	Bertram R. Levy	ONR
Everet H. Beckner	Sandia	Melville McClelland	LRL
Lawrence R. Bidwell	OAR	William D. McCormick	U Washington
Robert E. Boyle	Ft. Detrick	Maj Dorsey T. Mahin	WRAIR
Albert Chabai	Sandia	John F. Marchaterre	Argonne
Maj Henry A. Collin, Jr.	AFRDC	Albert J. Moscowitz	U Minnesota
Ralph S. Cooper	LASL	Roger D. Orr	NOL
Robert Curl	Rice U	Richard S. Palais	Brandeis U
Robert E. Davis	Purdue U	Cornelius J. Pings	Cal Tech
John Deutch	MIT	R. H. Prager	USN Elect Lab
Lloyd J. Dolby	U Oregon	Sidney Ross	Frankford Arsenal
Lawrence Dresner	ONRL	Martin Saunders	Yale U
Thomas A. Griffy	Stanford U	Maj Robert C. Smith	OAR
Capt John M. Gromek	AFSC	W. Von Winkle	USN UW Sound Lab
Paul C. Haake	UCLA	Lennard Wharton	U Chicago
Erich Hafner	Ft. Monmouth	Maj Irvin Williams	AEC
Sven R. Hartmann	Columbia U		

TRAVEL - Travel expenses of nonGovernment participants from home base to the Seminar and return are reimbursable at the regular University rate: the equivalent of air jet--tourist, unless certifiable unavailable. All participants eligible for travel expenses to be paid by the Seminar must provide receipts for all expenditures. Occasional and brief individual travel during the Seminar to meet previous commitments and permit maximum attendance at the Seminar will be supported on the same basis (to the extent of additional expenses attributable to Seminar attendance), but must have advance approval.

All attendees are expected to make their own travel arrangements to and from UCLA. Travel for field trips will be arranged by the Seminar. Government and Military personnel should bring along appropriate orders authorizing continuous travel for the month of August; their salary, travel and expenses must of course be borne by their home agencies.

PER DIEM - The standard University per diem rate of \$15/day will be paid non-Government participants living away from home. On regular meeting days when catered lunches are provided, this figure will be reduced to \$12.50. For nonGovernment attendees residing in the LA area, actual expenses will be reimbursed in lieu of a per diem (except on field trips); again receipts should be preserved.

HOUSING - For those who have not previously been sent copies, there are enclosed a current listing of local hotels and motels, and maps of the UCLA campus and Los Angeles area. To minimize dispersion (for aid in car pools, joint extracurricular activities, etc.) we have selected two nearby motels as Seminar residence headquarters:

BEL AIR SANDS - 11461 Sunset Blvd., just west of the San Diego Freeway
Single, \$11/day; Double, \$14/day, with kitchenette, add \$3; No monthly rate.
Pool, Dining Room, Cocktail Lounge, Free TV, 24-hour Switchboard

TROPIC PALMS - 10580 Wilshire Blvd., near Westwood Blvd.
Single, \$100/mo; Double, \$150/mo (double or twin beds); Suite, \$275/mo
(2 rooms, double or twin beds, sleeps four)
Pool, Coffee Shop, Free TV

Attendees bringing families may prefer to live near the beach. In any event, please specify on the attached questionnaire what, if any, housing arrangements you want us to make for you.

DIRECTIONS TO CAMPUS - UCLA is located in West Los Angeles ("Westwood Village"), with main campus entrance on Westwood Boulevard at LeConte Avenue, four blocks north of Wilshire Boulevard. Limousine service is available to the Village from the Los Angeles International Airport. If you are driving from the airport, take Century Blvd. due east to the San Diego Freeway northbound entrance; drive north on the freeway (~10 miles) to the Wilshire Blvd. off-ramp, taking the "east" fork, and proceed east on Wilshire to the third traffic light (Westwood Blvd.) from the freeway exit; a left (north) turn onto Westwood Blvd. then leads onto the UCLA campus. Other campus entrances are from Gayley Ave. at Buenos Ayres Drive, and from Hilgard Ave. at Manning (no left turn!) or Westholme. Note that the campus entrance through Tiverton Drive is now closed due to building construction.

SEMINAR LOCATION - Seminar sessions will be held in Room 3083 (entered through the Reception Room 3087) of the Chemistry Building (Building 37 on the campus map). Entrance to the Chemistry Building may be made from the west through the Court of the Sciences (at the third-floor level), from Buenos Ayres Drive to the east (at the first-floor level), or from the south via Lot 10B.

SECURITY CHECK-IN - Security check-in, involving confirmation of clearances, issuing Seminar ID cards, badges, notebooks, etc., will begin in Chem 3087 at 0800 on Monday, 2 August. Since Seminar security indoctrination is scheduled for 0945 hours, it will be appreciated if you are on deck early. On subsequent days, seminar sessions will start at 0900, with check-in at 0845.

IDENTIFICATION - You should bring along personal credentials, preferably a picture ID card from your base installation. Lacking that, driver's license, credit cards, etc. will speed security formalities. You should also bring along this letter which constitutes your personal invitation to the Seminar.

CLASSIFIED MATERIAL - The Seminar Document Control Center cannot assume accountability for classified material that attendees bring with them. However, a simple system is being set up for handling classified notes and other documents generated at the Seminar. Space for unclassified storage of brief cases will be provided; please do not plan to carry brief cases into and out of the meeting room.

PARKING - Parking will be provided as necessary in Lot 2. However, because this lot requires a Parcoa keycard, parking for the first day only will be in Lot MH (Myra Hershey Hall) on Manning near Buenos Ayres Drive, for which a one-day sticker is attached--to be returned if not used. Please indicate your parking needs on the attached questionnaire.

CLOTHING - The weather in Los Angeles during August may range from bright sunshine, with temperatures in the 90's, to rather cool days of overcast. (In any event, the Seminar meeting room is air-conditioned!) Nights are almost always cool. Thus, light clothing for day wear, augmented by a jacket during the evening is recommended. For use on field trips it would be advisable to bring along a windbreaker and a raincoat. By and large there will be no need for special field clothing; it is possible, but not necessary, to get dirty.

RSVP - Please fill in and post promptly the enclosed Questionnaire.

We have scheduled a slate of excellent speakers and interesting field trips and, with your help, look forward to a stimulating month.

STATINTL



W. G. McMillan, Chairman

WGM/mlw

Encls: One-day parking sticker
Campus & LA maps
Questionnaire & return envelope
List of hotels and motels

QUESTIONNAIRE

To prepare as much as possible in advance of the 1965 session of the Defense Science Seminar, we ask that you supply us promptly with this additional information:

Name: _____ Nickname: _____

ATTENDANCE: I definitely will willnot attend the August 1965 Defense Science Seminar.

ARRIVAL: I plan to arrive on _____ at _____ via _____.

ABSENCES: I will attend continuously and participate in all field trips _____:

With the following exceptions: _____.

HOUSING: I will be accompanied by _____ wife, and _____ children.

I will make my own housing arrangements.

Please reserve for me _____ at _____ for the dates
accomodation hotel or motel
of _____ in the approximate price range of _____.

LOCAL TRANS-

PORTATION: I plan to bring my car; rent a car; have no car.

CAMPUS

PARKING: I will willnot need a campus parking place.

UNIVERSITY

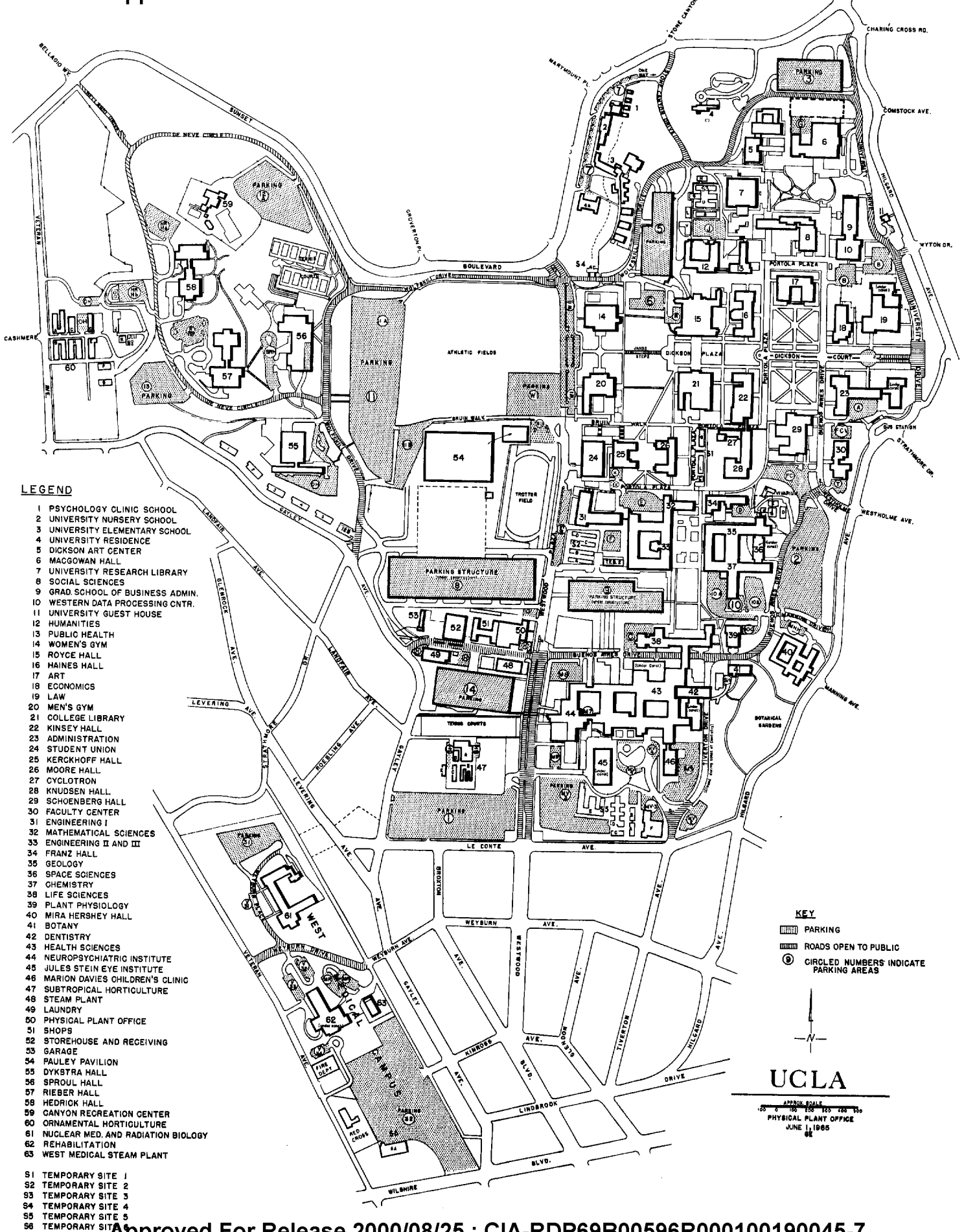
ATTENDEES: Please specify exact University salary rate as of August 1965:
\$ _____ per _____ months.
9 or 12?

VITA: For Seminar information and use in the annual brochure, please give complete personal and professional information following the form of the enclosed exemplar. If in doubt concerning abbreviations, please spell out.

FULL NAME (FIRST, MIDDLE, LAST) Professional Address, Including Zip Code, FIELD OF SPECIALIZATION. Birth place and date; single (s) or married (m), and date; number of children. Degree, School, Date (for each degree \geq A B.). Previous professional positions (Title, Affiliation, Inclusive Dates) in chronological order; PRESENT TITLE, POSITION, AFFILIATION, LOCATION, DATE BEGUN. Professional Honors, Assignments, Committees or Organizations, Licenses, etc. Technical accomplishments, interests.

DEFENSE INTERESTS - If now known - these, of course, may be changed or augmented after the Seminar.

PHOTOGRAPH: Please include a recent head-and-shoulders photograph, preferably about 3"x4", although other sizes are acceptable. If you have none available, it will be time enough if you bring one along in August. Otherwise we will have to arrange to have your photo taken here.



INFORMATION FOR LECTURERS AND VISITORS
UCLA/ARPA DEFENSE SCIENCE SEMINAR

INTRODUCTION - So that you know what you are committed to, I have advertised that "Every attempt will be made to provide perspicuous orientation in the form of order-of-magnitude and back-of-the-envelope calculations coupled with the relevant physical constants, numbers and state-of-the-art hardware." We are striving to achieve an atmosphere of informality that will promote questions and discussion.

AUDIENCE - This year's "class" of about 45--all men, generally 30-35 years of age--is composed of roughly 40% university scientists, 40% government scientists and 20% military personnel.

LOCATION - Seminar sessions will be held in an air-conditioned meeting room entered through the Reception Room 3087 of the UCLA Chemistry Building (Building 37 on the campus map). Entrance to the Chemistry Building may be made from the west through the Court of the Sciences (at the 3rd floor level), from Buenos Ayres Drive to the east (at the 1st floor level), or from the south via Lot 10B.

FACILITIES - The Seminar room is fully equipped with lectern, blackboard, chart easels, screen, and projection facilities for 3-1/4" x 4" or 2" x 2" slides, viewgraphs, opaques and 16mm movies with or without sound.

DIRECTIONS TO CAMPUS - UCLA is located in West Los Angeles ("Westwood Village"), with main campus entrance on Westwood Blvd., at LeConte Ave., 4 blocks north of Wilshire Blvd. Limousine service is available to the Village from the Los Angeles International Airport. If you are driving from the airport, take Century Blvd., due east to the San Diego Freeway northbound entrance; drive north on the Freeway (~ 10 miles) to the Wilshire Blvd. off ramp, taking the "East" fork, and proceed east on Wilshire to the 3rd traffic light (Westwood Blvd.) from the Freeway exit; a left (north) turn onto Westwood Blvd., then leads onto the UCLA campus. Other campus entrances are from Gayley Ave., at Buenos Ayres Drive, and from Hilgard Ave., at Manning (no left turn!) or Westholme. Note that the campus entrance through Tiverton Drive is now closed due to building construction.

PARKING - Seminar visitor parking will be in Lot MH (Mira Hershey Hall) on Manning near Buenos Ayres Drive, for which the necessary number of one-day stickers are attached. Please bring these stickers with you for attachment to the windshield of your car. Lot MH is a couple of hundred meters south of the east wing entrance to the Chemistry Building.

CLEARANCES - The Seminar is conducted at the Secret Restricted Data level. Please have your Security Office forward your clearance to: Security Officer, UCLA Defense Science Seminar, P. O. Box 24524, Los Angeles, California 90024.

LODGING - If we can assist in any way in making reservations for lodging or travel, please write or call the Seminar Secretary, Mrs. Mary Lue Wolff, 213-478-9711, X4491.

EXPENSES - Lecturers whose travel expenses and/or time are not paid for by their home institution should preserve all receipts and make sure to provide the Seminar Secretary with the accounting necessary to fill out our Travel Voucher, which should be signed before leaving.

the
DEFENSE SCIENCE SEMINAR

Sponsored by the
ADVANCED RESEARCH PROJECTS AGENCY

DEPARTMENT OF CHEMISTRY
UNIVERSITY OF CALIFORNIA
LOS ANGELES

Under Contract SD—262
with the
DEPARTMENT OF DEFENSE

August 1964

FOREWORD

The Defense Science Seminar was conceived in the spring of 1964 for the purpose of interesting a rising generation of academic scientists in the technological problems of Defense Research and Development. The generation of twenty-five years ago served its apprenticeship in the application of technology to national security during the Second World War. A substantial fraction of them have continued their interest and given valuable service in acting as a technical advisory community to the Federal Government both in defense and non-defense matters.

I hope that the Defense Science Seminars will interest some of the abler young academic scientists in current and future problems of defense and related technologies. We in the Defense Department intend to utilize the talents of its alumni on various scientific advisory panels. Perhaps some of them may even ultimately be persuaded to spend some fraction of their careers in Government service.

STATINTL



Director, Defense Research & Engineering

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Front Cover—MINUTEMAN Launch at Vandenberg Air Force Base (Courtesy Dr. J. R. Burnett, MINUTEMAN Program Director, Space Technology Laboratories)

BACKGROUND AND PURPOSE

The Defense Science Seminar grew out of a series of conversations with Dr. Harold Brown, Director of Defense Research & Engineering, during the fall and winter of 1963, deploring the seclusion from the affairs of government of one of the nation's greatest resources: the young intellectual leaders of our universities. Although many universities and their faculties were deeply involved in the great military projects of World War II, the application of science to national defense did not long remain a popular academic pursuit. Those university scientists and engineers who did maintain their interest and proficiency in defense problems have played a vital role, largely in scientific advisory and administrative capacities, in shaping our defenses and—with increasing frequency—in helping to formulate policy in other areas of government. Curiously, despite the recognized need for such advisors, these World War II project alumni have been allowed to become two decades older—and much busier—without the development of any mechanism for training their replacements, much less meeting the increased demands for such talent.

It is the aim of the Defense Science Seminar to help develop a new generation of responsible people, knowledgeable in the scientific-technical problems of defense and government, as a base from which might be drawn new technical committee members, counselors and even occasionally government administrators. Besides the traditional disdain of academicians for practical (especially military) applications, a major barrier in getting gifted but inexperienced university scientists involved in defense problems is one of classification: few defense contractors or government agencies are anxious to hire as a consultant anyone who doesn't already know the score, and the newcomer finds it difficult to establish a need-to-know without such backing.

A great impetus was provided by Dr. Brown's willingness to authorize a need-to-know for Seminar participants on the basis of their implied promise of continued interest. This has made it possible to expose the willing newcomer to a general background of the existing defense structure and the associated problems at least sufficient to qualify him for apprentice membership on some of the many government advisory committees. If these initiates then live up to their promise, they will in time grow into expert and productive senior advisors. This is the rationale behind the Defense Science Seminar.

ORGANIZATION

From a standing start in May 1964, the difficulties of finding suitable participants, arranging their clearances, devising a program of lectures, getting commitments from qualified lecturers, arranging rooms, security facilities, field trips, transportation, housing, finances, catering service and the myriad other details, seemed all but insuperable. The August date was accordingly chosen as the latest one which would not interfere with the resumption of university classes in the fall.

The first problem was to find promising young scientists having the necessary time and interest. Fortunately, much of the spade work in identifying bright young university people is done each year by the Alfred P. Sloan Foundation, which seeks just such scientists—in Chemistry, Physics and Mathematics—as possible recipients of Sloan Fellowships. Through the courtesy of Dr. Larkin H. Farinholt, Sloan Foundation Vice President for Scientific Affairs, recent lists of Sloan nominees were placed at our disposal. Using these lists partly as a guide, along with additional names gleaned from a near-infinity of reference phone calls to senior university scientists and engineers across the country, some hundred individuals were sent copies of the Seminar prospectus and questionnaire.

According to the prospectus, the Seminar would:

- be established on a trial basis for a period of three years, running for four weeks each during the summers of 1964, 1965 and 1966;
- involve an audience of about thirty participants drawn from the 30-35 age group and comprised largely of university assistant and associate professors in physics, chemistry and engineering, with a leavening of mathematicians, life scientists and military officers;
- invite distinguished civilian and military experts for periods of 1-3 days to offer lectures during mornings, and to conduct more intimate discussions in the afternoons (security classification no higher than Secret Restricted Data);
- provide housing, lecture rooms and security facilities on the UCLA campus;
- pay all expenses of invited university auditors, and in addition provide a stipend related to their regular salary (based on the standard 9-month academic appointment) according to the National Academy formula;
- request that invited military personnel and scientists from Government laboratories be given appropriate temporary reassignment for the duration of the Seminar.

Returns on the questionnaire were remarkably complete (77%), with only 18% indicating no interest whatever. Thus encouraged, OSD Contract SD-262 was executed for ARPA with UCLA to operate the Seminar. In order to give the military departments a strong interest and feeling of participation, Dr. Charles M. Herzfeld, Deputy Director of ARPA and designated Liaison Officer for the Seminar, contacted the Assistant Secretaries for R&D of the Army, Navy and Air Force by letter inviting them to: (a) select one of their staff to act as a point of contact and serve as a member of an informal Seminar steering committee; (b) suggest topics and lecturers for the Seminar; (c) nominate officer and civilian candidates from their respective Services to attend as participants; (d) consider ways and means of utilizing their graduates of the Seminar on various scientific committees; and (e) assist with the funding of the Seminar to the extent of one-sixth each of the total cost.

Except for the funding clause (e), the same invitation was addressed to the Chairman of the Atomic Energy Commission, Dr. Glenn T. Seaborg; the President's Science Advisor, Dr. Donald F. Hornig; the Chairman of the Defense Science Board, Dr. Frederick Seitz; and the Chairman of the Service Advisory Committees: Dean Morrrough P. O'Brien, Chairman, Army Science Advisory Panel; Dr. Eric Walker, Chairman, Naval Research Advisory Committee; and Dr. H. Guyford Stever, Chairman, Air Force Scientific Advisory Board. In response to these requests, the following liaison representatives were designated by their respective agencies:

Service/Agency	Representative
Department of the Army, Research & Development	Dr. Ivan R. Hershner, Jr.
Department of the Navy, Research & Development	Dr. John N. Adkins
Department of the Air Force, Research & Development	Lt. Gen. James Ferguson
Atomic Energy Commission	Brig. Gen. Delmar Crowson
Office of Science & Technology	Dr. Vincent V. McRae
Defense Science Board	Dr. William W. Hammerschmidt
Army Scientific Advisory Panel	Lt. Col. Kenneth R. Bull
Naval Research Advisory Committee	Dr. John N. Adkins
Air Force Scientific Advisory Board	Col. Robert J. Burger

From the invitee questionnaire responses and the list of Service nominees, a selection was made and formal invitations were issued. The list of invitees was provided to ARPA in the person of Mr. Daniel Sullivan, who processed papers from the candidates for OSD security clearance certification and need-to-know for access to materials and field stations. Administration of the physical security for the University was handled by the Office of Naval Research Branch Office, Pasadena.

PARTICIPANTS

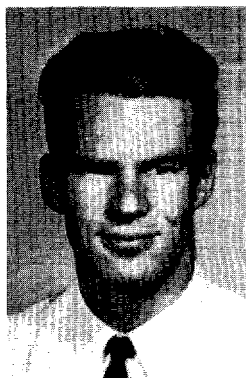
In order to emphasize new potential contributors and at the same time ensure knowledgeable discussions, our initial aim was to assemble an audience consisting of roughly two-thirds university personnel and one-third military and government-laboratory personnel. However, in this first session the lateness of the decision to proceed found many competing academic commitments and conflicts—the Conference on Theoretical Physics in Dubna, the Conference on Molecular Quantum Mechanics in Istanbul, the Gordon Research Conferences, and other such attractive diversions. As a consequence the rather inverted ratio of one-third university personnel to two-thirds military and government-laboratory personnel was achieved. Nevertheless, it was one of the liveliest such groups ever assembled, and the lecturers could scarcely have hoped for a more critical and appreciative reception.

The background and interests of the auditors are given in some detail below in the hope of publicizing their participation and special interests to a wide audience of potential consumers.

JOHN D. BALDESCHWIELER Department of Chemistry, Stanford University, Stanford, California 94305. CHEMICAL PHYSICS. b. Elizabeth, New Jersey, 14 Nov 1933; m. 59. BE Cornell, 56; PhD California, Berkeley, 59. Research Asst, Harvard, 60; Instructor, Chemistry, Harvard, 60-62, Asst Prof 62-65; ASSOC PROF, CHEMISTRY, STANFORD UNIVERSITY, 65-. Molecular spectroscopy and structure; nuclear magnetic resonance; nuclear quadrupolar, microwave and infrared spectroscopy.



Defense Interests: Advanced radar and sonar systems, chemistry of the upper atmosphere; technical aspects of Intelligence activities; small arms, small-unit tactics and weapons.



KYLE D. BAYES Department of Chemistry, University of California, Los Angeles, California 90024. PHYSICAL CHEMISTRY. b. Colfax, Washington, 3 Mar 1935; m. 61. BS CalTech, 56; PhD Harvard, 59. NSF Postdoctoral Fellow, Bonn, Germany, 59-60; ASST PROF, CHEMISTRY, UNIVERSITY OF CALIFORNIA, LOS ANGELES, 60-; Consultant, The RAND Corporation, 64-. Chemiluminescent reactions; gas-phase kinetics; mass spectrometry; upper-atmosphere reactions; photo-chemistry.

Defense Interests: Re-entry systems; air chemistry in R/V wakes; combustion and flames; civil defense.

STEWART N. BLUMENFELD Aero-Astronautics Department, The RAND Corporation, 1700 Main Street, Santa Monica, California 90406. MICROBIOLOGY. b. Chicago, Illinois, 2 May 1932; m. 54; c. 2. BS Illinois, 54; MA Kansas, 57. Research Asst Bacteriology, Kansas, 55-57; Research Virologist, Kansas Virus Lab, 57-58; Research Bacteriologist, UCLA Medicine, 58-60; Life Scientist, Douglas Aircraft Co., 60-62; Mem Tech Staff, Hughes Aircraft Research Labs, 62-63; MEM TECH STAFF, AERO-ASTRONAUTICS DEPT. THE RAND CORPORATION, 63-. Respiratory viruses; tissue culture; microbiologic aspects of closed-cabin systems; chemical and biological agents and defense.



Defense Interests: COIN warfare; nonlethal chemical agents in police operations; detection and defense against covert and overt BW/CW attacks on military and civilian objectives.

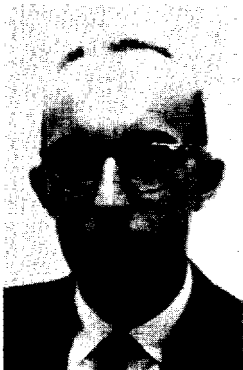


JAMES C. BRESEE Chemical Technology Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee 37831. CHEMICAL ENGINEERING. b. New York, Manhattan, New York, 25 Oct 1925; m. 52; c. 2. BS Illinois, 45, MS, 47; ScD MIT, 53. Instr, Inorg Chem, Illinois, 46-47; Jr Engr, Chem Engrg Div, Argonne Natl Lab, 47-48; Instr, Chem Engr Dept, MIT, 50, Asst Prof, 51-54; Chem Tech Div, Oak Ridge Natl Lab 54-; Engr 54-56; Section Chief Unit Operations, 56-60; Section Chief, Pilot Plant, 60-63; ASSISTANT DIRECTOR, CHEMICAL TECHNOLOGY DIVISION, OAK RIDGE NATL LAB, 63-. Radiochemical separations; mass transfer; unit operations, radiochemical plant design; chemical kinetics; radiation hazards analysis.

Defense Interests: Civil defense; anti-ballistic missile systems.

MAJ. MARCEL E. CONRAD, Jr. MC, Department of Hematology, Walter Reed Army Institute of Research, Washington, D.C. 20012. HEMATOLOGY and INTERNAL MEDICINE. b. New York, New York, 15 Aug 1928; m. 48; c. 3. BS Georgetown, 49, MD, 53; board certified Int Med, 61. US ARMY, 53-; MAJ, Intern, Walter Reed General Hosp, 53-54; Instr Med Field Serv Sch, 54-55; Res Int Med, Walter Reed Gen Hosp, 55-58, Chief, Res, Dept Med, 58-59, Asst Chief, Hematology Serv, 58-60, Res Serv, 58-60; Res Hematologist, Walter Reed Army Inst of Res, 59-60; Asst Chief Med Serv, 121 Evac Hosp, Korea, 60; Comm Officer, 43 Surg Hosp (MA), Korea, 61; Instr Mil Med and Allied Sci, Crs 8-A-F6, Walter Reed Army Inst of Res 61-62; Chief, Dept of Gastroenterology, 62-63; ASST CHIEF, DEPT OF HEMATOLOGY, WALTER REED ARMY INSTITUTE OF RESEARCH, 63-. Clin Asst Prof Med, Georgetown U School of Medicine, 64-. Am Med Assn; Internat Soc Hematol; Am Col Physicians; Amer Fed Clin Res; Amer Soc Hematol; AAAS.

Defense Interests: Transfusion problems; radiation injury; hepatitis.



GERARD T. DOBRINDT Analytical Laboratory. US Army Development and Proof Services, Aberdeen Proving Ground, Maryland 21005. MATHEMATICAL STATISTICS. b. Youngstown, Ohio, 22 Aug 1930. BS John Carroll, 52; MS St Louis, 54; Grad Fellow, Math, St Louis, 52-54; Grad Study, Johns Hopkins, 63. Mathematician, US Army Ballistic Res Lab, 54-57; Analytical Statistician, US Army Dev and Proof Serv, 57-61, Supervisory Mathematician, 61; CHIEF, STATISTICS SECTION, ANALYTICAL LABORATORY, US ARMY DEVELOPMENT AND PROOF SERVICES, ABERDEEN PROVING GROUND. Member, Inst Math Statistics; Sigma Xi. Mathematical and Applied Statistics; Experimental Design.

Defense Interests: Conventional warfare plans, policies and hardware; application of operations research.

WILLIS H. FLYGARE Department of Chemistry, University of Illinois, Urbana, Illinois 51803. CHEMICAL PHYSICS. b. Jackson, Minnesota, 24 Jul 1936; m. 58; c. 3. AB St Olaf College, 58; PhD California, Berkeley 61. Instr, Physical Chemistry, Illinois, 61-63; ASST PROF, CHEMISTRY, ILLINOIS, 63-. Microwave spectroscopy; nuclear magnetic resonance; matrix isolation of small molecules in rare-gas lattices; intermolecular interactions by infrared spectroscopy; theory of pressure-dependent shifts in vibration-rotation spectra.



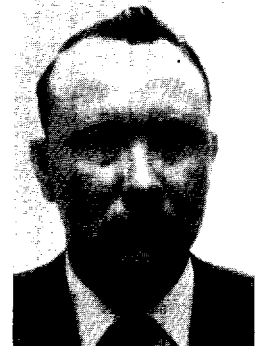
Defense Interests: Interaction of electromagnetic radiation and matter; radio communication and effects of nuclear detonations; ABM problem of discrimination during re-entry.



GALEN R. FRYSSINGER Research Branch, Electric Power Division, US Army Engineer Research and Development Laboratories, Fort Belvoir, Virginia 22060. PHYSICAL CHEMISTRY. b. Harrisburg, Pennsylvania, 21 Aug 1931; m. 53; c. 3. BS Juniata College, 53; MS Yale, 55, PhD, 56. Fullbright Scholar, Max Planck Inst for Phys Chem, Goettingen, Germany, 56; NSF Postdoctoral Fellow, 57. Mem faculty, U No Carolina, 55-60; Res and Dev Div, Arthur D Little, Inc, 60-63; CHIEF, ELECTRIC POWER RESEARCH BRANCH, US ARMY ENGR RESEARCH AND DEVELOPMENT LABS, FT BELVOIR, 63-. Electrochemistry and thermodynamics of adsorption at metal/solution interfaces; fuel cells; radioactive waste disposal; management of research.

Defense Interests: Power systems; anti-submarine warfare; technology for future hardware systems; implementation of research and development into qualified hardware systems.

CAPT. KENNETH L. GILBERT Guidance and Control Directorate, Ballistic Systems Division, Norton Air Force Base, California 92409. PHYSICS. b. Plainview, Texas, 15 Feb 1933; m. 54; c. 2. BS Texas Tech, 54; MA U Texas, 61. Convair, Ft Worth, 54-55; US AIR FORCE, 55-, CAPT, Grad Flying School, Reese AFB, 56; Troop Carrier Pilot, Evreux, France, 56-59; PROJECT OFFICER, GUIDANCE AND CONTROL DIRECTORATE, AF BALLISTIC SYSTEMS DIVISION, NORTON AFB, 61-. Supervision and technical management of programs pertaining to hardening of ICBM systems to nuclear effects; simulation facilities; operations analysis/threat definition; underground nuclear testing.



Defense Interests: Survivability of strategic missile systems to nuclear attack; nuclear weapons effects; strategic missile defense and offense.



VICTOR GILINSKY Physics Department, The RAND Corporation, 1700 Main Street, Santa Monica, California 90406. PHYSICS. b. Warsaw, Poland, 28 May 1934; m. 64. B Eng Phys, Cornell, 56; PhD CalTech, 61. Autonetics Div, North American Aviation, 55; Atomics International, 56; Aeronutronic Div, Ford Motor Co, 59; Aerospace Corp, 61; MEM TECH STAFF, PHYSICS DEPARTMENT, THE RAND CORPORATION, 61-. Quantum electrodynamics; plasma physics; many-body problems.

Defense Interests: Electromagnetic fields from nuclear explosions.

JOHN P. HALLOWES, Jr. Physical Sciences Laboratory, DRD, Army Missile Command, Redstone Arsenal, Alabama 35809. PHYSICS. b. Tampa, Florida, 16 Feb 1925; m. 46; c. 2. USNR: V-12 Apprentice Seaman, 43-46, Ensign 46. BEE Georgia Tech, 46; MS Vanderbilt, 48, PhD. 64. Jr. Engr, Research Div. Curtis-Wright Corp, Columbus, Ohio, 46-47; Physicist, US Navy Mine Countermeasures, Panama City, Fla, 47-51; ARMY MISSILE COMMAND (REDSTONE ARSENAL) Ala, 51-; Group Leader, Automatic Controls Research, 54-58, Dep Dir, Electromagnetic Lab, 58-59, DIRECTOR, PHYSICAL SCIENCES LAB, 59-. Mem Am Phys Soc; Inst of Electrical and Electronic Engrs; Reg Prof Engr, Ala; Eta Kappa Nu; Tau Beta Pi; Sigma Xi. Electronics; nuclear physics.



Defense Interests: Radar systems; missile guidance; re-entry physics; nuclear weapons effects.

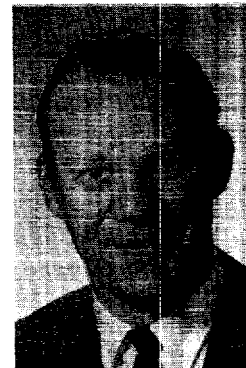


HENDRIK F. HAMEKA Department of Chemistry, University of Pennsylvania, Philadelphia, Pennsylvania 19104. THEORETICAL CHEMISTRY. b. Rotterdam, The Netherlands, 25 May 1931; m. 58; c. 2. Candidaat, 50, Doctorandus 53, DSc, Leiden, 56. Res Assoc, U Rome, 57; Postdoctoral Fellow, Carnegie Tech, 58; Res Physicist, Philips Res Lab, Eindhoven, 58-60; Asst Prof Chemistry, Johns Hopkins, 60-62; ASSOC PROF, CHEMISTRY, UNIVERSITY OF PENNSYLVANIA, 62-. Alfred P. Sloan Research Fellow, 63-65. Sigma Xi; Am Phys Soc. Theoretical spectroscopy of organic molecules; magnetic susceptibility; resonance fluorescence; magnetic rotation spectra.

Defense Interests: Communication systems; atomic weapons.

M. FREDERICK HAWTHORNE Department of Chemistry, University of California, Riverside, California 92502. ORGANIC AND INORGANIC CHEMISTRY, b. Ft Scott, Kansas, 24 Aug 1928; m. 51; c. 2. BA Pomona, 49; PhD UCLA, 53; Postdoctoral Res Assoc, Iowa State, 54. Sr Res Chemist, Rohm and Haas Co, Redstone Arsenal Research Div, 55, Head, Metallo-Organic Res Group, 56-60; Visiting Lect, Harvard, 60; Lab Head, Rohm and Haas Co, Philadelphia, Pa 61; PROF CHEMISTRY, UNIVERSITY OF CALIFORNIA, RIVERSIDE, 62-; Consultant, American Potash and Chemical Corp, 62-; Consultant, Aerojet Gen Corp, 65-; Consultant, Melpar, Inc 65-; AEC Predoctoral Fellow, 51-53; Visiting Lect, Chemistry, Queen Mary College, U London, 63; Alfred P. Sloan Research Fellow, 63-. Sigma Xi; Alpha Chi Sigma; Phi Lambda Upsilon; Sigma Nu; Am Chem Soc; Chem Soc (London); Am Inst of Aeronautics and Astronautics. Organic and Inorganic Chemistry, especially boron compounds.

Defense Interests: COIN military hardware; conventional explosives; rocket propulsion; chemical agents for police operations.



RICHARD D. INGRAM Ordnance Research Laboratory, Pennsylvania State University, State College, Pennsylvania 16801. ELECTRICAL ENGINEERING. b. Bellwood, Pennsylvania, 17 Apr 1931; m. 52; c. 2. BS Penn State, 57, MS, 60. ASST PROF, ORDNANCE RESEARCH LABORATORY, PENNSYLVANIA STATE UNIVERSITY, 61-. Sigma Xi; Tau Beta Pi; Eta Kappa Nu; Sigma Tau. Signal processing techniques.

Defense Interests: Detection, identification and interception in anti-submarine warfare; underwater missiles of advanced design.

DANIEL KIVELSON Department of Chemistry, University of California, Los Angeles, California 90024. CHEMICAL PHYSICS. b. New York, New York, 11 July 1929; m. 49; c. 2. AB Harvard, 49, MS, 50, PhD, 53. Instr Physics, MIT, 53-55; Instr Chemistry, UCLA, 55-56, Asst Prof, 56-59, Assoc Prof, 59-63, PROF, CHEMISTRY, UCLA, 63-. Res Assoc, Chemistry, Columbia, 56; Guggenheim Fellow, Saclay, France, 59; Alfred P. Sloan Fellow, 60-; Special Research Corp Grant, 59-62. Am Phys Soc. Microwave spectroscopy; molecular structure; quantum chemistry; magnetic resonance.



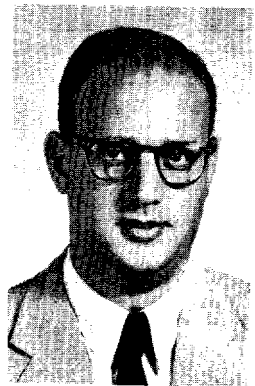
Defense Interests: ABM systems; command and control; counter insurgency; arms control.



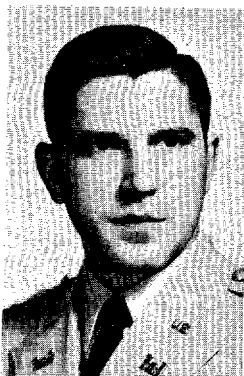
MARGARET G. KIVELSON Physics Department, The RAND Corporation, 1700 Main Street, Santa Monica, California 90406. PHYSICS. b. New York, New York, 21 Oct 1928; m. 49; c. 2. AB Radcliffe, 50, AM, 51, PhD, 57. CONSULTANT, PHYSICS DEPARTMENT, THE RAND CORPORATION, 55-. Am Phys Soc. Many-body theory, plasma physics, quantum mechanics.

Defense Interests: R/V wake physics; ABM systems; electromagnetic signals from nuclear explosions.

EDGAR A. KRAUT Space Science Center, Institute of Geophysics and Planetary Physics, University of California, Los Angeles, California 90024. THEORETICAL PHYSICS. b. Cleveland, Ohio, 4 May 1934; m. 62. AB California, Los Angeles, 56, MA, 57, PhD, 62. IGY Research Geophysicist ONR-UCLA, 57-58; Research Geophysicist, UCLA, 58-63; ASST PROF, PHYSICS & GEOPHYSICS, UCLA, 63-. Am Phys Soc; Am Geophys Union; AAAS. Phi Beta Kappa; Sigma Xi. Wave propagation; nonlinear physics; hydro- and magnetohydro-dynamics; theoretical seismology; upper atmosphere physics.



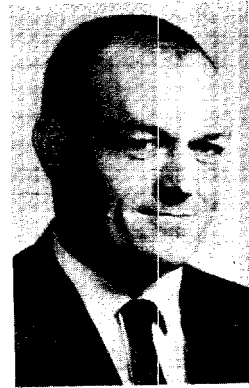
Defense Interests: Re-entry physics; military uses of space; nuclear test detection; underwater acoustics; missile defense.



MAJ. DANIEL L. LYCAN Office of the Chief of Engineers, Headquarters, Department of the Army, Washington, D.C. 20315. CIVIL ENGINEERING. b. Decatur, Illinois, 26 Feb 1931; m. 55; c. 3. BS MIT, 52; MS Illinois, 59, PhD, 60. US ARMY 52-, MAJ, Engr Platoon Leader and Battalion Staff Officer, Europe, 53-56; Basic Officers Course, 52, Adv Officers Course, 57; Staff and Faculty of Engr Sch, Ft Belvoir, Va, 56-57; Spec Asst to Dir, US Army Engr Waterways Exp Sta, Vicksburg, Miss, 59-61; Mil Assistance Adv Gp, Vietnam, 61-62; TECHNICAL ASST TO THE ASST CHIEF OF ENGRS FOR NASA SUPPORT, CHIEF OF ENGINEERS, HDQS DEPT OF THE ARMY, Washington, D. C., 62-. Sigma Xi; Phi Kappa Phi; Am Soc Civ Engrs; Soc of Am Mil Engrs; Reg Prof Engr, Miss.

Defense Interests: Nuclear weapons effects and protective structures; extra-terrestrial engineering problems, particularly lunar construction and mapping.

WILLIAM McNEILL Physical Chemistry Section, US Army Frankford Arsenal, Philadelphia, Pennsylvania 19137. PHYSICAL CHEMISTRY. b. Evanston, Illinois, 1 Jan 1930; m. 50; c. 3. BA Colgate, 51; MA Temple, 55, PhD, 61. FRANKFORD ARSENAL, 51-: Chemist, 51-57; Chief, Ceramics and Dielectrics Unit, 57-59; CHIEF, PHYSICAL CHEMISTRY SECTION, 59-. AMC Technical Working Group on Electronic Materials. Anodic processes; inorganic electrochemistry; mica recrystallization; electrophoretic deposition; tungsten-bronze synthesis and properties.



Defense Interests: Anodic coatings and processes; electronics and ceramic materials; laser countermeasures.



FRANK S. MENDEZ Project Control and Analysis Division, Hdqs. US Army Tropic Test Center, Fort Clayton, Canal Zone. MATHEMATICS. b. Delivar, Iowa, 10 Oct 1925; m. 52; c. 4. AB Bowling Green State U, 49, MS, 50. Jr Engr, Res Engr & Staff Engr, Firestone Tire and Rubber Co, 51-57; Mech Engr, Public Works Office, 15° Naval Dist, Ft Amador, Canal Zone, 57; Engr, US Army, Canal Zone, 57-63; CHIEF, PROJECT CONTROL AND ANALYSIS DIVISION, US ARMY TROPIC TEST CENTER, FT CLAYTON, CANAL ZONE, 63-. Reg Prof Engr, Ohio and Canal Zone. Natl and Canal Zone Societies of Prof Engrs; Chairman, Liaison Comm with Panama Soc of Prof Engrs; Am Ordnance Assoc; Past Educational VP, Toastmasters International. Supervision and Tech Mgmt of test and evaluation activities; weapons, equipment and ammunition testing.

Defense Interests: Short-, medium- and long-range planning of missions; facilities and procedures for development and testing of equipment.

WERNER G. NEUBAUER Propagation Branch, Sound Division, US Naval Research Laboratory, Washington, D.C. 20390. PHYSICS. b. White Plains, New York, 18 Apr 1930; m. 54; c. 2. BS Roanoke College, 52; Graduate study, Johns Hopkins, 53, Maryland, 54-58. US Naval Res Lab, Sound Div, Proj Physicist, 53-57; MICROACOUSTICS SECTION, PROPAGATION BRANCH, US NAVAL RESEARCH LABORATORY, 57-. Wave propagation, reflection and scattering; experimental acoustics in controlled environments; reflection from shapes and bodies; ultrasonics; underwater sound.



Defense Interests: Pro- and anti-submarine warfare; marine acoustics; re-entry vehicle technology; detection of nuclear detonations.

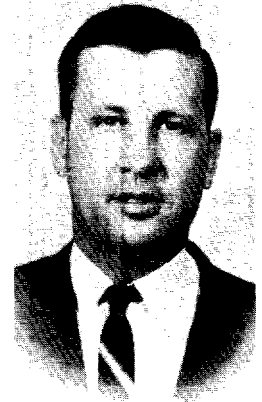


MILES T. PIGOTT Ordnance Research Laboratory, Pennsylvania State University, State College, Pennsylvania 16801. PHYSICS. b. Springfield, Ohio, 23 Mar 1923; m. 45; c. 7. AB Miami, 47; MA Illinois, 48; PhD Penn State, 55. ASSOC PROF OF ENGINEERING RESEARCH, ORDNANCE RESEARCH LAB, PENNSYLVANIA STATE UNIVERSITY, 51-. Solid-state physics; cryogenics; infrared spectroscopy; nuclear physics; ultrasonics; magnetism.

Defense Interests: Torpedo warheads and exploder mechanisms; submarine vulnerability to underwater demolitions.

JOHN P. PURTELL US Army Benet' R&E Laboratories, Watervliet Arsenal, Watervliet, New York 12189. MECHANICAL ENGINEERING. b. Troy, New York, 31 May 1925; m. 51; c. 5. BMech Engr and BMgmt Engr, Rensselaer, 49, MS, 53. Mech Engr, Watervliet Arsenal and AEC, 50-53; Tech Assoc, Inst Paper Chem, Appleton, Wisc, 53-56; Res Engr, Huyck Corp, 56-59; Mech Engr, Exp Mech Lab, Res Br, Watervliet Arsenal, 59-61, Chief, Exp Mechs Lab, 61-63; CHIEF, WEAPONS CONCEPTS SECTION, DEVELOPMENT LAB, BENET' R&E LABORATORIES, WATERVLIET ARSENAL, 63-. Mem Civ Serv Engrs and Scientists Rating Panel; Patent Rev Comm; AMC Design Coupling Comm; Long-range Combat Vehicle Armament Comm. Design of handling equipment; shore-based equipment for nuclear submarines; technical safety engineering; papermaking instrumentation; simulation, dynamic and firing tests on weapons and components.

Defense Interests: Projection of Army needs for future weapons; artillery, tank cannon, mortars, recoilless rifles, etc.; design and test of feasibility models.



ROBERT F. ROWNTREE Weapons Planning Group, US Naval Ordnance Test Station, China Lake, California 93557. PHYSICS. b. Columbus, Ohio, 8 Feb 1930; m. 56; c. 2. BA Miami, 52; M Pub Adm, Syracuse, 53; PhD Ohio State, 63. Wright Air-Dev Ctr, 53, Engr, R&D Labs, Ft Belvoir, 54-55; Res Asst, Phys and Astr, Ohio State, 55-56; Tchg Asst, 56-58; Res Asst, 58-59; Grad Fellow, Mershon Natl Security Prog, 59-61; Cons, Inst Def Anal, 61; Antenna Lab, Elect Engr, Ohio State, 61-62; Cons, Proj Michelson, Naval Ord Test Sta, 61-63; Res Assoc, Physics, Ohio State, 62-63; PHYSICIST, OPERATIONS RESEARCH ANALYST, MISSION ANALYSIS GROUP, WEAPONS PLANNING GROUP, US NAVAL ORDNANCE TEST STATION, 63-. Vacuum-evaporated thin-film coatings for infrared optics; IR flame emission spectra; IR reflectivity of materials; far IR/submillimeter instrumentation and spectroscopy; IR and optical properties of materials.

Defense Interests: Optical and IR sensors; missile guidance; accidental war; limited war; arms control; Intelligence analyses.

D. TRACY RUMFORD Computer Sciences Department, The RAND Corporation, 1700 Main Street, Santa Monica, California 90406. MATHEMATICS. b. St Paul, Minnesota, 8 Sep 1933. BA, St. Mary's College, Minnesota, 55. Actuarial Sci, NW Natl Life Ins Co, 55-57; COMPUTER PROGRAMMER ANALYST, THE RAND CORPORATION, 57-. Evaluation of computer display systems; security aspects of computer processing of classified and sensitive data; retrieval of Intelligence data.

Defense Interests: Role of Intelligence in gaming strategic alternatives and in design of advanced systems.



MAJ. OSCAR P. SNYDER, Jr. QMC. US Army Natick Laboratories, Natick, Massachusetts 01762. FOOD ENGINEERING, BIOLOGY and FOOD RADIATION. b. Washington, D.C., 23 Feb 1930; m. 59; c. 1. BS U Denver, 52; MS (Food Science) MIT, 59. US ARMY, 52-, MAJ, Medium Tank Platoon Leader, 52-54; Quartermaster Co and Group Staff Assignments, Germany, 54-56; QMC Officers Course, Ft Lee, Va, 56-57; QMC Food and Container Inst, 59-62; Logistics Sec G4, 8° US Army Hdqs, Korea, 62-63; FOOD RADIATION PROGRAM, ARMY IRRADIATION FACILITY, NATICK, Mass, 63-. High-level electron beam and gamma-ray dosimetry and instrumentation; radiation microbiology, microwave heating; very low-level gamma-ray detection techniques; electrical instrumentation.

Defense Interests: Radiation effects on biological and material systems, including precise instrumentation; small-unit tactics and equipment; study of small-ground unit operations under possible future battlefield conditions.

LT. JAMES E. STEELMAN US Army Electronic Proving Ground, Ft. Huachuca, Arizona 85613. ELECTRICAL ENGINEERING. b. Comanche County, Oklahoma, 31 May 1937; m. 64. BS Texas Tech, 60; SM MIT, 62. Texas Instruments Co, 60; Comm Sys, Jet Propulsion Lab, 63; US ARMY, 63-, LT, Basic Officers Course, 63; PROJ OFFICER, INTERFERENCE PREDICTION MODEL ELECTRONIC PROVING GROUND, FT HUACHUCA, ARIZONA, 63-. Alpha Phi Omega; Eta Kappa Nu; Tau Beta Pi. Frequency-agile radars; ultra-stable oscillators; applications of superconductivity in feedback elements; information and communication theory.



Defense Interests: Signal processing and communications; battlefield electronic interference; political aspects of national defense.

BERNARD R. STEIN Office of Science Resources Planning, National Science Foundation, 1951 Constitution Avenue, N.W., Washington, D.C. 20550. PHYSICAL CHEMISTRY. b. Boston, Massachusetts, 5 Aug 1927; m. 57; c. 3. BS Northeastern, 49; MS Tennessee, 50; Grad study, Catholic U, 52-54, Max Planck Inst, Physikalisches Chemie, Goettingen, Ger, 54-57; Dr Rer Nat, U Goettingen, 57; Postdoctoral Fellow, U Ottawa, 57-58. Chem Br, US Army Research and Development Group (Europe), 60-63; Physical Sciences Div, US Army Research Office, 58-60, 63-65. STAFF ASSOC, OFFICE OF SCIENCE RESOURCES PLANNING, NATIONAL SCIENCE FOUNDATION, 65-. Energy conversion; R&D program management.



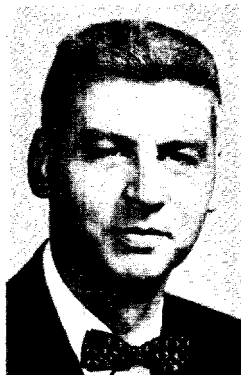
Defense Interests: Tactical and COIN warfare; arms control; international security and liaison.

ALBERT F. WUORI Applied Research Branch, US Army Cold Regions Research and Engineering Laboratory, Hanover, New Hampshire 03755. CIVIL ENGINEERING. b. Houghton, Michigan, 25 July 1928; m. 51; c. 3. BSCE Michigan Tech, 55, MSCE, 57. Top Mgmt Seminar, Army Mgmt Engr Training Agency, 62. Air Weather Service, USAF, 48-52; Engr, Standard Oil of Ohio, 55; Res Proj Leader, US ARMY COLD REGIONS RESEARCH AND ENGINEERING LABORATORY, 55-63, CHIEF, APPLIED RESEARCH BRANCH, 63-. Mem Int Soc for Terrain-Vehicle Sys; Am Soc of Civ Engr; Tau Beta Pi; Chi Epsilon. Soil and snow mechanics; development of trafficable surfaces; cold regions engineering.



Defense Interests: Mobility over cold-region terrain (snow and muskeg); tactical problems of surface mobility; nuclear weapons effects.

PETER E. YANKWICH Department of Chemistry, University of Illinois, Urbana, Illinois 61803. PHYSICAL CHEMISTRY. b. Los Angeles, California, 20 Oct 1923; m. 45; c. 3. BS California, Berkeley, 43, PhD, 45. Civ Sci, Manhattan Proj, UC Rad Lab, Berkeley, 44-46, Mem Bio-organic Group, 46-48; Instr Chemistry, U of California, Berkeley, 47-48; Asst Prof, Chemistry, U of Illinois, 48-55. Assoc Prof, 55-57, PROF, 57-; HEAD, DIV OF PHYSICAL CHEMISTRY, UNIVERSITY OF ILLINOIS, 62-. Chemical kinetics, particularly isotope kinetics; mechanisms of simple reactions; prediction of reaction rates; hot-atom chemistry of the N(n,p)C reaction.



Defense Interests: Problems related to detection, inspection and validation of nuclear events; technical aspects of limited warfare; disarmament and arms control; Intelligence.

TOPICS AND SPEAKERS

The schedule of principal topics is outlined in the Calendar Summary. While the daily themes included most of the areas advertised in the original prospectus, the order of topics was not always ideal, being to a large extent dictated by availability of the lecturers.

Although the calendar shows the scope of the Seminar, the depth of the treatment can be better appreciated from the detailed lecture titles:

Monday, 3 August—US AIMS IN NATIONAL DEFENSE

- 0945 Security Briefing—Capt. Robert J. Trauger, USN, ONR, Pasadena
- 1045 Introduction—William G. McMillan, Seminar Chairman
- 1100 Defense R&D in the Context of Defense Problems—The Hon. Dr. Harold Brown, DDR&E
- 1400 Air Force Views of Possible Future Strategies—Maj. Gen Jerry D. Page, USAF, Deputy Director of Plans for Aerospace

Tuesday, 4 August—AIR FORCE STRATEGIC SYSTEMS, AND AIRCRAFT DEVELOPMENT

- 0900 The Development of USAF Strategic Systems—Gen Bernard A. Schriever, USAF, Commander, AFSC
- 1045 The Strategic Air Command Mission—Maj. Gen. Seth J. McKee, USAF, Commander, 821st Strategic Aerospace Division, Ellsworth AFB.
- 1400 Flying Machine Breakthroughs—Mr. George S. Schairer, V. President, R&D, Boeing Airplane Co.

Wednesday, 5 August—STRATEGIC MISSILES

- 0900 The Development of the USN POLARIS System—R/Adm. Levering Smith, USN, Technical Director, Office of Special Projects.
- 1145 Movie: SAC Combat Missile Force—USAF ATLAS & TITAN Systems
- 1300 Movie: Solid Ground—USAF MINUTEMAN System
- 1330 The Science and Technology of Missiles—Mr. Deane N. Morris, The RAND Corp.
- 1630 Movie: McNamara and the Pentagon

Thursday, 6 August—NUCLEAR WEAPONS AND WEAPONS EFFECTS—Lt. Col. Robert Hand and Briefers from the DASA Field Command Training Group, Sandia Base

- 0900 Fission Weapon Principles—Maj. Rodger S. Baird, USAF
- 0945 Fusion Weapons Principles—Maj. Stanley J. Kuick, USA
- 1045 Fission Weapons Characteristics & Design—Lt. Marvin I. Clark, USN
- 1115 Fusion Weapons Characteristics & Design—Maj. Rodger S. Baird
- 1315 Aerial Delivery—Lt. Marvin I. Clark
- 1415 Missile Delivery—Maj. Rodger S. Baird
- 1515 Blast & Thermal Effects—Capt. George E. Jones, USMC
- 1615 Radiation Effects—Maj. Stanly J. Kuick, USA
- 1700 Worldwide Fallout—Maj. Rodger S. Baird

Friday, 7 August—FIELD TRIP, VANDENBERG AFB, California

Monday, 10 August—NUCLEAR WEAPONS PHYSICS

- 0900 A Plateau of Nuclear Weapons?—Dr. Edward Teller, Professor-at-Large, University of California
- 1045 Limited Nuclear Warfare—Dr. Edward Teller
- 1315 Principles of Fission Weapons, I—Dr. Harmon W. Hubbard, The RAND Corp.
- 1400 Principles of Fission Weapons, II—Dr. Lawrence S. Germain, Lawrence Radiation Laboratory
- 1545 Thermonuclear Weapons—Dr. Ernest A. Martinelli, The RAND Corp.

Tuesday, 11 August—NUCLEAR WEAPONS PHENOMENOLOGY AND EFFECTS

- 0900 Fireball Phenomenology: Blast, Thermal Radiation & Cloud Rise—Dr. Forrest R. Gilmore, The RAND Corp.
- 1030 High Altitude Phenomenology—Dr. Robert E. LeLevier, The RAND Corp.
- 1315 Movie: Introduction to the Fishbowl Test Series
- 1415 Discussion of Fishbowl Results—Drs. LeLevier and Gilmore
- 1545 Nuclear Test Detection—Dr. Richard Latter, The RAND Corp.

Wednesday, 12 August—CIVIL DEFENSE

- 0900 Some Uncensored Thoughts on Civil Defense—Dr. Andrew Suttle, Texas A&M
- 1030 Civil Defense: Ten Percent of the Pentagon Budget—Dr. Edward Teller, UCB & LRL
- 1145 Discussion—Drs. Suttle, Teller, Libby, Brown, et al.
- 1345 Alternatives in Civil Defense—Dr. William M. Brown, The Hudson Institute

SCHEDULE SUMMARY August 1964				
Monday	Tuesday	Wednesday	Thursday	Friday
<p>3.</p> <p>US AIMS IN NATIONAL DEFENSE</p> <p>Dr. H. Brown Maj. Gen. J. D. Page</p>	<p>4.</p> <p>AF STRATEGIC SYSTEMS</p> <p>Gen. B. A. Schriever Maj. Gen. S. J. McKee Mr. G. S. Schairer</p>	<p>5.</p> <p>STRATEGIC MISSILES</p> <p>R/Adm. L. Smith Mr. D. N. Morris</p>	<p>6.</p> <p>NUCLEAR WEAPONS & WEAPONS EFFECTS</p> <p>Lt. Col. R. Hand and Briefers from DASA Field Command</p>	<p>7.</p> <p>FIELD TRIP</p> <p>Vandenberg AFB</p>
<p>10.</p> <p>NUCLEAR WEAPONS PHYSICS</p> <p>Dr. E. Teller Dr. H. W. Hubbard Dr. L. S. Germain Dr. E. A. Martinelli</p>	<p>11.</p> <p>NUCLEAR WEAPONS PHENOMENOLOGY & EFFECTS</p> <p>Dr. R. Latter Dr. R. E. LeLevier Dr. F. R. Gilmore</p>	<p>12.</p> <p>CIVIL DEFENSE</p> <p>Dr. A. Suttle Dr. E. Teller Dr. W. F. Libby Dr. W. M. Brown</p>	<p>13.</p> <p>FIELD TRIP</p> <p>DASA Field Command</p>	<p>14.</p> <p>COMMAND, CONTROL & COMMUNICATION</p> <p>Dr. E. Fubini Dr. J. R. Burnett Dr. J. S. Foster Maj. Gen. J. B. Bestic Dr. A. M. Peterson</p>
<p>17.</p> <p>FIELD TRIP</p> <p>North American Air Defense Command</p>	<p>18.</p> <p>RADAR</p> <p>Dr. C. Hoover Dr. C. Lerch Dr. A. M. Peterson</p>	<p>19.</p> <p>RE-ENTRY</p> <p>Mr. F. A. Payne Cdr. A. Julian Dr. C. Hoover Dr. B. D. Henshall Capt T. P. Baker Dr. K. C. Bandtel Dr. T. B. Cook Brig. Gen. G. A. Kent</p>	<p>20.</p> <p>FIELD TRIP</p> <p>Naval Ordnance Test Station</p>	<p>21.</p> <p>ABM</p> <p>Dr. D. J. Fink Dr. B. Alexander Dr. S. J. Rabinowitz Dr. R. I. Primich</p>
<p>24.</p> <p>TACTICAL & LIMITED WAR</p> <p>Dr. B. Fall Dr. C. M. Herzfeld</p>	<p>25.</p> <p>ANTI-SUB WARFARE</p> <p>R/Adm. T. Caldwell Cdr. B. A. Becken SE ASIA Dr. G. J. Pauker</p>	<p>26.</p> <p>FIELD TRIP</p> <p>Lawrence Radiation Laboratory</p>	<p>27.</p> <p>CRISES, SPECIFIC & GENERAL</p> <p>Mrs. R. Wohlstetter Dr. A. Wohlstetter</p>	<p>28.</p> <p>ARMS CONTROL</p> <p>Dr. S. N. Graybeal</p>

TOPICS AND SPEAKERS (Continued)

Thursday, 13 August—FIELD TRIP TO DASA FIELD COMMAND, Albuquerque, New Mexico

Friday, 14 August—COMMAND & CONTROL and COMMUNICATIONS

- 0900 The View from OSD—The Hon. Dr. Eugene Fubini, Assistant Secretary of Defense
- 1030 Command and Control in the MINUTEMAN System—Dr. J. Robert Burnett, Space Technology Laboratories
- 1330 Permissive Links—Dr. John S. Foster, Director, Lawrence Radiation Laboratory
- 1500 Defense Communications Systems—Maj. Gen. John B. Bestic, Deputy Director, Defense Communications Agency
- 1545 HF Command & Control, and Communications During Disturbed Periods—Dr. Allen M. Peterson, Stanford Research Institute

Monday, 17 August—FIELD TRIP TO NORTH AMERICAN AIR DEFENSE COMMAND, Colorado Springs, Colorado

Tuesday, 18 August—RADAR—THEORY, CAPABILITIES & APPLICATION

- 0900 Pulse Compression & Phased Array Radar Techniques—Dr. Charles Hoover, Bell Telephone Laboratories
- 1045 Systems Design Considerations for Terminal ABM Intercept—Dr. Charles Hoover
- 1300 Array Radars in Satellite Detection & Tracking—Dr. Charles Lerch, Institute for Defense Analysis
- 1515 Radar Interference from Nuclear Explosions—Dr. Allen M. Peterson, Stanford Research Institute

Wednesday, 19 August—RE-ENTRY—PHYSICS & VEHICLES

- 0900 The US Re-entry Program—Mr. Fred A. Payne, ODDR&E Deputy for Strategic Systems
- 0945 Polaris Re-entry Systems—Cdr. Alex Julian, USN, Special Projects Office
- 1045 Discrimination of Re-entry Objects—Dr. Charles Hoover, Bell Telephone Laboratories
- 1330 Advanced Ballistic Re-entry Systems (ABRES) Program—Dr. Brian D. Henshall, Aerospace Corporation
- 1430 The SLEIGHRIDE Program—Capt. Thomas P. Baker, Jr., AFBSD
- 1515 Re-entry Vehicle Hardening—Dr. Kenneth C. Bandtel, Lawrence Radiation Laboratory
Discussion participants included Dr. Thomas B. Cook, Jr., Sandia Corporation, and Brig. Gen. Glenn A. Kent, ODDR&E.

Thursday, 20 August—FIELD TRIP TO NAVAL ORDNANCE TEST STATION, China Lake, California

Friday, 21 August—ANTI-BALLISTIC MISSILE DEFENSE

- 0900 The Nike-Zeus, Nike-X Program—Dr. Daniel J. Fink, ODDR&E
- 1115 The Critical Technology of ABM—Dr. Ben Alexander, Defense Systems Corp.
- 1345 The DEFENDER Program—Dr. Samuel J. Rabinowitz, ARPA
- 1600 Re-entry Physics Simulation—Dr. Robin I. Primich, GM Defense Research Labs.

Monday, 24 August—TACTICAL & LIMITED WAR

- 0900 Communist Revolutionary Warfare Operations in Indo China—Prof. Bernard Fall, Howard University
- 1500 Limited War: Project AGILE—Dr. Charles M. Herzfeld, Deputy Director, ARPA

Tuesday, 25 August—ANTI-SUBMARINE WARFARE; and MORE ON SE ASIA

- 0900 Anti-Submarine Warfare—R/Adm. Turner Caldwell, USN, Commander, ASW Group 5
- 1100 Detection, Localization & Classification of Underwater Targets—Cdr. Bradford A. Becken, USN, BuShips
- 1530 The Social Sciences & The Crisis in SE Asia—Dr. Guy J. Pauker, The RAND Corp.

Wednesday, 26 August—FIELD TRIP TO LAWRENCE RADIATION LABORATORY, Livermore, California

Thursday, 27 August—CRISES, SPECIFIC & GENERAL

- 0900 The Cuban Missile Crisis: Warning & Intelligence—Mrs. Roberta Wohlstetter, The RAND Corp.
- 1045 Crisis Decisions—Dr. Albert Wohlstetter
- 1300 Is Defense Provocative?—Dr. Albert Wohlstetter
- 1515 Movies: NOTS Presidential Briefing and Tactical Weapons Tests

Friday, 28 August—ARMS CONTROL

- 0900 Arms Control—Plans, Prospects & Problems—Dr. Sidney N. Graybeal, Deputy Ass't Director, ACDA
- 1315 Security Debriefing—Capt. Robert J. Trauger, USN, ONR, Pasadena
- 1330 Seminar Checkout

FIELD TRIPS

Since defense ultimately leans heavily on hardware, it is essential for would-be experts to establish and maintain an intimate familiarity with field equipment. While this could not be in any sense accomplished in the few field trips possible during the Seminar, it seemed important to make a start in this direction in order to demonstrate the value of such visits as aids in normalizing the intuition and in providing a point-of-reference for the more abstract theoretical studies.

Accordingly, five one-day field trips (one overnight) were distributed throughout the four weeks of the Seminar. Limitations of time and distance from Seminar headquarters in Los Angeles confined these trips to Western United States, a restriction we hope to relax in future sessions.

Without exception, the Seminar was welcomed most cordially. Each agency provided excellent briefings and informative tours of their facilities, as illustrated by the condensed schedules below:

Friday, 7 August—VANDENBERG AIR FORCE BASE, California

The trip to Vandenberg AFB was arranged through the good offices of Dr. J. Robert Burnett, MINUTEMAN Program Director, Space Technology Laboratories. The Air Force Ballistic Systems Division provided an airplane to transport the group to Vandenberg.

- 0930 Welcome by Maj. Gen. S. W. Wells, Commander, 1st Strategic Aerospace Division
- 0945 Orientation on mission of Vandenberg AFB—Lt. Col. Youngblood
- 1030 Discussion, question and answer session with Directors of MINUTEMAN and TITAN II Test Programs
- 1300 Tour of Technical Facilities (MINUTEMAN AND TITAN II)—Maj. Bockemuehl
- 1400 Launches of ATLAS F and MINUTEMAN missiles

Luck was with us on this first trip, since the group had the rare privilege of seeing two launches in a single day: an ATLAS and a MINUTEMAN.

Thursday, 13 August—DEFENSE ATOMIC SUPPORT AGENCY FIELD COMMAND, Albuquerque, New Mexico

This trip was arranged under the auspices of Lt. Gen. H. C. Donnelly, Chief, Defense Atomic Support Agency, with the assistance of Col. Ola P. Thorne, DASA Field Command. Transportation was provided by MATS in the form of a KC-135 jet transport, through the kind offices of Lt. Gen. James Ferguson. Col. W. E. Gernert acted as host and guide.

- 1015 Weapons Display Area—Training Group Staff
- 1330 History of Test Program through 5 August 1963—Capt. George E. Jones, USMC
- 1415 Birth and Growth of a Test Program—Capt. R. W. Duborg, USN
- 1500 Plans and Activities Under the Provisions of the Test Ban Treaty—Col. Don I. Prickett, USAF

A highlight of this trip was a social hour and dinner at which Seminar participants had an opportunity to meet informally with representatives from DASA Field Command, Sandia Base, the Air Force Weapons Laboratory and the Los Alamos Scientific Laboratory.

Monday, 17 August—NORTH AMERICAN AIR DEFENSE COMMAND, ENT AIR FORCE BASE, Colorado Springs, Colorado.

Host: Brig. Gen. R. S. Abbey, DCS Plans.

The trip to NORAD was arranged with Gen. John K. Gerhart, with the kind assistance of Brig. Gen. Dorr E. Newton. A C-135 jet transport was again provided by MATS, through Lt. Gen. James Ferguson and his staff.

- 1100 Threat—S/L G. H. Booth, RCAF
NORAD Organization and Mission—Maj. E. W. Claridge, USA
Aerospace Defense Operations—Cdr. A. M. Smith, USN
- 1330 Combat Operations Center—Lt. Col. J. M. Wood, USAF
- 1415 Future Aerospace Defense Plans—Maj. W. E. Whitlatch, USAF
- 1515 Command and Control—Col. R. F. Dutcher, USAF
- 1545 425L—Col. K. W. Seemann, Jr., USAF

Highlights of the NORAD excursion were the informal lunch and ensuing discussion with General Gerhart and his staff, and the tour of the Air Combat Operations Center.

Thursday, 20 August—NAVAL ORDNANCE TEST STATION, China Lake, California

This trip was arranged through the offices of Capt. F. F. Reck. Transportation was via rented Greyhound bus. This trip was unique in being the only overnight spent outside Los Angeles. Accommodations were provided for the group on the Test Station.

- 0800 Welcome and Introductory Remarks—Capt. F. F. Reck, USN
- 0830 Test Facility Orientation—Mr. C. J. DiPol
- 0850 Terrier Missile Test—Test Range
- 0930 Revolutionary Warfare in the Republic of Vietnam—Dr. Robert F. Rowntree and Mr. D. K. Pack
- 1245 Highlights of NOTS Technical Program—Dr. William B. McLean, NOTS Tech. Dir.
- 1415 The Effectiveness of Air-to-Surface Weapons in Limited War—Mr. C. L. Schaniel

Wednesday, 26 August—LAWRENCE RADIATION LABORATORY, Livermore, California

This visit was arranged through the LRL Director, Dr. John S. Foster, with the assistance of Dr. Forrest Fairbrother. Transportation was again provided (with an eleventh-hour assist by Dr. Robert Sproull, Director of ARPA) by the Air Force, this time in the form of two C-47's from the USAF Space Systems Command.

- 1000 Tactical Nuclear Weapons and Applications—Dr. John S. Foster
- 1130 Laboratory Objectives & Facilities—Dr. John S. Foster
- 1400 Computers, Present and Future—Dr. Sidney Fernbach
- 1500 Tour of Tape-Controlled Fabrication Machines
- 1530 Warheads and Weapon Systems—Dr. Carl Haussmann
- 1615 Command and Control Hardware—Dr. Marvin Gustavson

The central role of the AEC in National Defense makes this laboratory a fascinating place.

FIELD TRIPS

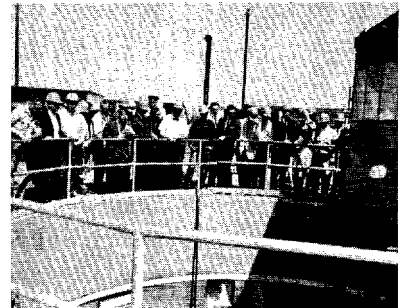
Vandenberg AFB



The Computing Center



Margy K. at the console of the TITAN II



Looking down in the mouth

NORAD

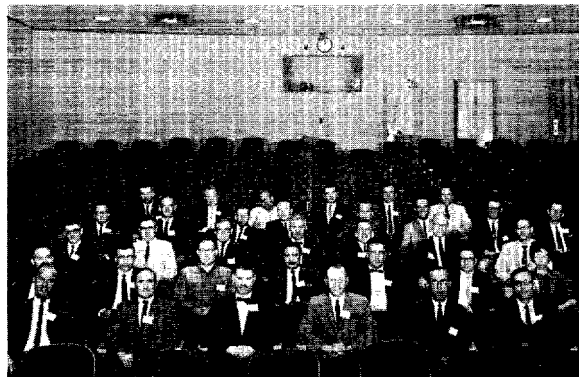


The Seminar poses with Brig. Gen. Dorr Newton (2° row, right) on the steps of the NORAD Combat Operations Center.

DASA Field Command



Col. R. Hand, DASA, shepherds the Seminar on tour of base.



What the DASA Briefers saw



Col. W. E. Gernert, DASA, greets the deplying Seminar.

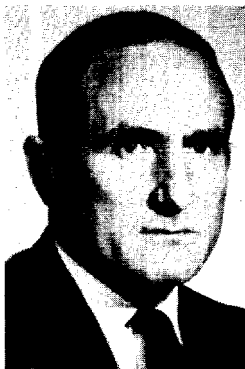
ADMINISTRATION, SECURITY and SUPPORT

Following the rule that one can't have an idea without getting stuck with it, Dr. McMillan was prevailed upon by Dr. Brown to chair the Seminar.

WILLIAM G. McMILLAN Department of Chemistry, University of California, Los Angeles 90024. CHEMICAL PHYSICS. b. Montebello, California, 19 Oct 1919; m. 46; c. 3. BA UCLA, 41; MA Columbia, 43, PhD (Chemistry), 45. Tchg Asst Chem, Columbia, 41-44; Asst Prof, CHEMISTRY, UNIVERSITY OF CALIFORNIA, LOS ANGELES, 47-51, Assoc Prof, 52-58, PROF, 58-. DEPT CHAIRMAN, 59-. Consultant LRL 52-57; Vstg Prof, Columbia, Summer 49, Vstg Lect, Harvard, 51-52; Consultant, Brookhaven Nat Lab, 52-; MEM PHYSICS DEPT, THE RAND CORP, 54-; Guggenheim Fellow, Inst Nuc Studies, U. Chicago, 46-47; Alfred P. Sloan Research Fellow, 57-61; Mem Am Phys Soc, Am Chem Soc, AAAS, Sigma Xi, Phi Beta Kappa, Phi Lambda Upsilon, Pi Mu Epsilon, Alpha Chi Sigma. Adv Council, Calif State Coordinator of Atomic Activities, 59; Cons, Pres Sci Adv Comm (PSAC), 60-; Nuclear Panel, AF Sci Adv Bd (AFSAB), 61-, SAB "Open Ear" Gp, 61-; Chm, SAB ad hoc Review Comm on AF Protective Structures Res Prog, 61; AEC Delegate to British AWRE re underground test detection, Aldermasten, 60; Chmn, Ad hoc Gp on Weapons Effects (ODDR&E and DASA), 61-; AF Ballistic Sys Div Adv Gp, 62-64; Cons, AF Range Tech Adv Gp, 62; Def Sci Bd, 62-; Chmn, Ad hoc Gp on Rad Effects (USAF, USN, DDR&E); 63-; Def Intell Agcy Ad hoc Panel, 65-; Weapons and Munitions Panel, AFSAB Tac Study Task Gp, 64-. Statistical and quantum mechanics of small molecules; adsorption; equation of state; spectroscopy at high pressures.



To help with the many details of the technical program—consultations on speakers, selection of films, negotiations on field trips, airplanes, etc.—Mr. Jack E. Whitener (Lt. Col., USAF Ret) was appointed Vice Chairman of the Seminar. Col. Whitener's long experience with military matters combined with his first-hand knowledge of nuclear weapons and weapons effects made him especially qualified for this position.

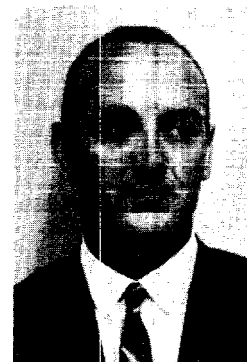


JACK E. WHITENER Physics Department, The RAND Corporation, 1700 Main Street, Santa Monica, California 90406. ENGINEERING PHYSICS. b. Duncan, Oklahoma, 25 Oct 1918; m. 42; c. 3. BS Oklahoma, 41; MS Michigan, 46. US Air Force 41-61, LT COL RET. Harvard and MIT Radar School; pilot training; WW II Radar Officer and Pilot; Instr, Physics, Air Inst of Tech, 47-48 Los Alamos Sci Lab, 48-53; Proj Off, AF Special Weapons Center, 53-57; Rep of AF Special Weapons Center to The RAND Corp, 57-61. PHYSICAL SCIENTIST, PHYSICS DEPARTMENT, THE RAND CORP, 61-. Nuclear weapons tests operations; nuclear blast-wave measurements.

Defense Interests: Nuclear weapons effects; enhanced nuclear weapons design.

The Seminar was held in an air-conditioned meeting room, 3083, located in the new wing of the UCLA Chemistry Building. The many special requirements—furnishings, erection of a foyer partition, projection facilities, and a host of other minutiae—were ably provided by the Department of Chemistry Laboratory Manager, Mr. A. Barry Hoelscher. In addition to these duties, Mr. Hoelscher participated in the intellectual life of the Seminar from a background of military experience in the Marine Corps.

A. BARRY HOELSCHER Department of Chemistry, University of California, Los Angeles, California 90024. LABORATORY MANAGEMENT. b. Santa Barbara, California, 21 Nov 1927; m. 65. BA California, Santa Barbara, 53, Calif Tchg Credentials, 54; Postgrad study, U Southern California, 56-57, LA State, 58. Cpl, US Marine Corps, DOS, Barstow, California, 46-47, Sgt, 7th Tank Bn FMF-PAC, 50-51; Tracked Veh Trng Sch, Camp Del Mar, 50; Instr, Arcadia High School, Arcadia, California, 54-61; LABORATORY MANAGER, DEPARTMENT OF CHEMISTRY, UCLA, 61-. Atomic, biological and chemical warfare survival.



Defense Interests: Development of small arms; field equipment; civil defense; COIN operations.

Official responsibility for the administration of security reposed in the Office of Naval Research Branch Office, Pasadena, Capt. Robert J. Trauger, USN, Commanding Officer. In addition to spot visits by Capt. Trauger, Cdr. Harold M. Steeves, USN (Executive Officer), LCdr. Thomas J. Kennedy, USNR (Research Reserve Program Officer) and Mr. Leon H. Connell (Security Specialist), two ONR representatives were in attendance: CWO W. Patrick Bauguess, USN, and Cdr. Edwin V. Dunlop, USNR (Ret). The continuous presence of Cdr. Dunlop, who returned to temporary active status for this purpose, was particularly helpful in the expeditious handling of security.



Capt. Robert J. Trauger



Cdr. Harold M. Steeves



Cdr. Edwin V. Dunlop



CWO W. Patrick Bauguess

Personnel and visit clearances, need-to-know, and other problems requiring official support were funneled through Mr. Daniel J. Sullivan, ARPA Staff Assistant, who ably fulfilled the role of "Mr. Inside".



Daniel J. Sullivan



Don D. Darling



Mary Lue Wolff

The details of security management—badges, photographs, notebooks, guard services, paper processing—were arranged by Mr. Don D. Darling of the management consultant firm, Don D. Darling & Associates. Included as part of this package was Mrs. Mary Lue Wolff, who acted as Secretary, Treasurer and Girl Friday to the 35 regular attendees and the numerous distinguished lecturers.

CRITIQUE

Because of the short time available and the indelible imprint of the background of the organizers, this first Seminar was weighted heavily toward strategic nuclear questions, with emphasis on Air Force systems. The time devoted to Naval systems was short by comparison, and the coverage of tactical conventional warfare—and especially of the important contribution of the Army and Marines—was most inadequate. These shortcomings were recognized at the outset, but there is real hope of achieving a better balance in future sessions. In particular, Lt. Gen. W. W. Dick, U.S. Army Deputy Chief of Staff for R&D, and his staff have presented a full day of briefings summarizing some of the Army's field systems and problems, and have outlined a series of educational visits to Army installations which we are already taking advantage of as background for the next Seminar. We also hope to examine Naval systems somewhat more thoroughly and to consider at least briefly the problems of atomic, biological and chemical warfare.

At the end of the Seminar each attendee was asked to write a short critique and to make suggestions for improvements. Many felt the lack of State Department representation in the discussion of National Aims. Apart from the imbalance toward strategic nuclear forces, the content and scope found general approval. Considerable sentiment was expressed in favor of enlarging the psycho-socio-political context of revolutionary warfare. Some wished for more emphasis on outstanding problems, possibly at the expense of past accomplishments. In some instances the order of topics was not altogether logical, but again this may be improved with greater lead time.

The mixed feelings expressed concerning the technical level of the talks indicated that by and large a good average was achieved. A large proportion of the lecturers were singled out by several auditors for their outstanding presentations, and the concensus was that the "faculty" was truly superb. The field trips were generally hailed as an excellent and essential part of the Seminar.

The spectre of having to cope with a roomful of voracious questioners over interminable blocks of uncommitted time led to a schedule fairly loaded with lectures. A common complaint was thus the inadequacy of discussion time, and the superabundance of daily hours. Although we found time for few movies, even the best of these were in retrospect voted down in favor of more discussion. Some participants even suggested having evening problem sessions! Despite the informal atmosphere and frequent coffee breaks, there is little doubt that occasional recreational periods would have relieved the incipient physical atrophy felt by many.

In a future session the generation of a spirit of camaraderie and common purpose—which was not achieved until our Naval Ordnance Test Station bus excursion—should be encouraged as early as possible. Our feedback indicates that an unexpected bonus of the Seminar may be the establishment of longlived friendships and new channels of communication between the institutions and laboratories represented.

In any event, it was gratifying that all attendees found the Seminar personally rewarding and thought it worth continuing.

FOLLOW-THROUGH

While the reception and encouragement accorded the Seminar by participants, lecturers, field installations and many levels of the government scientific community has been vastly important to its continuation, the real measure of its success lies in the degree to which the participants become integrated into the councils of government and especially defense science. This integration will require time to accomplish, although there is already an encouraging beginning. At this writing, two university participants—Drs. Baldeschwieler and D. Kivelson—have been appointed to the ARPA Advisory Committee on Ballistic Missile Defense.

Besides the utilization of the university participants, an equally important question for the military departments and other government agencies is how to make most effective use of the (hopefully!) broadened perspectives and wider understanding of the attendees they have supplied.

It is hoped that this brochure will call wider attention to the Seminar and its alumni amongst potential consumers.

ACKNOWLEDGEMENTS

An undertaking as large and unusual as the Defense Science Seminar is almost bound to end in serious debt to many contributors. Certainly the project could not have been carried through without the enthusiastic support and encouragement of Dr. Harold Brown, DDR&E, Dr. Robert L. Sproull, Director of ARPA, and Dr. Charles M. Herzfeld, Deputy Director of ARPA. For the many special campus arrangements, the way was cleared most effectively by having the backing of Chancellor Franklin D. Murphy. It is a tribute to the dedication of the men in Government service, in our Armed Forces and in the Defense industries that, without exception, each person who was asked to help responded in the most generous manner possible. If the Seminar is not a smashing success, it will not be for lack of cooperation.

I am most grateful to all our lecturers, who took time from their busy schedules to share their knowledge, experience and perspective with us. Being altogether too familiar with the guarded acquiescence with which academicians grudgingly agree to lecture on their specialties, it came as an agreeable surprise how very willing were Government, Military and Industrial personnel to place their expertise at our disposal and to submit to our most critical questioning. Yet in retrospect, this is perhaps not so surprising. There are few people in positions of responsibility who are so self-sufficient as not to welcome the attention and concurrence of their colleagues. Command and decision comprise a lonely vigil, brightened only by a sense of patriotism and the approval of one's peers. Perhaps there is a moral here—not to be niggardly with such approval lest we find ourselves in a similarly lonely situation!

For allowing me to impose on their good offices in arranging field trips, I am greatly indebted to such good friends as Lt. Gen. H. C. Donnelly, Chief, DASA, and Col. Ola P. Thorne, DASA Field Command; Gen. John K. Gerhart, CINC, NORAD; Dr. John Foster, Director, Lawrence Radiation Laboratory; and Dr. J. R. Burnett, MINUTEMAN Program Director, Space Technology Laboratories. Lt. Gen. James Ferguson, AF Deputy Chief of Staff for R&D, and his staff—particularly Col. H. C. Teubner and Mr. John W. Fillius, AFSTP—were most helpful in arranging air transportation, was also Mr. Bernard Korenblit (ARPA). Here I want to thank Lt. Gen. W. Austin Davis, then Commander of the USAF Ballistic Systems Division, and Maj. Gen. Ben Funk, Commander of the Space Systems Division, for use of their planes—kindly arranged by Lt. Col. H. B. Stuber, AFBSQ—on our trips respectively to Vandenberg Air Force Base and the Lawrence Radiation Laboratory; and to express our appreciation to Lt. Col. John T. Moore, Operations Officer, 44th Air Transport Squadron (MATS) at Travis AFB, and particularly to Capt. Kenneth L. Cox and his crew who flew us on their C-135 jet to DASA Field Command and to NORAD.

Through the generosity of Mr. Frank Collbohm, President of The RAND Corporation, and Mr. Claude R. Culp, head of the RAND ARPA project, preparations for the Seminar were supported—both morally and financially—in advance of receiving the contact. During the Seminar, both the Chairman and Vice Chairman were on loan from RAND. Col. Jack Whitener, in his role as Seminar Vice Chairman, not only made extensive arrangements for classified film showings, but also participated in the Seminar discussions and shepherded the Seminar on its field trips to Vandenberg AFB and the Naval Ordnance Test Station. A further RAND contribution was the sound advice on security matters given by Messrs. Richard H. Best and David H. Williams. Finally, RAND contributed a large and especially well-qualified contingent of lecturers, as well as several of the participants.

The work of the Service representatives in locating especially capable military officers and laboratory personnel to attend the Seminar was extremely important. The Army, with its large group of attendees, was particularly successful in this.

Our best thanks go to Mr. Daniel J. Sullivan, ARPA Staff Assistant, and Mr. Samuel E. Clements, Executive Assistant, ODDR&E, for help in the Pentagon with the contract and with the thorny matter of security, and to Mrs. Frankie R. Fernald (ARPA) for her Sunday and sunny assistance; to Capt. Robert J. Trauger, Office of Naval Research, Pasadena, and his staff—especially Cdr. Edwin Dunlop and CWO Pat Bauguess, who were in regular attendance at the Seminar—for their attentive and considerate supervision of security; to Mr. Arthur F. Schaeffer, UCLA Contracts and Grants Officer, and Messrs. John E. Codd and E. W. Herl (OSD) for assistance with the contract; to Mr. Don Darling for his all-round know-how and efficiency; to Mr. Barry Hoelscher, Dr. E. R. Hardwick and Mr. E. H. Beckers for their ability to work miracles of procurement; to Messrs. Kenneth A. Weydert, Chalmers H. Fletcher and Robert M. Rook for compressing the usual purchasing time scale; to Messrs. John P. Hooten and Arnold Rudin for their rapid service and attractive furnishings; to Mr. Victor E. Thompson for relinquishing his glassblowing office; to Miss Sharon Stalder and Mrs. Marie Grace for endless hours of transcription; to Capt. Lynn Boyd and Lt. Bill P. Collins of the UCLA Campus Police for their assistance with facility surveillance; to Mrs. Sally A. Meisenholder for parking arrangements; and to the UCLA Sproul Hall Food Service in the person of Mr. Carl L. Glaser for the elegant luncheons.

I am especially grateful to Mrs. Mary Lue Wolff for her constant attention and cheerfulness in personalizing the administration of the Seminar; and to my secretaries, Miss Ellen S. Dunlevy and Mrs. Madelon Lopez, for working overtime in preparation and in tending the near-infinity of telephone calls and letters.

Finally, I want to thank the Seminar participants for their enthusiastic reception, critical appreciation and sustained interest.

The short time available to arrange the Seminar caused me to make outrageous requests and impositions on many friends. I can only hope I have not squandered too much of my precious store of good will . . .

WGM

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