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MEDICAL SERVICES ANNUAL HISTORICAL REPORT - AMEDD ACTIVITIES, C--ETC(U)
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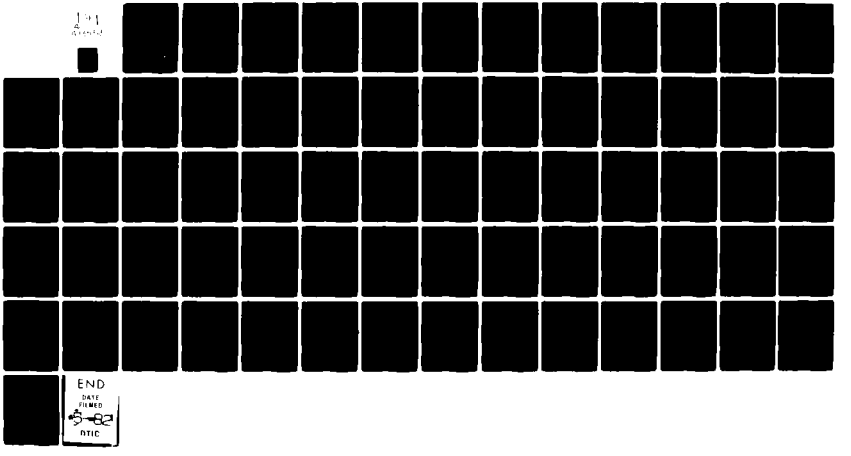

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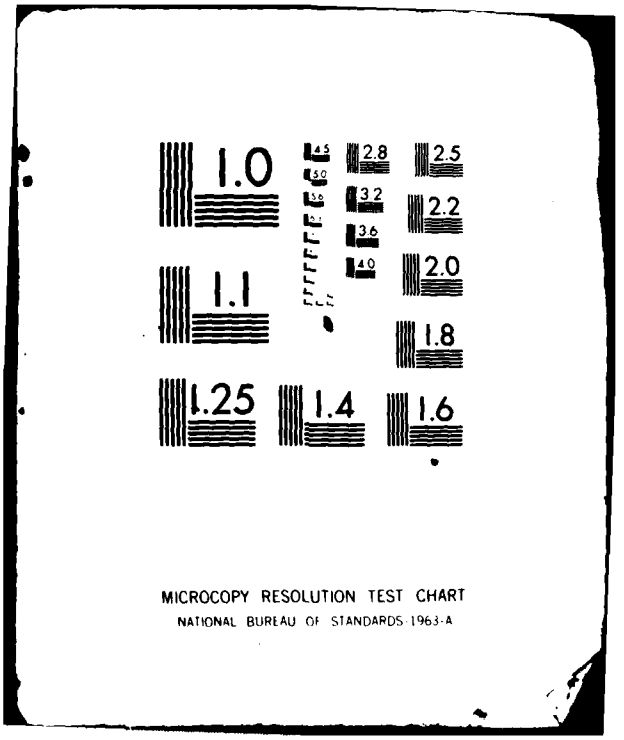
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MEDICAL SERVICES
ANNUAL HISTORICAL REPORT–AMEDD ACTIVITIES

RCS MED-41 (R4)
1981

LETTERMAN ARMY INSTITUTE OF RESEARCH PRESIDIO OF SAN FRANCISCO CALIFORNIA 94129

MEDICAL SERVICES

ANNUAL HISTORICAL REPORT - AMEDD ACTIVITIES

Reports Control Symbol MED-41 (R4)

LETTERMAN ARMY INSTITUTE OF RESEARCH

PRESIDIO OF SAN FRANCISCO

CALIFORNIA 94129

CALENDAR YEAR 1981

JOHN D. MARSHALL, JR.
Colonel, MS
Commanding

HELMUT E. HACKER
Lieutenant Colonel, MS
Executive Officer

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Letter on file

A

SECTION I - Mission

The Letterman Army Institute of Research (LAIR) is a Class II activity under the jurisdiction of the US Army Medical Research and Development Command, Fort Detrick, Frederick, MD, with station at the Presidio of San Francisco, CA.

The mission of the Institute is to provide a general military medical research capability and conduct research in the areas of dermal protection against biological, chemical and radiological hazards; battlefield casualty management; effects of military lasers; experimental psychology; military trauma and resuscitation; blood preservation; chronic mammalian toxicology; and, within available resources and capabilities, support clinical investigation projects recommended by Commander, Letterman Army Medical Center (LAMC). The Institute also performs other medical research activities as directed by the Commanding General, US Army Medical Research and Development Command.

SECTION II - ORGANIZATION

LAIR contains four research divisions, a division of research support, and four administrative support elements. These divisions are in turn organized into functions by separate groups. The LAIR organization chart is on page 4.

SECTION III - PERSONNEL AND ADMINISTRATION

1. Personnel strength as of 31 December 1981:

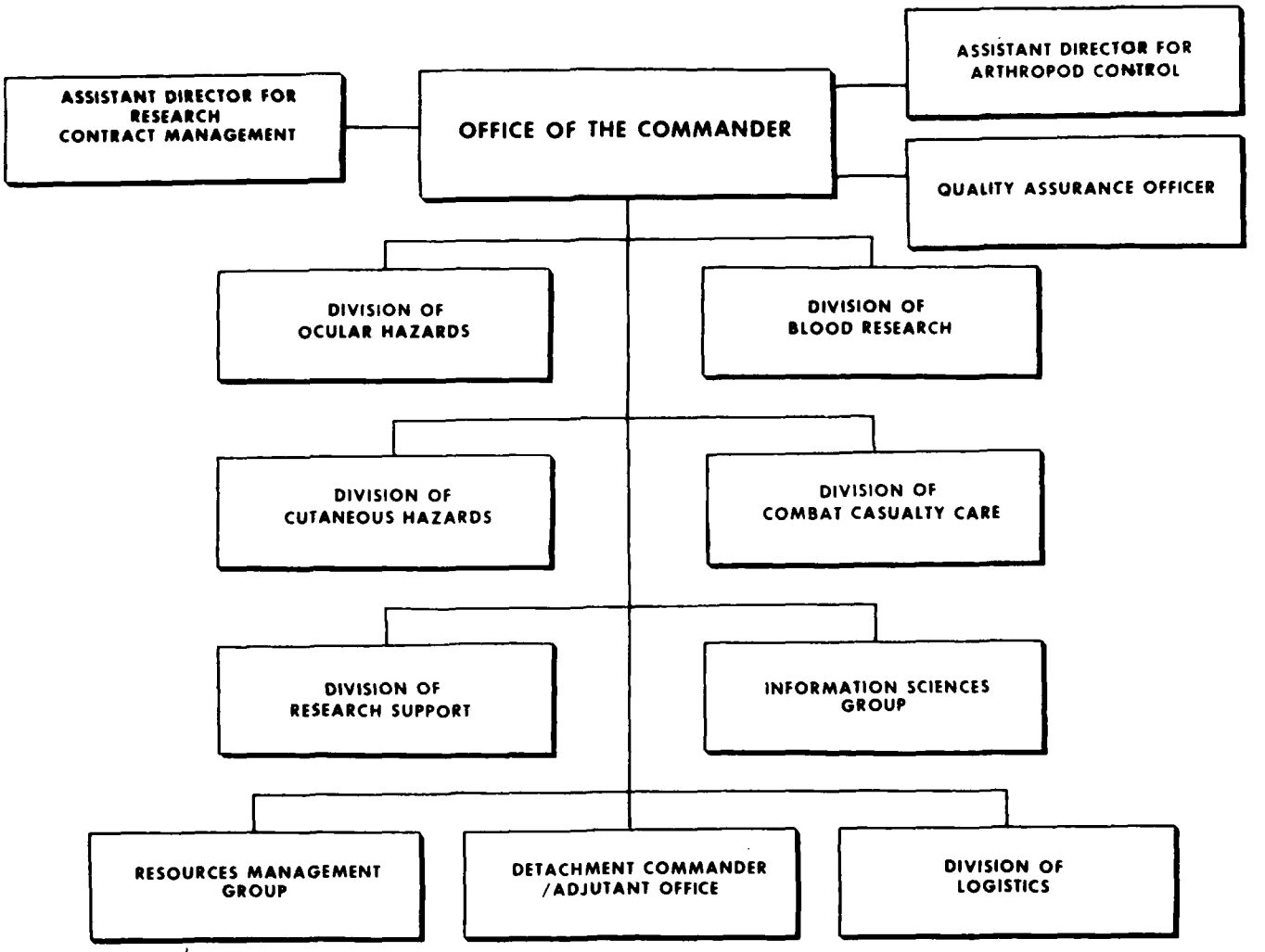
OFFICERS	REQUIRED	AUTHORIZED	ACTUAL
MC	15	15	13
VC	12	10	10
MS	27	23	21
Subtotal	54	48	44
Enlisted	122	113	121
Civilian (FTP)	132	105	103
(Temp)	-	7	9
Total	308	273	277

2. During this reporting period, key positions were staffed as follows:

POSITION	INCUMBENT
Commander/Director	John D. Marshall, Jr., COL, MS
Deputy Commander	Louis Hagler, COL, MC
Executive Officer	Helmut F. Hacker, LTC, MS
Assistant Director for Arthropod Control	Alfred M. Allen, COL, MC
Assistant Director for Research Contract Management	J. Ryan Neville, PhD, DAC, GS-14
Quality Assurance Officer	John L. Szurek, MAJ, MS (1 Jan - 11 Jun 81)
	John C. Johnson, CPT, MS (12 Jun - 31 Dec 81)
Detachment Commander/ Adjutant	Margaret M. Kulczyk, CPT, MS
C, Resources Management Group	Gary L. Bennett, MAJ, MS
C, Information Sciences Group	Raymond W. Serenbetz, CPT, MS (1 Jan - 11 Jun 81)
	Dale L. Murray, CPT, MS (12 Jun - 31 Dec 81)
C, Division of Ocular Hazards	Edwin S. Beatrice, COL, MC
C, Division of Cutaneous Hazards	George H. G. Eisenberg, Jr., MAJ, MS
C, Division of Combat Casualty Care	Ronald F. Bellamy, COL, MC
C, Division of Blood Research	Robert B. Bolin, LTC, MC (1 Jan - 30 Sep 81)
	Murdo G. MacDonald, COL, MC (1 Oct - 31 Dec 81)

C, Division of Research Support	Paul P. Jennings, Jr., LTC, VC (1 Jan - 22 May 81)
	John T. Fruin, LTC, VC (23 May - 31 Dec 81)
C, Division of Logistics	Michael H. Todd, MAJ, MS (1 Jan - 17 May 81)
	Louis B. Olaso, MAJ, MS (16 Aug - 31 Dec 81)
C, Medical Laboratory NCO/ First Sergeant	James H. Judkins, 1SG

LETTERMAN ARMY INSTITUTE OF RESEARCH
PRESIDIO OF SAN FRANCISCO, CA 94129



APPROVED John N. Marshall Jr
JOHN MARSHALL JR
Colonel MS
Commanding
DATE 1 Feb 1982

LAIR

CY 1981

3. Office of the Commander:

a. A new position was recognized and authorized within the Command Group. Jack B. Keller, Jr., DAC, GS-11, assumed duties as the Foreign Science Information Officer, providing a free flow of information on matters of intelligence interest to the command.

b. The position of Toxicology Project Officer was changed to Assistant Director for Arthropod Control effective 1 Dec 81. The new assigned mission for the incumbent is to act as a central manager for RDTE of material for the control of arthropods of military importance.

c. Mrs. C.B. Crosby, DAC, GS-04, transferred to the Division of Research Support in October leaving the Quality Assurance secretary's position open. At that time the Chief, Quality Assurance Unit (QAU), revised the QAU secretary job description to accurately reflect the current duties of the position which had changed considerably since the original description has been written. The new description did not fit neatly into the available civil service job categories since it incorporated secretarial, administrative, clerical, and scientific job elements. Civilian Personnel (CPO) classified the position as secretarial but customized the job description to fit the specialized requirements.

d. Thirty mobilization designee positions were authorized during the calendar year. Ten mobilization designees performed their annual training (AT) at LAIR during the reporting period.

4. Information Sciences Group:

a. Personnel departing from the Information Sciences Group included CPT R.W. Serenbetz, MS, D.A. Harris, DAC, GS-12, and V. Lam, DAC, GS-4.

b. Personnel arriving into the Information Sciences Group included CPT D.L. Murray, MS, SGT G. Pratt and V. Lam, GS-4.

c. Vacancies for two full-time temporary GS-09 computer programmer positions were advertised at three large universities in the San Francisco bay area. The positions remain unfilled.

d. Vacancy for one part-time temporary GS-12 Math-Statistician, was advertised at two large universities and two small community colleges in the San Francisco bay area. This position remains unfilled.

c. Recruitment for a GS-12, Biomedical Engineer with computer background was unsuccessful and subsequently the position was lost due to change in LAIR's TDA.

f. V.L. Gildengorin, DAC, Mathematical Statistician for LAIR, was promoted to GS-12, 5 April 81.

g. 1LT D.L Murray, MS, Chief, Information Sciences Group was promoted to the rank of Captain, 10 Jul 81.

5. Division of Ocular Hazards:

a. Division acquired two new researchers: J.A. Wolfe, MD, CAPT, USPHS, and D.D. Rigamonti, DAC, GS-12, Neurophysicist.

b. LTC M. Belkin, IDF, Ophthalmologist, returned to Israel, on 10 Aug 81, after a two-year research assignment in the Division.

c. LTC J.F. Weiss, MC, returned to private practice on 1 June 81, after a two-year assignment at LAIR.

6. Division of Cutaneous Hazards:

a. Addition of investigator in Division of Cutaneous Hazards: CPT D.R. Westrom, MC.

b. Dr. G.G. Krueger, MD, Research Dermatologist from the University of Utah College of Medicine continued to assist the Division of Cutaneous Hazards in the development of the nude mouse-grafted human skin model.

7. Division of Combat Casualty Care:

a. Key personnel arriving or assuming key positions in the Division of Combat Casualty Care during the reporting period were: COL M.L. Fackler, MC, General Surgeon, MAJ R.E. Burr, MC, Internist, and CPT D.F. Brown, MS, Biochemist.

b. Key personnel departing from the Division of Combat Casualty Care during the reporting period were: COL M.G. MacDonald, MC, Internist, and A.M. Abou-Zamzam, DAC, GS-13, Research Chemist.

c. Remaining shortages for the Division of Combat Casualty Care are one GS-09 Physiologist (position requirement recognized but not authorized), and four 92B technicians.

8. Division of Blood Research:

a. COL M.G. MacDonald, MC, joined the division from the Combat Casualty Care Division and became Chief of the Division of Blood Research on 1 Oct 81. LTC R.B. Bolin, MC, assumed duties of Assistant Chief.

b. Personnel joining the division were: MAJ C.M. Nilsson, MC, Hematologist, Aug 81; CPT R.W. Tye, MC, Sep 81; SP4 M.A. Thompson, Nov 81; PFC C.O. Lee, Nov 81; PFC K.R. Trimble, Dec 81, and L.A. Wettstein, DAC, GS-5, Typist-Stenographer, Feb 81.

c. Personnel leaving the division were: MAJ P.J. Scannon, MC, May 81, and MAJ P.R. Sohmer, MC, June 81.

d. The stroma-free hemoglobin solutions project, Division of Blood Research, was restructured into two areas of investigation: a) Safety aspects of hemoglobin solutions, and b) efficacy studies of hemoglobin solutions as blood substitutes. This program is directed by LTC R.B. Bolin, MC, and anticipates an IND application in the summer of 1982. Clinical studies would follow shortly after approval of the application.

e. The division has continued to grow. There was a net gain of one investigator this past year, intensifying a lack of space problem. The increased productivity of the division continues to strain the administrative support of the division.

9. Division of Research Support:

a. LTC P.B. Jennings, Jr., VC, Chief, Division of Research Support, was transferred to Germany during CY 81, and was replaced by LTC J.T. Fruin. SFC P.E. Klaus, Division NCOIC, went to the Academy of Health Sciences and was replaced by SFC E. Rodriguez, formerly of Division of Ocular Hazards.

b. The following key members of the Toxicology Group departed during CY 81 and were replaced as indicated:

Departed	Replaced By
CPT R.A. Wirtz, MS	CPT N.R. Powers, MS
SSG F.R. Pulliam	SSG L.D. White
SP5 M.G. Rusnak	PFC S.F. Orencole
E.L. McGown, DAC, GS-13	Vacant
A. Regh, DAC, GS-05	C.B. Crosby, DAC, GS-05

c. C.M. Lewis DAC, GS-0[illegible] and J. Dacey, DAC, GS-07, also joined the Group.

d. Several key personnel changes occurred during CY 81 in the Operating Room Services Group:

(1) The Chief, MAJ R.S. Dixon, VC, was transferred to Germany in May 81. MAJ W.C. Rodkey, VC, arrived in Aug and assumed the position of Chief.

(2) In Oct the NCOIC, SFC M.F. Jones, was transferred to Germany. SSG M. De LaCerda was elevated to the position of NCOIC.

(3) SP5 N. Champagne, an operating room specialist, separated from the Army in May 81; PV2 K.R. McLaughlin was assigned to fill that position in Aug 81.

(4) The Operating Room Services Group remains one 91D below authorized strength, but that vacancy is expected to be filled early in CY 82.

e. The following key personnel departures and assignments occurred in the Pathology Services Group during the report period:

(1) SSG A.M. Inocentes, NCOIC, departed for Fort Sam Houston, TX, for the Officer Basic Course and was replaced by SSG C.R. Beckett who transferred from the Division of Combat Casualty Care to become NCOIC, Pathology Services Group.

(2) MAJ G.E. Marrs, VC, was assigned to the Group.

(3) All authorized military and civilian positions were filled at the end of the year.

f. The following personnel departures and assignments took place in the Animal Resources Group:

(1) LTC J.A. Goldsboro, VC; CPT J.A. Worsing, VC; SFC A. Robles; and SP4 T. Allen were reassigned.

(2) In Dec, LTC R.D. Hall, VC, was assigned, replacing LTC J.A. Goldsboro, VC, as Group Chief. SSG R. Baylor was also assigned to Animal Resources Group.

(3) One military O-3 VC position, the Veterinary Comparative Medicine Officer, has been vacant since Sep 81.

g. In the Radioisotope Services Group SP5 L. Adams completed his term of service in the U.S. Army and was replaced by SP5 R.C. Rhetmeyer. SFC J.O. Malaska was promoted to his present grade, E-7, on 1 Jun 81.

h. During the report period, J.H. Skala, DAC, GS-14, Chief of the Analytical Chemistry Services Group resigned the position. He was replaced by E.L. McGown, DAC, GS-13, initially as Acting Chief and subsequently as Chief, Analytical Chemistry Services Group.

10. Division of Logistics:

a. The LAIR Activity Support Group (ASG) operation continues to be hampered by personnel shortages. Most fabrication and installation projects must be performed by outside agencies (contracts) at a greater cost. Again this year, a major problem is loss of the ASG engineer technician. The building drawings, vital to accurate maintenance/ repair/installation work continue to get further outdated. The LAIR equipment preventive maintenance program cannot be fully performed due to lack of personnel.

b. Budget limitations have necessitated review of the major Building Maintenance Contracts. The reviews have resulted in curtailment of some services previously provided (i.e. Custodial Contract cutbacks have made the LAIR divisions provide self-help cleaning of their laboratory and administrative areas).

c. The Supply Group remained basically stable throughout the year. There was a change of Purchasing Agents for the Blanket Purchase Agreements. Arrival of two additional enlisted personnel helped solidify the Property Book Section and Receiving Operation.

SECTION IV - TRAINING

1. Office of the Commander:

a. LAIR and the University of San Francisco reviewed the memorandum of agreement to continue the Graduate/Undergraduate Biological Science Affiliation Program. Students are continuing to spend a portion of the week working in the laboratories under the supervision of LAIR mentors. During the last year, 21 students participated in this cooperative program.

b. During the summer of 81, LAIR played host to two high school students who were selected as finalists in the International Science and Engineering Fair, sponsored in part by the Army Research Office. The visiting students spent a week at LAIR observing the work being conducted in the scientific area of their interest.

c. Also during the summer of 81, LAIR was the place of active duty for training eight Health Professions Scholarship students undergoing study at colleges and universities throughout the US.

d. LAIR military personnel participated in a joint field training exercise with Letterman Army Medical Center in Dec 81. The exercise, Combat Environmental Transition Training, provided LAIR personnel with refresher instruction on basic military subjects such as map reading, land navigation, weapons qualification, and other material useful in the transition from a peacetime to a combat environment. Several LAIR NCOs and officers served as cadre members and instructors during this training.

e. J.A. Broadwin, DAC, GS-11, completed the Advanced Online Training Course at the UCLA Biomedical Library, 18-22 May 81.

f. CPT J.C. Johnson, MS, attended a Quality Assurance Roundtable in Williamsburg, VA., 29 Sep - 1 Oct 81, and completed the training course "Good Laboratory Practice" by Craig Stewart and Associates.

2. Information Sciences Group:

a. A half-day class on use of the BINDER utility software package was given at LAIR by Mr. Harris Freeman of Data General Corp. SF, CA, on 7 Jan 81.

b. W.H. Langley, DAC, GS-12, was awarded MS degree in computer sciences from San Francisco State University, SF, CA, on 20 Jan 81.

c. V.L. Gildengorin, DAC, GS-12, and W.H. Langley, DAC, GS-12, attended a computer graphics workshop at the Lawrence Berkeley Laboratory on 21 Jan 81.

d. D.A. Harris, DAC, GS-12, conducted a 3-week course in BASIC computer language 2-21 Feb 81 and again 6-25 Apr 81. A total of 36 individuals from various divisions within LAIR attended.

e. D.A. Harris, DAC, GS-12, commenced teaching on 21 Feb 81 the document processing system (TIPS). Approximately 12 individuals from various divisions within LAIR attended.

f. V.L. Gildengorin, DAC, GS-12, attended a course entitled, Simulation Modeling and Analysis, in San Francisco, CA, on 27 May 81.

g. W.H. Dailey, DAC, GS-11, attended a 5-day course, Data/81, at the University of Santa Clara, Santa Clara, CA, 24-28 Aug 81. Mr. Dailey also attended a workshop entitled, TEX Implementors, Stanford University, Palo Alto, CA, 14-15 May 81.

h. Mr. R. Anderson of Beckman Inc., Oceanside, CA, conducted a seminar at LAIR on the setup and use of the protocol administration and

experiment data collection subsystems of the TOXSYS information systems for toxicology research on 12-13 Aug 81.

i. Mr. B. Derby of the Data General Corp., SF, CA, conducted a seminar at LAIR on the use of the INFOS management system on 24 and 31 Aug 81.

j. W.H. Langley, DAC, GS-12, conducted a class, Introduction to Data Processing at LAIR, 26-30 Oct 81. A total of 33 individuals from various divisions within LAIR attended.

k. 1LT J.A. Melton, MS, LAMC, volunteered to conduct a 36-hour class in BASIC as an Interactive Programming Language at LAIR 3-27 Nov 81. A total of 18 individuals from various divisions within LAIR attended.

l. SFC J.L. Moore, NCOIC, attended Advanced NCO Education Schooling, Ft. Benjamin Harrison, IN, 1 Oct thru 18 Dec 81.

3. Division of Ocular Hazards:

a. LTC M. Belkin, IDF, attended seminar on corneal contact lenses, and refract keratoplasty in San Francisco, 8-9 May 81.

b. SFC V.R. Farr completed several correspondence courses in Clinical Pathology.

c. SP5 R.L. D'Armand completed Ophthalmic Medical Assistants correspondence course, American Association of Ophthalmology, 3 Sept 81.

4. Division of Cutaneous Hazards:

a. CPT W.W. Jederberg, MS, attended Laboratory Safety Practices Course conducted at the Sheraton Palace Hotel, San Francisco, CA, 22-24 Jun 81.

b. CPT W.W. Jederberg, MS, CPT C.T. White, MS, SP6 W.G. Bell, SP5 E.J. Martin, SP5 K.A. Unruh, SP5, S.J. Barnhart, G.J. Klain, DAC, GS-15, and P. Schmid, DAC, GS-13, attended Cardiopulmonary Resuscitation and Emergency Cardiac Care course conducted at LAIR, 16-17 Jun 81.

c. MAJ G.H.G. Eisenberg, Jr., MS, attended Command and General Staff Officer Course, Phase II, University of Nevada, Reno, NV, 13-28 Jun 81.

d. SFC R.J. Smiljanic attended 1SG Refresher Course conducted at Ft Ord, CA, 3-12 Aug 81.

e. CPT M.D. Buescher, MS, and SP5 P.L. Plamp attended the Medical Entomology and Pest Control Technology Course at the Navy Disease Vector Ecology and Control Center, Alameda Naval Air Station, CA, 14 Sep thru 9 Oct 81.

f. SP6 H.G. Semey attended the Medical Entomology and Pest Control Technology Recertification Course at the Navy Disease Vector Ecology and Control Center, Alameda Naval Air Station, CA, 13-16 Oct 81.

g. SP6 H.G. Semey attended Shipboard Pest Control Course at the Navy Disease Vector Ecology and Control Center, Alameda Naval Air Station, CA, 27-28 Oct 81.

h. W.G. Reifenrath, DAC, GS-13, attended Management Skill Improvement Course at Presidio of San Francisco, CA, 27-29 Oct and 3 Nov 81.

5. Division of Combat Casualty Care:

a. COL R.F. Bellamy, MC, SP5 E.M. Mahoney, SP5 M.O. Baysinger, and SP5 L.R. DeGuzman attended the Advanced Trauma and Life Support Course given by the Letterman Army Medical Center through the American College of Surgeons, Oct 81.

b. COL R.F. Bellamy, MC, was certified by the American Heart Association as an Advanced Life Support Provider in Jul 81, and was certified by the American College of Surgeons as an Advanced Trauma Life Support Provider, Oct 81.

6. Division of Blood Research:

a. SSG D.R. Tompkins, SP6 K.W. Chapman, and SP5 J.T. Hawkins attended the 3rd Western Area Pheresis Workshop, Los Angeles, CA, 18-19 June 81.

b. F. Medina, DAC, GS-9, attended a Gel Methods Course, sponsored by LKB Instrument Co., San Francisco, Aug 81.

c. G.L. Moore, DAC, GS-14, attended the following courses: Correlation and Regression Analysis, Office of Personnel Management, San Francisco, May 81; Management Skills Course, Civilian Personnel Office, Nov 81.

d. M.E. Moore, DAC, GS-11, attended a three-day course, in Personnel Management in the Spring of 81.

e. COL M.G. MacDonald, MC, and LTC R.B. Bolin, MC, attended the American College of Physicians Course, Present Concepts in Internal Medicine, Letterman Army Medical Center, 6-9 Oct 81.

7. Division of Research Support:

a. A.L. Wilkinson, DAC, GS-06, Office of the Chief, attended the Office of Personnel Management course entitled "Office Management," held at the San Francisco Training Center, 19-21 Aug 81.

b. CPT M.A. Hanes, VC, Toxicology Group, attended a 2-week specialized "on-the-job training" program in teratology at the Environmental Protection Agency, Research Triangle Park, North Carolina, 3-13 Jul 81.

c. CPT N.R. Powers, MS, Toxicology Group, attended the Biochemistry Seminar, held at U.C. Berkeley, CA, Fall 81.

d. C.M. Lewis, DAC, GS-09, Toxicology Group, attended *Introduction to Data Processing* and the FORTRAN Programming Course, San Francisco City College, Spring 81, and in the fall, attended a COBOL Programming course.

e. SP5 L.J. Sauers, Toxicology Group, enrolled as a candidate for a Master of Science degree in biology, University of San Francisco.

f. SP5 L.C. Kincannon, Toxicology Group, attended courses in Medical Microbiology and in Immunology, San Francisco State University.

g. SP5 J.S. Alletto completed a course in Immunology, San Francisco State University.

h. In the Pathology Services Group, preceptorship training in Veterinary Pathology was conducted. Three Veterinary Corps officers, CPT A.T. Burrs, VC, CPT M.J. Langford, VC, and CPT G.T. Makovec, VC, were participants in this program which is designed to prepare Veterinary Corps Officers for board certification by the American College of Veterinary Pathologists.

i. CPT A.T. Burrs, VC, and CPT G.T. Makovec, VC, attended the AMEDD short course entitled "Pathology of Laboratory Animals" at the Armed Forces Institute of Pathology, Washington, DC, 10-14 Aug 81; CPT M.J. Langford, VC, attended the course entitled "Comparative Pathology" at the Armed Forces Institute of Pathology, 4-6 May 81.

j. Two enlisted technicians, Pathology Services Group, were given on-the-job training in Techniques for Scanning and Transmission Electron Microscopy. Also, two enlisted technicians were trained in monolayer tissue culture techniques for diploid fibroblasts, established cell lines, and primary cultures. One enlisted technician was trained in techniques for tracheal organ cultures. The capability for growing and maintaining mammalian cells and tissue in vitro was established as part of a research program designed to use these in vitro systems for basic studies in toxicology.

k. R.G. Williamson, DAC, GS-4, completed two courses offered at Western Regional Training Center, Office of Personnel Management, San Francisco: 1) Report Writing, 17-19 Mar 81, 2) Technical Writing, 5-8 May 81

l. In the Operating Room Services Group, MAJ R.S. Dixon, VC, while assigned, attended a refresher course at the Academy of Health Sciences, 22 Mar-11 Apr 81. MAJ W.G. Rodkey, VC, presented a paper at the annual meeting of the American College of Veterinary Surgeons, New Orleans, 17-20 Feb 81; he co-authored three papers presented at the annual meetings, American Society for Surgery of the Hand, and American Orthopedic Society for Sports Medicine, Las Vegas, 22-26 Feb 81. In addition, he was a faculty member for the Military Veterinary Medicine Symposium held at Walter Reed Army Institute of Research, 26 Apr-2 May 81.

m. The entire civilian animal caretaker and enlisted animal specialist staffs of the Animal Resources Group attended the California Veterinary Medical Association Scientific Seminar for Animal Health Technicians, 28-31 Oct 81.

n. The Animal Resources Group held weekly training seminars in animal restraint, anesthesia, and radiology for the veterinary technicians.

o. J.J. Knudsen, DAC, GS-7, Analytical Chemistry Group, attended a course offered by Varian Instrument Division entitled "Gas Chromatograph Maintenance," held in Walnut Creek, CA, 10-11 Sep 81.

p. R. O'Connor, DAC, attended a course in Sunnyvale, CA, offered by Perkin-Elmer Corp., entitled "Infrared Spectroscopy and Infrared Spectroscopy Software."

q. The Radioisotope Services Group assisted in the training portion of the Letterman Army Medical Center course, "Safe Use and Handling of Radioisotopes." The Radioisotope Services Group also conducted radiation safety instruction for Institute personnel.

r. In the Radioisotope Services Group, MAJ E.W. Askew, MS, attended a one-day course on "Nutrition and Competitive Athletics" at the University of California, Berkeley, 17 Jan 81; he also attended a one-day symposium on "Dimensions in Nutrition" at Colorado State University, 24 Mar 81. In addition, he attended the Federation of American Society for Experimental Biology meetings in Atlanta, GA, 13-17 Apr 81.

s. SP4 K.A. Volk, Radioisotope Services Group, enrolled in a "Clinical Biochemistry" course at San Francisco State University.

8. Division of Logistics:

a. T.J. Thompson, DAC, WL-11, SFC D.H. Fuss, J.D. Collins, DAC, GS-3, S.A. Box, DAC, GS-4, SP5 E.B. Wise, CPT R.H. Neuteboom, MS, attended the AMEDDPAS Training, May 81.

b. T.J. Thompson, DAC, WL-11, attended the Textronix Repair Training, Aug 81.

c. R.E. Bowen, DAC, WG-11, L.D. Bohler, DAC, GS-12, attended Ballistics Training, June 81.

SECTION V - MATERIEL

1. Division of Ocular Hazards: The division received a completed TOW simulator fabricated by Hughes Aircraft, under contract to the Electric Warfare Laboratory, Ft Monmouth, New Jersey, 1 Sep 81. This device will be used in field studies on ocular protection and incoherent flash effects.

2. Division of Blood Research: The sudden imposition of budget restrictions during CY 81 created unexpected shortages of supplies which interrupted the orderly performance of certain aspects of research within scheduled milestones. The backlog of purchase orders created by the budget restrictions has led to continuing supply problems which interfere with the timely completion of work as scheduled.

3. Division of Research Support: Key items of equipment transferred to the USDA in 1980 by Congress have been resolved. New automated microprocessor central replacements have been acquired resulting in increased productivity.

4. Radioisotope Services Group: The Group purchased and installed a new Packard scintillation counter and Tri-Carb sample oxidizer.

5. Division of Logistics:

a. A computer program was developed by Mr. L.D. Eohler, DAC, GS-12, to document/file building construction and major repair projects.

b. The accountable property at LAIR increased to 14135 line items with a decreased value of $9,920,623.63. This compares to 14057 line items valued at $9,925,305.97 reported for the previous year. The insignificant change was a result of purchases of new equipment equaling disposals.

c. A total of 475 line items with a value of $867,205.36 of excess and/or salvage was either turned in to property disposal or laterally transferred to other organizations.

d. The average number of standard requisitions processed each month during the past year equaled 122 line items. Non-standard purchase requests averaged 228 line items processed each month during the period. The Supply Group maintained 30 Blanket Purchase Agreements (BPAs) which averaged 259 line items processed each month.

e. AMEDDPAS (Army Medical Department Property Accounting System) with change package five was implemented in May 81. The initial change created confusion but many of the problems have been resolved.

SECTION VI - CONSTRUCTION

1. The Ballistics Injury Laboratory became operational in the Division of Combat Casualty Care.

2. The following projects were completed by the Division of Logistics during CY 81:

a. Building Equipment Preventive Maintenance (PM). The ongoing equipment PM program continues to be modified and improved. This aggressive program is considered the major maintenance priority, to minimize future problems with the building major equipment and systems.

b. Incinerator Air Blower. This unit was installed to improve incinerator efficiency, to meet Bay Area pollution standards.

c. The building main electrical power transformers were repaired to stop PCB oil leaks. These units are scheduled for replacement with non-PCB units in 1985.

d. Ballistics Injury Laboratory. This project is approximately 98% complete, but is presently in operation to perform ballistics experiment work.

e. Computer Room Power. A new power transformer system was installed for the LAIR computer area to support the new computer. The new system provides alarm/shutdown capabilities required to adequately protect the computer system.

f. LAMC Ether Extraction Laboratory. This facility provides for LAMC ether extraction work in an explosion-proof environment.

g. LAMC/Fort Baker Move. Additional work, (primarily utilities installation) was performed this year to support the Fort Baker laboratory move into the LAIR Building.

h. Water System. Major repair was performed on the building water softener systems. Both tanks were cleaned, sandblasted and epoxy-coated. New resin material was installed. New water sprinkler manifolds were fabricated and installed.

3. The following projects were started in the Division of Logistics during CY 81.

a. Fire/Smoke Study. An Engineering Firm is performing a fire/smoke study of the LAIR Building. The study will result in possible recommendations for improving the LAIR Building fire/smoke safety. The study is scheduled for completion in Mar 82. The study is approximately 20% complete.

b. Fume Hood/Ventilation. A request for an engineering study has been initiated to study original design deficiencies in the LAIR ventilation systems. The study will result in possible recommendations for improving the LAIR Building ventilation systems. This study will start in mid 82.

c. LAMC Computer Room changes. The LAMC Computer Organization, MISO, is installing new computer systems in LAIR. To support the new equipment requirements, this project will provide structural changes and install a new electrical power system similar to the new LAIR power system. The new electrical system provides for alarm/shutdown capabilities for protecting new and existing computer systems. The project is scheduled for completion in Jan 82. The project is 90% complete.

d. Calibration Van Electrical Power. Electrical power service is being installed (by the LAIR Activity Support Group) to provide support for the Depot Calibration Van. The van ties up at the LAIR loading dock every 120 days to perform calibration for LAIR equipment. This project is scheduled for completion in Jan 82. The project is 20% complete.

e. USDA Laboratory Modification. The USDA is remodeling their ward/laboratory areas to provide for their research requirements. The LAIR Chief, Activity Support Group (Mr. L.D. Bohler, DAC, GS-12) is the Engineering POC and Contracting Officer's Representative for this project. The project is scheduled for completion in Feb 82. The project is 80% complete.

f. Chemical Storage Building. A Hazardous Chemical Storage is being constructed for LAIR. This is an exigent minor construction project. The 2800 sq. ft. building scheduled for completion in Jan 82 is 70% complete.

g. Water Main Backflow Preventer. A USAMRDC funded project is now at procurement for contract bids to install a backflow preventer on one of the Building 1110 water mains. This item was omitted in the original building design. The project is scheduled for completion in Mar 82. The project is not yet started.

SECTION VII - ASSISTANCE PROVIDED CIVILIAN AND OTHER GOVERNMENTAL AGENCIES

1. During 28-30 Apr 81, the 13th Annual United States/Republic of Korea Security Consultative Meetings were held at the LAIR facility. LAIR staff members assisted in the planning and coordination of these meetings and provided assistance to Secretary of Defense, Caspar W. Weinberger, Korean Defense Minister, Choo Young Buck, and their staffs.

2. Office of the Commander:

a. While performing duties as the Toxicology Project Officer, COL A.M. Allen, MC, participated in the following activities:

(1) Lectured at the occupational medicine rounds, University of California Medical Center (UCSF), on 21 May and 16 Jul 81.

(2) Lectured students attending a mini-residency in occupational medicine sponsored by UCSF on 8 Sep 81.

(3) Served as a faculty member at the University of Pennsylvania symposium, "Assessment of Efficacy and Safety of Topical Drugs and Cosmetics," 17-19 Oct 81.

(4) Gave a seminar on future research in toxicology and lectured on epidemiology, Department of Community and Environmental Medicine, University of California at Irvine, 23 Apr 81.

b. Funding support and project management for medical research and development in the areas of combat casualty care and laser

bioeffects were provided to approximately 50 investigators in educational institutions, industry and other government facilities. Approximately $2.7M was provided to these activities during CY 81.

c. CPT J.C. Johnson, MS, presented a summary of the way in which LAIR has implemented the Good Laboratory Practices regulations: Technical Coordinating Panel at U.S. Army Institute of Medical Research for Chemical Defense at Edgewood, MD, on 8 Jul 81.

d. LAIR has supported the San Francisco Bay Area Council of the Boy Scouts of America by providing meeting rooms and volunteer personnel.

3. Information Sciences Group:

a. The staff of the Information Sciences Group provided consultative and data processing communications and machine time support to LTC T.J. Marciniak, TRIMIS-Army, WRAMC, who is conducting the conversion of the CLINFO (renamed RESEARCHER) database management system to the LAIR Data General Eclipse C330 minicomputer.

b. Personnel from the Information Sciences Group and the Medical Audio Visual Group at LAIR provided support to LTC T.J. Marciniak, TRIMIS, Army, to demonstrate the RESEARCHER data management and at analysis system at the joint meeting of the Association of American Physicians, American Society for Clinical Investigation and American Federation for Clinical Research in SF, CA, on 25-27 Apr 81.

c. CPT R.W. Serenbetz, MS, assisted in judging for the Twenty Eighth Annual San Francisco Bay Area Science Fair, Academy of Sciences, Golden Gate Park, SF, CA, 4-8 Apr 81.

4. Division of Ocular Hazards:

a. Data on laser bioeffects for both supra and subthreshhold effects were provided to US Army Concepts and Analysis Agency.

b. Data on retinal and corneal effects for biomedical laser-threat scenarios were provided to TRADOC and CACDA directorates.

c. Conducted activities with the Persh Subcommittee on Ocular Protection in technical requirements for ocular protection against lasers.

d. Coordinated and provided laser-threat/medical assessment briefings to Cdr, USAMRDC, and to The Surgeon General.

e. Provided expertise in dark adaptometer, ultrasonography, and visual electro-physiology to Bay Area military ophthalmology departments for evaluation of special "difficult" diagnostic procedures.

f. Delivered a one-day lecture series on ophthalmic diagnosis to the Army and Navy ophthalmology resident and staff.

g. Transferred dark adaptometer technology to USARIEM, Natick, MA.

h. Completed hardware-software documentation of LAIR Dark Adaptometer to USARRL, Ft. Rucker, AL.

i. Conducted activities with Academy of Health Sciences in technical instruction on laser hazards/requirements documents for ocular protection (ballistics/laser).

j. Provided experimental data of laser effects on visual function to ERADCOM.

k. Provided briefings and current concepts in ocular protection to Defense Science Board study group.

l. Provided guidance and background information on laser protection to Army Science Board study group.

5. Division of Cutaneous Hazards:

a. Mr. Pat Luft, San Jose, CA, an Army Science Board Award winner, was given orientation on culture methods for insects of medical importance in the Division of Cutaneous Hazards and an orientation on the SLRL test of mutagenicity in Division of Research Support, 3-7 Aug 81.

b. CPT W.W. Jederberg, MS, presented a lecture to the personnel from LAMC Cell Separation Unit on Immunology on 9 Oct 81.

c. P. Schmid, DAC, GS-13, reviewed "Evaluation of Research Proposals in Biochemistry and Lipids" for U.S. Army Research Office, Research Triangle Park, N.C., 81.

d. Eggs of the phlebotomine sandfly Lutzomyia longipalpis for establishment of new colonies for research were provided to the Yale Arbovirus Research Unit, Yale University School of Medicine, New Haven, CT, and to the U.S. Army Medical Research Institute of Infectious Diseases, Fort Detrick, Frederick, MD.

e. CPT Tu-Hi Hong, MC, presented the results of collaborative studies of prostatic tumor tissue in nude mice with CPT W.W. Jederberg, MS, to the Kimbrough Urological Seminar, Denver, CO, 15-20 Nov 81.

f. Eggs and/or adults of the yellow fever mosquito, Aedes aegypti, were provided to the University of California at San Francisco, CA, SRI International Inc., Menlo Park, CA, and the Chevron Research Company, Richmond, CA.

6. Division of Combat Casualty Care:

a. COL R.F. Bellamy, MC, is Chairman of the Surgery Subcommittee of the U.S. Army Medical Research and Development Advisory Committee. He is also Clinical Assistant Professor, Department of Surgery, Uniformed Services University of the Health Sciences; serves as guest referee for the journals Circulation Research and Circulation; and was a member of the Faculty Council on Circulation, Cardiopulmonary Council Scientific Sessions, American Heart Association, Aug 81. COL Bellamy was also visiting professor, Department of Cardiology, State University of New York at Buffalo, NY, Apr 81.

b. COL M.G. MacDonald, MC, was a member of the staff for the FORSCOM Biathalon Training Camp (at the request of the Morale Services Division, Washington, DC), Camp Ethan Allen Training Site, Jericho, VT, 14-31 Jan 81.

c. MAJ L.W. Traverso, MC, gave a presentation entitled "The Trends and Treatments of Pancreatic Cancer" at Surgery Grand Rounds, Stanford University, Palo Alto, CA, Mar 81, and was a guest speaker at the Gary P. Wratten Surgical Symposium, San Antonio, TX, 28 Apr - 2 May 81.

d. CPT R.L. Scott, MS, visited the La Jolla Cancer Institute, La Jolla, CA, to discuss methods of quantifying rat fibronectin, 4 Sep 81.

e. J.P. Hannon, DAC, GS-15, serves as a member of the USAMRDC Surgical Research Subcommittee, serves as scientific reviewer for the American Physiological Society, American Association for the Advancement of Science, American Veterinary Medical Association, and American College of Sports Medicine. He also serves as scientific consultant to the National Science Foundation, National Institutes of Health, and Cutter Laboratories. Dr. Hannon is a member of the LAMC Human Use/Protocol Review Committee, serves as U.S. Civil Service Commission Activity Career Program Manager, and consultant/advisor to the U.S. Army Extramural Surgical Research Program. Dr. Hannon also performed a contract site visit to the University of Iowa College of Medicine, Iowa City, IA, 2-4 Apr 81.

7. Division of Blood Research:

a. LTC R.B. Bolin, MC, discussed the hemoglobin project with American Critical Care Corporation to determine an approach to obtain an IND for hemoglobin as a blood substitute, Sep 81; assisted the American Red Cross in planning their X Annual Symposium to be held May 82; met with CPT Valeri, USN, at Boston Naval Blood Research Laboratory to discuss mutual projects which generated a letter of understanding for the sister programs; met with Dr. Nelson and staff, US Army Medical Bioengineering Research and Development Laboratory, Ft. Detrick, MD, Apr 81, to discuss development of a field-adaptable water purifier for field-usable resuscitation fluids; met with American Red Cross representatives, Washington, D.C. to discuss their interests in CPDA-2; met with LTC J. Woodey, Georgetown University to discuss interaction on the stem cell project; met with National Institutes of Health representatives about a jointly sponsored symposium on blood substitutes.

b. The principal investigators of the division met with members of the Jet Propulsion Laboratory to discuss a sterile docking device to provide medical-grade water for reconstituting blood products in the field. In Feb, Jul, and Sep 81, LTC R.B. Bolin, MC, MAJ R.R. Sohmer, MC, G.L. Moore, DAC, GS-14, and F. DeVenuto, DAC, GS-14, met with Cutter Laboratory representatives, Berkeley, CA, to discuss development of Optional Additive Systems, Ascorbate Phosphate for human use, and the manufacture of lyophilized hemoglobin in plastic bags for field use.

c. F. DeVenuto, DAC, GS-14, has provided hemoglobin solutions to several investigators having USAMRDC contracts. The Army Military Intelligence Agency requested analysis of a foreign material having potential as a plasma expander. A report was made to them by Dr. DeVenuto. Investigators at Kessler AFB were given assistance in establishing their program on hemoglobin solutions as blood substitutes.

8. Division of Research Support:

a. LTC J.T. Fruin, VC, served as Consultant to the U.S. Army Surgeon General in Food Hygiene. He answered questions regarding food wholesomeness, microbiological contamination, food spoilage, and disposition of food suspected of contamination.

b. More than 50 Good Laboratory Practices (GLP) Standard Operating Procedures (SOPs) were provided to other medical department facilities. GLP SOPs represent a significant amount of professional investigator-level input and should be viewed as a valuable Medical Department asset.

c. LTC J.A. Goldsboro, VC, served as a consultant on Laboratory Animal Medicine to the Naval Biomedical Research Laboratory and Clinical Investigation Service, Oak Knoll Naval Hospital, Oakland, CA, 1 Jan-31 Dec 81.

d. LTC J.A. Goldsboro, VC, presented a two-day lecture on Primate Diseases and Use of Primates in Biomedical Research to third year veterinary students, at the Tuskegee Institute School of Veterinary Medicine, AL, 4-5 Feb 81.

e. LTC J.A. Goldsboro participated as guest lecturer at the 16th Annual Veterinary Symposium, Tuskegee Institute, AL, and presented a lecture entitled "The Care and Breeding of the Nude Mouse."

f. LTC P.W. Mellick, VC, served on the Education Committee of the American College of Veterinary Pathologists for organizing the scientific program for the 1981 annual meeting, held in Monterey, CA, 10-14 Nov 81. He presented a paper entitled "Comparative Aspects of Airway Structure."

g. LTC P.W. Mellick, VC, served as point of contact for a meeting of the US-Japan non-energy (R&D) cooperation on Animal Science - Workshop on Microbiological Monitoring. The meeting was held at LAIR, 14-16 Dec 81.

h. LTC P.W. Mellick, VC, served on a standing committee to provide liaison between the American College of Veterinary Pathology and the Registry of Veterinary Pathology, Armed Forces Institute of Pathology. He also served on the Steering Committee for the annual Primate Pathology Workshop, held in conjunction with the annual meeting of the International Academy of Pathology. In addition, he served as consultant in veterinary pathology to the Department of Anesthesia, College of Medicine, University of California, San Francisco.

i. SP5 L.J. Sauers presented a lecture on the Ames Assay and the Drosophila SLRL to the Graduate Division of the Institute of Biological Chemistry, University of San Francisco, Oct 81.

j. Personnel of the Electron Microscopy Laboratory, Pathology Services Group, provided assistance and electron microscope time to Dr. Douglas Pratt, Department of Pharmacy and Pharmacology, University of California, San Francisco.

k. The staff of the Pathology Services Group provided gross pathology, histochemistry, clinical pathology, and electron microscopy support for investigators in five Institute divisions and the Letterman Army Medical Center Clinical Investigation Service.

1. In conjunction with the Veterinary Pathology Preceptorship Training Program, officers of the Pathology Services Group provided consultation on selected cases to Dr. James L. Fowler, Florida State Diagnostic Laboratory, Live Oak, FL, and to several civilian veterinarians in the Bay Area.

9. The Operating Room Services Group:

a. Supported the Therapeutic Gastrointestinal Laser Endoscopy course, co-sponsored by LAMC. This course was attended by approximately 40 physicians from LAMC and the civilian community, 21-23 Jan 81.

b. Supported the Ophthalmic Phacofragmentation course, sponsored by the Department of Ophthalmology, LAMC. This course was attended by approximately 16 ophthalmic surgeons from all branches of the military, 5-6 Mar 81.

c. Supported the Advanced Trauma Life Support Course, co-sponsored by the Department of Surgery, LAMC, and the American College of Surgeons. This course was attended by 20 physicians and surgeons from the Army, Navy, and Air Force, 19-21 Oct 81.

SECTION VIII - IMPROVEMENTS AND SIGNIFICANT ACCOMPLISHMENTS

1. General:

a. Significant improvement of the capabilities of LAIR took place this year with the creation of a Ballistic Injury Laboratory. A specialized laboratory was developed which satisfied all the relevant safety and security requirements. The necessary hardware for generating ballistic missiles of a defined size and velocity was obtained and personnel were trained in its use. This facility provides LAIR with the capability of propelling ballistic missiles of various sizes (from very small to NATO round size) at controlled velocities that range from 1000 ft/sec to more than 5000 ft/sec. This laboratory will allow evaluation of the physics of high velocity particles, peculiar biomedical effects of such particles, and surgical strategies required to treat the devastating wounds they cause. The laboratory will support studies in the Divisions of Ocular Hazards, Blood Research, and Combat Casualty Care.

b. Improvement of LAIR safety and occupational health program was denoted by compilation of the first comprehensive health hazards inventory and instituting a comprehensive medical surveillance system.

c. With medical research contract support, a double-blind clinical trial of J5 antiserum to treat gram-negative bacteremia has

been completed. Study results indicate that the developed antiserum substantially lowers the death rate from gram-negative bacteremia and septic shock. The investigators suggest that the J5 antiserum should be considered part of the standard treatment of gram-negative bacteremia.

d. Quality Assurance Unit has continued its efforts to bring the laboratory into compliance with Food and Drug Administration (FDA) Good Laboratory Practices Regulations. Specific accomplishments include the following: a) Implementation of archiving procedures, b) development and implementation of a study review and audit process, c) certification of 96 Standard Operating Procedures (SOPs), d) development and implementation of an automated Master Schedule and Archive Indexing System, e) streamlining of inspection and follow-up documentation procedures, f) review, audit and archival of 18 studies and g) certification of 33 Good Laboratory Practices protocols.

e. Resources Management Group installed and implemented an automated accounting augmentation system that permits more accurate accounting in the STANFINS arena, to include cost distribution models, labor accounting mechanisms and status reporting. They also installed and implemented a computer operated Authorization Document/Manning Chart to ensure current staffing and authorization data.

2. Information Sciences Group:

a. A Dunn Instruments 631 color camera was installed and interfaced to the Tektronix 4027 color graphics terminal on 6 Jan 81.

b. J.T. Hixson, DAC, GS-09, completed installation of the Tektronix Color Easygraphing software package on the LAIR Eclipse C330 minicomputer on 16 Mar 81. The Easygraphing package is a totally data-driven graphics package and requires no user programmed interface.

c. A Data General Eclipse MV8000 minicomputer was installed in the Information Sciences Group on 4 Jun 81. The MV8000 is a state-of-the-art general purpose digital computer with 32-bit word size and virtual addressing. The system runs under the Advanced Operating System/Virtual Storage (AOS/VS) and is configured with 2M bytes of main memory and 570M bytes of on-line disk storage. The Data General MV8000 installation was completed on schedule and was made available for general use in Aug 81.

d. J.T. Hixson, DAC, GS-09, developed a prototype programmable calculator-based system to support entry of bacteria colony count data collected in Ames assay.

e. Under the guidance of W.H. Langley, DAC, GS-12, and J.T. Hixson, DAC, GS-09, an Institute working group was formed to study the features and application of computer-based word and office automation tools. Redundant versions of the DOC text formatting program with minor functional differences were merged and enhanced into a single software package by Mr. Hixson. Evaluation of the TIPS word processing package on the LAIR Eclipse C330 mini-computer continued with the installation of improved versions.

f. Throughout the year, W.H. Langley, DAC, GS-12, monitored the contracted installation by Beckman, Inc., Oceanside, CA, on the LAIR Data General Eclipse C330 minicomputer of the TOXSYS information system for toxicology research. Testing of protocol administration, experiment data collection and environment identification components of the system continued over this period.

g. The Data General Corp. database management/interactive query software package was installed on the LAIR Eclipse MV8000 computer on 17 Aug 81. Testing of the package showed it could not be run from non-Data General terminals (widely used at LAIR) because of cursor positioning controls which are hard-coded in the software. Options selected in exchange for the DBMS software included installation of the INFOS II Query /Report Writer software on the MV8000, retrofitting of the MV8000 printer with an upper/lower case character set, and installation of software that supports Fortran 77 on the Eclipse C/330 and conversion of Fortran 5 to Fortran 77 on the MV8000.

h. Installation of the new computer-room power distribution system was completed in Apr 81.

i. Installation of the Multiplexor Communications Adapter and cabling was completed in December 81, permitting high speed transfer of data between the C330 Eclipse and MV8000 Eagle computers.

j. USER, MATHSTAT, OFFICE and GRAPHICS directories were created or reorganized on the LAIR Eclipse C330 and MV8000 computers to more properly catalog files that support applications systems.

k. An Eclipse C330 dose-report software program, a supporting based animal data acquisition system was completed by Mr. M. Nasr, DAC, GS-09, in Nov 81.

3. Division of Ocular Hazards:

a. Provided newly expanded bioeffects data base for laser training device safety (MILES) to US Army Environmental Hygiene Agency and the Project Manager for training devices.

b. Completed research into bioeffects of new infrared laser threat scenarios.

c. Developed new biomedical data base for laser threat scenarios.

d. Completed final data for recommended and accepted changes in TB MED 279 and AR 40-46 safety levels for pulse repetition lasers.

e. Completed simulated laser flash effects studies for typical field exposure conditions.

f. Completed studies in treatments to prevent ocular fibrosis after trauma.

g. Received and tested TOW simulator in flash effects studies at Camp Parks, CA.

h. Completed simulated laser flash studies in Project BLASER.

4. Division of Cutaneous Hazards:

a. L.C. Rutledge, DAC, GS-13, met with LTC B.D. Svobada and CPT M.J. Fisher, Materiel Division, Directorate of Combat Development and Health Care Studies, US Army Academy of Health Sciences, Fort Sam Houston, TX, 5-6 Mar 81. The purpose of the meeting was to initiate a Letter of Agreement (LOA) for development of an improved topical arthropod and leech repellent. As a result of the meeting, a first draft of the proposed LOA was submitted to the Academy in April, and a revised draft was completed by the Academy in May. The revised draft is currently being staffed to other interested agencies by the Academy.

5. Division of Combat Casualty Care:

a. Following completion of studies designed to measure blood flow during cardiopulmonary resuscitation, a new study has been instituted to develop a model in which cardiovascular and cerebral function, after resuscitation, can be assessed.

b. A commercial captive bolt gun has been modified to make myocardial contusions in anesthetized pigs.

c. Shock is induced by release of several different acinar cell enzymes, including glandular kallikrein and a histamine-releasing agent.

d. Rats with an abnormally low P_{50} have a greater survival when exposed to organophosphates than do normal rats.

e. A conscious, chronically instrumented porcine hemorrhagic shock model has been perfected. Studies are now underway to determine regional blood flow distribution.

f. The hemodynamic effects of 7.5% saline and Ringer's lactate are being compared using the porcine hemorrhagic shock model. Thyrotropine-releasing factor did not increase survival in a rat hemorrhagic shock model.

g. Assays have been developed for 21 hormonal or metabolic substrates likely to be important in low flow states and trauma.

h. Low energy irradiation of full-thickness tissue defects was not found to accelerate wound healing. A variety of dressings for full-thickness tissue defects are now being evaluated.

i. A technique has been established for determining the true in vivo biological viscosity of resuscitation fluids.

j. Naloxone was not found to improve performance of shocked hearts when evaluated in a right heart bypass porcine model in which left ventricular function curves can be constructed. A beta endorphin assay was developed as part of this study.

k. The isolated perfused organ model was established. This allows the oxygen delivering capacity of resuscitation fluids to be measured at any desired flow rate or gas tension.

l. Reductases of both metmyoglobin and methemoglobin are inhibited by cobalt acetate, which may be related to the therapeutic efficacy of cobalt salts in cyanide poisoning.

6. Division of Blood Research:

a. All protocols of the Division of Blood Research were updated and presented for approval to the Ad Hoc Committee for Blood Preservation.

b. The stroma-free hemoglobin research has been redirected into safety and efficacy studies leading to an IND application in 1982. Master protocols were written and the safety protocol was written to comply with GLP regulations. These studies will utilize the pyridoxalated-polymerized hemoglobin solutions which appear to have improved the vascular retention time and oxygen affinity problems inherent in the unmodified hemoglobin solutions.

c. CPDA-2 clinical trials were completed and the data submitted to FDA for their approval.

d. Modification of hemoglobin as a resuscitation solution was made into a separate 6.1 protocol. A major change was initiated in the use of protein chemistry analytical methods to evaluate hemoglobin derivatives under specified reaction conditions. Development of a hemoglobin tetramer stabilized by intramolecular cross-links and having an increased vascular retention time have been accomplished. A contract was given to Dr. Condie, University of Minnesota, to provide substantial quantities of high purity hemoglobin solutions for further modification.

e. Hematologic and hemostatic evaluation of stroma-free hemoglobin in dogs was completed. This work will now serve as base-line data for: a) other animal species, b) modified hemoglobin preparations, and c) a pre-clinical IND data base.

f. A symposium on blood substitutes has been planned, funded and arranged, sponsored by NIH and the US Army.

g. Blood Research Division has established a COED experimental design program, contracted with CompuServe.

h. A gas chromatographic assay for free fatty acids has been established as part of the quality control procedures for the stroma-free hemoglobin project.

i. Site visits to individual contractors of the division are being continued by members of Blood Research Division:

(1) CPT R.W. Tye, MC, visited Dr. Condie, University of Minnesota; Dr. Greenberg, University of California at San Diego, and Dr. Walden, University of Iowa.

(2) CPT G.W. Boswell, MS, conferred with Dr. Hignite, Dr. Hodges and Dr. Reed, Veterans Administration Medical Center, Kansas City, MO, Nov 81.

(3) CPT D.A. Stewart, MS, aided the AFRRI Division of Immunology in establishing a lymphocyte stem cell assay, Sep 81.

7. Division of Research Support:

a. The Toxicology Group completed its training phase and became fully capable of conducting acute, subchronic and chronic oral, dermal, and parenteral toxicity studies. In addition, dermal sensitization and primary ocular irritation, Ames assay, and Drosophila SLRL testing capabilities were fully developed. All standard tests are conducted in compliance with Federal Good Laboratory Practices Regulations.

b. Twenty-two candidate antidotes for chemical agents belonging to the organophosphinate family were tested using the Ames assay and were found to be non-mutagenic.

c. The M-258A Decontamination Kit was evaluated for potential skin irritation hazard and found to be only slightly irritating to intact skin when properly applied.

d. Initial toxicology testing of candidate insect repellents has progressed with most compounds being relatively non-toxic.

e. A program designed for quality control of laboratory animals was implemented. Two to four percent of rats and mice from each shipment are selected at random for necropsy, histopathologic examination, hematology, and serology, with the pathology report completed within seven days. Thus, investigators are assured of having healthy animals for use.

f. Capabilities to establish and maintain tissue and organ cultures were established. These capabilities were established primarily in conjunction with studies designed to determine the feasibility of using mammalian cells in vitro as toxicologic screening procedures and as systems for studying mechanisms of chemical toxicity at the cellular level. At year's end, capabilities exist to grow and maintain a variety of established cell lines, primary cultures, and tracheal organ cultures. Large numbers of cells can be produced and supplied to other LAIR investigators as needed.

g. In the Radioisotope Services Group, a new scintillation counter and sample oxidizer were installed. This Group also shipped 16,664 lbs. of radioactive waste to the disposal site; in addition, they applied for the LAIR NRC license.

8. Division of Logistics:

a. Increased the number of BPAs to provide the division additional flexibility in ordering supplies. This has proved worthwhile and has given the researchers a more rapid means of obtaining supplies to keep projects going.

b. During the last part of the year transferred over $500,000 of excess equipment within USAMRDC.

SECTION IX - INSPECTIONS, SURVEYS, AND AUDITS

1. The US Government Accounting Office's inquiry into research being conducted at LAIR was initiated by Congressman John D. Burton, San Francisco, in Dec 80 and was completed in May 81. The final report

noted that the research projects conducted at LAIR were in all cases approved and unclassified and there was no evidence of unauthorized biological research.

2. On 4 Feb 81, Mr. Lewis D. Walker, Deputy for Environment, Safety and Occupational Health, Assistant Secretary of the Army (Installations, Logistics, and Financial Management) visited LAIR to insure compliance with applicable environmental, safety and occupational health mandates.

3. An Industrial Hygiene Special Study was conducted by the US Army Environmental Agency, Aberdeen Proving Ground, MD, during the period 2-13 Feb 81.

4. A Command review was conducted by BG G. Rapmund, Commander, USAMRDC, 4-6 May 81.

5. The Radioisotope Services Group was inspected by the Nuclear Regulatory Commission, Health Services Command Inspector General, the LAMC Inspector General and the Southwest Nuclear Disposal Agency. No major deficiencies were noted.

6. Recurring industrial hygiene and occupational health and safety surveys and inspections are conducted by appropriate LAMC agencies in conjunction with LAMC/LAIR Interservice Support Agreements to insure that maximum health and safety conditions are maintained for all employees.

7. J.R. Neville, DAC, GS-14, Assistant Director for Research Contract Management, performed scientific site visits to the following contractors: Dr. William Moores, University of California, San Diego (UCSD) Jan and Aug 81; Dr. Abraham Braude, UCSD, Aug 81; Dr. Gerson Greenburg, UCSD, Aug 81; Dr. Ernest Beutler, Scripps Clinic & Research Foundation, Aug 81; Dr. Stanley Levenson, Albert Einstein College of Medicine, Oct 81; Dr. John Kinney, Columbia University, Oct 81; and Dr. Irshad Chaudry, Yale University, Oct 81.

8. The Quality Assurance Unit made 110 internal inspections of non chemical laboratory studies to insure compliance with Good Laboratory Practices regulations. The overall state of compliance was good.

9. LAIR underwent a US Army Medical Research and Development Command Internal Review during the period 17-26 Feb 81.

10. A Management and Facility Review of the Information Sciences Group computer facilities was conducted 5-7 May 81 by MAJ Jon Packman and Ms. Mary McNally, USAMRDC.

11. The LAIR animal facility was inspected by the American Association for Accreditation of Laboratory Animals on 1 May 81. The animal facilities continue to be fully accredited by this organization.

12. The Activity Services Group, Division of Logistics, maintenance program was reviewed by the USAMRDC MAIT, 10-14 Aug 81.

13. Command Supply Inspection 13-17 April 1981 conducted by HQ, USAMRDC.

SECTION X - CONFERENCES

1. COL J.D. Marshall, Jr., MS, and LTC H.F. Hacker, MS, attended the USAMRDC Commander's Conference, Fort Detrick, MD, 9-12 Sep 81.

2. COL L. Hagler, MC, attended the meeting of the American Federation of Research, San Francisco, CA, 23-27 Apr 81.

3. COL L. Hagler, MC, traveled to Fort Sam Houston, TX, from 8-12 Sep 81 to attend the AHS Clinical Investigation Program.

4. COL A.M. Allen, MC, attended the XX International Occupational Health Conference, Cairo, Egypt, 25 Sep - 1 Oct 81.

5. 1SG J.M. Judkins attended the USAMRDC Chief Lab Medical NCO Conference, Fort Detrick, MD, 25-30 Oct 81.

6. J.R. Neville, DAC, GS-14, Assistant Director for Research Contract Management, attended the symposium on Prophylaxis and Treatment of Organophosphate Poisoning, 6-7 Mar 81; attended the Fourth Annual Conference on Shock, 4-6 Jun 81; and attended the 67th Annual Clinical Congress, American College of Surgeons, 12-16 Oct 81.

7. CPT J.C. Johnson, MS, Quality Assurance, presented two papers at the International Workshop on Research Methods in Human Nature and Vibrations, New Orleans, LA, 16-18 Sep 81.

8. MAJ G.L. Bennett, MS, Chief, Resources Management Group, attended the USAMRDC Comptroller's Conference at Ft. Detrick, MD, 4-8 May 81.

9. V.L. Gildengorin, DAC, GS-12, attended a 2-day seminar conducted by CompuServe on 29-30 Jan 81 in the areas of Experimental Design, San Francisco, CA. She also attended a seminar on "Women at Work" which addressed the role of women in management and supervisory roles, in San Francisco, CA, 18 Feb 81.

10. T.C. Steward, DAC, GS-11, attended the IEEE COMPCON conference, San Francisco, CA, 24-26 Feb 81. He also attended the Western Electronics Convention in San Francisco, CA, on 8-10 Sep 81.

11. D.A. Harris, DAC, GS-12, and T.C. Steward, DAC, GS-11, attended COMPCON 4-day conference tutorials, San Francisco, CA, 23-26 Feb 81.

12. W.H. Langley, DAC, GS-12, attended a meeting of the inter-governmental council on the Technology of Information Processing (ICTIP) held at Treasure Island, CA, on 25 Mar 81.

13. CPT D.L. Murray, MS, 1LT M.C. Sawyers, MS, and W.H. Langley, DAC, GS-12, attended a meeting of the ICTIP, Emeryville, CA, on 10 June 81.

14. W.H. Dailey, DAC, GS-11, attended a conference at Wentworth-by-the-Sea, Portsmouth, New Hampshire, entitled "Functional Programming Language and Computer Architecture," 17-22 Oct 81.

15. COL E.S. Beatrice, MC, MAJ P.A. O'Mara, MS, and D.J. Lund, DAC, GS-12, visited Redstone Arsenal, AL (MICOM) and Orlando, FL (PM TRADE). Additional research programs required by both PM MICOM and PM TRADE discussed and outlined funding for current CY, on 13-15, Jan 81.

16. LTC J.F. Weiss, MC, attended the University of California conference on Bulbar & Adnexal Tumors in San Francisco, 4-6 Feb 81.

17. B.E. Stuck, DAC, GS-12, and MAJ P.A. O'Mara, MS, attended a classified meeting at AMSAA, Aberdeen Proving Ground, MD on Laser Weapon Effectiveness Modeling, 12-13 Feb 81.

18. MAJ P.A. O'Mara, MS, visited Hughes Aircraft in Culver City, CA, for design review of the Optical Jamming Simulator (OJS) which is being constructed by Hughes for use by the Electronic Warfare Laboratory, 11 Feb 81.

19. The 2nd Annual Classified Conference on "Lasers on the Modern Battlefield" hosted by the Division of Ocular Hazards, 24-25 Feb 81.

20. COL E.S. Beatrice, MC, MAJ P.A. O'Mara, MS, H. Zwick, DAC, GS-14, D.J. Lund, DAC, GS-12, visited ECOM, Ft. Monmouth, NJ, to review experimental progress of Project A-813 and discuss the field test schedule for Jun-Jul 81 time frame, 31 Mar 81.

21. J.B. Keller, Jr., DAC, GS-11, attended Western Region Technical Symposium, Lackland, AFB, TX. 19-22 Apr 81.

22. H. Zwick, DAC, GS-14, K.S. Bloom, DAC, GS-11, B.E. Stuck, DAC, GS-13, D.I. Randolph, DAC, GS-13, D.J. Lund, DAC, GS-13, and LTC M. Belkin, IDF, to Orlando, FL, ARVO meeting, 27 Apr-1 May 81.

23. J.B. Keller, DAC, GS-11, to Pentagon. Defense Intelligence Briefing, 27 Apr 81.

24. H. Zwick, DAC, GS-14, D.A. Stamper, DAC, GS-11, K.S. Bloom, DAC, GS-11, and D.I. Randolph, DAC, GS-13, at Medical Association Meeting, San Antonio, TX: Aerospace Medical Association Meeting, 4-7 May 81.

25. COL E.S. Beatrice, MC, to Pentagon to brief The Surgeon General on Laser Threat, 20-21 May 81.

26. COL E.S. Beatrice, MC, to Pentagon for secret briefing, 3 - 4 Jun 81.

27. CPT E.T. Schmeisser, MS, attended New York Academy of Sciences Conference on Evoked Potentials, New York, NY, 15-19 Jun 81.

28. Dr. D.I. Randolph, DAC, GS-13, attended the Center for Visual Sciences Symposium entitled "Relating Physiology to Psychophysics" at Rochester University, Rochester, NY, 18-20 Jun 81.

29. COL E.S. Beatrice, MC, to Concepts & Analysis Agency to develop cognizance concerning technical development of foreign laser, 13-14 Jul 81.

30. COL E.S. Beatrice, MC, to Pentagon, Defense Intelligence briefing, Berler, 15- 16 Jul 81.

31. MAJ P.A. O'Mara, MS, D.A. Stamper, DAC, GS-11, D.J. Lund, DAC, GS-13, visited Hughes Aircraft Corp., Culver City, CA, to discuss TOW Simulator 15-16 Jul 81.

32. COL E.S. Beatrice, MC, to Pentagon to discuss MILES, 27-28 Jul 81.

33. COL E.S. Beatrice, MC, and B.E. Stuck, DAC, GS-13, visited Los Alamos National Scientific Laboratory, Los Alamos, NM, to discuss Laser Bioeffects, 24-25 Aug 81.

34. COL E.S. Beatrice, MC, D.J. Lund, DAC, GS-13, B.E. Stuck, DAC, GS-13 to Ft. Leavenworth, KS, to participate in Directed Energy Conference, 14-17 Sep 81.

35. COL E.S. Beatrice, MC, visited Ft. Detrick to participate in the JWG, meeting on Eye Protection, 28 Sep 81.

36. COL E.S. Beatrice, MC, visited Alexandria VA, for briefing on Personnel Threat, Lasers, to Defense Board Task Force, 20-21 Oct 81.

37. COL E.S. Beatrice, MC, attended the classified Third Annual Conference on "Lasers on the Modern Battlefield," 29-30 Oct 81.

38. COL E.S. Beatrice, MC, B.E. Stuck, DAC, GS-13, H. Zwick, DAC, GS-14, to Tri-Service meeting on Laser Bioeffects, School of Aerospace Medicine, San Antonio, TX, 9-10 Nov 81.

39. COL E.S. Beatrice, MC, to Pentagon for Defense Science Board, for a briefing on laser threat, 17-18 Nov 81.

40. COL E.S. Beatrice, MC, to Academy of Health Sciences, San Antonio, for Workshop on Lasers/Microwaves, 7-9 Dec 81.

41. CPT R.R. Levine, MS, to APG, MD for review of laser protection study at Ft. Knox, KY, 14-16 Dec 81.

42. L.C. Rutledge, DAC, GS-13, presented a paper entitled "Tests of Repellents Against Lutzomyia longipalpis (Diptera, Psychodidae)," 12th Annual Meeting of the Society of Vector Ecologist, Fresno, CA, 21-22 Jan 81.

43. CPT C.T. White, MS, attended Van Waters & Rogers Seminar on Chemical Safety in San Francisco, CA, 3 Mar 81.

44. CPT C.T. White, MS, G.J. Klain, DAC, GS-15 and W.G. Reifenrath, DAC, GS-13, attended the Symposium on Prophylaxis and Treatment of Organophosphate Poisoning, San Diego, CA, 5-6 Mar 81.

45. CPT C.T. White, MS, attended American Chemical Society National Meeting in Atlanta, GA, 29 Mar - 3 Apr 81.

46. G.J. Klain, DAC, GS-15, attended the annual meeting of the Federation of American Societies for Experimental Biology in Atlanta, GA. on 12-17 Apr 81.

47. MAJ G.H.G. Eisenberg, Jr., MS, LTC K.E. Black, MC, CPT W.W. Jederberg, MS, CPT D.R. Westrom, MC, CPT C.T. White, G.J. Klain, DAC, GS-15, W.G. Reifenrath, DAC, GS-13, attended the annual meeting of the Society for Investigative Dermatology, Inc., San Francisco, CA, 27-29 Apr 81.

48. LTC K.E. Black, MC, attended the Sixth Annual Uniformed Services Dermatology Seminar at the National Naval Medical Center, Bethesda, MD, 6-10 May 81.

49. CPT C.T. White, MS, attended the Symposium on Immunology of Organophosphates at USAMBRDL, Edgewood Arsenal, MD, 20 May 81.

50. CPT C.T. White, MS, attended the American Society of Biological Chemists National Meeting at St. Louis, MO, 1-4 Jun 81.

51. CPT C.T. White, MS, and G.J. Klain, DAC, GS-15, attended the Chemical Defense Program Review, USAMRDC, Ft Detrick, MD, 6-7 Jun 81.

52. W.G. Reifenrath, DAC, GS-13, attended the Chemical Defense Scientific Program Review at USAMRDC, Ft Detrick, MD, to make a presentation on Shower Decontamination of the Skin, 8-9 Jun 81.

53. L.C. Rutledge, DAC, GS-13, presented a paper entitled "Tests of Repellents Against Diamanus montanus (Siphonaptera: Ceratophyllida)" at the 65th Annual Meeting of the Pacific Branch, Entomological Society of America, Oakland, CA, 22-25 Jun 81.

54. W.G. Reifenrath, DAC, GS-13, attended the Third International Symposium on Bioengineering and the Skin in Philadelphia, PA, to present a paper entitled "Skin Evaporation and Penetration Characteristics of Mosquito Repellents", 21-23 Jul 81.

55. P. Schmid, DAC, GS-13, attended Gordon Research Conference on Epithelial Differentiation and Keratinization in Tilton, NH, 10- 14 Aug 81.

56. CPT C.T. White, MS, attended the Second International Symposium on the Immunobiology of Proteins at Tahoe, CA, 7-11 Sep 81.

57. L.C. Rutledge, DAC, GS-13, attended the regular meeting of the Northern California Entomology Club, Berkeley, CA, Nov 81.

58. CPT M.D. Buescher, MS, attended the annual meeting of the Entomological Society of America to present a paper entitled "Laboratory Repellent Tests Against Rhodnius prolixus, 29 Nov - 3 Dec 81.

59. L.C. Rutledge, DAC, GS-13, presented a paper entitled "Tests of Repellents Against Xenopsylla cheopis, (Siphonaptera: Pulicidae)" at the annual meeting of the Entomological Society of America, San Diego, CA, 9 Nov - 3 Dec 81.

60. LTC K.E. Black, MC, and CPT D.R. Westrom. MC, attended the 40th Annual Meeting of Academy of Dermatology at Moscone Center, San Francisco, CA, 5-10 Dec 81.

61. G.J. Klain, DAC, W.G. Reifenrath, DAC, GS-13, and P. Schmid, DAC, GS-13, attended the 40th Annual Meeting of Academy of Dermatology at Moscone Center, San Francisco, CA, 8 Dec 81.

62. COL R.F. Bellamy, MC, attended the following conferences:

a. At the request of COL Camp, USAMRDC, he attended the 4th International Symposium on Wound Ballistics, Gothenburg, Sweden, 2-4 Sep 81.

b. He was invited to present a paper entitled "Clinical Relevance of Recent Developments in Coronary Physiology" at the annual meeting of the New York State Society of Anesthesiologists, New York, NY, 14 Dec 81.

63. COL R.F. Bellamy, MC, J.P. Hannon, DAC, GS-15, and SP5 E.M. Mahoney attended the annual meeting of the Shock Society, Marco Island, FL, 3-7 Jun 81; COL Bellamy presented an abstract entitled "Blood Flow During Experimental Cardiac Massage," Dr. Hannon presented an abstract entitled "Physiologic Characteristics of Non-Fatal Hemorrhage in the Conscious Pig," and SP5 Mahoney presented an abstract entitled "Drug Therapy in Fixed-Volume Exsanguination of Unanesthetized Rats."

64. COL R.F. Bellamy, MC, MAJ L.W. Traverso, MC, SP5 M.L. Alago, SP5 M.O. Baysinger, SP5 L. DeGuzman, SP5 E.M. Mahoney, and SP5 D.C. Pedersen attended the 67th Annual Meeting of the American College of Surgeons, San Francisco, CA, 11-16 Oct 81.

65. COL R.F. Bellamy, MC, attended the 65th Annual Meeting of the Federation of American Societies for Experimental Biology, Atlanta, GA, 12-17 Apr 81. He presented a paper entitled "Atrial Cove: Applicability of the Vascular Waterfall Model of the Coronary Circulation."

66. COL M.G. MacDonald, MC, attended the Second Annual Conference of Problems in Gastroenterology: A Clinical and Pathological Approach, Keystone, CO, 7-15 Feb 81.

67. MAJ L.W. Traverso, MC, gave three presentations:

a. "Chronic Pancreatitis and Islet Cell Transplantation" at the annual meeting of the Southern Chapter of the American College of Surgeons, Santa Barbara, CA, 23-24 Jan 81.

b. "Aprotinin: Have We Expected Too Much?" and "Shock Induced by Hemorrhagic Pancreatitis Ascites" at the joint meeting of the American

Pancreatic Association, Inc., and the National Pancreatic Cancer Project, Chicago, IL, 5-6 Nov 81.

68. CPT D.F. Brown, MS, attended the 11th annual meeting of the Society for Neuroscience, Los Angeles, CA, 18-23 Oct 81.

69. CPT R.L. Scott, MS, attended the following meetings:

a. She presented a paper entitled "Effect of Fasting on Plasma Fibronectin in Humans" at the annual meeting of the American Federation for Clinical Research (Eastern Section), Boston, MA, 22-25 Oct 81.

b. She attended the American Federation of Clinical Research, Western Section, Carmel, CA, 5 Feb 81.

c. She attended the Annual meeting of the Federation for Clinical Research (national meeting), San Francisco, CA, 25-27 Apr 81.

70. Dr. J.D. O'Benar, DAC, GS-11, attended the following meetings:

a. Annual meeting of the Federation of American Societies for Experimental Biology, Atlanta, GA, 11-17 Apr 81.

b. Annual meeting of the American Federation for Clinical Research, San Francisco, CA, 25-27 Apr 81.

71. LTC R.B. Bolin, MC, attended the following meetings:

a. First annual Army Hematology - Oncology Meeting, Walter Reed Army Medical Center, 27-28 Jan 81.

b. Royal Canadian Medical Association Meetings as a guest, Toronto, Ontario, Canada, 15-21 Sep 81. Dr. Bolin presented a lecture "Current Concepts of Blood Substitute Development."

c. Northern California Blood Bank Association annual meeting, San Francisco, CA, 12-13 Jun 81.

d. American Association of Blood Banks annual meeting, Chicago, IL, Nov 1-4, 81,and presented two papers, "Current Research at the Blood Research Division, LAIR" and "In Vivo Characteristics of Platelets Preserved in CPDA-2."

72. F. DeVenuto, DAC, GS-14, attended the annual meeting of the American Association of Blood Banks, Chicago, IL, Nov 1-4, 81, and presented a paper, "Transfusion With Pyridoxalated-Polymerized Hemoglobin Solutions."

73. CPT G.W. Boswell, MS, attended the annual Academy of Pharmaceutical Sciences meeting, Orlando, FL, Nov 81. The annual American Pharmaceutical Association meeting, St. Louis, MO, Apr 81, and a conference on Antibiotics Update - 1981, San Francisco, CA, Aug 81.

74. LTC J.T. Fruin, VC, and CPT M.A. Hanes, VC, attended the Society of Toxicology conference in San Diego, CA, 1-6 Mar 81.

75. LTC J.A. Goldsboro, VC, attended the 16th Annual Veterinary Medical Symposium, Tuskegee Institute, AL, 12-14 Apr 81.

76. LTC P.W. Mellick, VC, attended the following conferences:

a. Conference of Army Veterinarians, Washington, DC, 24-25 Aug 81.

b. Twelfth Annual Conference on Environmental Toxicology. Dayton, OH, 3-5 Nov 81.

77. CPT M.A. Hanes, VC, attended the California Veterinary Medical Association meeting, San Francisco, CA, 28-31 Oct 81.

78. SSG L.D. White and PFC E.M. Zimmerman attended the California Veterinary Medical Association, Animal Handler Technician meeting, San Francisco, CA, 28-31 Oct 81.

SECTION XI - LIAISON AND ORIENTATION VISITS

1. Members of the House Appropriations Committee, Washington, DC, visited LAIR on 14-15 Jan 81.

2. LAIR was visited and the facility toured by the following distinguished personnel:

a. GEN E.C. Meyer, Chief of Staff of the Army on 6 May 81.

b. LTG Grunhoefer, West German Surgeon General of the Armed Forces on 27 May 81.

c. GEN Azmy Attia, Senior Surgeon from the Egyptian Army, 22-25 Jul 81.

d. MG R. Bishop, Commander, Health Services Command, FSH, TX, on 16 Sep 81.

e. LTG B. Mittemeyer, Surgeon General of the Army, 13 Oct 81.

f. Mr. Pat Hilke, Principal Deputy to the Assistant Secretary of the Army for Installations, Logistics, and Financial Management, 24 Nov 81.

g. Sergeant Major of the Army, W. A. Connelly, visited the Enlisted Detachment on 4 Dec 81.

3. The First Military Medical Delegation from the Peoples Republic of China, Peoples Liberation Army, visited LAIR on 28-29 Oct 81. The visit included a briefing and tour of LAIR and a luncheon hosted by LAIR at the Presidio Officers Club. Additionally, LTC H.F. Hacker, the LAIR Project Officer, hosted a tour of San Francisco and Marin County landmarks.

4. LTC J. LaMothe, Research Area Manager III, HQ, US Army Medical Research and Development Command (USAMRDC), visited to review research priorities and plans, Apr 81.

5. COL Camp, Research Area Manager II, HQ, USAMRDC, visited to review research priorities and plans, May 81.

6. BG Rapmund, Commander, USAMRDC, visited to discuss advisory subcommittees and research management procedures, May 81.

7. Ms. Jean Smith, Contracting Officer, USAMRDC, visited to discuss new contract management policies, Sep 81.

8. Dr. Levenson, Albert Einstein College of Medicine, visited to discuss recent research results, Oct 81.

9. Dr. Nemo, National Heart, Lung, and Blood Institute, visited to coordinate medical research activities, Nov 81.

10. MAJ Holly, U. S. Army Aeromedical Research Laboratory, visited to discuss contract management policies, Nov 81.

11. Resources Management Group was visited by Mr. Dave Wilson, Systems Accountant, USAMRDC, 23-27 Mar 81.

12. COL R. Rengstorff, US Army Biomedical Laboratory, visited LAIR to bring COL E.S. Beatrice up to date on the Optical Sciences Group OSG-Smith Kettlewell contract effort involving the use of TAB components as studied in human volunteers, 26 Jan 81.

13. Dr. A. Jampolsky, Smith Kettlewell Institute of Visual Sciences, discussed proposal on atropine effects, 29 Jan 81.

14. Dr. T. Lawwill, University of Kansas, visited the Division of Ocular Hazards to discuss new Army requirements for laser bioeffects research, 3-4 Feb 81.

15. Mr. Joseph Schwartz, Electronic Research and Development Command (ECOM) visited to review research progress of Project A-813, 11 Feb 81.

16. Classified conference, Laser on the Modern Battlefield, hosted by Division of Ocular Hazards, LAIR, 24-25 Feb 81.

17. COL D. Hilmas (visited with MAJ O'Mara) discussed chemical warfare antidote studies, 24 Feb 81.

18. Dr. A. Lewis, School of Applied Engineering Sciences, Cornell Univ, Dr. M. Raybourn, Lawrence Berkeley Laboratory, University of California, and Dr. W. Spencer, Pacific Medical Center, held preliminary discussion of coordinated research efforts in neurophysiology, molecular biochemistry, photochemistry, and morphology, 26 Feb 81.

19. Dr. E. Elson, Pathologist, Veterans Administration, San Diego, CA, visited to discuss potential assignment to LAIR, 11 Mar 81.

20. Dr. J. Kobrick, USARIEM, Dr. J. Enoch, School of Optometry, Univ of California at Berkeley, and D. Sliney, USAEHA, attended the Laser Bioeffects Ad Hoc Study Group meeting, 7 Apr 81.

21. Dr. A. Jampolsky, Dr. B. Brown, and Dr. T. Adams, Optical Sciences Group, Smith Kettlewell Institute of Visual Sciences, visited to discuss proposal on atropine effects, 21 Apr 81.

22. MG G. Rapmund, CDR, USAMRDC, visited the Division of Ocular Hazards and was briefed on division research progress, 5 May 81.

23. General Meyer, Army Chief of Staff, and LTG Hall, CDR, Sixth Army, visited the division and were briefed by COL Beatrice, 6 May 81.

24. Tom Weaver and Guido Hussein, EDM Corp, visited 7 May 81.

25. Joseph Schwartz, ECOM, and Mr. Hoffman and Mr. Ackerman of Martin Marietta, Orlando, FL, visited and discussed Project A-813 and Optical Jamming Simulator, 27-28 May 81.

26. MAJ Etchechury, Missile Command, visited the Division of Ocular Hazards, 29 May 81.

27. Dr. A. Jampolsky, Dr. T. Adams, Dr. B. Brown, and Dr. Portnoy, Smith Kettlewell Institute of Visual Sciences, and COL E. Bu[illegible]cher, USAMRDC, visited to discuss proposal on atropine effects, 29 May 81.

28. H. Zwick, DAC, GS-14, and COL E.S. Beatrice, MC, visited Lawrence Radiation Laboratory to review recent laser exposure results with Dr. Raybourn, 1 Jul 81.

29. MAJ P.A. O'Mara, MS, met with Joseph Schwartz, Electronic Warfare Laboratory (EWL), 20 Jul 81.

30. MAJ P.A. O'Mara, MS, D.A. Stamper, DAC, GS-11, D.J. Lund, DAC, GS-13, visited Hughes Aircraft, Culver City, CA, concerning information on use of Hughes Optical Jamming Simulator (OJS) constructed by EWL and LAIR, 20 Jul 81.

31. COL McDermott, Radiological Hygiene, COL Mathewson, USAEHA, and David Sliney, USAEHA, visited LAIR, 3-5 Aug 81.

32. Dr. Mosebar, AHS, San Antonio, TX, visited LAIR and was briefed on LAIR Laser activities/studies, 19 Aug 81.

33. Captain Tutin, Wright Patterson, Bellbrook, OH, visited Ocular Hazards for briefing on Research in Flash Effects, 3-4 Sept 81.

34. COL Winter, Medical & Life Sciences, Pentagon, was briefed on laser hazards, 23 Sept 81.

35. LTC Bell, AHS, Briefed on Laser Hazards, 24 Sept 81.

36. Mr. Tucker & Mr. White, Ft. Leavenworth, toured LAIR, 24 Sept 81.

37. Conducted 3rd annual Laser on the Modern Battlefield, classified conference, 29-30 Oct 81.

38. General E.C. Meyer, US Army Chief of Staff, visited LAIR and was briefed on research findings from the Litter Patient Shower Decontamination study, 6 May 81.

39. The second quarterly meeting of the Stress Physiology and Decontamination Working Group was held at LAIR 2-4 Dec 81. Presentations and discussions centered on research to protect against percutaneous intoxication by chemical warfare agents and prevention of physiological stress arising from wear of chemical protective garments.

40. CPT J.E. Gingrich, Department of Entomology, Walter Reed Army Institute of Research, Washington, DC, visited the Division of Cutaneous Hazards for discussion of repellent testing methods, 7-9 Jan 81.

41. W.G. Reifenrath, DAC, GS-13, discussed a skin decontamination protocol with U.S. Army Biomedical Laboratory, Aberdeen Proving Grounds, MD, 18 Jan - 3 Feb 81. During this time period, Dr. Van Hooidonk, Prins Maurits Laboratory TNC, Netherlands, observed the skin decontamination trials.

42. MAJ J. Abercrombie and MAJ S.E. Kunz, HQ, USAMRDC, visited the Division of Cutaneous Hazards for an orientation on the insect repellent program, 29-30 Jan 81.

43. L.C. Rutledge, DAC, GS-13, attended the 103rd quarterly meeting of the Armed Forces Pest Management Board as Agency Representative of LAIR in Gainesville, FL, 2-4 Mar 81.

44. Dr. E.E. Davis, SRI International, Menlo Park, CA, visited the Division of Cutaneous Hazards for discussions on insect repellent research, 10 Mar 81.

45. Dr. J.E. Hafernik, San Francisco State University, CA, visited the Division of Cutaneous Hazards for discussions of matters of mutual interest in entomology, 2 Apr 81.

46. MG G. Rapmund, Commander, USAMRDC, visited LAIR for a briefing on insect repellent RDT&E activities at LAIR, 4 May 81.

47. W.G. Reifenrath, DAC, GS-13, visited U.S. Army Biomedical Laboratory, Edgewood, MD, to finish work on soman-diethyl malonate comparison trials, 17-23 May 81.

48. CPT C.T. White, MS, visited USABML, Aberdeen Proving Ground, MD, to discuss nerve agent chemoprophylactics with Dr. Lieske and associates, 20-25 May 81.

49. Mr. P.E. Letchworth and Ms. D. Sherman of the Mountain View Research Center, Stauffer Chemical Company, Mountain View, CA, visited the Division of Cutaneous Hazards for discussions on insect repellent R&D, 26 May 81.

50. P. Schmid, DAC, GS-13, visited SRI to discuss aspects of skin biology, May 81.

51. CPT M.D. Buescher, MS, and L.C. Rutledge. DAC, GS-13, visited Cutter Laboratories Inc., Berkeley, CA, for discussions on insect repellent research and development, 4 Jun 81.

52. Dr. K.L. Smith, Bend Research Inc., Bend, OR, visited the Division of Cutaneous Hazards for discussions on insect repellent formulations, 15 Jun 81.

53. Dr. C.J. Weinmann, University of California at Berkeley, visited the Division of Cutaneous Hazards in connection with the rearing of Ornithodoros ticks, 18 Jun 81.

54. Robert Y. Nelson, PhD, PE, CIH, and Deborah A. Imell, MES, University of Oklahoma, Department of Environmental Health visited LAIR, 26 Jun 81.

55. CPT M.D. Buescher, MS, and L.C. Rutledge, DAC, GS-13, visited the Mountain View Research Center, Stauffer Chemical Company, Mountain View, CA, for discussions on insect repellent R&D, 8 Jul 81.

56. W.G. Reifenrath, DAC, GS-13, visited S.C. Johnson, Racine, WI, to discuss mutual interests in skin research, 15 Jul 81.

57. W.G. Reifenrath, DAC, GS-13, visited the Laboratories of Arthur D. Little, Inc., Cambridge, MA, to discuss measurement of skin hydration techniques with Dr. Ivan Simon and Dr. Irvin Blank, 17 Aug 81.

58. MAJ G.H.G. Eisenberg, Jr., MS, CPT M.D. Buescher, MS, W.G. Reifenrath, DAC, GS-13, and L.C. Rutledge, DAC, GS-13, briefed BG G. Rapmund, Commander, USAMRDC, on the repellent program at the Applied Entomological Scientific Program Review, Fort Detrick, Frederick, MD, 18-19 Aug 81.

59. Dr. Richard Kennly, SRI, visited the Division of Cutaneous Hazards to discuss aspects of Chemical Defense, Aug 81.

60. G.J. Klain, DAC, GS-15, and W.G. Reifenrath, DAC, GS-13, visited USAMRDC, Ft Detrick, MD, to review and critique on-going research as member of the Performance Physiology and Decontamination Working Group for Chemical Defense Board, 27-28 Aug 81.

61. W.G. Reifenrath, DAC, GS-13, visited Rohm and Haas Laboratories, Spring House, PA, to discuss research proposal in chemical defense, 2 Sep 81.

62. W.C. Reifenrath, DAC, GS-13, visited USAMRDC, Ft Detrick, MD, to review and critique on-going research as member of the Performance Physiology and Decontamination Working Group for Chemical Defense, 8-11 Sep 81.

63. W.G. Reifenrath, DAC, GS-13, visited Southern Research Institute, Birmingham, AL, to perform on-site visit for chemical defense program, 10 Sep 81.

64. Dr. Thomas Franz, University of Washington, WA, visited Division of Cutaneous Hazards to discuss aspects of skin biology, Sep 81.

65. Dr. Dallas Hyde, Department of Veterinary Medicine, Univeristy of California, Davis, CA, visited Division of Cutaneous Hazards to discuss animal morphometrics and macroscopic anatomy of skin, Oct 81.

66. Mr. Carlson, Kewanee Scientific, visited Division of Cutaneous Hazards to discuss safety hoods, 22 Oct 81.

67. Ms. Leslie Larentzen, Chevron Research Company, Richmond, CA, visited the Division of Cutaneous Hazards for discussion of matters of mutual interest relating to the rearing of insects of medical importance, 19 Nov 81.

68. MAJ J. Abercrombie, HQ, USAMRDC, visited LAIR in connection with the repellent program, 30 Nov 81.

69. Dr. Thomas Spencer and Ron Rizer, S.C. Johnson Co., Racine, WI, visited the Division of Cutaneous Hazards to discuss aspects of skin biology, 10 Dec 81.

70. Dr. Ron Talcott, San Francisco General Hospital, visited the Division of Cutaneous Hazards to present a seminar on malathion metabolism, Feb 81.

71. Dr. T. Mathias, San Francisco General Hospital, visited the Division of Cutaneous Hazards to discuss in vitro skin permeability techniques, Mar 81.

72. Dr. Ron Wester, University of California, San Francisco, CA, visited the Division of Cutaneous Hazards to observe techniques used in skin permeability studies, Jun 81.

73. Mr. B. Cohen, School of Public Health, U.C. Berkeley, CA, visited the Division of Cutaneous Hazards to learn about techniques used to measure skin penetration in vitro, Jul 81.

74. Dr. Robert Bronaugh, FDA, visited the Division of Cutaneous Hazards to present a seminar on skin penetration models, Apr 81.

75. Dr. Theodore Procio, Battelle, Columbus, OH, and Mr. Wendesheim, American Air Filter Co. (Defense Products Div), Ellicott City, MO, visited the Division of Cutaneous Hazards to discuss skin decontamination equipment, Aug 81.

76. P. Schmid, DAC, GS-13, visited the Laboratories of Spectra Physics in Mountain View, CA, to discuss instrumentation dealing with skin biology, 4 May 81.

77. Dr. Sandman, University of California, San Francisco, CA, visited the Division of Cutaneous Hazards several times to discuss aspects of enzymological methods of skin biology.

78. Dr. Holland, Oak Ridge National Laboratory, TN, visited Division of Cutaneous Hazards to observe procedures on in vitro skin permeability determinations, 30 Apr 81.

79. Dr. Joseph A. Bakan, Director, R&D, Eurand America, Dayton, OH, visited Division of Cutaneous Hazards to discuss possible new mosquito repellent formulations, May 81.

80. Dr. Santesson and Dr. Meyerhoffer, National Defense Research Institute, Stockholm, Sweden, visited the Division of Cutaneous Hazards to discuss mutual problems in Chemical Defense, 27-28 Mar 81.

81. Dr. Bruno Papermeister, US Army, Medical Research Institute for Chemical Defense, Aberdeen Proving Ground, MD, visited Division of Cutaneous Hazards to discuss effects of mustard on skin, 20 Jul 81.

82. Allan Holloway, MD, PhD, Laser Doppler Flow, visited Division of Cutaneous Hazards to discuss research on skin-grafted nude mice, Jul 81.

83. Mansel Ephriam, PhD, Tel Aviv, visited the Division of Cutaneous Hazards to discuss research on skin-grafted nude mice, Jun 81.

84. H.I. Maibach, MD, UCSF, CA, visited the Division of Cutaneous Hazards to discuss research on skin-grafted nude mice, Jul 81.

85. Vera Morhenn, PhD, Stanford University, Palo Alto, CA, visited the Division of Cutaneous Hazards to discuss research or skin-grafted nude mice, May 81.

86. Don Chambers, PhD, University of Utah, UT, visited the Division of Cutaneous Hazards to discuss research on skin-grafted nude mice, May 81.

87. Rhona Cohen, PhD, University of Illinois, IL, visited the Division of Cutaneous Hazards to discuss research on skin-grafted nude mice, May 81.

88. Charles F. Frey, MD, Vice Chairman, Department of Surgery, University of California, Davis, CA, visited the Division of Combat

Casualty Care to observe porcine in vivo shock-monitoring experiments, Mar 81.

89. Benjamin W. Zweifach, PhD, Professor of Bioengineering, University of California at San Diego, CA, visited the Division of Combat Casualty Care and gave a seminar concerning responses of the microvascular bed to shock, 14 May 81.

90. Dr. Lionello Ferrari visited the Division of Combat Casualty Care for recruitment purposes, 28 May 81.

91. Personnel from Johnson & Johnson Company demonstrated a new membrane oxygenator at LAIR, 30 May 81.

92. John W. Holaday, PhD, Department of Medical Neurosciences, Walter Reed Army Institute of Research, visited the Division of Combat Casualty Care to discuss projects concerning the possible clinical applicability of opiate antagonists in cardiovascular pathophysiology, 14-16 Jul 81.

93. General Dr. Azmy Attia, Senior Surgeon, Egyptian Army, visited the Division of Combat Casualty Care, 22-24 Jul 81.

94. Drs. Fedor and Friedman, Alpha-Therapeutics, visited the Division of Combat Casualty Care and gave a seminar on perfluorocarbon emulsions, 26 Aug 81.

95. Dr. John Baldeschweiler, Professor of Chemistry, California Institute of Technology, visited the Division of Combat Casualty Care to discuss the use of immunoliposomes in shock and resuscitation research, 25 Sep 81.

96. Dr. David H. Lewis, Linkoping University Clinical Research Center, Linkoping, Sweden, visited the Division of Combat Casualty Care to discuss mutual interests in combat casualty care and to establish a greater degree of cooperation between laboratories, 2 Nov 81.

97. Peter Weisgerber, MD, American representative for Geistlich Pharmaceuticals, Germany, visited the Division of Combat Casualty Care to discuss the feasibility of doing American preclinical trials at LAIR (new wound dressing), 13 Nov 81.

98. Dr. Richard Yen, Jet Propulsion Laboratory, Pasadena, CA, visited the Division of Combat Casualty Care to discuss the use of fluorescent immunomicrospheres in shock and resuscitation research, 24 Nov 81.

99. Dr. Robert Beale, Australian Red Cross, visited 5 Jun 81.

100. Major General Augerson, MC, visited 9 Oct 81.

101. The following personnel were briefed and toured the Toxicology Group:

a. COL D. Swanson, Mr. C. Lieske, and Mr. B. Sultan, US Army Medical Research Institute of Chemical Defense, 2 Dec 81.

b. LTC J. LaMothe, CPT L. Menell, CPT J. Carr, and Dr. J. Dackre from HQ, US Army Medical Research and Development Command and US Army Medical Bioengineering Research and Development Laboratory, 12 Aug 81.

c. Dr. S. Omaye, US Department of Agriculture Regional Labratory, 9 Sep 81.

d. MAJ D. George, HQ, USAMRDC, 10 Aug 81.

e. CPT M.A. Hanes, VC, SSG L. White, SP4 T. Kellner, and PFC E. Zimmerman visited the Stanford Research International to observe dermal toxicology testing, 29 Apr 81.

f. LTC J.T. Fruin, VC, attended the Council of Army Veterinarians workshop, 24-25 Aug 81, and the Veterinary Corps Training Distribution workshop, 26-27 Aug 81.

g. LTC J.T. Fruin, VC, and E. McGown, DAC, GS-14, conducted liaison visits to the US Army Medical Research Institute of Chemical Defense, US Army Medical Bioengineering Research and Development Laboratory, Walter Reed Army Institute of Research, and HQ, USAMRDC, to discuss toxicology testing and testing requirements, 13-15 Apr 81; they also attended the Chemical Defense meeting at HQ, USAMRDC, 13 Apr 81.

h. CPT M.A. Hanes, VC, attended the insect repellent meeting at HQ, USAMRDC, to present toxicity data collected on insect repellents, 17 Aug 81.

i. LTC J.T. Fruin, VC, conducted liaison visits to US Army Institute of Chemical Defense, HQ, USAMRDC, and US Army Medical Bioengineering Research and Development Laboratory to discuss toxicity testing, 14 - 15 Dec 81.

j. COL D. Hilmas visited the Toxicology Group to discussed participation in the chemical defense, 24-26 Feb 81, and 10-13 Aug 81.

k. LTC P.W. Mellick, VC, attended the Training Distribution Workshop of the U.S. Army Veterinary Corps, Washington, DC, 26-27 Aug 81.

1. LTC P.W. Mellick, VC, and CPT G.T. Makovec, VC, visited Dr. D. Hyde, Department of Anatomy, College of Veterinary Medicine, University of California at Davis, CA, to discuss techniques and methodology for morphometric studies to document the histologic components of porcine skin, 8 Oct 81.

m. CPT A.T. Burrs, VC, CPT M.J. Langford, VC, and CPT G.T. Makovec, VC, attended the Western States Veterinary Pathology Conference at Syntex Corporation, Palo Alto, CA. CPT Burrs presented a case report entitled "Hemangioma-like Lesion of the Canine Scrotum." CPT Langford presented "Mouse Hepatitis Virus Infection in a Nude Mouse," 8 Oct 81.

n. CPT A.T. Burrs, VC, CPT M.J. Langford, VC, and CPT G.T. Makovec, VC, attended the annual meeting of the American College of Veterinary Pathology, Monterey, CA, 10-13 Nov 81.

o. B.D. Schwartz, DAC, GS-12, attended the 32nd annual meeting of the Tissue Culture Association, Washington, DC, 8-11 Jun 81.

102. S.T. Schuschereba, DAC, GS-9, participated in the following activities:

a. Attended the Annual Meeting of the Association for Research in Vision and Ophthalmology, Sarasota, FL, 27 Apr-1 May 81.

b. Visited PM TRADE at the Naval Training and Equipment Center, Orlando, FL, to discuss results of an experiment of study effects of diffuse argon laser irradiation on the rhesus monkey retina, 30 Apr 81.

c. Visited the School of Physics and Applied Engineering, Cornell University, Ithaca, NY, to discuss aspects of a collaborative project designed to determine effects of diffuse argon laser irradiation on the retina, 7 May 81.

SECTION XII - UNRESOLVED PROBLEMS

1. Contracted installation of the TOXSYS information system for toxicology research has not been completed by Beckman, Inc., of Oceanside, CA. Archive and restore functions and the following reporting applications software are not operational: 1) animal weight changes in conjunction with critical clinical signs, 2) food consumption deviation, 3) animal weight deviations, and 4) the study status report. Repeated failure of TOXSYS TOXCART data collections terminals, especially bar code reader wands, has continually interrupted the conduct of studies.

2. Attempts are still being made to fill an ophthalmology position at LAIR. This position has been widely advertised in the appropriate journals. Potential candidates have been limited by the reluctance of clinicians to accept research assignments, and because of changes in military personnel regulations which have downgraded rank on entry into active service.

3. Appropriate hoods and filters are required to permit use of chemical surety substances in chemical defense research at LAIR.

4. Over-regulation of chemical surety substances (CSS) and, therefore, the need for a CSS-secure area, remains a major impediment to in-house research on the dermal aspects of medical defense against chemical warfare. Serious consideration should be given to revision of AR 50-6 to include a realistic evaluation of threat and occupational safety when regulating use of CSS in civilian and military medical research laboratories. The present regulation requires sub-lethal amounts of undiluted CSS to be moved, secured, and stored in the same way as munition-sized quantities. These requirements make it extremely expensive to do the research, it generates unfounded anxiety in people living near the facility, and focuses unfriendly intelligence-gathering operations on the facility as being a site where chemical defense research is being performed. A more useful and cost-effective approach would be to incorporate a multilevel set of requirements in the regulation so that CSS would be controlled in accordance with their toxicity, the hazard to the workers and surrounding community, and the threat potential for theft and subsequent mis-use of the maximum allowable quantity of CSS authorized for the facility.

5. The lack of an automated data management system for tabulating and analyzing pathology data generated by toxicology studies continues to be a problem of major concern. A pathology data management system is available for TOXSYS, a system manufactured and marketed by Beckman Instrument Company; however, there have been many difficulties in implementation of other "TOXSYS" systems at LAIR and the pathology systems were not purchased. Efforts to identify other systems from commercial sources have failed. At year's end, pathology data from toxicology studies were being tabulated manually, a procedure that may compromise accuracy and considerably extend the time required to complete these studies.

6. A critical shortage of trained and experienced personnel exists in the field of toxicology. The Toxicology Group has trained some technician-level personnel, but in the investigator field, personnel are not readily available.

7. The Hitachi electron microscope was moved from the second floor of Phase I to the first floor of Phase III during CY 80. At the end of CY 81, the room housing this microscope still required much refurbishing before the instrument could be made completely operable.

8. The LAIR NRC license has not yet been issued. After a second submission of the application, Oct 81, it is estimated that issuance will not take place until well into CY 82.

9. Replacement/repair of the floor in the cage-washing area, Animal Resources Group, has not been accomplished. Pot-holes in the concrete floor are a major safety hazard. Patchwork filling of holes has given temporary relief; however, permanent repair of this floor is necessary and was pointed out as a major deficiency during the American Association for Accreditation of Laboratory Animal Care, site visit, 1 May 81.

SECTION XIII - OTHER

1. COL A. M. Allen, MC, received the following appointments:

a. Assistant Clinical Professor of Dermatology, UCSF.

b. Consultant to the US Food and Drug Administration and appointment to the Administration's Dermatology Advisory Panel.

2. Division of Combat Casualty Care:

a. COL R.F. Bellamy, MC, became a member of the American Physiological Society and the Association of Military Surgeons of the United States.

b. MAJ L.W. Traverso, MC, became a member of the American Physiological Society.

c. SP5 Richard R. Gomez was accepted to the Uniformed Services University of the Health Sciences.

d. SP5 Eileen M. Mahoney represented LAIR at the USAMRDC Soldier of the Year Competition, Ft. Detrick, Frederick, MD, 25-31 Oct 81.

3. From 1 Apr to 1 Sep 81, the position of Chief, Operating Room Services Group was vacant. Officers from Pathology Services Group provided supervision, administrative procedures, and professional veterinary support to the Operating Room Services Group during this period.

SECTION XIV - PUBLICATIONS

LETTERMAN ARMY INSTITUTE OF RESEARCH
PRESIDIO OF SAN FRANCISCO, CA

BOOKS

BEATRICE, E.S. and Participants. Combat Ocular Problems. Proceedings of Conference (Letterman Army Institute of Research, Presidio of San Francisco, California, 20-21 October 1980), edited by L. Applewhite. GPO 587-276/62

INSTITUTE REPORTS

69. RANDOLPH, D.I., B.E. STUCK, M.E. SHEA, and S. WIERZBA. A Technique for Evaluating Thermal Sensitivity at the Rhesus Monkey Eye and Surrounding Tissues. February 1981

70. GUTHERTZ, L.S., and J.T. FRUIN. Assessment of Mutagenic Activity in Thermally Processed, Frozen, Electron-irradiated, and Gamma-irradiated Beef Using the Ames Salmonella/mammalian Microsome Mutagenicity Assay. June 1981

78. WISE, W.R., R.S. HARDING, J.H. SKALA, and H.E. SAUBERLICH. Semiautomated Determination of Serum Lipids. February 1981

87. McGOWN, E.L., C.M. LEWIS, A. ROBLES, P.P. WARING, J.H. SKALA, V.L. GILDENGORIN, and H.E. SAUBERLICH. Investigation of Possible Antivitamin B-6 Properties in Irradiation Sterilized Chicken. June 1981

88. O'MARA, P.A., D.A. STAMPER, D.J. LUND, and E.S. BEATRICE. Chromatic Strobe Flash Disruption of Pursuit Tracking Performance. November 1980

89. ASKEW, E.W. Influence of Nutritional Factors on Lipid metabolism. December 1980

90. O'MARA, P.A., D.A. STAMPER, and D.J. LUND. A Microcomputer-controlled Video Electronic System for Measuring Human Pursuit Tracking Performance. March 1981

91. HANNON, J.P. Domestic Swine in Physiological Research. I. A biomedical model. May 1981

92. HANNON, J.P., J.H. SKALA, and W.Y. MOORES. Domestic Swine in Physiological Research. II. Electrolyte values for arterial serum from young anesthetized pigs maintained under steady-state ventilatory conditions. May 1981

93. DIXON, R.S., P.B. JENNINGS, JR., and J.P. HANNON. Physiologic Aspects of Porcine Hemorrhage. I. A vascular catheter for chronic implantation in swine. July 1981

94. HANNON, J.P., P.B. JENNINGS, JR., and R.S. DIXON. Physiologic Aspects of Porcine Hemorrhage. II. Alterations in heart rate and arterial pressure during fifty percent blood volume loss in the conscious animal. July 1981

95. HANNON, J.P., P.B. JENNINGS, JR., and R.S. DIXON. Physiologic Aspects of Porcine Hemorrhage. III. Heart rate and arterial blood pressure changes during spontaneous recovery from 30 and 50 percent blood volume loss in the conscious animal. July 1981

96. LUND, D.J., B.E. STUCK, and E.S. BEATRICE. Biological Research in Support of Project MILES. July 1981

97. SAUERS, L.J., F.R. PULLIAM, and J.T. FRUIN. The Mutagenic Potential of: n-(n-octyl)-glutarimide. (Toxicology Series 1). July 1981

98. SAUERS, L.J., F.R. PULLIAM, and J.T. FRUIN. The Mutagenic Potential of: n-hexyl-2-oxazolidone. (Toxicology Series 2). July 1981

99. SAUERS, L.J., F.R. PULLIAM,and J.T. FRUIN. The Mutagenic Potential of: 4-nitrophenyl methyl phenyl phosphinate, 4-nitrophenyl diphenyl phosphinate, 4-nitrophenyl dimethyl phosphinate,4-chlorophenyl methyl phenyl phosphinate, 4-chlorophenyl diphenyl phosphinate. (Toxicology Series 3). July 1981

100. SAUERS, L.J. F.R. PULLIAM, and J.T. FRUIN. The Mutagenic Potential of: 4-nitrophenyl isopropyl (phenyl) phosphinate, 4-nitrophenyl ethyl (phenyl) phosphinate phenyl, 4-nitrophenyl (methyl) phosphinate, 4-nitrophenyl 2-methoxyphenyl phosphinate, 4-nitrophenyl 4-nitrophenyl (methyl) phosphinate. (Toxicology Series 4). July 1981

101. FRUIN, J.T., and M.A. HANES. Primary Dermal Irritation Potential of Components of the M-258A-1 Decontamination Kit (Study 1) (Toxicology Series 6). September 1981

102. SAUERS, L.J., F.R. PULLIAM, and J.T. FRUIN. The Mutagenic Potential of: 3-nitrophenyl dimethylphosphinate, 4-nitrophenyl 4-methoxyphenyl (methyl) phosphinate, 4-nitrophenyl 4-methylphenyl (methyl) phosphinate, 4-nitrophenyl di-n-butylphosphinothioate. (Toxicology Series 16). September 1981

103. JOHNSON, H.L., H.E. SAUBERLICH, R.A. NELSON, D.D. SCHNAKENBERG, W. AMOS, E.W. ASKEW, M.D. GREEN, J. TURNBULL, G.J. KLAIN, D.B. MILNE, and R.D. FULTS. Nutritional Evaluation of Meals Consumed in the Military Dining Halls at Twenty-Nine Palms Marine Corps Base for both the Conventional A Ration/Short Order and the New "Restaurants" Concept of Military Feeding. Recommendations to Correct Deficiencies. September 1981

104. SAUERS, L.J., F.R. PULLIAM, and J.T. FRUIN. The Mutagenic Potential of: 4-nitrophenyl bis(2-thienyl) phosphinate, 4-nitrophenyl 2-furyl(methyl) phosphinate, 4-cyanophenyl bis(2-furyl) phosphinate, 4-nitrophenyl bis (2-furyl) phosphinate. (Toxicology Series 17). September 1981

105. SAUERS, L.J., F.R. PULLIAM, and J.T. FRUIN. The Mutagenic Potential of: 4-nitrophenyl 4-chlorophenyl (methyl) phosphinate, 4-nitrophenyl bis (chloromethyl) phosphinate, 4-nitrophenyl phenyl (tichloromethyl) phosphinate, 4-nitrophenyl dinitrophenyl dichloromethyl (phenyl) phosphinate. (Toxicology Series 18). September 1981

106. SAUERS, L.J., F.R. PULLIAM, and J.T. FRUIN. The Mutagenic Potential of 4-fluorophenyl methyl (phenyl) phosphinate, 4-nitrophenyl 4-trifluoromethylphenyl (methyl) phosphinate, 4-nitrophenyl 3-trifluoromethylphenyl (methyl) phosphinate, 4-methylsulfinylphenyl methyl (phenyl) phosphinate. (Toxicology Series 19). September 1981

107. SAUERS, L.J., F.R. PULLIAM, and J.T. FRUIN. The Mutagenic Potential of triethylene glycol monohexyl ether, 3-(N-n-butyl-N-acetyl) aminopropionic acid ethyl ester proprietary compound RH-398, N,N-diethyl-m-toluamide, N(n-hexyl) glutarimide. (Toxicology Series 5). September 1981

108. SAUERS, L.J., and J.T. FRUIN. The Mutagenic Potential of: N,N-dipropylcyclohexanecarboximide (CHR 10) 1-(3-cyclohexene-1-yl-carbonyl) piperidine (CHR 11). (Toxicology Series 23). November 1981

109. SAUERS, L.J., F.R. PULLIAM, and J.T. FRUIN. The Mutagenic Potential of: (E)-1,2,3,4-tetrahydro-6-methyl-1(2-methyl-1-oxo-2-butenyl) quinoline, 1,2,3,4-tetrahydro-6-methyl-1-(3-methyl-1-oxo-2-butenyl) quinoline, 50% DEET, 25% Dow Corning 200 fluid, in isopropanol. (Toxicology Series 20). September 1981

110. KNUDSEN, J.J., and E.L. McGOWN. A Computer Program to Process Spectrophotometric Analytical Data Associated with Curvilinear Absorbance/Concentration Relationships. November 1981

111. HANNON, J.P., P.B. JENNINGS, and R.S. DIXON. Physiologic Aspects of Porcine Hemorrhage. IV. Blood Gas and Acid-Base Status of the Conscious Animal Following 30 and 50 Percent Blood Loss. December 1981

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16. ODOM, D.G. BASIC Program for Analysis of Platelet Size Distributions. April 1981

17. FRUIN, J.T., M.A. HANES, and L.C. RUTLEDGE. Primary Dermal Irritation Potential of the Insect Repellent CHF1 and its Components. (Toxicology Series 7). September 1981

18. FRUIN, J.T., M.A. HANES, and L.C. RUTLEDGE. Primary Dermal Irritation Potential of Components of the M-258A-1 Decontamination Kit (Study 4). (Toxicology Series 11). September 1981

19. ZWICK, H., E.S. BEATRICE, and T. GARCIA. Long-Term and Progressive Changes in Rhesus Spectral Sensitivity After Low-Level Light (514 nm) Exposure. December 1981

20. ZWICK, H., and D.L. JENKINS. Coherency Effects on Retinal Neural Processes of Pseudemys. December 1981

21. FRUIN, J.T., and M.A. HANES. Primary Dermal Irritation Potential of Components of the M-258A-1 Decontamination Kit (Study 2). September 1981

22. FRUIN, J.T., and M.A. HANES. Primary Dermal Irritation Potential of Components of the M-258A-1 Decontamination Kit (Study 3). (Toxicology Series 9). September 1981

23. KELLNER, T.P., M.A. HANES, and J.T. FRUIN. Primary Eye Irritation Potential of the Insect Repellents CHF1 and m-DEET. (Toxicology Series 10). September 1981

24. FRUIN, J.T., and M.A. HANES. Primary Dermal Irritation Potential of Components of the M-258A-1 Decontamination Kit (Study 5). (Toxicology Series 13). September 1981

25. FRUIN, J.T. Primary Dermal Irritation Resulting From the Abrasive Action When Using the M-258A-1 Decontamination Kit (Study 6). (Toxicology Series 14). September 1981

26. FRUIN, J.T. Primary Dermal Irritation Resulting From the Abrasive Action When Using the M-258A-1 Decontamination Kit (Study 7). (Toxicology Series 15). September 1981

27. JEDERBERG, W.W., and J.T. FRUIN. Primary Dermal Irritation Potential of Components of the M-258A-1 Decontamination Kit (Study 8). (Toxicology Series 21). November 1981

28. FRUIN, J.T., and M.J. LANGFORD. Primary Dermal Irritation Potential of Existing and Candidate Insect Repellents and Formulation Products for Insect Repellents. (Toxicology Series 22). November 1981

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81-012 REIFENRATH, W.G., J.A. HILL, P.B. ROBINSON, D.L. McVEY, W.A. AKERS, D.M. ANJO, and H.I. MAIBACH. Percutaneous absorption of carbon ^{14} labeled insect repellents in hairless dogs. J Environ Pathol Toxicol 4: 249-256, 1980

81-013 TILLOTSON, J.A. Ascorbate oxid[illegible]n in the guinea pig. Nutr Rep Int 22: 555-561, 1980

81-014 CABAUD, H.E., G.W. WESTIN, and S. CONNELLY. Tendon transfers in the paralytic hip. J Bone Joint Surg 61-A: 1035-1041, 1979

81-015 DeVENUTO, F., K.R. BUSSE, A.I. ZEGNA, and C.C. PECK. Evaluation of a reverse osmosis apparatus for field production of USP grade injectable water from sea water, pond water, and human urine. Milit Med 145: 831-835, 1980

81-016 WILSON, H.R., and L.O. LOLLINI. Leishmania braziliensis braziliensis: metastatic infection in a golden hamster. Trans Roy Soc Trop Med Hyg 74: 833, 1980.

81-017 OMAYE, S.T., M.D. GREEN, and M.H. DONG. Influence of dietary thiamine on pulmonary, renal, and hepatic drug metabolism in the mouse. J Toxicol Environ Health 7: 317-326, 1981

81-018 MOORE, G.L., C.C. PECK, P.R. SOHMER, and T.F. ZUCK. Some properties of blood stored in anticoagulant CPDA-1 solution. A brief summary. Transfusion 21: 135-137, 1981

81-019 SKALA, J.H., P.P. WARING, M.F. LYONS, M.G. RUSNAK, and J.S. ALLETTO. Methodology for determination of blood amino-transferases. In: Methods in Vitamin B-6 Nutrition, edited by J.E. Leklem and R.D. Reynolds. New York: Plenum, 1981

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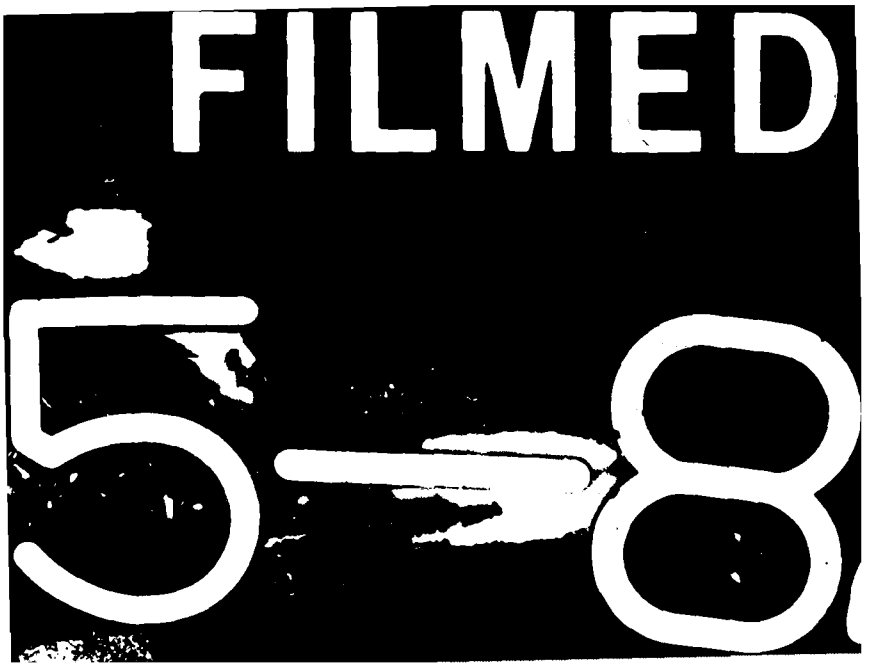
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