



HEADQUARTERS  
AIR MATERIEL COMMAND AIR1.940726.009

IN REPLY ADDRESS BOTH  
COMMUNICATION AND EN-  
VELOPE TO ATTENTION OF  
FOLLOWING OFFICE SYMBOL:

TSEAA1

TSEAA1/APG/efd  
WRIGHT FIELD, DAYTON, OHIO  
11 July 1946

**SUBJECT:** Exchange of Information on University Contracts.

**TO:** Commanding General, Headquarters, AAF  
Washington 25, D. C. (Attn: Research Division  
Office of The Air Surgeon)

1. Attached for your information, file and further action are five (5) copies of the list of current contracts with universities sponsored by the Aero Medical Laboratory, Engineering Division, Air Materiel Command. This list represents a complete coverage of research and development sponsored outside the Laboratory itself.

2. It is requested that your office initiate action to obtain for reference use of this Laboratory, lists of university contracts sponsored by the Office of Research and Invention, Navy Department, by the Surgeon General, and by the School of Aviation Medicine. In order to administer the above contracts effectively so that the government, the contractor, and the Laboratory gain the most benefit, knowledge of the existence of parallel and supporting studies in other universities would be extremely valuable.

3. It is proposed that copies of the attached list be used by your office as exchange material to acquire this information for our Laboratory.

4. In offering this information to your office for circulation to other interested groups, it is not our intention to invite them to participate in this program or visit with these universities freely. Visits and correspondence to these universities by other service agencies and other service contractors should be coordinated through this Laboratory as these contracts are sponsored by the Air Materiel Command.

FOR THE COMMANDING GENERAL:

E. J. KENDRICKS  
Colonel, Medical Corps  
Chief, Aero Medical Laboratory  
Aircraft & Physical Requirements  
Subdivision, Engineering Division

1 Incl:  
List of Univ Contracts (5)

Source: RG 341 Entry 44  
National Archives - DC

Box 93

22 July 94

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USAF

APG:smw

3 April 1946

TSEAA

University Contracts - Aero Medical Laboratory

The Air Surgeon  
 Headquarters Army Air Forces  
 Washington 25, D. C.

Attention: Colonel Otis O. Benson, Jr.  
 Chief, Medical Research Division

1. Contracts now active with universities are as follows:

<u>University</u>	<u>Subject</u>
* University of California Berkeley, California	Development, fabrication and testing of tan central warning panels
Duke University Durham, North Carolina	Respiratory regulation at altitude
* Massachusetts Institute of Technology, Cambridge, Mass.	Construction of one 150 gallon liquid storage container and construction of light-weight walk-around bottle and converter
* Ohio State University Columbus, Ohio	Physiology of decompression above 63,000 feet
# University of Southern California, Los Angeles	Design and manufacture of resuscitating device for use in conjunction with present AAF pressure breathing regulator
* University of Southern California, Los Angeles	Development of a partial pressure suit for use at altitudes up to 60,000 feet
Woods Hole Oceanographic Inst., Woods Hole, Mass.	Report on whether eating marine plankton is safe and nutritious
Mayo Clinic, Rochester, Minnesota (This is a contract for \$1.00 a year)	Experimental studies of personal equipment proposed for use of flying personnel, and reports thereon

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 USAF

Ltr. to Air Surgeon, Hq. AAF, Washington - Attn: Colonel Benson 3 April 1946  
 Subject: University Contracts - Aero Medical Laboratory

2. Contracts now being negotiated with universities are as follows:

<u>University</u>	<u>Subject</u>
** University of California Berkeley, California	Use of radioactive isotopes
University of California Los Angeles, California	A study of the physiology, pathology and clinical aspects of heat tolerance of humans to extremely hot temperatures (150° F. to 250° F.)
** University of California Donner Lab., Berkeley, Calif.	Study, Preparation of a "Handbook, Artificial Radioactivity in Biology"
# Columbia University College of Physicians and Surgeons, New York, N. Y.	- Investigation and evaluation of clinical and physiological aspects, effects and value of Burns resuscitator
** University of Illinois Urbana, Illinois (This is a contract for \$1.00 a year)	Report on legibility of aircraft instruments in relation to dial size and spacing of scale divisions
University of Indiana, Bloomington, Indiana	A study of the partitioned calorimetry of human tolerance to extreme heat with special emphasis on the nature of vapor pressure gradients to the skin
** University of Indiana, Bloomington, Indiana	Report on psychological principles in the design of controls for computing gun sights
* Massachusetts Institute of Technology, Cambridge, Mass.	Design liquid oxygen generator
** University of Minnesota, Minneapolis, Minnesota	Research report on psychological factors related to "Legibility of verbal and numerical information used in aircraft"
** Princeton University, Princeton, New Jersey	Research report on "Psychological factors affecting accuracy and speed of reading and interpreting scales, graphs, dials and tables used in aircraft"
** University of Rochester Rochester, New York	Study on the physiology of high pressure breathing with special emphasis on possible redistribution of body fluids
** University of Southern California, Los Angeles	Report on partial pressure suit

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Mr. to Air Surgeon, Sq. AAF, Washington - Attn: Col. Hanson 3 April 1946  
 Subject: University Contracts - Aero Medical Laboratory

<u>University</u>	<u>Subject</u>
Swarthmore College Swarthmore, Pennsylvania	Development of an improved Scholander micrometric burette
University of Texas Galveston, Texas	Study to conduct an investigation to determine the most effective means of resuscitating personnel suffering from the effects of anoxia and a variety of asphyxial conditions, such as carbon monoxide poisoning, drowning, electric shock, etc.
Tufts College Tufts, Massachusetts	Research report on "Determination of factors related to effectiveness of warning devices used in aircraft"
Yale University, School of Medicine, New Haven, Conn.	To conduct an investigation to determine the mechanism of bubble formation in tissues and the vascular system of animals subjected to low-barometric pressures, and to study methods to be employed in reducing the rate of bubble formation

3. The contracts marked "a" represent an engineering and development entirely out of the Aero Medical Laboratory. The Laboratory acts essentially as an evaluating agency. Contracts marked "b" represent a biological study without parallel work in the Aero Medical Laboratory. If these contracts progress, it is planned to use the techniques as an analytical tool for altitude chamber and centrifuge studies. Contracts marked with "c" cover a general problem on resuscitation and intermittent pressure breathing, about 33 per cent of which is performed at Wright Field, and the remainder in outside universities. It is the understanding of the Aero Medical Laboratory that the School of Aviation Medicine has a parallel project, but to date there has been no liaison between the two activities. Contracts marked "d" are a part of the current psychological program which is so organized that at least 50 per cent of the work is performed at Wright Field and the remaining portion of the activity is coordination and evaluation. Contracts marked "e" cover high pressure breathing and the activity in this general project is divided equally between the Laboratory and the various universities. All high altitude chamber work and anti-g evaluation of the partial pressure suit is done at Wright Field. The remaining projects, unmarked, are paralleled with a comparable activity in the Laboratory itself and will be used to supplement information necessary for the Aero Medical Laboratory to devise human requirements in the design of aircraft.

FOR THE COMMANDING GENERAL:

LOYD E. GRIFFIS  
 Colonel, Medical Corps  
 Chief, Aero Medical Laboratory  
 Aircraft and Physical Requirements  
 Subdivision, Engineering Division

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## AERO MEDICAL LABORATORY

CURRENT CONTRACTS WITH UNIVERSITIES - JULY, 1946

1. Berkeley Scientific Instrument Co. (University of California)  
"Mass spectrograph for gas analysis (Donner Laboratory Model)"
2. Boston University School of Medicine - Dept. of Physiology  
Geo. Mason and Prof. Hans O. Haterius  
"Study on the effects of sudden exposure to cold on the intact living organism"
3. University of California - Dr. John Lawrence  
"Use of radioactive isotopes in Respiration Problems"
4. University of California, Berkeley, California - Dept. of Psychology  
Dr. Clarence Brown  
"Psychological Study of Flight Controls, with Special Reference to Requirements for Prone Position Operation"
5. University of California, Donner Lab., Berkeley, Calif. - Dr. John Lawrence  
"Study; Preparation of a Handbook, Artificial Radioactivity in Biology"
6. University of California (Los Angeles) - Dr. Craig L. Taylor  
"Study; The primary purpose shall be to define the heat load in physical and physiological terms and to determine tolerance times in accordance with these criteria. The plan is to establish the environmental limits in terms of essential normal mental and physical conditions and performances of normal man. (b) Secondly; Qualitative and quantitative observations will be made and recorded of the pathological and physiological incipient tolerance for heat as it is manifested in the experiments and as shown by post-experimental recovery."
7. Columbia University, College of Physicians and Surgeons, New York, N. Y.  
Dr. D. W. Richards, Jr.  
"Investigation and evaluation of clinical and physiological aspects, effects and value of Burns resuscitator"
8. Cornell Aeronautical Laboratory  
"Engineering and cost study for a linear accelerator-decelerator"
9. Duke University, Durham, North Carolina - School of Medicine - Jr. F. G. Hall  
"Respiratory regulation at altitude"
10. Harvard Fatigue Laboratory, Soldiers' Field Station, Boston, Massachusetts  
Dr. D. B. Hill  
"Studying critique of technique for evaluating physiological and psychological stresses such as would be encountered in high performance aircraft. Studies will consist of two phases: (1) Survey of current literature; (2) Preliminary investigation."

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11. University of Illinois, Urbana, Illinois - Dr. Alex Williams  
"Report on legibility of aircraft instruments in relation to dial size and spacing of scale divisions"
12. University of Indiana - Dept. of Physiology - Dr. Paul A. Nicoll  
"A Study of the behavior of the vascular bed and its environment in an intact mammal when exposed to various conditions encountered at high altitudes"
13. University of Indiana, Bloomington, Indiana - Dr. Douglas Ellison  
"Report on psychological principles in the design of controls for computing gun sights"
14. Massachusetts Institute of Technology, Cambridge, Mass. - Dr. S. C. Collins  
"To cover the cost to conduct an investigation and prepare a report on the properties and characteristics of a horizontal flow fractionating column of special design for the production of oxygen from air"
15. Massachusetts Institute of Technology, Cambridge, Mass. - Dr. S. C. Collins  
"Liquid oxygen generator"
16. Massachusetts Institute of Technology, Cambridge, Mass. - Dr. S. C. Collins  
"Construction of one 150 gallon liquid storage container construction of light weight walk-around bottles and converter"
17. Ohio State University, Columbus, Ohio - Dr. Fred Hitchcock  
"Physiology of Decompression above 63,000 feet"
18. Mayo Clinic, Rochester, Minnesota - Dr. Walter Boothby  
"Experimental studies on personal equipment proposed for use of flying personnel and reports thereon"
19. Princeton University, Princeton, N. J. - Dept. of Psychology - Dr. Wm. Kappauf  
"Research Report of 'Psychological Factors Affecting Accuracy and Speed of Reading and Interpreting Scales, Graphs, Dials and Tables used in Aircraft'"
20. University of Rochester, Rochester, N. Y. - Dept. of Physiology, School of Medicine - Dr. W. O. Fern  
"Study on the physiology of high pressure breathing with special emphasis of possible redistribution of body fluids"
21. University of Rochester, Rochester, N. Y. - Dept. of Physiology, School of Medicine - Dr. Adolph  
"Study of temperature regulation, heat exchange, and tolerance of man and warm blooded animals on exposure to cold"
22. University of Southern California - Dept. of Physiology - Dr. James Henry  
"A study to determine the physiologic responses of animals and human beings at altitudes above 55,000 feet"
23. Stanford University, Palo Alto, Calif. - Dept. of Physiology - Dr. Weymouth  
a. "Study of the fundamental nature and relationship of the clues for perception of distance as related to the practical problem of an efficient and valid test of distance discrimination"

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Conrad h. G. Merrill

- b. "Study of the fundamental and practical problems involved in visual acuity, including an analysis and critique of recent findings on the growth and development of the optical mechanisms and their relations to errors of refraction, etc?"
24. Stanford University, Palo Alto, Calif. - Dept. of Physiology - Prof. V. E. Hall  
 "A study of the role played by the metabolic rate of the nerve cells in the brain on the thermostatic behavior of the body temperature regulating center. This study will be made on intact mammals and possibly on isolated brain tissue"
25. Swarthmore College, Swarthmore, Pa. - Dr. Laurence Irving  
 "Development of an improved Scholander micrometric burette" ."
26. Swarthmore College, Swarthmore, Pa. - Dept. of Zoology - Dr. Laurence Irving  
 "Research and development services are required for a period of one year from the date of the contract consisting of: (1) The development of semi-micro analytical methods suitable for field use. (2) The testing and use of these methods, and other applicable methods in field studies on the water balance of marine mammals, birds and/or reptiles"
27. University of Texas, Galveston, Texas - Dept. of Physiology - Dr. Howard Swann  
 "Study to conduct an investigation to determine the most effective means of resuscitating personnel suffering from the effects of anoxia and a variety of asphyxial conditions, such as carbon monoxide poisoning, drowning, electric shock, etc."
28. Tufts College, Medford, Mass. - Dept. of Psychology - Dr. John Kennedy  
 "Research report on psychological factors related to 'Legibility of verbal and numerical information used in aircraft'"
29. University of Maryland, College Park, Maryland - Dept. of Psychology  
 Dr. John Jenkins  
 "Research report on 'Determination of Factors Related to Effectiveness of Warning Devices Used in Aircraft'"
30. Washington, University of, Seattle, Washington - Dept. of Psychology  
 Dr. Roger Loucks  
 "Research report on 'The Psychological Aspects of Orientation as they Relate to the Design of Aviation Equipment'"
31. Yale University - School of Medicine - Dr. J. F. Fulton  
 "Study: (1) To conduct an investigation to determine the mechanism of bubble formation in tissues and the vascular system of animals subjected to low barometric pressures and other factors which promote bubble formation; (2) To study methods to be employed in reducing the rate of bubble formation"

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