NASA Contractor Report 4455


Janice Wallace-Robinson, Elizabeth Hess, and Katherine J. Dickson
The George Washington University
Washington, D.C.

Prepared for
NASA Office of Space Science and Applications
under Contract NASW-4324

National Aeronautics and Space Administration
Office of Management
Scientific and Technical Information Program
1992
# TABLE OF CONTENTS

Preface..................................................................................................................v

Introduction..........................................................................................................vii

Environmental Health Program
   Barophysiology...............................................................................................3
   Microbiology....................................................................................................21
   Toxicology.........................................................................................................29
   General...............................................................................................................37

Index of Principal Investigators..........................................................................41

Appendix: List of Principal Investigators and Addresses........................................45
This bibliography contains publications resulting from research supported by the NASA Environmental Health Program during the years 1980-1990. Portions of this ten-year compilation have been published previously as part of a series of bibliographies of space biomedical research. Previous editions in this series cover the years 1980-1982 (NASA CR 3587), 1982-1983 (NASA CR 3739), 1983-1984 (NASA CR 3860), 1984-1986 (NASA CR 4184), and 1987-1988 (NASA CR 187840).

This bibliography is divided into four sections: Barophysiology, Microbiology, Toxicology, and General Environmental Health. NASA-funded investigators whose work resulted in the publication are identified by an asterisk. A principal investigator index is included in the bibliography, as well as a list of investigators and their affiliations.

As part of our continuing interaction with the scientific and professional community, we are pleased to present this bibliography in an effort to stimulate an exchange of information and ideas among scientists working in this program.

We would like to thank the investigators for their cooperation in submitting lists of their publications. We would also like to thank Audrey Brown for her technical expertise in the compilation of this bibliography.

Janis H. Stoklosa, Ph.D.
Manager, Environmental Health Program
INTRODUCTION

The Environmental Health Program is part of the Life Sciences Division of NASA's Office of Space Science and Applications. Space life sciences research was initiated in 1960 with the goal of enabling human survival in space. Now, in the late 20th century, the program is evolving to ensure human health and productivity on space missions: on the Space Shuttle in the 1990s, then on Space Station Freedom, and ultimately on the Moon and missions to Mars.

The health and well-being of crews in the spacecraft environment depend on proper atmospheric composition and pressure and an environment free from accumulated air- and waterborne gaseous, particulate, and microbial toxicants and contaminants. The goals of the Environmental Health Program are to utilize ground-based studies to understand the effects of the spacecraft and extravehicular activity (EVA) environments on humans and other organisms; to specify, measure, and control these environments; and to develop countermeasures where necessary to optimize crew health, safety, and productivity. The current program strives to achieve these goals by conducting research to define microbiological and toxicological standards and barophysiological protocols, and developing advanced environmental monitoring technology.

The Environmental Health Program encompasses three disciplines: barophysiology, toxicology, and microbiology. Barophysiology includes understanding the biomedical considerations related to atmospheric composition and pressure of the space habitat; development of acceptable and appropriate ranges of gas composition, pressure, temperature, and humidity; defining models to predict decompression sickness; developing training protocols; and developing countermeasures for any adverse medical conditions that arise as a result of changes in atmospheric composition or pressure. Toxicology involves investigating the mechanisms of chemical poisoning at the molecular level; understanding toxicity and risk assessments, physiochemical properties, exposure limits, and contingency procedures; and developing procedures or methods to prevent harmful exposure to airborne chemicals. Microbiology involves establishing microbial standards for air, water, food, surfaces, and experimental animals; developing monitoring techniques; understanding the effects of spaceflight on microbial functions, population dynamics, and host-microbe interactions; and investigating the role of spaceflight stressors on the human immune system with emphasis on the risk of infectious disease due to common and environmental microorganisms.

Janis H. Stoklosa, Ph.D
Manager, Environmental Health Program
BAROPHYSIOLOGY
Adams*, J.D.
Review of space cabin and EVA suit environmental research at the School of Aerospace Medicine: Three decades (Abstract).

Adams*, J.D.; Dixon, G.A.; Harvey, W.T.
Bends susceptibility (Abstract).

Adams*, J.D.; Dixon, G.A.; Olson, R.M.; Bassett, B.E.; Fitzpatrick, E.L.
Preventing of bends during space shuttle EVAs using stage decompression.

Adams*, J.D.; Olson, R.M.; Dixon, G.A.; Fitzpatrick, E.L.
Advanced warning of the potential risk of developing bends and screening of bends prone individuals.

Barrow, R.E.; Hills*, B.A.
Properties of four lung surfactants and their mixtures under physiological conditions.
Respiration Physiology 51: 79-93, 1983. (GWU 4302)

Bueker, P.A. (Bungo, M.W. = P.I.)

Butler*, B.; Leiman, B.; Katz, J.
Positive end-expiratory pressure (PEEP) and venous air embolism (Abstract).

Butler*, B.; Luehr, S.; Katz, J.
Longevity of pulmonary vascular bubbles following venous air embolism (Abstract).
Abstract of paper presented at the Proceedings of the Ninth World Congress of Anesthesiology, 1988, 1 p. (GWU 10854)

Butler*, B.D.
Lysophosphatidylcholine induced changes in surface properties of rat bronchoalveolar lavage (Abstract).

Butler*, B.D.; Allen, S.J.; Laine, G.A.
Pulmonary edema with venous gas emboli: No evidence for microvascular permeability change (Abstract).
Undersea Biomedical Research 17: 71, 1990. (GWU 13514)
Butler*, B.D.; Conkin, J.; Luehr, S.
Pulmonary hemodynamics, extravascular lung water and residual gas bubbles following low dose venous gas embolism in dogs.
*Aviation, Space, and Environmental Medicine* 60(12): 1178-1182, 1989. (GWU 13393)

Butler*, B.D.; Conkin, J.; Luehr, S.
Repetitive versus continuous venous air embolism in dogs: Effects on pulmonary hemodynamics, extravascular lung water and bubble longevity (Abstract).
*Undersea Biomedical Research* 15: 18, 1988. (GWU 10139)

Butler*, B.D.; Davies, I.; Drake, R.E.
Airway instillation of lysophosphatidylcholine and its effects on filtration coefficient and critical microvascular pressure (Abstract).

Butler*, B.D.; Davies, I.; Drake, R.E.
Changes in alveolar lysophosphatidylcholine (LPC) and extravascular lung water after ischemia/reperfusion (I/R) (Abstract).

Butler*, B.D.; Davies, I.; Drake, R.E.
Effect of lysophosphatidylcholine on the filtration coefficient in intact dog lungs.

Butler*, B.D.; Davies, I.; Drake, R.E.
Lysophosphatidylcholine effects of lung fluid balance in dogs (Abstract).
In: *Proceedings of the 7th International Symposium on Surfactants in Solution*, Ottawa, Canada, 1988, p. 145. (GWU 10850)

Butler, B.D.; Hills*, B.A.
Cardiovascular effects and filtration threshold for pulmonary air embolism (Abstract).

Butler, B.D.; Hills*, B.A.
Role of lung surfactant in cerebral decompression sickness.
*Aviation, Space, and Environmental Medicine* 54(1): 11-15, 1983. (GWU 4501)

Butler, B.D.; Hills*, B.A.
Transpulmonary passage of venous air emboli.

Butler*, B.D.; Katz, J.
Pulmonary hemodynamic factors leading to arterial gas embolism of venous origin (Abstract).
*Undersea Biomedical Research* 15: 25, 1988. (GWU 10140)

Butler*, B.D.; Katz, J.
Vascular pressures and passage of gas emboli through the pulmonary circulation.

Butler*, B.D.; Katz, J.
Venous gas embolism (Abstract).
Cerebral decompression sickness: Bubble distribution in dogs in the Trendelenberg position (Abstract).
*Undersea Biomedical Research* 14: 15, 1987. (GWU 10851)

Effect of the Trendelenburg position on the distribution of arterial air emboli in dogs.

Butler*, B.D.; Luehr, S.; Katz, J.
Influence of oxygen ventilation on survival of air emboli in the pulmonary vasculature (Abstract).

Butler*, B.D.; Luehr, S.; Katz, J.
Venous gas embolism: Time course of residual pulmonary intravascular bubbles.
*Undersea Biomedical Research* 16(1): 21-29, 1989. (GWU 13481)

Butler*, B.D.; Robinson, R.
Digitized ultrasonic bubble signals as a visual adjunct to bubble scoring during decompression for EVA simulation (Abstract).

Butler*, B.D.; Robinson, R.; Sutton, T.
Venous bubble detection with decompression: Computer assisted visual and audio monitoring (Abstract).
*Undersea Biomedical Research* 17: 34, 1990. (GWU 13512)

Chryssanthou*, C.; Goldstein, G.; Sigona, I.; Tsigaridas, L.
The influence of sex on dysbaric disorders (Abstract).
*Aviation, Space, and Environmental Medicine* 56(5): 484, 1985. (GWU 7437)

Chryssanthou*, C.; Goldstein, G.; Talavera, J.
Altitude induced reversible alterations of the blood-brain and blood-lung barriers (Abstract).
*Aviation, Space, and Environmental Medicine* 59(5): 471, 1988. (GWU 9913)

Chryssanthou*, C.; Kiricikoglu, H.; Strugar, J.
Increase of plasma renin activity in male and female rabbits subjected to dysbaric conditions.

Chryssanthou*, C.; Kiricikoglu, H.; Strugar, J.
Increase of plasma renin activity in rabbits subjected to dysbaric conditions (Abstract).

Chryssanthou*, C.; Palaia, T.; Goldstein, G.; Stenger, R.
Increase in blood-brain barrier permeability by altitude decompression.

Chryssanthou*, C.; Stenger, R.J.; Goldstein, G.
Blood-brain barrier alteration by altitude decompression (Abstract).
*Aviation, Space, and Environmental Medicine* 57(5): 490, 1986. (GWU 8032)
Chyrssanthou*, C.P.; Goldstein, G.; Palaia, T.; Stenger, R.J.
Dysbaric disorders induced by altitude decompression (Abstract).
In: Space Life Sciences Symposium: Three Decades of Life Science Research in Space,
Washington, DC, June 21-26, 1987, p. 149-150. (GWU 9944)

Clark, J.M. (Lambertsen, C.J. = P.I.)
Diving and gas embolism.
In: Pulmonary Diseases and Disorders, 2nd Edition, Volume 1 (Fishman, A.P., Ed.). New York:

Clark, J.M. (Lambertsen, C.J. = P.I.)
Oxygen tolerance in nitrox diving.
In: Workshop on Enriched Air Nitrox Diving (Hamilton, R.W., Crosson, D.J., Hulburt, A.W.,
Undersea Research Program Report 89-1)

Clark, J.M. (Lambertsen, C.J. = P.I.)
Pulmonary limits of oxygen tolerance in man.

Clark, J.M.; Gelfand, R.; Flores, N.D.; Lambertsen*, C.J.; Pisarello, J.B.
Pulmonary tolerance in man to continuous oxygen exposure at 3.0, 2.5, 2.0 and 1.5 ATA in
Predictive Studies V.
In: Underwater and Hyperbaric Physiology IX (Bove, A.A., Bachrach, A.J., Greenbaum, L.J.,
14452)

Clark, J.M.; Gelfand, R.; Stevens, W.C.; Lambertsen*, C.J.
Extension of pulmonary oxygen tolerance in man at 2.0 ATA by intermittent exposure on a 60:15
oxygen:normoxic pattern in Predictive Studies VI (Abstract).
Undersea Biomedical Research 17(Suppl.): 25, 1990. (GWU 13524)

Clark, J.M.; Lambertsen*, C.J.
Principles of oxygen tolerance extension defined in the rat by intermittent oxygen exposure at 2.0
and 4.0 ATA (Abstract).
Undersea Biomedical Research 16(Suppl): 99, 1990. (GWU 14160)

Empirical models for use in designing decompression procedures for space operations (Abstract).
In: Space Life Sciences Symposium: Three Decades of Life Science Research in Space,

Comparison of venous gas emboli and decompression sickness incidence in exercising subjects
and sedentary Doppler Technicians during exposure to 4.3 psia (Abstract).

The Effect of Exercise on Venous Gas Emboli and Decompression Sickness in Human Subjects at
(GWU 10654)
Cooke, J.P.; Ikels, K.G.; Adams*, J.D.; Miller, R.L.
Relation of breathing oxygen-argon gas mixtures to altitude decompression sickness.
*Aviation, Space, and Environmental Medicine* 51(6): 537-541, 1980. (GWU 1476)

Dise, C.A.; Clark, J.M.; Lamberts*, C.J.; Goodman, D.B.P.
Hyperbaric hyperoxia reversibly inhibits erythrocyte phospholipid fatty acid turnover.

Dixon, G.A.; Adams*, J.D.; Harvey, W.T.
Decompression sickness and intravenous bubble formation using a 7.8 psia simulated pressure-suit environment.
*Aviation, Space, and Environmental Medicine* 57(3): 223-228, 1986. (GWU 7493)

Dixon, G.A.; Adams*, J.D.; Olson, R.M.; Fitzpatrick, E.L.
Validation of additional prebreathing times for air interruptions in the shuttle EVA prebreathing profile.

Drake, R.E.; Butler*, B.D.; Gabel, J.C.
Role of the alveolar gas-liquid interface in acceleration of pulmonary edema formation (Abstract).

Edwards, B.F.; Gilbert, J.H.; Horrigan*, D.J.; Waligora*, J.M.
Dynamics of whole body nitrogen washout while breathing 100% oxygen (Abstract).


Fitzpatrick, E.L.; Adams*, J.D.; Olson, R.M.; Dixon, G.A.
The identification of bubbles before bends in ultrasonic Doppler human studies.

Gelfand, R.; Clark, J.M.; Lamberts*, C.J.
Respiratory control timing characteristics during prolonged hyperoxia at 1.5, 2.0, 2.5, and 3.0 ATA (Predictive Studies V) (Abstract).
*Undersea Biomedical Research* 16(Suppl.): 93-94, 1989. (GWU 14163)

Gelfand, R.; Clark, J.M.; Lamberts*, C.J.
Ventilatory response to hypoxia is preserved following prolonged hyperbaric hyperoxia at 1.5, 2.0, and 2.5 ATA in man (Predictive Studies V) (Abstract).
*Undersea Biomedical Research* 17(Suppl.): 163, 1990. (GWU 13521)

Gelfand, R.; Clark, J.M.; Lamberts*, C.J.; Pisarello, J.B.
Effects on respiratory homeostasis of prolonged, continuous hyperoxia at 1.5 to 3.0 ATA in man in Predictive Studies V.
Gelfand, R.; Clark, J.M.; Lambertsen*, C.J.; Pisarello, J.B.
Ventilatory response to CO₂ following prolonged hyperoxia at 1.5 ATA and 2.5 ATA in man (Abstract).

Gelfand, R.; Clark, J.M.; Lambertsen*, C.J.; Pisarello, J.B.
Ventilatory response to hypoxia following prolonged hyperoxia at 1.5 ATA in man (Abstract).

Gemhardt, M.L.; Lambertsen*, C.J.
Minimization of oxygen prebreathe requirements for extravehicular activity (EVA), by use of suit variable pressure profiles (Abstract).
Undersea Biomedical Research 17(Suppl.): 157, 1990. (GWU 13523)

Gemhardt, M.L.; Lambertsen*, C.J.; Miller, R.G.; Hopkin, E.
Evaluation of a theoretical model of tissue gas phase growth and resolution during decompression from air diving (Abstract).
Undersea Biomedical Research 17(Suppl.): 95, 1990. (GWU 13525)

Gerth, W.A.; Vann*, R.D.; Leatherman, N.E.
The relation of whole-body nitrogen elimination during oxygen breathing to the acquisition of decompression sickness protection (Abstract).

Gerth, W.A.; Vann*, R.D.; Leatherman, N.E.
The relation of whole-body nitrogen elimination during prebreathe to the incidence of decompression sickness at 4.3 psia (Abstract).
Aviation, Space, and Environmental Medicine 60(5): 489, 1989. (GWU 14404)

Gerth, W.A.; Vann*, R.D.; Leatherman, N.E.
Whole-body nitrogen elimination during oxygen prebreathing and altitude decompression sickness risk.

Gerth, W.A.; Vann*, R.D.; Leatherman, N.E.; Freezor, M.D.
Effects of microgravity on tissue perfusion and the efficacy of astronaut denitrogenation for EVA.
Aviation, Space, and Environmental Medicine 58(9, Suppl.): A100-A105, 1987. (GWU 8090)

Gerth, W.A.; Vann*, R.D.; Leatherman, N.E.; Freezor, M.D.
Effects of microgravity on tissue perfusion and the efficacy of decompression sickness prevention in EVA spacecrew (Abstract).
In: Abstracts of Papers, Physiologic Adaptation of Man in Space, 7th International Man in Space Symposium, Houston, TX, February 10-13, 1986, 2 p. (GWU 7778)


Heyser, R.C.; Rooney*, J.A.
TDS measurement of the second harmonic emission from ensonified bubbles (Abstract).
Hills*, B.A.
Alveolar liquid lining: Langmuir method used to measure surface tension in bovine and canine lung extracts.

Hills*, B.A.
Analysis of eustachian surfactant and its function as a release agent.
*Archives of Otolaryngology* 110(1): 3-9, 1984. (GWU 5183)

Hills*, B.A.
Arrest of metastatic cells: Agents promoting and inhibiting instant non-specific adhesion by fibronectin.

Hills*, B.A.
Compatible atmospheres for a space suit, space station, and shuttle based on physiological principles.
*Aviation, Space, and Environmental Medicine* 56(11): 1052-1058, 1985. (GWU 7138)

Hills*, B.A.
Contact-angle hysteresis induced by pulmonary surfactants.

Hills*, B.A.
Hydrophobic lining of the eustachian tube imparted by surfactant.
*Archives of Otolaryngology* 110(12): 779-782, 1984. (GWU 7137)

Hills*, B.A.; Barrow, R.E.
A surface engine phenomenon induced by lung surfactants (Abstract).

Hills*, B.A.; Barrow, R.E.
Air embolism: Possible role of surfactant on recompression.

Hills*, B.A.; Barrow, R.E.
An 'engine' phenomenon displayed by monolayers of a pulmonary surfactant cycled to steady state.

Hills*, B.A.; Bryan-Brown, C.W.
Role of surfactant in the lung and other organs.

Hills*, B.A.; Butler, B.D.
Phospholipids identified on the pericardium and their ability to impart boundary lubrication.

Hills*, B.A.; Butler, B.D.; Drake, R.E.
Surfactants identified in lung lymph and their ability to act as abhesives.
Hills*, B.A.; Butler, B.D.; Lichtenberger, L.M.
Gastric mucosal barrier: Hydrophobic lining to the lumen of the stomach.

Hills*, B.A.; James, P.B.
Spinal decompression sickness: Mechanical studies and a model.
*Undersea Biomedical Research* 9: 185-201, 1982. (GWU 4228)

Horrigan*, D.J.
Decompression in space.

Horrigan*, D.J.; LaPinta, C.K.
NASA requirements for underwater training and surface intervals before flying.

Horrigan*, D.J., Jr.; Waligora*, J.M.
The development of effective procedures for the protection of space shuttle crews against decompression sickness during extravehicular activities.

Horrigan*, D.J., Jr.; Waligora*, J.M.; Bredt, J.H.
Extravehicular activities.

Horrigan*, D.J.; Waligora*, J.M.; Conkin, J.
Selection of an emergency back-up pressure for an 8.3 psi space suit (Abstract).

Horrigan*, D.J.; Waligora*, J.M.; Gilbert, J.H.; Conkin, J.; Stanford, J.
An evaluation of a 10.2 psi space cabin pressure and a 6 psi suit for prevention of altitude decompression sickness (Abstract).
*Aviation, Space, and Environmental Medicine* 57(5): 511, 1986. (GWU 8029)

Results of metabolic rate assessment during shuttle extravehicular activities (Abstract).

Horrigan*, D.J., Jr.; Waligora*, J.M.; Hadley, A.T., III; Conkin, J.
Doppler measurements of intravenous gas bubbles during six hours of exercise at space suit pressures (Abstract).

Horrigan*, D.J.; Waligora*, J.M.; LaPinta, C.K.; Conkin, J.; Edwards, B.J.F.
Development of decompression guidelines for space crews flying aircraft after neutral buoyancy training (Abstract).
*Aviation, Space, and Environmental Medicine* 60(5): 488, 1989. (GWU 14371)
Horrigan*, D.J., Jr.; Waligora*, J.M.; Nachtwey, D.S.
Physiological considerations for EVA in the Space Station era.

Horrigan*, D.J., Jr.; Waligora*, J.M.; Stanford, J.
A physiological evaluation of space shuttle extravehicular activities (Abstract).
Aviation, Space, and Environmental Medicine 56(5): 484, 1985. (GWU 7934)

Horrigan*, D.J.; Waligora, J.M.; Stanford, J.; Edwards, B.F.
Overview of crew member energy expenditure during Shuttle Flight 61-B ease/access task performance.
(NASA-CP-2490) (GWU 10655)

Jauchem, J.R. (Waligora, J.M. = P.I.)
Blood biochemical and cellular changes during a decompression procedure involving eight hours of oxygen prebreathing.
Clinical and Physiological Biochemistry 7: 47-52, 1989. (GWU 10657)

Blood biochemical factors in humans resistant and susceptible to formation of venous gas emboli during decompression.

Jauchem, J.R.; Waligora*, J.M.; Conkin, J.; Horrigan*, D.J.; Johnson, P.C.
Blood changes following repetitive decompressions simulating extravehicular activity for 3 days (Abstract).
Aviation, Space, and Environmental Medicine 56(5): 484, 1985. (GWU 7933)

Blood biochemical and cellular changes during decompression and simulated extravehicular activity.

Distribution of arterial air emboli: Effect of the Trendelenberg position in dogs (Abstract).

Krutz, R.W., Jr.; Dixon, G.A. (Smead, K. = P.I.)
The effects of exercise on bubble formation and bends susceptibility at 9,100 m (30,000 ft; 4.3 psia).
Aviation, Space, and Environmental Medicine 58(9, Suppl.): A97-A99, 1987. (GWU 8675)

Kumar, K.V.; Calkins, D.S.; Waligora*, J.M.; Horrigan*, D.J.
Estimation of survival functions in decompression sickness (Abstract).
Aviation, Space, and Environmental Medicine 61(5): 450, 1990. (GWU 13149)

Kumar, K.V.; Waligora*, J.M.
The Effects of Different Rates of Ascent on the Incidence of Altitude Decompression Sickness.
Kumar, K.V.; Waligora*, J.M.; Calkins, D.S.
Threshold altitude resulting in decompression sickness.

Kumar, K.V.; Waligora*, J.M.; Horrigan*, D.J.; Gilbert, J.H.
Analysis of the individual risk of altitude decompression sickness under repeated exposures.

Lambertsen*, C.J.
Background history and scope of diving table validation.

Lambertsen*, C.J.
Extension of oxygen tolerance in man: Philosophy and significance.
*Experimental Lung Research* 14: 1035-1058, 1988. (GWU 13711)

Lambertsen*, C.J.
Hypobaric decompression sickness: Origins and evolution of pathophysiological concept.

Lambertsen*, C.J.
Physiologic factors in human organ oxygen tolerance extension.
Paper presented at a workshop on Diving and Hyperbaric Medicine, European Undersea and Biomedical Society, Aberdeen, Scotland, September, 1988, 24 p. (GWU 10728)

Lambertsen*, C.J.
Relations of decompression to use of oxygen: Harmful effects and their prevention.

Lambertsen*, C.J.
Relations of isobaric gas counterdiffusion and decompression gas lesion diseases.

Lambertsen*, C.J.
The pressure continuum: Need for rational correlation and differentiation of the flying and diving environments.

Lambertsen*, C.J.
Undersea hyperbaric and aerospace medicine: The oxygen connection.
Lambertsen*, C.J.; Albertine, K.H.; Flores, D.; Pisarello, J.
Pathophysiology of spontaneous venous gas embolism: Relation to pulmonary oxygen poisoning
(Abstract).
In: Space Life Sciences Symposium: Three Decades of Life Science Research in Space,

Lambertsen*, C.J.; Clark, J.M.; Gelfand, R.; Pisarello, J.B.; Cobbs, W.H.; Bevilacqua, J.E.;
Schwartz, D.M.; Montabana, D.J.; Leach, C.S.; Johnson, P.C.; Fletcher, D.E.
Definition of tolerance to continuous hyperoxia in man: An abstract report of Predictive Studies V.
In: Underwater and Hyperbaric Physiology IX (Bove, A.A., Bachrach, A.J., Greenbaum, L.J.,
13784)

Hallenbeck, J.M.
Prospective diving and decompression procedures for neutral buoyancy laboratory operations.
Report of Meeting of the Environmental Sciences Review Committee, NASA Johnson Space
Center, Houston, TX, 1989.

Lambertsen*, C.J.; Gernhardt, M.L.; Guveyian, K.
An integrated system of decompression stress analysis (Abstract).
Undersea Biomedical Research 17(Suppl.): 92-93, 1990. (GWU 13526)

Lambertsen*, C.J.; Gernhardt, M.L.; Miller, R.G.; Hopkin, E.; Guveyian, K.
Evaluation of a decompression analysis method based upon integrated analytic models of tissue gas
bubble dynamics and oxygen tolerance. Great Britain: United Kingdom Department of Energy,
1989. (Project E/5B/CON/8121/2334)

Leiman, B.; Braude, B.; Glass, P.; Cronau, L.; Katz, J.; Butler*, B.; Stanley, T.
Quantitation of factors influencing efficacy of preoxygenation prior to general anesthesia
(Abstract).

Loeppky, J.A.; Luft*, U.C.
Effect of lower body negative pressure release on hyperpnea induced by inhaled gas.
Respiration Physiology 41: 349-365, 1980. (GWU 1915)

Loeppky*, J.A.; Scotto, P.; Chick, T.W.; Luft, U.C.
Effects of acute hypoxia on cardiopulmonary responses to head-down tilt.
Aviation, Space, and Environmental Medicine 61(9): 785-794, 1990. (GWU 12449)

Luft*, U.C.; Mostyn, E.M.; Loeppky, J.A.; Venters, M.D.
Contribution of the Haldane effect to the rise of arterial Pco2 in hypoxic patients breathing oxygen.
Critical Care Medicine 9(1): 32-37, 1981. (GWU 1429)

Meehan, R.T.; Duncan, U.; Neale, L.; Waligora*, J.; Taylor, G.R.
The use of decompression to simulate the effect of extravehicular activity on human lymphocyte
transformation.
In: Proceedings of the 2nd International Conference on Space Physiology, Toulouse, France,
November 20-22, 1985, p. 163-166. (ESA-SP-237) (GWU 304)

13
Melo, V.; Caprihan, A.; Luft, U.C.; Loeppky*, J.A.
Distribution of ventilation and diffusion with perfusion in a two-compartment model of gas exchange.

Olson, R.M.; Dixon, G.A.; Adams*, J.D.; Fitzpatrick, E.L.; Koegel, E.
An evaluation of the ultrasonic precordial bubble detector.

Olson, R.M.; Fitzpatrick, E.L.; Adams*, J.D.; Burton, R.R.
Intravascular bubble formation and the prediction of bends.

Olson, R.M.; Krutz, R.W., Jr.; Dixon, G.A.; Smead*, K.W.
An evaluation of precordial ultrasonic monitoring to avoid bends at altitude.
Aviation, Space, and Environmental Medicine 59(7): 635-639, 1988. (GWU 6696)

Pisarello, J.B.; Clark, J.M.; Gelfand, R.; Lamberts*, C.J.
Human circulatory response during prolonged exposure to oxygen at 2 ATA (Abstract).

Pisarello, J.B.; Clark, J.M.; Gelfand, R.; Lamberts*, C.J.
Human circulatory responses to prolonged hyperbaric hyperoxia in Predictive Studies V.

Rooney*, J.A.
Ultrasonic detection of bubbles using time delay spectrometry.

Rooney*, J.A.
Ultrasound techniques for space applications.

Rooney*, J.A.; Heyser, R.C.
Feasibility of the use of the second harmonic to detect and characterize bubbles associated with decompression sickness (Abstract).

Rooney*, J.A.; Heyser, R.C.
Integrated ultrasonic pulsed Doppler system for measurement of blood flow (Abstract).
Aviation, Space, and Environmental Medicine 56(5): 493, 1985. (GWU 7949)
Rooney*, J.A.; Heyser, R.C.
The use of swept-frequency ultrasonic techniques for quantitative bubble detection.

Skinner, J.L.; Hart, K.R.; Adams*, J.D.
Altitude decompression sickness: A retrospective study of treatment parameters in 283 cases.

Stevens, W.C.; Clark, J.M.; Gelfand, R.; Lambertsen*, C.J.
Interacting effects of 2 ATA inspired Po2 and exercise on pulmonary ventilation and arterial Pco2 (Abstract).
*Undersea Biomedical Research* 17(Suppl.): 164-165, 1990. (GWU 13522)

Sutton, T.; Cianci, P.; Hill, R.K.; Butler*, B.D.
Emergency action with arterial gas embolism: Is there evidence for the Trendelenberg position? (Abstract)
Abstract of paper presented at the 1990 Undersea and Hyperbaric Medical Society Meeting, Gulf Coast Chapter, 1990, 1 p. (GWU 13741)

Torbati, D. (Lambertsen, C.J. = P.I.)
Oxygen and brain physiologic functions: A review.

Torbati, D.; Greenberg, J.H.; Lambertsen*, C.J.
Regional cerebral glucose metabolic rate during thirty minutes hypoxia of 7% oxygen in adult conscious rats.
*Neuroscience Letters* 6(3): 253-258, 1986. (GWU 13702)

Torbati, D.; Lambertsen*, C.J.
Effects of hyperbaric oxygenation on regional cerebral glucose utilization rate in the awake rat.

Torbati, D.; Reilly, K.J. (Lambertsen, C.J. = P.I.)
Effect of prolonged normobaric hyperoxia on regional cerebral metabolic rate for glucose in conscious rats.

Torbati, D.; Torbati, A. (Lambertsen, C.J. = P.I.)
Blood glucose as a predictive measure for central nervous system oxygen toxicity in conscious rats.
*Undersea Biomedical Research* 13(2): 147-154, 1986. (GWU 12600)

Vann*, R.D.
Decompression risk in flying after diving.
Vann*, R.D.
Flying after diving: A database.
In: *Flying After Diving* (Sheffield, P.J., Ed.). Bethesda, MD: Undersea and Hyperbaric Medical Society, p. 179-222, 1989. (GWU 11128)

Vann*, R.D. (Ed.)

Vann*, R.D.; Gerth, W.A.; Leatherman, N.E.
Influence of O₂ prebreathe duration and exercise on the risk of decompression sickness at 4.3 psia (Abstract).
*Aviation, Space, and Environmental Medicine* 60(5): 489, 1989. (GWU 14403)

Vann*, R.D.; Gerth, W.A.; Leatherman, N.E.
The effects of exercise and body position during pre-flight oxygen breathing on decompression sickness at 4.3 psia (Abstract).

Vann*, R.D.; Gerth, W.A.; Leatherman, N.E.; Feezor, M.D.
A likelihood analysis of experiments to test altitude decompression protocols for shuttle operations.
*Aviation, Space, and Environmental Medicine* 58(9, Suppl.): A106-A109, 1987. (GWU 8089)

Vann*, R.D.; Gerth, W.A.; Leatherman, N.E.; Freezor M.D.
A likelihood analysis of experiments to test altitude decompression protocols for shuttle operations (Abstract).
In: *Abstracts of Papers, Physiologic Adaptation of Man in Space, 7th International Man in Space Symposium*, Houston, TX, February 10-13, 1986, 2 p. (GWU 7776)

Vann*, R.D.; Torre-Bueno, J.R.
A theoretical method for selecting space craft and space suit atmospheres.
*Aviation, Space, and Environmental Medicine* 55(12): 1097-1102, 1984. (GWU 7718)

Vann*, R.D.; Torre-Bueno, J.R.
Selection of space craft and space suit atmospheres (Abstract).
*Undersea Biomedical Research* 11(1, Suppl.): H9, 1984. (GWU 9882)

Waligora*, J.; Horrigan*, D.J., Jr.; Conkin, J.

Waligora*, J.M.
Physiologically acceptable space station and pressure suit pressures.

The effect of extended O₂ prebreathe on the incidence of altitude decompression sickness and venous gas bubbles (Abstract).
In: *Abstracts of Papers, Physiologic Adaptation of Man in Space, 7th International Man in Space Symposium*, Houston, TX, February 10-13, 1986, 1 p. (GWU 7777)
Waligora*, J.M.; Horrigan*, D.J., Jr.; Conkin, J.
The effect of extended O₂ prebreathing on altitude decompression sickness and venous gas bubbles.
Aviation, Space, and Environmental Medicine 58(9, Suppl.): A110-A112, 1987. (GWU 8088)

Waligora*, J.M.; Horrigan*, D.J.; Conkin, J.; Gilbert, J.H.
Incidence of symptoms and venous gas bubbles in male and female subjects after decompression (Abstract).
Aviation, Space, and Environmental Medicine 57(5): 511, 1986. (GWU 8030)


The effect of multiple simulated extravehicular activity (EVA) decompressions over a 72-hour period on symptom and bubble incidence (Abstract).
Aviation, Space, and Environmental Medicine 56(5): 483, 1985. (GWU 7932)

Waligora*, J.M.; Horrigan*, D.J.; Hadley, A.T., III; Conkin, J.
Evaluation of a stage decompression protocol to prevent altitude decompression sickness.

The effect of repeated decompressions at 17 hour intervals on symptom and bubble incidence (Abstract).

Waligora*, J.M.; Horrigan*, D.J.; Jauchem, J.R.; Conkin, J.
Detection of incipient altitude decompression sickness with Doppler sensors in flight.

Waligora*, J.M.; Horrigan*, D.J.; Kumar, K.V.
Intensity of exercise and likelihood of decompression sickness (Abstract).

Waligora*, J.M.; Horrigan*, D.J.; Nicogossian, A.E.
The physiology of spacecraft and space suit atmosphere selection.

The impact of hypobaric protocols simulating extravehicular activity on platelet activation (Abstract).
Aviation, Space, and Environmental Medicine 60(5): 489, 1989. (GWU 14383)

Webb, J.T.; Smead*, K.W.; Jauchem, J.R.; Barnicott, P.T.
Susceptibility to decompression-induced venous gas emboli: Hematology and biochemistry (Abstract).
MICROBIOLOGY
Brown*, H.D.; Pierson*, D.L.
Automated microbiology system for Space Station.

Microbial identification system for Space Station Freedom.

Automated microbiology system for Space Station Freedom (Abstract).
Aviation, Space, and Environmental Medicine 60(5): 511, 1989. (GWU 14392)

Cargill, K.L.; Pyle, B.H.; McFeters*, G.A.
Effects of culture conditions on the iodine susceptibility of Legionella pneumophila (Abstract).
In: Abstracts of the 90th Annual Meeting of the American Society for Microbiology, Anaheim, CA, May 13-17, 1990, p. 301. (GWU 13614)

Characklis, W.G.; Marshall, K.C.; McFeters*, G.A.
The microbial cell.

Characklis, W.G.; McFeters*, G.A.; Marshall, K.C.
Physiological ecology in biofilm systems.

Microbiology facilities aboard Space Station Freedom (SSF).

Recombinant α1-antitrypsin Pittsburgh attenuates experimental gram-negative septicemia.

Microbiological monitoring during the Spacelab 3 mission (Abstract).
Aviation, Space, and Environmental Medicine 57(5): 503, 1986. (GWU 8019)

Microbial evaluation of the Animal Enclosure Module (Abstract).

Adhesion of Pseudomonas aeruginosa to stainless steel and plastic surfaces (Abstract).
Henney, M.R.; Scarlett, J.B.; Pierson*, D.L.; Irbe, R.M.
Microbiological evaluation of the whole body shower system (Abstract).

Hunt, L.D.; Pierson*, D.L.
Purification and characterization of putrescine and ornithine transcarbamylases from _Candida albicans_ (Abstract).

Treatment bed microbiological control.

Kilgore, M.V., Jr.; Zahorchak, R.J.; Woodward, S.S.; Pierson*, D.L.; Arendale, W.F.
Definition of a near real-time microbiological monitor for application in space vehicles.

LeChevallier, M.W.; McFeters*, G.A.
Microbiology of activated carbon.
In: _Drinking Water Microbiology: Progress and Recent Developments_ (McFeters, G.A., Ed.).

LeChevallier, M.W.; Schiemann, D.A.; McFeters*, G.A.
Factors contributing to the reduced invasiveness of chlorine-injured _Yersinia enterocolitica_.

Evaluation of antibacterial sensitivity testing methods for methcillin resistant _Staphylococcus_ in a dermatology clinic population (Abstract).
_Southern Medical Journal_ 80(9): 14, 1987. (GWU 12055)

McFeters*, G.A.
Detection and significance of injured indicator and pathogenic bacteria in water.

McFeters*, G.A.
Enumeration, occurrence, and significance of injured indicator bacteria in drinking water.
In: _Drinking Water Microbiology: Progress and Recent Developments_ (McFeters, G.A., Ed.).

McFeters*, G.A.; LeChevallier, M.W.; Singh, A.; Kippin, J.S.
Health significance and occurrence of injured bacteria in drinking water.

McFeters*, G.A.; Pyle, B.H.
Bacterial resistance to disinfection by iodine in water systems on spacecraft (Abstract).
McFeters*, G.A.; Pyle, B.H.
Consequences of bacterial resistance to disinfection by iodine in potable water.

McFeters*, G.A.; Singh, A.; Williams, S.; Byun, S.; Callis, P.R.
Acridine orange staining as an index of physiological activity in E. coli (Abstract).
In: Abstracts of the 90th Annual Meeting of the American Society for Microbiology, Anaheim, CA, May 13-17, 1990, p. 310. (GWU 13613)

Telemycology: A novel to monitoring environmental microbial load in Space Station Freedom.

Gram staining apparatus for Space Station applications.

Molina, T.C.; Pierson*, D.L.; Irbe, R.M.
Gram-staining apparatus (GSA) compatible for use in microgravity conditions (Abstract).

Pierson*, D.L.
Medical microbiology of crew members.

Pierson*, D.L.
Medical microbiology of crewmembers.

Pierson*, D.L.
Medical microbiology of crewmembers and spacecraft.

Pierson*, D.L.; Brown*, H.D.
Inflight microbial analysis technology.

Pyle, B.H.; McFeters*, G.A.
Effect of growth medium on sensitivity of pseudomonads to iodine and their recovery after disinfection (Abstract).
In: Abstracts of the 87th Annual Meeting of the American Society for Microbiology, Atlanta, GA, March 1-6, 1987, p. 290. (GWU 10552)

Pyle, B.H.; McFeters*, G.A.
Iodine sensitivity of bacteria isolated from iodinated water systems.
Candian Journal of Microbiology 35: 520-523, 1989. (GWU 13487)
Pyle, B.H.; McFeters*, G.A.
Iodine susceptibility of pseudomonads grown as biofilms on stainless steel (Abstract).

Pyle, B.H.; McFeters*, G.A.
Iodine susceptibility of pseudomonads grown attached to stainless steel surfaces.
*Biofouling* 2: 113-120, 1990. (GWU 13495)

Pyle, B.H.; McFeters*, G.A.
Population dynamics of pseudomonads after iodination.

Biofilm formation potential and control in a simulated spacecraft water system (Abstract).
*Aviation, Space, and Environmental Medicine* 60(5): 511, 1989. (GWU 14394)

Biofilm formation and control in a simulated spacecraft water system: Interim results.

Singh, A.; McFeters*, G.A.
Injury of enteropathogenic bacteria in drinking water.
In: *Drinking Water Microbiology: Progress and Recent Developments* (McFeters, G.A., Ed.).

Singh, A.; McFeters*, G.A.
Rapid enumeration of viable bacteria by image analysis epifluorescence microscopy (Abstract).

Singh, A.; McFeters*, G.A.
Survival and virulence of copper- and chlorine-stressed *Yersinia enterocolitica* in experimentally infected mice.

Singh, A.; Pyle, B.H.; McFeters*, G.A.
Rapid enumeration of viable bacteria by image analysis.

Singh, A.; Yu, F.-P.; McFeters*, G.A.
Rapid detection of chlorine-induced bacterial injury by the direct viable count method using image analysis.

Watters, S.K.; Pyle, B.H. (McFeters, G.H. = P.I.)
Effects of cultural conditions on an iodine resistant population of *Pseudomonas cepacia* (Abstract).
Watters, S.K.; Pyle, B.H.; LeChevallier, M.W.; McFeters*, G.A.
Enumeration of *Enterobacter cloacae* after chloramine exposure.

Watters, S.K.; Pyle, B.H.; LeChevallier, M.W.; McFeters*, G.A.
Injury, repair and enumeration of chloraminated *Enterobacter cloacae* (Abstract).

Effect of growth conditions on enumeration of pseudomonads by viable and direct count methods (Abstract).
TOXICOLOGY
Bull*, R.J.
Potential health hazards associated with water recycling in space (Abstract).

Bull*, R.J.
Toxicological aspects of water recycle and disinfection.

Casserly, D.M.; Russo*, D.M.
A rationale for atmospheric monitoring on Space Station Freedom.

Casserly, D.M.; Russo*, D.M.
Identifying atmospheric monitoring needs for Space Station Freedom.

Coleman*, M.E.
Atmospheric contamination control.

Coleman*, M.E.

Coleman*, M.E.
Toxic hazards in space operations.

Coleman*, M.E.; James, J.T.
Spacecraft Maximum Allowable Concentrations for Airborne Contaminants. Houston, TX: NASA, Johnson Space Center, 14 p., 1990. (JSC 20584) (GWU 1832)

Condo, D.P.; Janauer*, G.E.
Reactive pre-concentration of trace amounts of pesticides in environmental analysis procedures. Part I. Determination of carbamates by indirect spectrophotometry.
Analyst 112: 1027-1031, 1987. (GWU 8975)

Gaiser, K.; Dardano, J.; Pierson*, D.
Development of a sampling strip for airborne particulates in orbiter air (Abstract).
Aviation, Space, and Environmental Medicine 56(5): 493, 1985. (GWU 7950)

Galen, T.J.; Pierson*, D.L.
Inflight shuttle atmospheric samples collected with the solid sorbent air sampler (Abstract).
Aviation, Space, and Environmental Medicine 57(5): 503, 1986. (GWU 8020)

Galen*, T.J.; Pierson*, D.L.
Volatile organic analyzer for spacecraft air quality monitoring (Abstract).
Aviation, Space, and Environmental Medicine 60(5): 511, 1989. (GWU 14393)
Gause, E.M.; Hartmann, R.J.; Leal, B.Z.; Geller*, I.
Neurobehavioral effects of repeated sublethal soman in primates.

Gause, E.M.; Mendez, V.; Geller*, I.
Exploratory studies of a rodent model for inhalant abuse.
*Neurobehavioral Toxicology and Teratology* 7: 143-148, 1985. (GWU 14032)

Geller*, I.; Gause, E.M.; Leal, B.Z.; Hartman, R.J.; Seifter, J.
Behavioral effects of drugs as a function of maternal polybrominated biphenyl body burden.
*Toxicology Letters* 24: 229-234, 1985. (GWU 14239)

Geller*, I.; Hartmann, R.J.; Gause, E.M.
Effect of exposure to high concentrations of toluene on ethanol preference of laboratory rats.

Geller*, I.; Hartmann, R.J., Jr.; Gause, E.M.
Effects of subchronic administration of soman on acquisition of avoidance-escape behavior by laboratory rats.

Geller*, I.; Hartmann, R.J.; Mendez, V.; Gause, E.M.
Toluene and ethanol effects on baboon match-to-sample performance: Possible synergistic action.

Geller*, I.; Hartmann, R.J.; Mendez, V.; Gause, E.M.
Toluene inhalation and anxiolytic activity: Possible synergism with diazepam.

Geller*, I.; Hartmann, R.J.; Moran, E.; Leal, B.Z.; Haines, R.J.; Gause, E.M.
Acute soman effects in the juvenile baboon: Effects on a match-to-sample discrimination task and on total blood acetylcholinesterase.

Geller*, I.; Mendez, V.; Hartmann, R.J.; Gause, E.; Rippstein*, W.J., Jr.
Effects of 1,1,1-trichloroethane on a match-to-sample discrimination task in the baboon.
*Journal of Toxicology and Environmental Health* 9: 783-795, 1982. (GWU 3850)

Geller*, I.; Sawa, A.; Stavinoha, W.B.
Effects of subchronic soman on avoidance-escape behavior and cholinesterase activities.

Recent experiences with iodine water disinfection in shuttle.

Gibbons, R.E.; Schultz*, J.R.; Sauer, R.L.
*Iodine Sorption Study on the Proposed Use of Viton A in a Shuttle Galley Water Accumulator*.

Lam*, C.-W.
*Orbiter Utility Chemicals: Toxicologic Information and Risk Assessments*. Houston, TX: NASA, Johnson Space Center, 60 p., 1990. (JSC 24621) (GWU 13748)

30
Lam, C.-W.
*STS-26 Payload, DSO and Orbiter Utility Chemicals: Toxicologic Information and Risk Assessments.* Houston, TX: NASA, Johnson Space Center, 1989. (JSC 23072)

Lam, C.-W.

Lam*, C.-W.; Calkins, D.; Degioanni, J.; Tan, M.; Weir, F.; Galen*, T.; Pierson*, D.
Human Halon 1301 (bromotrifluoromethane) inhalation study (Abstract).

Lam*, C.-W.; Galen*, T.J.; Boyd, J.F.; Pierson*, D.L.
Mechanism of transport and distribution of organic solvents in blood.

Lam*, C.-W.; Galen*, T.J.; Boyd, J.F.; Pierson*, D.L.
The mechanism of organic solvent transport in the blood (Abstract).

Lam*, C.-W.; Pierson*, D.L.; Coleman*, M.E.
NASA-JSC Toxicology Data Base.

Lam*, C.-W.; Pierson*, D.L.; Galen, T.J.
The mechanism of organic solvent transport in the blood.

Lam*, C.-W.; Wong, K.W.
*STS-32 Payload, DSO and Orbiter Utility Chemicals: Toxicologic Information and Risk Assessments.* Houston, TX: NASA, Johnson Space Center, 1989. (JSC 24054)

Lawrence*, W.H.
Effects upon operant behavior of rats from inhaling sub-lethal levels of pyrolysates from a polymide and polyurethane foam.

Lawrence*, W.H.

Lawrence*, W.H.
Lawrence*, W.H.

Lawrence*, W.H.; Autian, J.; Sanford, C.
Effects upon operant behavior of rats from inhaling sub-lethal levels of pyrolysates from a polymide and polyurethane foam (Abstract).

Leano, H.; Limero*, T.; James, J.
Automated analysis of flight samples by gas chromatography/mass spectrometry (Abstract).

Limero*, T.F.; Taylor*, R.D.; Pierson*, D.L.; James, J.T.
Space Station Freedom viewed as a "Tight Building" (Abstract).

Modell*, M.
Reforming of organic substances in supercritical water.

Modell*, M.; deFilippi, R.
Supercritical fluid desorption of phenol from activated carbon (Abstract).
*Carbon* 18: 48, 1980. (GWU 4475)

Pierson*, D.L.; Galen, T.J.
Design and evaluation of a solid sorbent air sampler.

Pierson*, D.L.; Galen, T.J.
Solid sorbent air sampler.

Pierson*, D.L.; Galen, T.J.
The ion trap detector, an air quality monitor.

Pierson*, D.L.; Russo, D.
Toxic hazard assessments in the STS program.

Rippstein*, W.J.
Shuttle toxicology.
Rippstein*, W.J.
Shuttle toxicology.

Rippstein*, W.J.
Shuttle toxicology.

Rippstein*, W.J., Jr.; Coleman*, M.E.
Toxicological evaluation of the Columbia spacecraft.
*Aviation, Space, and Environmental Medicine* 54(12, Suppl. 1): S60-S67, 1983. (GWU 5218)

Russo, D.M.; Rippstein*, W.J., Jr.
The effects of Halon 1301 and Freon 12 alone and in combination on operant behavior in the rat.

Russo, D.M.; Schneider*, H.J.
Pyrolyses products of polyurethane and polyimide foams: Effects on unsignalled shock escape behavior.

Sherer, T.T.; Bull*, R.J.
Comparison of the subchronic effects of iodine (I₂) and iodide (I⁻).

Sherer, T.T.; Bull*, R.J.
Traditional propylthiouracil doses used for inducing hypothyroidism are too high (Abstract).
*Society for Neuroscience Abstracts* 15: 1372, 1989. (GWU 13644)

Stout, K.D.; Bull*, R.J.
Absorption and elimination of I₂ and I⁻ in the rat (Abstract).

Stout, K.D.; Bull*, R.J.
Differential uptake and distribution of radiiodide based on I₂ and I⁻ pretreatment (Abstract).

Stout, K.D.; Bull*, R.J.
Relative uptake of 125I from I₂ versus I⁻ in the rat (Abstract).

Thrall, K.D.; Bull*, R.J.
Differences in the distribution of iodine and iodide in the Sprague-Dawley rat.
*Fundamental and Applied Toxicology* 15(1): 75-81, 1990. (GWU 13501)

Thrall, K.D.; Bull*, R.J.
Evidence of by-product formation following iodine (I₂) administration in Sprague-Dawley rats (Abstract).
*PANWAT Proceedings* 6: 8, 1989. (GWU 13558)
Thrall, K.D.; Bull*, R.J.
Evidence of thyroxine (T₄) formation following iodine (I₂) administration in Sprague-Dawley rats (Abstract).
PANWAT Proceedings 7: 7, 1990. (GWU 13557)

Thrall, K.D.; Bull*, R.J.
Pretreatment with I₂ and I⁻ results in differential uptake and distribution of radioiodide (Abstract).

Thrall, K.D.; Sherer, T.T.; Bull*, R.J.
Comparison of the effects of I₂ and I⁻ on thyroid function in the rat (Abstract).
Toxicologist 9: 276, 1989. (GWU 13556)

Timberlake, S.H.; Hong, G.T.; Simson, M.; Modell*, M.
Supercritical water oxidation for wastewater treatment: Preliminary study of urea destruction.

Willis*, C.E.; Schultz, J.R.
Spacecraft water system disinfection technology: Past, present, and future needs.

Wong, K.L. (Lam, C.-W. = P.I.)
STS-26 Payload Experiments and Chemical and Orbiter Utility Chemicals: Toxicologic Information and Risk Assessments. Houston, TX: NASA, Johnson Space Center, 1989. (JSC 23885)

Wong, K.L.; Lam*, C.-W.

Wong, K.L.; Lam*, C.-W.; Galen*, T.J.; Coleman*, M.E.; Pierson*, D.L.
NASA-JSC Toxicology Database (Abstract).
Aviation, Space, and Environmental Medicine 60(5): 511, 1989. (GWU 14344)
GENERAL ENVIRONMENTAL HEALTH


INDEX OF PRINCIPAL INVESTIGATORS
Adams, J.D. 3, 7, 14, 15
Brown, H.D. 21, 23, 24
Bull, R.J. 29, 33, 34
Bungo, M.W. 3
Butler, B.D. 3, 4, 5, 7, 9, 10, 11, 13, 15
Chyrssanthou, C.P. 5, 6
Cintron, N.M. 37
Coleman, M.E. 29, 31, 33, 34
Galen, T.J. 31, 32, 34
Geller, I. 30
Heyser, R.C. 8, 14, 15
Hills, B.A. 3, 4, 9, 10
Horrigan, D.J., Jr. 6, 7, 8, 10, 11, 12, 16, 17, 37
Janauer, G.E. 22, 29
Lam, C.-W. 30, 31, 34
Lambertsen, C.J. 6, 7, 8, 12, 13, 14, 15, 21
Lawrence, W.H. 31, 32
Limero, T.F. 32
Loeppky, J.A. 13, 14
Luft, U.C. 13, 14
McFeters, G.A. 21, 22, 23, 24, 25
Modell, M. 32, 34
Pierson, D.L. 21, 22, 23, 24, 29, 31, 32, 34, 37
Pool, S.L. 37
Rippstein, W.J., Jr. 32, 33
Rooney, J.A. 8, 14, 15
Russo, D.M. 29, 32, 33, 37
Schneider, H.J. 33
Schultz, J.R. 24, 30, 34
Smead, K.W. 11, 14, 17
Taylor, R.D. 21, 23, 24, 32
Vann, R.D. 8, 13, 15, 16
Waligora, J.M. 6, 7, 8, 10, 11, 12, 13, 16, 17, 37
Willis, C.E. 34
Wolf, J.E. 22, 37
ENVIRONMENTAL HEALTH PRINCIPAL INVESTIGATORS: 1980-1990

John D. Adams  
USAF School of Aerospace Medicine  
Brooks Air Force Base, TX  78235

Harlan D. Brown  
NASA, Johnson Space Center  
Biomedical Laboratories  
Houston, TX  77058

Richard J. Bull  
College of Pharmacy  
Washington State University  
Pullman, WA  99164-6510

Bruce D. Butler  
Department of Anesthesiology  
University of Texas  
6431 Fannin, 5.020 MSMB  
Houston, TX  77030

Glenn Carle  
NASA, Ames Research Center  
Mail Stop 239-12  
Moffett Field, CA  94035

Chryssanthos M. Chryssanthou  
Department of Pathology  
Beth Israel Medical Center  
10 Nathan D. Perlman Place  
New York, NY  10003

Nitza M. Cintron  
NASA, Johnson Space Center  
Biomedical Laboratories Branch  
Mail Code SD4N  
Houston, TX  77058

Martin E. Coleman  
NASA, Johnson Space Center  
Biomedical Laboratories Branch  
Mail Code SD411  
Houston, TX  77058

W. C. Duncan  
Watson Clinic South  
P.O. Box 95005  
Lakeland, FL  33804

Shiro Furukawa  
NASA, Kennedy Space Center  
Kennedy Space Center, FL  32899

Theodore J. Galen  
NASA, Johnson Space Center  
Houston, TX  77058

Irving Geller  
National Institute on Drug Abuse  
5600 Fishers Lane  
Rockville, MD  20857

Richard Heyser  
NASA, Jet Propulsion Laboratory  
4800 Oak Grove Drive  
Pasadena, CA  91109

Brian A. Hills  
Department of Anesthesiology  
University of Texas Medical Center  
Houston, TX  77030

David Horrigan  
NASA, Johnson Space Center  
Code SD3  
Houston, TX  77058

Gilbert E. Janauer  
Department of Chemistry  
State University of New York at Binghamton  
Binghamton, NY  13903

Chiu-Wing Lam  
Krug International  
Houston, TX  77058

Christian J. Lambertsen  
Institute for Environmental Medicine  
University of Pennsylvania Medical Center  
Philadelphia, PA  19104

W. Homer Lawrence  
Department of Medicinal Chemistry  
University of Tennessee  
College of Pharmacology  
26 South Dunlap  
Memphis, TN  38163
Harris A. Lichtenstein  
5701 Woodway Drive, Suite 324  
Houston, TX 77057

T.F. Limero  
NASA, Johnson Space Center  
Biomedical Laboratories  
Houston, TX 77058

Jack Loeppky  
Lovelace Medical Foundation  
2525 Ridgecrest, SE  
Alburquerque, NM 87108

Gordon A. McFeters  
Department of Microbiology  
Montana State University  
Bozeman, MT 59717

William Melnick  
Department of Otolaryngology  
University of San Antonio  
456 West 10th Avenue, Room 4024  
San Antonio, TX 43210

Michael Modell  
Modar, Inc.  
14 Tech Circle  
Natick, MA 01760

Duane L. Pierson  
NASA, Johnson Space Center  
Mail Code SD4  
Houston, TX 77058

David F. Putnam  
Umpqua Research Company  
P.O. Box 791  
Myrtle Creek, OR 97457

Wayland J. Rippstein, Jr.  
NASA, Johnson Space Center  
Houston, TX 77058

James A. Rooney  
NASA, Jet Propulsion Laboratory  
California Institute of Technology  
4800 Oak Grove Drive, Mail Stop 114-B13  
Pasadena, CA 91109

Dane Russo  
NASA, Johnson Space Center  
Mail Code SD4  
Houston, TX 77058

John R. Schultz  
Krug International Technology  
Life Science Division  
Houston, TX 77058

Kenneth Smead  
School of Aerospace Medicine  
United States Air Force  
Brooks Air Force Base  
San Antonio, TX 78235

R.D. Taylor  
NASA, Johnson Space Center  
Houston, TX 77058

Richard D. Vann  
Department of Anesthesiology  
Environmental Research Lab  
Duke University  
Durham, NC 27706

James M. Waligora  
NASA, Johnson Space Center  
Mail Code SD5  
Houston, TX 77058

Charles E. Willis  
NASA, Johnson Space Center  
Mail Code SD4  
Houston, TX 77058

John E. Wolf  
Department of Dermatology  
Baylor College of Medicine  
Houston, TX 77030
A 10-year cumulative bibliography of publications resulting from research supported by the Environmental Health Program of the Life Sciences Division of NASA is provided. The goals of this program are to utilize ground-based studies to understand the effects of the spacecraft and EVA environments on humans and other organisms; to specify, measure and control these environments; and to develop countermeasures where necessary to optimize crew health, safety, and productivity. Primary subjects encompassed by this bibliography are barophysiology, toxicology, and microbiology. Principal Investigators whose research tasks resulted in publication are identified by asterisk.