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PREFACE

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).
_Please refer to the original source for the complete citation._

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.; Robinson, R.
Digitized ultrasonic bubble signals as a visual adjunct to bubble scoring during decompression for EVA simulation (Abstract).
_Aviation, Space, and Environmental Medicine_ 61: A40, 1990. (GWU 13513)

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.; Kircikoglu, H.; Strugar, J.
Increase of plasma renin activity in male and female rabbits subjected to dysbaric conditions.
_Aviation, Space, and Environmental Medicine_ 56(5): 427-430, 1985. (GWU 7439)

Chryssanthou*, C.; Kircikoglu, H.; Strugar, J.
Increase of plasma renin activity in rabbits subjected to dysbaric conditions (Abstract).
_Aviation, Space, and Environmental Medicine_ 55(5): 452, 1984. (GWU 7438)

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).

Clark, J.M. (Lambertsen, C.J. = P.I.)
Diving and gas embolism.

Clark, J.M. (Lambertsen, C.J. = P.I.)
Oxygen tolerance in nitrox diving.

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.

Clark, J.M.; Gelfand, R.; Stevens, W.C.; Lambertsen*, C.J.
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).

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

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

Gemhardt, M.L.; Lamberts, 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.; Lamberts, 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 prebreathe and altitude decompression sickness risk.

Gerth, W.A.; Vann, R.D.; Leatherman, N.E.; Feezor, 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.; Feezor, 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).
*Journal of the Acoustical Society of America 74(Suppl. 1): S12, 1983. (GWU 6004)*
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.

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).

Definition of tolerance to continuous hyperoxia in man: An abstract report of Predictive Studies V.

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.

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.

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.
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.; Smeal*, 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.; Lambertsen*, C.J.
Human circulatory response during prolonged exposure to oxygen at 2 ATA (Abstract).

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

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.
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 P02 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)

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Effects of hyperbaric oxygenation on regional cerebral glucose utilization rate in the awake rat.

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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).
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ENVIROMENTAL HEALTH PRINCIPAL INVESTIGATORS: 1980-1990

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16. Abstract
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.

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