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ACADEMIC TRAINING:

Michigan State University, Lansing, Michigan	BS	Chemistry	1963
Michigan State University, Lansing, Michigan	MS	Biophysics	1967
Michigan State University, Lansing, Michigan	Ph.D.	Biophysics	1969

RESEARCH AND PROFESSIONAL EXPERIENCE:

1969 - 1975: Research Biophysicist, Corporate Research Institute, Environmental Sciences Section, Union Carbide Corporation, Tarrytown, NY.

1975-1977 Head, Hyperbaric Laboratory, Institute of Applied Physiology and Medicine, Seattle, WA.

1977 - 1980 Visiting Scientist, Underwater Medicine Section, German Aerospace Research Establishment (DFVLR), Bonn-Bad Godesberg, West Germany.

1980 - 1989 Head, Hyperbaric Physiology and Biophysics Section, Head and Technical Advisor, Hyperbaric Medicine Group, Institute of Applied Physiology and Medicine, Seattle, WA.

1989 - present Head, Environmental Physiology/Biophysics Group, NASA/ Johnson Space Center; Human Adaptation and Countermeasures, SK, Houston, Texas.

1992 - present Adjunct Associate Professor of Anesthesiology, University of Texas Health Sciences Center, Houston, TX.

HONORS/AWARDS:

- North Pacific Chapter/Undersea Medical Society, Secretary/Treasurer (1982-83), President (1984-85)
- *NASA Certificate of Commendation* (1994) “...for performance in proposing and implementing an investigation on the effects of simulated microgravity on the incidence of altitude decompression sickness...”
- Albert Behnke Lecturer, (1995) Undersea Medical Society/ North Pacific Chapter
- *Who's Who In America* (1997 -)
- *NASA Special Scientific Achievement Award*, “Prebreathe Reduction Project,” 2001

SCIENTIFIC COMMUNICATIONS:

1. Rosenberg, MR Powell. A new physical approach to a theory of general anesthesia. Second International Biophysical Conference, Vienna, Austria, (1966).
2. MR Powell, B. Rosenberg. Nature of the charge carriers in solvated biomacromolecules. *Biopolymers*, 9, 1403-1406 (1970).
3. MR Powell, B. Rosenberg. The nature of the charge carriers in solvated biomacromolecules, DNA. *Bioenergetics*, 1, 493-509 (1970).
4. MR Powell. Detection of gas-liquid phase separation in tissues by through-transmission ultrasound: 15th Annual Meeting, Biophysical Society, New Orleans, (1971).
5. Calvert, RW Hamilton, Jr., MR Powell, M. Shaw, M. Spivak. *A Short Tube Capillary Blood Oxygenator*. Final Report: National Institutes of Health, Contract NIH-71-2365, Union Carbide Corporation, Bound Brook, NJ, (1972).
6. MR Powell. Biophysical studies of decompression bubbles and their effects. *Fifth Symposium on Underwater Physiology*, (1972).
7. MR Powell. Leg pain and gas bubbles in the rat following decompression from pressure: monitoring by ultrasound: *Aerospace Med.*, 43, 168-172 (1972).
8. MR Powell. Gas phase separation following decompression in asymptomatic rats: visual and ultrasound monitoring: *Aerospace Med.*, 43, 1240-1244 (1972).

9. MR Powell. Tissue gas uptake at elevated pressures determined *in vivo* by mass spectrometry. *Proceedings*. 44th Annual Meeting, Aerospace Medical Association, Las Vegas, (1973).
10. MR Powell. The Role of the Noble Gas Series in Molecular Pharmacology, In: *A Guide to Molecular Pharmacology-Toxicology*, Vol. II. Chapter 13. [R.M. Featherstone, ed.], Marcel Dekker, New York, (1973).
11. MR Powell, RW Hamilton, Jr., D.J. Kenyon. Comparison of helium, neon, and neon-nitrogen mixtures for diving. *Undersea Biomed. Res.*, 1 (1), A7 (1974).
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14. MR Powell, GF Doebbler, RW Hamilton, Jr. Serum enzyme level changes in pigs following decompression trauma. *Aerospace Med.*, 45, 519-524 (1974).
15. MR Powell. Doppler ultrasound monitoring of venous gas bubbles in pigs following decompression from helium, neon, and air. *Aerospace Med.*, 45, 505-508 (1974).
16. MR Powell. Helium, oxygen, and nitrogen tissue uptake at normal and hyperbaric pressures determined *in vivo* by mass spectrometry. In: *Problems and Solutions In the Use of Mass Spectrometry in Hyperbaric Environments*, Toronto, (1975).
17. MR Powell. *In vivo* bubble growth following decompression. *The Physiologist*, (August, 1975).
18. Powell, MR., and KJ Weydig. 1974. *In vivo* bubble growth studies following decompression. *Technical Report CRL-T-798* under ONR contract N00014-74-C-0415. Tarrytown, N.Y.: Union Carbide Corp.
19. MR Powell and MP Spencer. Doppler-shifted ultrasound monitoring of gas bubbles following decompression. *Biophys. J.*, 16, (1976).
20. MR Powell. Pulmonary gas embolization following decompression. *Fed. Proc.*, 36, 534 (1977).

21. PJ. Belizi and MR Powell. Amelioration of chronic pulmonary oxygen toxicity by inert gas dilution. 48th Annual Meeting, Aerospace Medical Association, Las Vegas, (1977).
22. MP Spencer and MR Powell. The etiology of convulsions after hyperbaric exposures. *Undersea Biomed. Res.*, 4, (1), A23 (1977).
23. MR Powell. The Physiological Significance of Doppler-detected Bubbles in Decompression Sickness. In: *Early Diagnosis of Decompression Sickness*, Undersea Medical Society, Bethesda (1977).
24. MR Powell, MP Spencer, and HA. Domenie. Effects of augmented pulmonary gas embolization on short-term decompression stress. Undersea Medical Society /N. Pac. Chapt., (1977).
25. MR Powell and DC Johanson. Ultrasound Monitoring and Decompression Sickness. In: *Proceedings. VI Symposium on Underwater Physiology*, Undersea Medical Society, Bethesda (1978).
26. RW Hamilton, DJ. Kenyon, MR Powell, and M. Freitag. The Importance of Oxygen In Mixed-gas Decompression. In: *Workshop Proceedings. Mixed Gas Diving*, Undersea Medical Society, Bethesda, 133-136 (1978).
27. MR Powell. Untersuchungen an Ratten über den Einfluss von Stickstoff und Helium auf die erste Austauschstufe bei Tieftauchgängen. In: *Tauchmedizin*, [F. Gerstenband, K. Seeman, and M. Lazaronni, eds.], Schlütersche, Hanover, West Germany, 26-30, (1980).
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30. MR Powell, HD Fust. The Influence of Inert Gas Concentration on Pulmonary Oxygen Toxicity. In: *Proceedings, VII Symposium on Underwater Physiology*, Undersea Medical Society, Bethesda, MD, (1980).
31. MR Powell, MP Spencer. Decompression gas phase formation following exposure to different environmental stresses. *The Physiologist*, 24 (4), 67 (1981).

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81. Srinivasan, S, and MR Powell. The effects of surface tension on bubble volume changes using a mathematical model. *Undersea Hyperbaric Med.*, 24 (Suppl.): 25, (1997).
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