

CURRICULUM VITAE
The Johns Hopkins University School of Medicine

Walter Clyde Hubbard

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DEMOGRAPHIC INFORMATION

Current Appointment: Associate Professor of Medicine
Division of Clinical Pharmacology

Associate Professor of Medicine, (primary)
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Education and Training:

1963 Associate Science, Pre-Pharmacy, Texarkana College, Texarkana, TX
1966 Bachelor of Science, University of Arkansas Medical Sciences, Little Rock, AR, Pharmacy
1967 Pharmacist Internship, Kavanaugh Pharmacy, Little Rock, AR, Licensure
1974 Doctor of Philosophy, Vanderbilt University, Nashville, TN, Pharmacology
1975 Post Doctoral Fellowship, Vanderbilt University, Nashville, TN, Pharmacology

Professional Experience:

1976-77: Instructor, Vanderbilt University School of Medicine, Nashville, TN, Pharmacology
1977-83: Asst. Professor, Vanderbilt University School of Medicine, Nashville, TN, Pharmacology
1983-87: Cancer Expert, NCI, NIH, Developmental Therapeutics Program, Bethesda, MD
1987-89: Senior Investigator, NCI, NIH, Developmental Therapeutics Program, Frederick, MD
1989-05: Associate Professor, Johns Hopkins University School of Medicine, Baltimore, MD
Division of Allergy and Clinical Immunology
2005- Associate Professor of Medicine, The Johns Hopkins University School of Medicine,
Division of Clinical Pharmacology, (Division of Allergy and Clinical Immunology)

RESEARCH ACTIVITIES

Publications:

Peer Reviewed Articles:

1. Jordin, M. W., Easterly, W. D., Winningham, T. E., and **Hubbard, W. C.** Synthesis and pharmacological properties of some fluorine containing amide derivatives. *J. Pharm. Sci.* 44: 1190-1103, 1965.
2. Hurwitz, L., **Hubbard, W. C.**, and Little, S. The relationship between the drug-receptor interaction and calcium transport in smooth muscle. *J. Pharmacol. Exp. Ther.* 183: 117-126, 1972.
3. Strecker, R. B., **Hubbard, W. C.**, and Michelakis, A. M. Dissociation constant of the norepinephrine-receptor complex in normotensive and spontaneously hypertensive rats. *Circ. Res.* 37: 658-663, 1975.
4. **Hubbard, W. C.**, and Watson, J. T. Determination of 15-keto-13, 14-dihydro-metabolites of PGE₂ and PGF_{2 α} in plasma using high performance liquid chromatography and gas chromatography-mass spectrometry. *Prostaglandins* 12: 21-35, 1976.
5. Seyberth, H. W., **Hubbard W. C.**, Oelz, O., Sweetman, B. J., Watson, J. T., and Oates, J. A. Prostaglandin mediated hypercalcemia in the VX₂ carcinoma bearing rabbit. *Prostaglandins* 14: 319-331, 1977.
6. Raisz, L. G., Seyberth, H. W., Dietrich, J. W., Simmons, H. A., **Hubbard, W. C.**, and Oates, J. A. Effect of prostaglandin endoperoxides and metabolites in bone resorption in vitro. *Nature* 267: 532-534, 1977.
7. Gerber, J. G., Branch, R. A., **Hubbard, W. C.**, and Nies, A. S. Indomethacin is a placental vasodilator. The effect of prostaglandin inhibition. *J. Clin. Invest.* 62: 14-19, 1978.
8. Gerber, J. G., Branch, R. A., **Hubbard, W. C.**, and Nies, A. S. The lack of an effect of furosemide on uterine prostaglandin metabolism in vitro. *Prostaglandins* 15: 663-670, 1978.
9. Gerber, J. G., **Hubbard, W. C.**, and Nies, A. S. Uterine vein prostaglandin levels in late pregnant dogs. *Prostaglandins* 17: 623-627, 1979.
10. Gerber, J. G., **Hubbard, W. C.**, and Nies, A. S. The role of renal metabolism of prostaglandin E₂ in determining its activity as a renal vasodilator in the dog. *Prostaglandins* 17: 323-336, 1979.
11. Roberts, L. J., II, **Hubbard, W. C.**, Bloomgarden, Z. T., Bertagna, X. Y., McKenna, T., J., Rabinowitz, D. and Oates, J. A. Prostaglandins: Role in the humoral manifestations of medullary carcinoma of the thyroid and inhibition by somatostatin. *Trans. Assoc. Am. Physicians* 92: 286-291, 1979.
12. Goetzl, E. J., Brash, A. R., Tauber, A. I., Oates, J. A., and **Hubbard, W. C.** Modulation of human neutrophil function by monohydroxy eicosatetraenoic acids. *Immunology* 39: 491-501, 1980.
13. Boeynaems, J. M., Oates, J. A., and **Hubbard, W. C.** Preparation and characterization of hydroperoxy eicosatetraenoic acids (HPETEs). *Prostaglandins* 19: 87-97, 1980.
14. Boeynaems, J. M., Brash, A. R., Oates, J. A., and **Hubbard, W. C.** Preparation and assay of monohydroxy eicosatetraenoic acids. *Anal. Biochem.* 104: 259-267, 1980.
15. **Hubbard, W. C.**, Hough, A. J., Jr., Johnson, R. M., and Oates, J. A. The site of VX₂ tumor transplantation affects development of hypercalcemia in rabbits. *Prostaglandins* 19: 881-889, 1980.
16. **Hubbard, W. C.**, Hough, A. J., Jr., Brash, A. R., Watson, J. T., and Oates, J. A. Metabolism of linoleic and arachidonic acids in VX₂ carcinoma tissue: Identification of monohydroxy octadecadienoic and monohydroxy eicosatetraenoic acids. *Prostaglandins* 20: 431-447, 1980.
17. Boeynaems, J. M., and **Hubbard, W. C.** Transformation of arachidonic acid into an iodolactone by the rat thyroid gland. *J. Biol. Chem.* 255: 9001-9004, 1980.
18. Boeynaems, J. M., Reagan, D., and **Hubbard, W. C.** Lactoperoxidase-catalyzed iodination of arachidonic acid: Formation of macrolides. *Lipids* 16: 246-249, 1981.

19. Boeynaems, J. M., Watson, J. T., Oates, J. A., and **Hubbard, W. C.** Iodination of docosahexaenoic acid by lactoperoxidase and thyroid gland in vitro. Formation of an iodolactone. *Lipids* 16: 323-327, 1981.
20. Goetzl, E. J., Boeynaems, J. M., Oates, J. A., and **Hubbard, W. C.** Stimulus specificity of chemotactic deactivation of human neutrophils by lipoxygenase products of arachidonic acid. *Prostaglandins* 22: 279-288, 1981.
21. Boeynaems, J. M., Pelster, D., Oates, J. A., and **Hubbard, W. C.** Novel transformation of arachidonic acid in rat thyroid in vitro. *Biochim. Biophys. Acta* 665: 623-627, 1981.
22. Taber, D. F., Phillips, M. A., and **Hubbard, W. C.** Preparation of deuterated arachidonic acid. *Prostaglandins* 22: 349-352, 1981.
23. Roberts, L. J., II, Sweetman, B. J., Maas, R. L., **Hubbard, W. C.**, and Oates, J. A. Clinical applications of prostaglandin and thromboxane metabolite quantification. *Prog. Lipid. Res.* 20: 117- 122, 1981.
24. **Hubbard, W. C.**, Phillips, M. A., and Taber, D. F. Selective synthesis of octadeuterated (*rac*) 5-HETE for use in GC-MS quantitation of 5-HETE. *Prostaglandins* 23: 61-65, 1982.
25. Ogletree, M., Oates, J. A., **Hubbard, W. C.**, and Brigham, K. Evidence for pulmonary release of 5-hydroxy eicosatetraenoic acid (5-HETE) during endotoxemia in unanesthetized sheep. *Prostaglandins* 23: 459-468, 1982.
26. Turk, J., Henderson, W. R., Klebanoff, S. J., and **Hubbard, W. C.** Iodination of arachidonic acid by eosinophil peroxidase, myeloperoxidase and lactoperoxidase: Identification and comparison of products. *Biochim. Biophys. Acta* 751: 189-200, 1983.
27. Henderson, W. R., **Hubbard, W. C.**, and Klebanoff, S. J. Iodination of arachidonic acid by the iron-H₂O₂-iodide system. *Lipids* 18: 390-392, 1983.
28. Hough, A. J., Jr., **Hubbard, W. C.**, and Oates, J. A. VX₂ carcinoma, pulmonary metastasis and neutrophilic leukocytosis: Possible animal model for of tumor-associated granulocytosis. *Am. J. Pathol.* 112: 231-237, 1983.
29. Forti, R. L., Mitchell, W. M., Workman, R. J., Forbes, J. T., and **Hubbard, W. C.** Functional cyclooxygenase enzyme is not required for mediation of the pleiotropic effects of human alpha and beta interferons. *Prostaglandins* 26: 409-420, 1983.
30. Forti, R. L., Mitchell, W. M., **Hubbard, W. C.**, Workman, R. J., and Forbes, J. T. Pleiotropic activities of human interferons are mediated by multiple response pathways. *Proc. Natl. Acad. Sci. USA* 81: 170-174, 1984.
31. Serafin, W. E., Oates, J. A., and **Hubbard, W. C.** Metabolism of leukotriene B₄. Identification of the principal nonvolatile metabolite in urine. *Prostaglandins* 27: 899-911, 1984.
32. **Hubbard, W. C.**, Litterst, C. L., Liu, M. C., Bleecker, E. R., Eggleston, J. C., McLemore, T. L., and Boyd, M. R. Profiling of prostaglandin biosynthesis in biopsy fragments of human lung carcinoma and human lung tissues by capillary gas chromatography-negative ion chemical ionization mass spectrometry. *Prostaglandins* 32: 889-906, 1986.
33. McLemore, T. L., Blacker, P. C., Gregg, M., Alley, M. C., Abbott, B. J., Shoemaker, R. H., Litterst, C. L., **Hubbard, W. C.**, Brennan, R. H., Fine, D. L., Eggleston, J. C., Mayo, J. G., and Boyd, M. R. Intrabronchial implantation: A method for orthotopic propagation of human lung tumors in athymic nude mice. *Chest* 91: 5S-8S, 1987.
34. McLemore, T. L., Blacker, P. C., Gregg, M., Abbott, B. J., Shoemaker, R. H., Liu, M., Litterst, C. L., **Hubbard, W. C.**, Brennan, R. H., Fine, D. L., Bohlman, M. E., Eggleston, J. C., Mayo, J. G., and Boyd, M. R. Novel intrapulmonary model for orthotopic propagation on human lung tumors in athymic nude mice, *Cancer Res.* 47: 5132-5140, 1987.

35. Lawrence, I. D., Warner, J. A., Cohan, V. L., **Hubbard, W. C.**, Kagey-Sobotka, A., and Lichtenstein L. M. Purification and characterization of human skin mast cells: Evidence for human mast cell heterogeneity *J. Immunol.* 139: 3062-3069, 1987.
36. Liu, M. C., Bleecker, E. R., Proud, D., McLemore, T. L., and **Hubbard, W. C.** Profiling of bisenoic prostaglandins and thromboxane B₂ in bronchoalveolar fluid from the lower respiratory tract of human subjects by combined capillary gas chromatography-mass spectrometry. *Prostaglandins* 35: 69-81, 1988.
37. **Hubbard, W. C.**, Alley, M. C., McLemore, T. L., and Boyd, M. R., Evidence for thromboxane synthesis in established cell lines derived from human lung carcinomas. *Cancer Res.* 48: 2674-2677, 1988.
38. McLemore, T. L., **Hubbard, W. C.**, Litterst, C. L., Liu, M. C., Miller, S., McMahon, N. A., Eggleston, J. C., and Boyd, M. R. Profiles of prostaglandin biosynthesis in normal lung and tumor tissue from lung cancer patients. *Cancer Res.* 49: 3140-3147, 1988.
39. **Hubbard, W. C.**, Alley, M. C., McLemore, T. L., and Boyd, M. R. Profiles of prostaglandin biosynthesis in sixteen established cell lines derived from human lung, colon, prostate and ovarian tumors. *Cancer Res.* 47: 4770-4775, 1988.
40. **Hubbard, W. C.**, Alley, M. C., McLemore, T. L., and Boyd, M. R. Evidence for prostanoid biosynthesis as a biochemical feature of certain subclasses of non-small cell carcinomas of the lung as determined in established cell lines derived from human lung tumors. *Cancer Res.* 49: 826-832, 1989.
41. Churchill, L., Chilton, F. H., Resau, J. H., Bascom, R., **Hubbard, W. C.**, and Proud, D. Cyclooxygenase metabolism of arachidonic acid by cultured human tracheal epithelial cells. *Am. Rev. Resp. Dis.* 140: 449-459, 1989.
42. Warner, J. A., Peters, S. P., Lichtenstein, L. M., **Hubbard, W. C.**, Yancey, K. B., Stevenson, H. C., Miller, P. J., and MacGlashan, D. W., Jr. Differential release of mediators from human basophils: Differences in metabolism following activation by unrelated stimuli. *J. Leukocyte Biol.* 45: 558-571, 1989.
43. McLemore, T. L., Adelberg, S., Czerwinski, M., **Hubbard, W. C.**, Yu, S. J., Storeng, R., Wood, T., Hines, R., and Boyd, M. R. Altered regulation of the cytochrome P4501A1 gene: Novel inducer-independent gene expression in pulmonary carcinoma cell lines. *J. Natl. Cancer, Inst.* 81: 1787-1794, 1989.
44. Udem, B. J., **Hubbard, W. C.**, Christian, E. P., and Weinreich, D. Mast cells in the guinea pig cervical ganglion: A functional and histological assessment. *J. Auton. Nerv. Syst.* 30: 75-87, 1990.
45. Triggiani, M., Hubbard, W. C., and Chilton, F. H. Synthesis of 1-acyl-2-acetyl-sn-glycero-3-phosphocholine by an enriched preparation of human lung mast cells. *J. Immunol.* 144: 4773-4780, 1990.
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47. McLemore, T. L., Litterst, C. L., Coudert, N., Liu, M. C., **Hubbard, W. C.**, Adelberg, S., Czerwinski, M., McMahon, N. A., Eggleston, J. C., Boyd, M. R., and Hines, R. Metabolic activation of 4-ipomeanol in human lung primary tumors and established human pulmonary tumor cell lines. *J. Natl. Canc. Inst.* 82: 1420-1426, 1990.
48. McLemore, T. L., Adelberg, S., Liu, M. C., McMahon, N. A., Yu, S. J., **Hubbard, W. C.**, Czerwinski, M., Wood, T. G., Eggleston, J. C., Boyd, M. R. and Hines, R. Expression of CYP1A1 gene in patients with lung cancer: Evidence for cigarette smoke-induced expression in normal and altered gene regulation in pulmonary carcinomas. *J. Natl. Cancer Inst.* 82: 1333-1339, 1990.

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51. Massey, W. A., **Hubbard, W. C.**, Liu, M. C., Kagey-Sobotka, A., and Lichtenstein, L. M. Profile of prostanoid release following antigen challenge in the skin of man. *Brit. J. Dermatol.* 125: 524-534, 1991.
52. Massey, Guo, C.-B., Dvorak, A. M., **Hubbard, W. C.**, Bhagavan, B. S., Cohan, V. L., Warner, J. A., Kagey-Sobotka, A., and Lichtenstein, L. M. Human uterine mast cells: Isolation, purification, characterization, ultrastructure and pharmacology. *J. Immunol.* 147: 1621-1627, 1991.
52. Majchel, A. M., Proud, D., **Hubbard, W. C.**, and Naclerio, R. M. Histamine stimulation of the nasal mucosa does not induce prostaglandin or leukotriene or methacholine hyperresponsiveness. *Int. Arch. Allergy Immunol.* 95: 149-155, 1991.
53. Nakamura, T., **Hubbard, W. C.**, Triggiani, M., Nagaki, T., Ishizaka, T. and Chilton, F. H. Arachidonic acid metabolism during immunologic and nonimmunologic activation of the mouse bone marrow derived mast cell. *Biochim. Biophys. Acta* 1085: 191-200, 1991.
54. Averill, F. J., **Hubbard, W. C.**, Proud, D., Gleich, G. J., and Liu, M. C. Platelet activation in the lung following antigen challenge in a human model of allergic asthma. *Am. Rev. Resp. Dis.* 145: 571-576, 1992.
55. Yu, X.-Y., **Hubbard, W. C.**, and Spannhake, E. W. inhibition of canine tracheal smooth muscle by mediators from bronchial cells. *Am. J. Physiol.* 262 (Lung Cell Mol. Physiol. 6): L229-L234, 1992.
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58. Chilton, F. H., Patel, M., Fonteh, A. N., **Hubbard, W. C.** and Triggiani, M. Dietary n-3 fatty acids effects on neutrophil lipid composition and mediator production. *J. Clin. Invest.* 91: 115-122, 1993.
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60. Lindeman, K. S., Downey, N., Liu, M. C., **Hubbard, W. C.**, Kagey-Sobotka, A., and Hirshman, C. A. The importance of prostanoids in calcium chelator-induced airway constriction. *J. Appl. Physiol.* 75: 1110-1116, 1993.
61. Hay, D. W. P., **Hubbard, W. C.**, and Undem, B. J. Endothelin-induced contraction and mediator release in human bronchus. *Brit. J. Pharmacol.* 110: 392-398, 1993.
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65. MacGlashan, D. W., Jr., and **Hubbard, W. C.** Interleukin-3 alters free arachidonic acid generation in C5a-stimulated human basophils. *J. Immunol.* 141: 6358-6369, 1993.
66. Shin, M.-H., Averill, F. J., **Hubbard, W. C.**, Chilton, F. H., Barody, F. M., Liu, M. C., and Naclerio, R. M. Nasal allergen challenge generates 1-O-hexadecyl-2-lysi-sn-glycero-3-phosphocholine. *Am. J. Respir. Crit. Care Med.* 149: 660-666, 1994.
67. **Hubbard, W. C.**, Bickel, C. and Schleimer, R. P. Simultaneous quantitation of endogenous levels of cortisone and cortisol in human nasal and bronchoalveolar lavage fluids and in plasma via gas chromatography-negative ion chemical ionization mass spectrometry. *Anal. Biochem.* 221: 109-117, 1994.
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74. **Hubbard, W. C.**, Hundley, T. R., Oriente, A., and MacGlashan, D. W., Jr. Quantitation of 1-stearoyl-2-arachidonoyl-sn-3-glycerol in human basophils via gas chromatography-negative ion chemical ionization mass spectrometry. *Anal. Biochem.* 236: 309-321, 1996.
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91. Giardiello, F. M., Casero, R. A., Hyland, L. M., Hamilton, S. R., Trimpath, J. D., Geiman, D. E., Romans, K., **Hubbard, Walter C.**, Offerhaus, J. A., and Yang, V. W. Prostanoids, ornithine decarboxylase and polyamines as biomarkers in primary chemoprevention of familial adenomatous polyposis with sulindac. *Gastroenterology* 126: 425-431, 2004.
92. Berdyshev, E. V., Gorshkova, I. A., Garcia, J. G. N., Natarajan, V. and **Hubbard, W. C.** Quantitative analysis of sphingoid base-1-phosphates as bisacetylated derivatives by liquid chromatography-tandem mass spectrometry. *Analytical Biochemistry* 339: 129-136, 2005.
93. Petrache, I., Natarajan, V., Zhen, L., Medler, T. R., Richter, A. T., Cho, C., **Hubbard, W. C.**, Berdyshev, E. V. and Tudor, R. M. Ceramide upregulation causes pulmonary cell apoptosis and emphysema. *Nature Medicine* 11:491-498, 2005.
94. Li, J., Thorne, L. N., Punjabi, N. M., Sun, C.-K., Schwartz, A. R., Smith, P. L., Marino, R. L., Rodriguez, A., **Hubbard, W. C.**, O'Donnell, C. P., and Polotsky, V. Y. Intermittent hypoxia induces hyperlipidemia in lean mice. *Circ Res.* 97: 698-706, 2005.

95. Berdyshev, E. V., Gorshkova, I. A., Usatyuk, P., Zhao, Y., Bahman, S., **Hubbard, W.**, and Natarajan, V. A novel role of sphingosine kinase 1 in the de novo biosynthesis of duhydroshphingosine-1-phosphate in mammalian cells. *Cell Signaling* (in press, 01/2006).

Book Chapters and Monographs:

1. Watson, J. T., Pelster, D. R., and **Hubbard, W. C.** Programmable selected ion monitoring for quantitative analysis of biological samples with a GC-MS computer system. Proceedings of Second International Conference on Stable Isotopes, Vol. II, Rosalind Klein (Ed.). ERDA Conference 751027, 1976, National Technical Information Service, Springfield, VA, pp. 543-546.
2. Watson, J. T., **Hubbard, W. C.**, Sweetman, B. J., and Pelster, D. R. Quantitative analysis of prostaglandins and their metabolites by selected ion monitoring with a GC-MS computer system. In: A. Frigerio (Ed.). *Advances in Mass Spectrometry in Biochemistry and Medicine*, Vol. II, Spectrum Publications, New York, 1976, pp. 495-504.
3. **Hubbard, W. C.**, Watson, J. T., and Sweetman, B. J. Prostaglandin analysis: Role of high performance liquid chromatography in sample processing. In: Hawk, G. L. (Ed.). *Biological/Biomedical Applications of Liquid Chromatography*, Vol. 10, New York, Marcel Dekker, 1979, pp. 31-55.
4. Boeynaems, J. M., and **Hubbard, W. C.** Preparation, purification, characterization and assay of hydroxy- and hydroperoxy-eicosatetraenoic acids. In: Boeynaems, J. M. and Herman, A. G. (Eds.). *Prostaglandin, Prostacyclin and Thromboxane Measurement*, Amsterdam, Martinus Nyhoff, 1980, pp. 167-181.
5. **Hubbard, W. C.**, Hough, A., Brash, A. R., Johnson, R. M., and Oates, J. A. The VX₂ carcinoma: Humoral effects and arachidonic acid metabolism. In: Samuelsson, B., Ramwell, P. W., and Paoletti, R. (Eds.). *Advances in Prostaglandin and Thromboxane Research*, Vol. 6, Raven Press, New York, 1980, pp. 525-527.
6. Bokoch, G., Boeynaems, J. M., and **Hubbard, W. C.** Chemotactic and chemokinetic activity of mammalian lipoxygenase products. *Lymphokines* 4: 271-295, 1981.
7. Boeynaems, J. M., VanSande, J., **Hubbard, W. C.** and Dumont, J. E. Metabolism of arachidonic acid in the thyroid gland. Enzyme pathways, regulation and significance. In: Nunez, J., Dumont, J. E., and Schultz, G. (Eds.). *Hormones and Cell Regulation*, Vol. 6, North Holland, Elsevier, 1982, pp. 37-53.
8. Taber, D. F., Phillips, M. A., and **Hubbard, W. C.** Preparation of deuterated arachidonic acid. In: Lands, W. E. M., and Smith, W. S. (Eds.). *Prostaglandins and Arachidonate Metabolites. Methods in Enzymology*, Vol. 86, New York, Academic Press, 1982, pp. 366-369.
9. **Hubbard, W. C.** Quantitation of 15-keto-13, 14-dihydro-PGE₂ in plasma by GC-MS. In: Lands, W. E. M., and Smith, W. S. (Eds.). *Prostaglandins and Arachidonate Metabolites. Methods in Enzymology*, Vol. 86, New York, Academic Press, 1982, pp. 571-578.
10. Ogletree, M. L., Schlesinger, K., Nettleman, M., and **Hubbard, W. C.** Measurement of 5-hydroxyeicosatetraenoic acid (5-HETE) in biological fluids by GC-MS. In: Lands, W. E. M., and Smith, W. S. (Eds.). *Prostaglandins and Arachidonate Metabolites. Methods in Enzymology*, Vol. 86, New York, Academic Press, 1982, pp. 607-612.
11. **Hubbard, W. C.**, and Taber, D. F. Analysis of hydroxy acids. In: Berti, F., Folco, G. and Velo, G. (Eds.). *Proceedings of the NATO Ninth International School of Pharmacology: Leukotrienes and Prostacyclin*, New York, Plenum Press, 1982, pp. 55-63.
12. **Hubbard, W. C.**, Litterst, C. L., Liu, M. C., Bleecker, E. R., Mimnaugh, E. G., Eggleston, J. C., McLemore, T. L., and Boyd, M. R. Detection and quantitation of eicosanoids by combined gas

- chromatography-mass spectrometry. In: Walden, T. L., and Hughes, H. N. (Eds.). Prostaglandin and Lipid Metabolism in Radiation Injury, New York, Plenum Press, 1987, pp. 365-377.
13. **Hubbard, W. C.**, Alley, M. C., McLemore, T. L., and Boyd, M. R. Fatty acid cyclooxygenase metabolism of arachidonic acid in human tumor cells. In: Honn, K. V., Marnett, L. J., Nigam, D., and Walden, T. (Eds.). Eicosanoids and Other Bioactive Lipids in Cancer and Radiation Injury, Kluwer Academic Publishers, Boston, 1991, pp. 37-42

Inventions, Patents and Copyrights:

None

EDUCATIONAL ACTIVITIES

Teaching:

Classroom:

Division of Allergy and Clinical Immunology:
Introduction to Mass Spectrometry and Analysis of Lipids and Lipid Mediators
Fellows Summer Orientation, Yearly 1991 - 2004
Oral Presentation with Illustrations and Highlights

Division of Clinical Pharmacology:
Teaching and mentoring faculty and staff in applications of combined liquid chromatography-mass spectrometry in clinical studies of the pharmacokinetics and metabolism of antiviral agents used in the treatment of HIV and other viral-related diseases,

Mentoring:

Pre-doctoral:

Thesis Committee:

Gary Michael Bokoch
Thesis Title: The role of arachidonic metabolism in stimulation of the polymorphonuclear leukocyte by n-formyl peptides, 1978-1981
Role: Committee Member and Advisor for the use of mass spectrometry in qualitative and quantitative analysis of arachidonic acid metabolites
Present Position: Professor, Scripps

Post-doctoral:

Jean-Marie Boeynaems, M. D. 1978 - 1981
Present Position: Faculty, University of Brussels, Brussels, Belgium
Role: Mentoring studies of lipoxygenase and thyroid peroxidase metabolism of polyunsaturated fatty acids. Experimental design and GC-MS analysis/quantitation of novel products.

John W. Turk, M. D., Ph. D. 1981 – 1983

Present Position: Professor of Pharmacology and Pathology, Washington University, St. Louis, St. Louis, MO

Role: Mentoring studies of myeloperoxidase and eosinophil peroxidase metabolism of polyunsaturated fatty acids. Experimental design and GC-MS analysis/quantitation of novel products.

William E. Serafin, M. D. 1982 – 1983

Present Position: Private Practice, Nashville, TN

Role: Mentoring studies of in vivo metabolism of leukotriene B4. Experimental design and analysis (GC-MS and chromatography). Of products of the leukotriene excreted in urine.

Training Grant Participation:

Division of Allergy and Clinical Immunology:
Basic and Clinical Immunology Training Grant
Role: Faculty Preceptor

07/01/01 – 6/30/06

Basic and Clinical Immunology Training Grant
Role: Faculty Preceptor

07/01/96 – 06/30/01

Basic and Clinical Immunology Training Grant
Role: Faculty Preceptor

07/01/91 – 6/30/96

Editorial Activities:

Editorial Board Appointments:

None

Journal Peer Review Activities: (list of journals)

Journal of Biological Chemistry
Analytical Biochemistry
Cancer Research
Prostaglandins
Lipids
Lipid Research
Journal of Lipid Research
Journal of the National Cancer Institute
Journal of Allergy and Clinical Immunology
Biochim. Biophys. Acta
Thorax
Analytical Chemistry
American Journal of Pharmaceutical Education

CLINICAL ACTIVITIES:

Registered Pharmacist Certificates:

Arkansas Certificate # 05320	June 1967 -
Maryland Certificate # 14318	November 1997 –

Service Responsibilities:

None

ORGANIZATIONAL ACTIVITIES

Professional Societies:

American Society for Mass Spectrometry (ASMS), 1977 –

American Society for Pharmacology and Experimental Therapeutics (ASPET), 1978 –

Session Chair: ASPET, August 1985 Fall Meeting, Session Chair

American Association for Cancer Research, 1986 – 1991

Maryland Pharmacist Association: 1997 –

American Association of Colleges of Pharmacy: 2004 -

Consultantships:

Vivus Pharmaceuticals 1995-1998 Analytical methods for determination of the pharmacokinetics of prostaglandin E₁ and prostaglandin E₂ in human subjects.

Role: Development and application of techniques for the measurement of the 15-keto-13, 14-dihydro-metabolites of PGE₁ and PGE₂ in human plasma.

RECOGNITION

Invited Talks:

1. Analysis of hydroxy acids. NATO Ninth International School of Pharmacology: Erice, Sicily, September 1981.

2. Detection and quantitation of eicosanoids by combined gas chromatography-mass spectrometry. Conference on the Role of Prostaglandins and Lipid Metabolism in Radiation Injury. U. S. Department of Defense, Rockville, MD, 1986.
3. Fatty acid cyclooxygenase metabolism of arachidonic acid in human tumor cells. Conference on the Role of Eicosanoids and Other Bioactive Lipids in Cancer and Radiation Injury. U. S. Department of Defense and the American Cancer Society, Detroit, MI, 1989.
4. The use of combined gas chromatography-electron capture negative ion mass spectrometry in studies of the kinetics of topical steroids used in the treatment of asthma. Edgewood-Aberdeen Proving Ground, Laboratory of Toxicology, Edgewood, MD, March 2001.
5. The role of mass spectrometry in clinical studies of the use of COX inhibitors for chemoprevention of human malignancies. American Chemical Society, Mid-Atlantic Regional Meeting, Towson, MD, May 2001.

Invited Reviews:

1. Bokoch, G., Boeynaems, J. M., and Hubbard, W. C. Chemotactic and chemokinetic activity of mammalian lipoxygenase products. *Lymphokines* 4: 271-295, 1981.

OTHER PROFESSIONAL ACCOMPLISHMENTS

1. Establishment of a state of the art mass spectrometry laboratory dedicated to the analysis of newly discovered agents from natural products within the NCI Developmental Therapeutics Program (DTP) as part of the Drug Discovery Program of the DTP
2. Developed and applied analytical techniques for determination of the extent of fatty acid cyclooxygenase metabolism in human tumor tissue (lung) and in cell lines established from human tumors of the lung, colon, prostate and breast with demonstration that fatty acid cyclooxygenase metabolism of arachidonic acid was a characteristic of certain classes of human lung tumors (NIH-NCI)
3. Established a state of the art mass spectrometry laboratory with capabilities for GC-MS, GC-MS/MS, LC-MS and LC-MS/MS analysis of "small" molecules as a core shared-instrumentation facility in the Johns Hopkins Asthma and Allergy Center (Bayview Campus). The Bayview Mass Spectrometry has been in continuous operation since 1990.
4. Recruitment of Ph. D. trained in proteomics to the Hopkins Faculty toward establishing proteomics as a core facility of the Hopkins Bayview Campus in the Division Directors of Pulmonary and Clinical Immunology (2003). The proteomics laboratory currently houses one MALDI-TOF and one Thermo LCQ Ion Trap dedicated to protein and peptide analysis (Mason Lord Building).
5. 2005: Transfer of an existing LC-MS/MS laboratory from the Hopkins Bayview Campus to the Division of Clinical Pharmacology laboratory is Osler 520 (Johns Hopkins Hospital) for application in clinical and pharmacokinetic studies of antiviral agents used in the treatment and prevention of HIV and for screening for X-linked adrenoleukodystrophic disease (X-ALD) in newborns.

