

## Donald Myers Foster, Ph.D.

### PROFESSIONAL ADDRESS:

Facilities Management Service (138E)  
Department of Veterans Affairs  
Central Texas Veterans Health Care System  
Temple, TX 76504  
(254)534-0230

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### EDUCATION

<u>UNIVERSITY</u>	<u>DEGREE</u>	<u>DATE</u>	<u>FIELD</u>
University of Michigan Ann Arbor, MI	Post-Grad Training	1969-1972	Physiology Biomathematics
University of Houston Houston, TX	Ph.D. M.S.	1969 1967	Biological Sciences Biological Sciences
Delta State University Cleveland, MS	B.S.E.	1961	General Science Education

### PROFESSIONAL EXPERIENCE

<u>PLACE</u>	<u>TITLE</u>	<u>FROM</u>	<u>TO</u>
Baylor University Waco, TX	Adjunct Professor	1/93	Now
CTVHCS (formerly O. E. Teague Veterans Center) Temple, TX	Chemist	8/91	Now
UMHB Belton, TX	Chairman & Professor	1/89	7/91
NASA-Johnson Space Center Houston, TX	Research Chemist	9/87	1/89
Texas A & M University College Station, Texas	Associate Professor	3/81	9/87
O. E. Teague Veterans Admin. Center (now CTVHCS) Temple, TX	Chemist	7/76	9/87
University of Minnesota	Assistant Professor	7/75	7/76

Minneapolis, MN				
Veterans Administration Hospital Minneapolis, MN	Research Chemist	7/73	7/76	
Vanderbilt University Nashville, TN	Research Associate	7/72	7/73	
University of Michigan Ann Arbor, MI	Postdoctoral Fellow	9/69	7/72	

## **BACKGROUND DESCRIPTION**

**2004-present**, Research Chemist and Chemical Hygiene Officer, Facilities Management Service (FMS), Department of Veterans Affairs, Central Texas Veterans Health Care System (CTVHCS), Temple, TX.

**1996-2004**, Chemist and Radiation Safety Officer, FMS, CTVHCS, Temple, TX.

As Radiation Safety Officer for the CTVHCS, responsible that the facility is in compliance with all Federal laws regarding the ordering, usage, storage, monitoring, and disposal of radioactive materials. As secretary of the Radiation Safety Committee, responsible for planning the agenda as well as preparing and reporting the minutes. Supervise numerous contracts and contractors in radiation safety, and interact with many departments, agencies, and personnel in the conduct of the radiation safety program. Oversee the radioactive materials license and license amendments. Prepare numerous reports, memos, documents, etc. to all levels inside and outside CTVHCS.

Provide educational services to staff physicians, resident physicians, chemists, other scientists, graduate and undergraduate students and staff and student technologists in the technological and scientific aspects of chemistry in general, in radiochemistry in particular, and in radiation safety.

Establish and maintain a meritorious research program in conjunction with other staff and researchers within the local medical community, and the scientific community at large.

Assist the medical staff in all phases of the scientific research process.

**1993-present**, Adjunct Professor, Institute of Biomedical Studies, Baylor University, Waco, TX. Played key role in establishing a formal affiliation agreement between the CTVHCS and the Institute of Biomedical Studies at Baylor University. Approved to teach graduate courses and supervise graduate students toward their degree. Supervised graduate seminars in Biomedical Studies.

**1991-1996**, Chemist, Nuclear Medicine Service, Olin E. Teague Veterans' Center (now CTVHCS), Temple, TX.

Supervised a clinical radioimmunoassay laboratory and maintained compliance with all applicable regulatory and accreditation requirements.

**1989-1991**, Chairman and Professor, Department of Chemistry, University of Mary Hardin-Baylor, Belton, Texas.

Responsible for planning long-term goals, objectives, and curriculum as well as the daily operation of the Department. Supervised Departmental faculty, staff, and student assistants. Served as Chairman of the Awards Committee in Chemistry and was responsible for student recruitment. Taught chemistry courses and supervised students in independent learning and research projects (supervised 12 projects from 1989-1991).

Member of the Grievance Committee of the Scott and White Medical Technology Program and Consultant to the Advisory Committee. Secretary/Treasurer of the Heart of Texas Section of the American Chemical Society, 1990-1991.

**1987-1989**, Research Chemist in the Biomedical Laboratories Branch of the Medical Sciences Division of the Johnson Space Center of NASA in Houston, Texas.

Responsible to provide expertise in clinical laboratory medicine in clinical chemistry, hematology, immunology, and clinical biochemistry for operational and research purposes. Required skills necessary for interfacing with various Center elements, other NASA centers, and governmental agencies. Provided the NASA oversight of a contractor operated clinical laboratory consisting of 6 Technologists and 1 clerical persons with an annual budget of approximately \$0.5 million.

Participated in workshops and on committees for program development.

Reviewed external grant and project proposals which came to the JSC Life Sciences Directorate for funding.

Also responsible for the design, execution, and reporting of basic and applied research in areas of biochemistry and clinical chemistry as it related to the space program.

**1976-1987**, Clinical Chemist in Pathology Lab Service, Olin E. Teague Veterans' Center, Temple, Texas. Associate Professor, Dept. of Pathology, Texas A & M College of Medicine, Temple Campus.

Guided and participated in the development of new chemistry procedures, the correlation and institution of additional procedures, and updating of procedures. Developed specialty chemistry procedures. Guided and participated in technical procedure writing and reports.

Responsible for long-term planning, evaluating needs for equipment, personnel, new areas of chemical testing to be added or developed, and cost-effective operation of the section.

Also responsible for overseeing daily operation of the chemistry section consisting of RIA, electrophoresis, immunochemistry, trace metals, and routine chemistries.

Provided technical supervision to 10-12 employees consisting of chemists, medical technologists, and technicians, mathematicians, computer programmers, laboratory aides, etc.

Developed and monitored quality control program, maintenance, and troubleshooting procedures of the section. Maintained accreditation with the College of American Pathologists.

Supervised and participated in education, teaching, and training of medical students, chemistry students, medical technologists, medical technicians, laboratory staff, house staff, medical staff, and others.

Served as technical advisor to Chief, Laboratory Service, and medical staff on matters pertaining to field of chemistry. Served on various permanent and ad hoc committees.

Consultant to universities, private industry, and the government in general and the V.A. in particular in matters of a scientific nature.

Organized, participated in, and spoke at scientific meetings, conferences, and symposia on local, national, and international levels.

Engaged in multi-faceted research program, leading to the formulation and testing of new hypotheses and procedures. Published scientific and technical articles in refereed scientific literature.

**1973-1976**, Research Chemist and co-investigator with Dr. K. Ahmed, Minneapolis Veterans Hospital, and Assistant Professor, Department of Laboratory Medicine and Pathology, School of Medicine, University of Minnesota, Minneapolis.

Investigated the partial reactions of the  $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$  using drugs, toxic agents, and normal physiological ligands. These studies have led to a better understanding of how cellular energy is transduced into the active transport of monovalent cations, which provides the basis for nerve activity, salt balance of cells, and cell volume regulation. It is expected from these studies that a clearer understanding of certain pathological conditions and associated therapeutic approaches will be obtained.

**1972-1973**, Research Associate, Department of Physiology, Vanderbilt University, Nashville, TN, under Dr. Robert L. Post.

Proteolytic digests of phosphorylated  $^{32}\text{P}$ -labeled  $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$  and  $\text{Ca}^{++}\text{-ATPase}$  were used to obtain a ( $^{32}\text{P}$ )-labeled oligopeptide overlapping the active site of these transport enzymes. A method for dansylation of the phosphopeptide was developed which made it possible to further purify and characterize phosphopeptides. A peptide was purified by paper electrophoresis and analyzed directly. The result agreed with published fingerprint studies and provided further certainty of the structure of an active site peptide of the  $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$ .

**1969-1972**, Postdoctoral training, Dept. of Biostatistics, School of Public Health, and the Dept. of Physiology, School of Medicine, University of Michigan, under Dr. John A. Jacquez.

The interaction of binary detergent with beef kidney microsomes was studied. A sequential release of proteins from the membranes was obtained. By following the specific activity of the  $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$ , the results showed a separation and purification of the enzyme from other membrane constituents. The enzyme was one of the last proteins to be removed as the detergent concentration was increased, which is commensurate with the concept that it is an "integral" protein. The detergent-membrane interaction was shown to involve detergent micelles in the separation of proteins from the membranes. The results of these studies agreed with models of membrane structure and supported premises of one model of how nonionic detergents disintegrate membranes, and at the same time contributed new knowledge to the field.

Another aspect of this training was an acquaintance with computer programming and computer applications to biomedical, biochemical, and ecological problems.

**1967-1969**, Ph.D. in Biological Sciences, University of Houston, obtained under the supervision of Dr. Darrell J. Weber.

Dissertation: "Physical, Chemical and Kinetic Characteristics of Isoenzymes of Wheat Germ Acid Phosphatase and Related Metabolic Studies". Isoenzymes of wheat germ acid phosphatase were characterized and compared. A chromatographic procedure was developed for separating all of the isoenzymes which revealed 3 new ones, extending the number of known isoenzymes from 4 to 7. Two of the isoenzymes were further purified, characterized, and compared. The two isolated isoenzymes were similar in sedimentation rate but differed in their visible absorption, chromatographic, electrophoretic, and kinetic properties. It was concluded that the isoenzymes of acid phosphatase are similar in size but differ in their charge.

In tissue culture studies, teratoma and normal tobacco tissues were compared to make a metabolic distinction between a neoplastic plant tissue and its closest normal homologue. The neoplastic tissue lacked an amino acid found in the normal tissue that co-chromatographed as homoserine. It was concluded that the neoplastic condition was accompanied by metabolic differences from the normal state due to quantitative shifts in the enzyme complement.

**1962-1967**, M.S. in Biological Sciences, University of Houston, obtained under the supervision of Dr. Robert Rabson of UH and in Dr. S. Schienberg's Lab, USDA Pioneering Research Laboratory, Beltsville, Md., and under the supervision of Dr. John Evans of UH.

Thesis: "Protein Changes in the Developing Seed of the Lima Bean *Phaseolus lunatus* var. thaxter." It was concluded that lima bean seeds are a good model for studying the biochemistry of development since synthesis of specific proteins could be observed at specific stages of maturation. The synthesis of the protein hemagglutinating factor was observed in detail through following its agglutinating activity and the incorporation of a radioactively labeled amino acid.

## **SPECIALIZED SKILLS**

1. Clinical Chemistry
2. Column Chromatography. Designed and constructed columns for ion-exchange column chromatography. Successfully utilized the columns to purify proteins. Presented seminars on theory of chromatographic processes.
3. Computer Use and Programming.
4. Histological and Histochemical Techniques
5. Immunochemical Techniques
6. Instrumental:
  - atomic absorption
  - automatic amino acid analyzer
  - clinical laboratory automated, robotic instrumentation
  - column chromatography and gel filtration
  - gas chromatograph
  - thin layer chromatography
  - densitometer

flame photometer  
oxygraph  
radioisotope counter (liquid and solid scintillation, gas flow, Geiger)  
scientific photography  
spectrophotometers (uv, vis, NIR)  
ultracentrifuge (differential, density gradient)  
zone electrophoresis (cellulose acetate, paper, polyacrylamide gel, starch gel)

7. Radioisotope Techniques:

a. Training:

- (1) Graduate course in radioisotopes. Text: *Principles of Radioisotope Methodology* by Chase and Rabinowitz, Burgess Publ. Co., Minneapolis, MN, 1962. Course included formal lectures on theory of, and lab training on use of alpha and beta emitting radioisotopes. A working knowledge of Geiger, gas flow, solid scintillation and liquid scintillation counters was acquired. A special research problem was performed.
- (2) Postdoctoral training under J.A. Jacquez, M.D., Univ. of Michigan. Formal lectures including theory of radioisotope tracer techniques.
- (3) Attended the Radiation Safety Officers Course taught by the University of Texas-San Antonio, Health Science Center, continuing Medical Education faculty, Sept. 16-20, 1996.

b. Experience:

- (1) Summer, 1963: Training and experience under AEC Licensee, Robert Rabson, Ph.D., in the Dept. of Biology, Radioisotope Lab, Univ. of Houston. Tested *in vitro* incorporation of  $^{14}\text{C}$ -amino acids into proteins, using a liquid scintillation spectrometer.
- (2) Spring, 1964: Special research problem in graduate radioisotope course. Followed uptake of  $^{14}\text{C}$ -amino acid into an *in vitro* protein synthesizing system, using liquid scintillation counting methods. Results were presented at a scientific meeting.
- (3) July, 1972 - June, 1973: Postdoctoral research with Robert L. Post, M.D., Vanderbilt University. Use of  $^{32}\text{P}$ -ATP in radioactive labeling of  $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$  of guinea pig kidney and  $\text{Ca}^{++}\text{-ATPase}$  of sarcoplasmic reticulum. Employed gas flow counter and autoradiography.
- (4) July, 1973 - June, 1976: Research chemist, V.A. Hospital Minneapolis, MN. Studies of  $^3\text{H}$ -ouabain binding and mechanisms of  $^{32}\text{P}$ -ATP incorporation into rat brain  $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$ . Utilized liquid scintillation counters. From these studies, constructed nonlinear models for the binding and dissociation of radioactively labeled substrates and the enzyme. These models employed the kinetic principles upon which radioimmunoassays are based.
- (5) July, 1976 - Sept., 1987: Technical advisor on use of  $^{125}\text{I}$ -labeled albumin in laboratory tests of patient blood volumes and for RIA. Named user on NRC Radioisotope License at Temple V.A.C. License: No. 42-10739-02. Served as Radiation Protection Officer for Isotopes for the O.E. Teague Veterans' Center. In charge of monitoring patients who had received therapeutic (including ablative) doses of  $^{131}\text{I}$ . Held Texas A&M Radioisotope License No. 383.

- (6) August, 1991-present: A member of the Radiation Safety Committee and an authorized user on the NRC radioactive materials License No. 42-10739-03 to the DVA CTVHCS. Until 1996 supervised a clinical radioimmunoassay laboratory.
  - (7) May 17, 1996 - present: Radiation Safety Officer and secretary of the Radiation Safety Committee of the DVA CTVHCS.
8. Rapid Kinetic Apparatus. Original concepts for major re-design of a rapid reaction stopped-flow apparatus were incorporated into a working model. The design and utilization of this model were described in a merit review proposal.
9. Tissue culture techniques and *in vivo* culture of mouse ascites tumor cells.
10. Teaching and Preceptorship Activities:
- a. Bachelor's degree in Science Education.
  - b. Received Secondary Teacher's Certification from the state of Mississippi.
  - c. Taught high school chemistry and mathematics for 1 year.
  - d. Conducted laboratory classes for undergraduate, graduate, and medical students during graduate and postdoctoral training.
  - e. Participated in teaching a graduate level course in Experimental Pathology in the Department of Pathology and Laboratory Medicine at the University of Minnesota.
  - f. Originated fourth year elective in clinical chemistry for medical students in the TAMU College of Medicine.
  - g. With Chief of Service, co-originated a VA Central Office approved internship in biomedical engineering for graduate students in the Biomedical Engineering program at Texas A&M University.
  - h. Played key role in developing an affiliated undergraduate training program in chemistry between the VA and UMHB, Belton, Texas. This program has inter-institutional approval between the University of Mary Hardin-Baylor and the O.E. Teague Veterans' Center. Currently serve as the VA Coordinator for this program.
  - i. Invited lecturer to 2nd year medical students in Biochemistry, Dept. of Medical Biochemistry, Texas A&M University, 1981-1985.
  - j. Community Health Professor with Temple Junior College and Lecturer in Medical Laboratory Technician Program, 1977-1986.
  - k. Lecturer in Medical Technology training program based in Temple through Southwest Texas State University and participated with the Chief, Laboratory Service, in planning and guiding the program.
  - l. Supervised senior medical technology students in special projects in clinical chemistry.
  - m. Taught graduate level course on Biomedical Statistics for Southwest Texas State University, Spring, 1987, Temple Campus.
  - n. Provided intra-departmental education and training programs and educational seminars to the medical staff at O.E. Teague Veterans' Center.
  - o. Professor and Chairman, Department of Chemistry, University of Mary Hardin-Baylor. Taught General Chemistry, Organic Chemistry, and Biochemistry, 1989-1991.
  - p. Adjunct Professor in the Institute of Biomedical Studies at Baylor University in Waco, Texas, 1993-present. Supervised graduate seminars.

## PUBLICATIONS

- Foster, D.M. 1967. Protein changes in the developing seed of the lima bean *Phaseolus lunatus* var. thaxter. In partial fulfillment of requirements for the Master of Science Degree.
- Foster, D.M. 1969. Physical, chemical, and kinetic characterizations of acid phosphatase and related metabolic studies. In partial fulfillment of the requirements for the Doctor of Philosophy Degree.
- Foster, D.M. and D.J. Weber. 1969. Free Amino acid pools and enzymes in teratoma and habituated tobacco tissue cultures. *Physiol. Plant* 22:1263-1272.
- Foster, D.M. and D.J. Weber 1973. Separation and characteristics of isoenzymes of wheat germ acid phosphatase. *Plant Science Letters* 1:169-177.
- Foster, D.M., K. Ahmed, and L. Zieve. 1974. Action of methane thiol on  $\text{Na}^+$ ,  $\text{K}^+$ -ATPase: Implications for hepatic coma. *Ann. N.Y. Acad. Sci.* 242:573-576.
- Ahmed, K. and D. Foster. 1974. Studies of the effects of  $\text{D}_2\text{O}$  on  $\text{Na}^+$ ,  $\text{K}^+$ -ATPase. *Ann. N.Y. Acad. Sci.* 242:280-292.
- Quarfoth, G., K. Ahmed, D. Foster, and L. Zieve. 1976. Action of methanethiol on membrane ( $\text{Na}^+$ ,  $\text{K}^+$ )-ATPase of rat brain. *Biochem. Pharmacol.* 25:1039-1044.
- Foster, D. and K. Ahmed. 1976.  $\text{Na}^+$ -dependent phosphorylation of the rat brain ( $\text{Na}^+$ ,  $\text{K}^+$ ) ATPase: Possible non-equivalent activation sites for  $\text{Na}^+$ . *Biochim. Biophys. Acta* 429:258-273.
- Foster, D., C.F. Hawkins, D. Fife, and J.A. Jacquez. 1976. The action of a binary non-ionic detergent on a kidney membrane fraction. *Chemico-Biological Interactions* 14:265-278.
- Foster, D. and K. Ahmed. 1977. Solvent effects on hydrolysis of the phosphoenzyme intermediate in sodium and potassium-dependent adenosine triphosphatase: Correlations with stimulation of potassium-dependent p-nitrophenyl phosphatase. *Molecular Pharmacol.* 13:142-149.
- Koch, Robert B., D. Desaiyah, D. Foster, and K. Ahmed, 1977. Effects of piperidines and fire ant venom on ATPase activities from brain homogenate fractions and characterization of  $\text{Na}^+$ ,  $\text{K}^+$ ,-ATPase inhibition. *Biochem. Pharmacol.* 13:142-149.
- Quarfoth, G., K. Ahmed, and D. Foster. 1978. Effects of Polyamines on partial reactions of membrane  $\text{Na}^+$ ,  $\text{K}^+$ -ATPase. *Biophys. Biochem. Acta* 526:580-590.



- Rossing, R.G. and D. Foster. 1980. The stability of clinical chemistry specimens during refrigerated storage for 24 hours. *Am. J. Clin. Path.* 73:91-95.
- Foster, D.M. and K. Ahmed. 1982. Solvent effects on ouabain binding to the Na<sup>+</sup>, K<sup>+</sup>-ATPase of rat brain. *Biophys. Biochem. Acta* 688:123-130.
- Foster, D., S. Russell, and K. Ahmed. 1983. Kinetic models of Na<sup>+</sup>-dependent phosphorylation of the Na<sup>+</sup>, K<sup>+</sup>-ATPase from rat brain. In J. Hoffman and B. Forbush, III (eds.), *Current Topics in Membranes and Transport* 19:553-556. Academic Press.
- Foster, D.M. 1983. Complementary uses of stable and radioactive isotopes in biochemical pharmacology. In A. Susan and W. P. Duncan (Eds.), *Proceedings of the International Symposium on The Synthesis and Applications of Isotopically Labeled Compounds*. pp.95-102. Elsevier, Amsterdam.
- Klemm, W.R. and D.M. Foster. 1986. Alcohol in a single pharmacological dose, decreases brain gangliosides. *Life Sciences* 39:897-902.
- Klemm, W.R. and D.M. Foster. 1986. Effects of chronic alcohol consumption in weanling rats on brain gangliosides. *Prog. Neuro-Psychopharmacol. and Biol. Psychiat.* 10:697-702.
- Foster, D.M., M.D. Huber, and W.R. Klemm. 1989. Ethanol may stimulate or inhibit (Na<sup>+</sup> + K<sup>+</sup>)-ATPase, depending upon Na<sup>+</sup> and K<sup>+</sup> concentrations. *Alcohol* 6:437-443.
- Brawn, P.N., D.M. Foster, *et al.* 1994. Characteristics of prostatic infarcts and their effect on serum prostate-specific antigen and prostatic acid phosphatase. *Urology* 44:71-75.
- Speights, V.O., P.N. Brawn, D.M. Foster, *et al.* 1995. Evaluation of age-specific normal ranges for prostate-specific antigen. *Urology* 45:454-458.
- Brawn, P.N., Jay, D.W., Foster, D.M., *et al.* 1996. Prostatic acid phosphatase levels (Enzymatic Method) from completely sectioned, clinically benign, whole prostates. *Prostate* 28(5): 295-299.
- Sanghi, S., Foster, D., Jewell, C., and Dostal, D. 2005. Humoral and Mechanical Cross-Talk in the Vasculature: Perspectives in Vascular Disease. *Vascular Disease Prevention* 2: 205-218.
- Lai, H., Guleria, R., Foster, D.M., Lu, G., Watson, L.E., Sanghi, S., and Dostal, D.E. 2006. Integrins: Novel Therapeutic Targets for Cardiovascular Diseases. *In press*.

## ABSTRACTS AND PAPERS PRESENTED AT SCIENTIFIC MEETINGS

- Foster, D. and J.E. Evans. 1965. Incorporation of a radioactive amino acid into the hemagglutinating fraction of *Phaseolus lunatus* var. thaxter. Presented at the annual meeting of the Southern Section of the Amer. Society of Plant Physiologists. Dallas, TX, Feb. 1-3.
- Foster, D. and J.E. Evans. 1967. Changing electrophoretic protein patterns during seed development. Presented at Sixty-fourth Annual Convention of the Association of Southern Agriculture Workers, Inc. New Orleans, LA, Jan. 30-Feb. 1.
- Foster, D. and D. Weber. 1969. Free amino acid pools and enzymes in teratoma and habituated tobacco tissue cultures. Presented at the annual meeting of the Southern Division of the American Phytopathological Society, Mobile, AL, Feb. 3-5.
- Hawkins, C., D. Foster, D. Fife, and J. Jacquez. 1972. Effect of a binary detergent on membrane (Na + K)-Mg ATPase. *Fed. Proc.* 31(2): 592. Ab. No. 2129.
- Foster, D. and K. Ahmed. 1974. Effects of D<sub>2</sub>O on the formation and decomposition of the phosphorylated form (E-P) of the Na<sup>+</sup>, K<sup>+</sup>-ATPase. *Fed. Proc.* 33(5):1332. Ab. No. 611.
- Quarfoth, G., D. Foster, K. Ahmed, and L. Zieve. 1974. Action of methanethiol on erythrocyte membranes and on brain Na<sup>+</sup>, K<sup>+</sup>-ATPase and K<sup>+</sup>-p-nitro-phenol phosphatase (K<sup>+</sup>-NPPase): Correlations with the formation and breakdown of phosphoenzyme (EP). *Pharmacologist* 16(2):293. Ab. No. 581.
- Foster, D. and K. Ahmed. 1975. Evidence for three non-equivalent Na<sup>+</sup> activation sites for phosphoenzyme (E-P) formation in the Na<sup>+</sup>, K<sup>+</sup>-ATPase of rat brain. *Fed. Proc.* 34(3):328. Ab. No. 621.
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- Foster, D. and K. Ahmed. 1975. Effects of D<sub>2</sub>O on ouabain binding to rat brain (Na<sup>+</sup>, K<sup>+</sup>)-ATPase. *Pharmacologist* 17(2):199. Ab. No. 137.
- Ahmed, K. and D. Foster. 1976. Effects of order of addition of ligands and dimethylsulfoxide on phosphoenzyme formation and ouabain binding of rat brain Na<sup>+</sup>, K<sup>+</sup>-ATPase. *Fed. Proc.* 35(7):1663. Ab. No. 1566.
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- Foster, D. 1978. Acceptable ranges of performance. Technicon symposium, Houston, Texas, March 29-31.

- Foster, D., C. Tessmer, B. Thomas, T. Goka, and J. Jeter. 1979. Human serum copper proteins. Presented at "A Conference on Methods for Determining Metal Ion Environments in Proteins", Las Cruces, New Mexico, January 10-12.
- Foster, D. 1979. An oral presentation on "The stability of serum chemistries during refrigerated storage for 24 hours", to the American Association of Clinical Chemists, Texas Section, Galveston, Texas, October 26-27.
- Foster, D. and J. Jeter. 1980. Adaptation of the Pierce Phosphorus Auto/Stat method to the Beckman Trace III and its correlation with SMA 12/60 Phosphorus Procedure. Amer. Assoc. for Clinical Chemistry, Boston, Massachusetts. *Clin. chem.* 26(7):1010, Ab. No. 268.
- Foster, D. and M. Adams-Mayne. 1981. Oral, "Enzyme rate theory applied to EIA: a simplified approach to data reduction", to Texas Section, AACC, Dallas, Texas, April 12.
- Foster, D., S. Russell, and K. Ahmed. 1981. Kinetic models of Na<sup>+</sup>-dependent phosphorylation of the Na<sup>+</sup>, K<sup>+</sup>-ATPase from rat brain. Third International Conference on Na<sup>+</sup>, K<sup>+</sup>-ATPase. Yale University, New Haven, CN, August 17-21.
- Foster, D. 1982. Complementary uses of stable and radioactive isotopes in biochemical pharmacology. International Symposium on the Synthesis and Applications of Isotopically Labeled Compounds. Kansas City, MO. June 6-11.
- Adams-Mayne, M. and D. Foster, 1982. Enzyme rate theory applied to EIA: a simplified approach to data reduction. Amer. Assoc. for Clinical Chemists, Anaheim, CA, August 8-13. *Clin. Chem.* 28:1657. Ab. No. 545.
- Foster, D. M. 1982. Water is a nutrient too! Amer. Assoc. for Clin. Chem., Texas Section, Arkadelphia, Ark., Oct. 8-10.
- Erwin, L., D.M. Foster, and G. Sehon. 1983. Development and evaluation of a rate method for inorganic phosphorus. Amer. Assoc. for Clinical Chemistry, Texas Section, San Antonio, TX, Oct. 14-15. WON STUDENT COMPETITION AWARD.
- Foster, D.M., L. Erwin, and G. Sehon. 1983. Extended applications of a commercial kit for assaying inorganic phosphorus. Amer. Chemical Soc., 39th Southwest Regional Meeting, Tulsa, OK, Dec. 7-9, p.63. Ab. No. 568.
- Klemm, W.R. and D.M. Foster. 1985. Acute alcohol reduces brain gangliosides. *Fed. Proc.* 44(4):1089. Ab. No. 3970.
- Foster, D.M. and W.R. Klemm. 1985. Ethanol at pharmacological levels may stimulate Na, K-ATPase activity associated with its intracellular side. Ninth Annual Meeting of Texas Pharmacologists, College Station, TX. May 23-24.

- Foster, D.M. and W.R. Klemm. 1985. Ethanol at Pharmacological levels differentially affects  $\text{Na}^+$ ,  $\text{K}^+$ -ATPase dependent upon  $\text{Na}^+/\text{K}^+$  concentrations. Texas Research Society on Alcoholism, Austin, TX, July 30-31. *Alcohol and Drug Research* 6:57.
- Klemm, W.R. and D.M. Foster, 1985. Membrane mechanisms of alcohol--the ganglioside connection. Texas Research Society on Alcoholism, Austin, TX, July 30-31. *Alcohol and Drug Research* 6:59.
- Huber, M.D., D.M. Foster, and W.R. Klemm. 1985. Ethanol at intoxicating levels may stimulate or inhibit the  $\text{Na}^+$ -pump dependent upon the intracellular and extracellular concentrations of  $\text{Na}^+$  and  $\text{K}^+$  and their ratios to each other. Amer. Assoc. for Clin. Chem., Texas Section, Corpus Christi, Texas, Oct. 18-20. WON STUDENT COMPETITION AWARD.
- Klemm, W.R. and D.M. Foster. 1985. Alcohol action on membrane lipids and their imbedded macromolecules. Amer. Assoc. for Clin. Chem., Texas Section, Corpus Christi, TX, Oct. 18-20.
- Klemm, W.R. and D.M. Foster. 1985. Chronic alcohol fails to alter brain gangliosides. Society for Neurosciences Annual Meeting, Dallas, TX, Oct. 20-24, p. 297. Ab. No. 11.
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- Foster, D.M. and B.R. Nechay. 1989. Maladjustment of kidneys to microgravity: Designs of measures to reduce the loss of calcium. Fourteenth Annual Meeting of the Society of Armed Forces Medical Laboratory Scientists, San Antonio, TX. March 4.
- Sorrow, S. and D.M. Foster. 1995. BIO-RAD's coated tube vs. Nichol's coated bead RIA assays for human TSH. Amer. Assoc. for Clin. Chem., Texas Section, Dallas, Texas, Oct. 20-21.
- Foster, D.M., M.D. Egle, B.M. Foster, and W.R. Klemm. 2000. What are "optimal conditions" for testing effects of drugs...?" Baylor University Spring Symposium, Waco, TX, March 24.

#### SYMPOSIA

The New York Academy of Sciences, International Conference on the Properties and Functions of Na<sup>+</sup>, K<sup>+</sup>-ATPase, New York, NY, November 26-29, 1973. (Speaker, co-authored two papers).

Technicon Symposium on Automation in the Laboratory, Data Management, and Quality Control, Houston, TX. March 29-31, 1987. Speaker.

Third International Conference on Na<sup>+</sup>, K<sup>+</sup>-ATPase, Yale University, New Haven, CN, August 17-21, 1981. Participant, co-author.

International Symposium on the Synthesis and Applications of Isotopically labeled compounds, Kansas City, MO, June 6-11, 1982. Featured speaker, author.

FASEB Summer Research Conference on Micronutrients, July 3-8, 1983, at Vermont Academy, Invited Speaker.

FASEB Summer Research Conference on Micronutrients, July 23-28, 1989, Copper Mountain, Co. Participant, presented Poster.

### **SELECTED SPEAKING ENGAGEMENTS AND SEMINARS**

Dept. of Physiology, Vanderbilt Univ., Nashville, TN, March, 1973. "An optimization study of detergents to solubilize the Na<sup>+</sup>, K<sup>+</sup>-ATPase of beef kidney."

Research Service, V.A. Hospital, Minneapolis, MN, March, 1973. "Use of a binary nonionic detergent to solubilize and purify the Na<sup>+</sup>, K<sup>+</sup>-ATPase of beef kidney."

Dept. of Biochemistry, Mississippi State Univ., Starkville, MS, January, 1975. "A new model for Na<sup>+</sup> activation of the Na<sup>+</sup>, K<sup>+</sup>-ATPase."

Urology Physician's Assistant Program V.A. Hospital, Minneapolis, MN. January. 1976. "The role of active transport of Na<sup>+</sup> and K<sup>+</sup> in the human body".

Research Seminar Series, V.A. Hospital, Minneapolis, MN, January, 1976. "Nonequivalent site models for Na<sup>+</sup> activation of the Na<sup>+</sup>, K<sup>+</sup> Dependent membrane transport ATPase."

V.A. Medical Center, Temple, TX. March, 1976. "CPK Isoenzymes."

Chemistry Dept., Univ. of Mary Hardin-Baylor, Belton, TX, November, 1977. "Chemists in the health sciences".

Heart of Texas Society of Medical Technology, Temple, TX, May, 1978. "Enzymology".

Co-host and speaker, Heart of Texas Society of Medical Technology, P.A.C.E. approved workshop on "application of the computer to the clinical lab", January 31, 1979.

Heart of Texas Society of Medical Technology, Temple TX, May, 1980. "The stability of serum chemistry during refrigerated storage."

Medical Grand Rounds, Olin E. Teague Veterans' Center, Temple, TX, October, 1980. "Laboratory aspects of thyroid testing."

Heart of Texas Society for Medical Technology, Temple, TX, January, 1981. "Update on thyroid testing."

Medical Grand Rounds, Olin E. Teague Veterans' Center, Temple, TX, July, 1981. "Gentamicin".

Heart of Texas Society of Medical Technology, Traveling Seminar Series (P.A.C.E. approved), Temple, TX, February, 1982. "Broad aspects of microcomputers in the clinical laboratory".

Delta State University, Cleveland, MS. Oct. 21, 1982. "Digitalis in health care".

Mississippi State University, Starkville, MS. May 25, 1983. "Theory and practice in enzyme immunoassays".

Medical Grand Rounds, Olin E. Teague Veterans' Center, March 20, 1984. "Laboratory aspects of iron, TIBC, and transferrin".

Texas Dietary Managers Association Fall Meeting, Temple, TX. Oct. 5, 1984. "Water is a nutrient".

Texas A&M Interdepartmental Seminar Series in Cell Biology, College Station, Texas. March 27, 1985. "Solvent-phase regulation of chemi-osmotic pumps in biological membranes".

Sul Ross State University, Alpine, TX. Sept. 18, 1986. "Pharmacology of digitalis drugs in cardiac therapy".

Department of Pharmacology, University of Texas Medical Branch, Galveston, TX. February 17, 1989. "Spirits, salts, and solvents: pieces of a pharmacological puzzle".

Society of Armed Forces Medical Laboratory Scientists, Fourteenth Annual Meeting, San Antonio, TX, March 4, 1989. "Maladjustment of kidneys to microgravity- Designs of Measures to reduce the loss of calcium."

## FUNDED RESEARCH

<u>Investigator(s)</u>	<u>Date(s)</u>	<u>Funding Source</u>	<u>Project Title</u>	<u>Amount</u>
D.M. Foster	Jan. 1973	NIH	Research Fellowship Primary Structure at the Active Site of (Na <sup>+</sup> + K <sup>+</sup> )-ATPase (awarded but declined)	\$5150 stipend
C.F. Tessmer D.M. Foster	Oct. 1978- Sept. 1979	OETVC	Gel Permeation Column Chromatography for Copper Protein Separation	\$3000
C.F. Tessmer D.M. Foster	Apr. 1978- Mar. 1980	OETVC	Serum Copper Protein in Dilantin Administration	\$3400
D.M. Foster	May-Dec. 1981	OETVC	Molecular Membrane Mechanisms of Alcoholism	\$2000
W.R. Klemm D.M. Foster	Sept. 1983 Aug. 1985	TAMU CCM	Membrane Mechanisms Effect of Alcohol and Alcoholism	\$50,000
W.H. Scouten D.M. Foster	Summer 1987	Baylor Univ.	Purification of (Na + K)- ATPase from Rat Brain	\$1200 Student Stipend
B.R. Nechay D.M. Foster	Summer 1988	NASA JSC	Summer Faculty Fellowship (Nechay)	Stipend
B.R. Nechay D.M. Foster	1988/89 School Yr.	NASA JSC	Maladjustment of Kidneys to Micro- gravity: Design of Measures to Reduce Loss of Calcium	\$15,000
D.M. Foster P.N. Brawn	1992/93	HybriTech Corp.	Prostate CA	\$2,366 Reagents

## **OTHER FACTS**

### **Undergraduate**

Received membership in Beta Beta Beta (National Biology Honor Society)

Received membership in Kappa Delta Pi (National Education Honor Society)

### **Graduate and Post-Graduate**

#### **Career**

NASA Predoctoral Traineeship NSG(T)-52 Suppl

NIH Postdoctoral Fellowship CA 06734-09, 1969-1972

NIH Special Research Postdoctoral Fellowship awarded but declined, 1974

Past member of the Automated Data Processing Users Group for the CTVHCS.

Obtained secret clearance while at NASA/JSC, 1988-1989.

Present and past member of the Radiation Safety Committee, CTVHCS, Temple, TX.  
Member, R&D Committee, CTVHCS, Temple, TX, 1992 - 2003 (circa 15 years total).

Chairman, CTVHCS Research Bio-safety Subcommittee of the R&D Committee, 1994 – 2003.

Member, CTVHCS EOC Committee, 1996 - present.

Appointed to Safety Task Force for TAMU Research Facility, Temple Campus, 1994 - 1995.

Member, CTVHCS–TAMU–Scott & White, Combined Safety Oversight Committee for Temple Campus Research facilities, 1995 - present.

Appointed as Radiation Safety Officer for the CTVHCS, effective May 17, 1996.

Received Outstanding Performance Ratings with Special Achievement Awards 1983, 1984.

Received Outstanding Performance Rating for 1985.

Received Superior Performance Awards for 1993, 1996.

Received Outstanding Performance Awards for 1994, 1995.



Received Special Achievement Award for 2003.

### **Professional**

Member, American Chemical Society since 1969

Chairman, Heart O' Texas Section, American Chemical Society, 1980

Delegate to the Southwest Conference on Local Section Activities hosted by the American Chemical Society in San Antonio, TX, March 11-13, 1979

Responsible for organizing a special symposium on Trace Elements sponsored by the Analytical Chemistry Division of the American Chemical Society for the 35th Southwest Regional Meeting of the ACS held in Austin, TX, December 5-6, 1979. Co-Chairman of the session.

Co-organizer and co-chairman of a biannual regional meeting of the Texas section (covers Texas, Oklahoma, Arkansas, Louisiana) of the American Association for Clinical Chemistry, held in Temple, TX, March 23-24, 1984.

Sec.-Treasurer, Heart O'Texas Section, American Chemical Society, 1990-91.

Special Judge for the North Texas Council of the American Statistical Association, Dallas Regional Science Fair, April 6, 2002, and April 10, 2004.

Member, New York Academy of Sciences

Member, Health Physics Society

Member, Conference of Radiation Control Program Directors

Member, Chihuahuan Desert Research Institute

## REFERENCES

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