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Current Work Address:

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EDUCATION:

California Institute of Technology (1999)
Intracytoplasmic Sperm Injection Workshop
Hosted by Eppendorf, Inc.

Becton Dickinson (1989)
FACscan Flow Cytometer
San Jose, CA.

Master of Science
Department of Microbiology
University of Tennessee, Knoxville,TN.

Bachelor of Science
College of Charleston, Charleston, SC.
Major: Biology

WORK EXPERIENCE:

July 2011-present

Dr. Mitchel J. Doktycz, Biological and Nanoscale Systems, Biosciences Division, Oak Ridge National Labs.

- Project Manager for the Genomic Foundational Science Focus Area "Plant-Microbe Interfaces."
- Technical help to funded Seed, LDRD and NIH projects

October 2009-July 2011

Dr. Mircea Podar, Systems Genetics, BioSciences Division, Oak Ridge National Labs

- Completed work on the LDRD "Host Diversity as a Variable Selection Environment for the Gut Microbiome," under Dr. Mircea Podar.
- Project Manager for the Genomic Foundational Science Focus Area "Plant-Microbe Interfaces," under Dr. Mitch Doktycz, Group Leader of the Biological and Nanoscale Systems, Biosciences Division, Oak Ridge National Labs

October 2007- September 2009: Technical Associate/Associate Staff Member

Dr. Elissa J. Chesler, Biosciences Division, Oak Ridge National Labs.

- Wrote Seed Money Proposal, which was funded in 2008: Systems Neurogenetics of Methylmercury Exposure. Managed project and prepared manuscript.
- Assisted in the writing and preparation of Research Project 7 of the Super Fund Basic Research Proposal (A total of 7 individual research projects) with collaborators from ORNL and Vanderbilt University in Nashville, TN: Mechanisms of Mercury Toxicity.
- Managed experimental design, preparation and execution of funded projects, in particular the Neurogenetics of Methylmercury exposure and the LDRD "Host Genetic diversity as a Variable Selection Environment for the Gut Microbiome", in collaboration with Dr. Mircea Podar.

March 1995-October 2007: Research Assistant

Dr. Edward J. Michaud, Life Sciences Division, Systems Genetics Group, Oak Ridge National Labs.

- Maintained and established murine embryonic stem cells.
- Generated transgenic and knock-out mice via pronuclear microinjections of fertilized murine ova and murine embryonic stem cell injections respectively for funded projects.
- Re-derived mutant mouse strains using intracytoplasmic sperm injections (ICSI), and *in vitro* fertilization (IVF) for the Cryo-Preserved Mutant Mouse Bank.

October 1993- March 1995: Research Associate

- Dr. J. Erby Wilkinson, College of Veterinary Medicine, University of Tennessee, Knoxville, TN and Dr. Rick Woychik, Oak Ridge National Labs, Oak Ridge, TN.
- Generated transgenic and knock-out mice.

July 1989 - September 1992: **Research Assistant**

Dr. Barry T. Rouse, Department of Microbiology, University of Tennessee, Knoxville, TN.

- Original research involving the cellular and humoral immune response to Herpes Simplex Virus with emphasis on helper and cytotoxic lymphocyte function, antigen presentation, herpetic stromal keratitis and necrotizing retinitis, both *in vitro* and in animal models of disease and immune responsiveness.

PUBLICATIONS:

1. A.C. Timm, P. Shankles, C.M. Foster, M.J. Doktycz, and S.T. Retterer. 2015. Toward Microfluidic reactors for cell-free protein synthesis at the point-of-care. Small 12(6): 810-817 doi: 10.1002/smll.201502764.
2. A. C. Timm, P. Shankles, C.M. Foster, M.J. Doktycz and S.T. Retterer. 2015. Characterization of extended channel bioreactors for continuous-flow protein production. Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics 33(6): 06FM02. http://dx.doi.org/10.1116/1.4932155
3. P. McWilliams-Keoppen, J.S. Foster, N. Hackenbrack, M. Ramirez-Alvarado, D. Donohoe, A.D. Williams, S.D Macy, C. Wooliver, D. Wortham, J.L. Morrell-Falvey, C.M. Foster, S.J. Kennel, and J.S. Wall. 2015. Light chain amyloid fibrils cause metabolic dysfunction in human cardiomyocytes. PLoS ONE 10(9): e0137716.
4. Wang W, Nallathamby PD, **Foster CM**, Morrell-Falvey JL, Mortensen NP, Doktycz MJ Gu B, and Retterer ST. Volume labeling with Alexa Fluor dyes and surface functionalization of highly sensitive fluorescent silica (SiO2) nanoparticles. 2013. Nanoscale 5(21): 10369-75
5. Mortensen NP, Hurst GB, Wang W, **Foster CM**, Nallathamby PD, and Retterer ST. 2012. Dynamic Development of the Protein Corona on Silica Nanoparticles: Composition and Role in Toxicity. 2013. Nanoscale 5(14): 6372-80.
6. M. Karakaya, R.A. Kerekes, J.L. Morrell-Falvey, C.M. Foster and S.T. Retterer. 2012. Analysis of tight junction formation and integrity. Conference proceedings of the Annual International conference of the IEEEE Engineering in Medicine and Biology Society. Conference 2012:3724-7.
7. Cambell JH, **Foster CM**, Vishnivetskaya TA, Campbell AG, Yang ZK, Wymore A, Palumbo AV, and Podar M. 2012. Host Genetic and Environmental Effects on Mouse Cecum Microbiota. ISME Journal 6(11): 2033-44.
8. Michaud EJ, Culiat CT, Klebig, ML, Barker PE, Cain KT, Carpenter DJ, Easter LL, **Foster, CM**, Gardner AW, Guo ZY Houser KJ, Hughes LA, Kerley MK, Liu Z, Olszewski RE, Pinn I, Shaw GD, Shinpock SG, Wymore AM, Rinchik EM, Johnson DK. 2005. Efficient gene-driven germ-line point mutagenesis of C57Bl/6 mice. BMC Genomics 21; 6:164.
9. Irina Khrebtudova, Edward J. Michaud, **Carmen M. Foster**, Kevin L. Stark, David J. Garfinkel, and Richard P. Woychik. 1998. Utilization of microhomologous

recombination in yeast to generate targeting constructs for mammalian genes. Mutation Research 401: 11-25.
10. W.G. Richards, B.K. Yoder, R.J. Isfort, P.G. Detilleux, C.M. Foster, N. Neilsen, R.P Woychik and J.E. Wilkinson. Isolation and characterization of liver epithelial cell lines form wild-type and mutant TgN737Rpw mice. American Journal of Pathology 150(4): 1189-97.
11. William G. Richards, Bradley K. Yoder, Robert J. Isfort, Philippe G. Detilleux, **Carmen Foster**, Nancy Neilsen, Richard P. Woychik, and J. Erby Wilkinson. 1996. Oval cell proliferation associated with the murine insertional mutation TgN737Rpw. American Journal of Pathology 149 **6**: 1919-30.
12. S. Witonsky, C.M. Foster, J. Bowen, N. Neilsen, U. Siebenlist, R.P. Woychik, and J.E. Wilkinson. 1996. Pathobiology of nf-kb transgenic mice.
13. W.G. Richards, B.K. Yoder, P.G. Detilleux, R.J. Isfort, J.H. Moyer, J.J. Shrick, C. Foster, N. Neilsen, J.E. Wilkinson and R.P. Woychik. 1995. Biliary hyperplasia associated with the murine insertional mutation TgN737Rpw. The FASEB Journal 9(3): 1.
14. T.A. Banks, F.J. Jenkins, S. Kanangat, S. Nair, S. DasGupta, **C. M. Foster**, and B. T. Rouse. 1994. Vaccination with the immediate-early protein ICP47 of herpes simplex virus-type 1 (HSV1) induces virus- specific lymphoprolifeation, buts fails to protect against lethal challenge. Virology **200**(1): 236-45.
15. **C.M. Mercadal**, D. Bouley, D. DeStephano, and B.T. Rouse. 1993. Herpetic Stromal Keratitis in the Reconstituted *scid* Mouse Model. Journal of Virology **67**: 3404-3408.
16. S. Martin, **C.M. Mercadal**, J.P. Weir, and B.T. Rouse. 1992. The Proportion of Herpes Simplex Virus Specific Cytotoxic T Lymphocytes (Tc) That Recognize Glycoprotein C Varies Between Individual Mice and is Dependent Upon the Form of Immunization. Viral Immunology **6**: 21-33.
17. **C.M. Mercadal**, M. Slaoui, S.M. Brown, and B.T. Rouse. 1992. Efficacy of Herpes Simplex Virus Type 1 and 2 Mutants to Confer Protection Against Zosteriform Spread in Mice. Viral Immunology **6**: 35-42.
18. L.A. Coker**, C.M. Mercadal**, B.T. Rouse, and R.N. Moore. 1992. Differential Effects of CD4+ and CD8+ Cells in Acute, Systemic Murine Candidosis. Journal of Leukocyte Biology **51**: 305-306.
19. M.Z. Doymaz**, C.M. Mercadal**, D. DeStephano, and B.T. Rouse. 1991. MHC-II Restricted, CD4+ Cytotoxic T Lymphocytes (CTL) Specific for Herpes Simplex Virus-1: Implications for the Development of Herpetic Stromal Keratitis (HSK) in Mice. Clinical Immunology and Immunopathology 6: 398- 409.
20. **C.M. Mercadal**, S. Martin, and B.T. Rouse. 1991. The Apparent Requirement for CD4+ T Cells in Primary Anti-Herpes Simplex Virus Cytotoxic T Lymphocyte Induction Can Be Overcome by Optimal Antigen Presentation. Viral Immunology **4**: 177-186.
21. E.A. Allen, J.P. Weir, S. Martin, **C.M. Mercadal**, and B.T. Rouse. 1990. Role of Coexpression of IL-2 and Herpes Simplex Virus Proteins in Recombinant Vaccinia Virus Vectors on Levels of Induced Immunity. Viral Immunology **3**: 207-215.
22. C.K. Newell, S. Martin, D. Sendele**, C.M. Mercadal**, and B.T. Rouse. 1989. Herpes Simplex Virus-Induced Stromal Keratitis: Role of T-Lymphocyte Subsets in Immunopathology. Journal of Virology **63**: 769-775.