

**BIOGRAPHICAL SKETCH**

NAME	POSITION TITLE
Norman L. Foster	
eRA COMMONS USER NAME	
nlfooster	Professor of Neurology, University of Utah School of Medicine Director, University of Utah Center for Alzheimer's Care, Imaging & Research Senior Investigator, The Brain Institute at the University of Utah

**EDUCATION/TRAINING**

INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
MacMurray College, Jacksonville, IL	B.A.	1969-73	Biology / Chemistry (summa cum laude)
Washington University, St. Louis, MO	M.D.	1973-77	Medicine
Jewish Hospital of St. Louis, MO	INTERN	1977-78	Straight Medicine
University of Utah, Salt Lake City, UT	RESIDENT	1978-81	Neurology
NIH, Bethesda, MD	FELLOW	1981-84	Experimental Therapeutics

**A. POSITIONS AND HONORS:**Academic Positions

1981-84 Medical Staff Fellow, National Institutes of Health, Bethesda MD  
1983-84 Attending Physician, National Institutes of Health, Bethesda MD  
1984-91 Assistant Professor, Department of Neurology, University of Michigan, Ann Arbor MI  
1991-98 Associate Professor, Department of Neurology, University of Michigan, Ann Arbor MI  
1995-97 Associate Research Scientist, Inst. of Gerontology, University of Michigan, Ann Arbor MI  
1997-98 Senior Associate Research Scientist, Inst. of Gerontology, Univ of Michigan, Ann Arbor MI  
1998-05 Professor, Department of Neurology, University of Michigan, Ann Arbor MI  
1998-03 Senior Research Scientist, Institute of Gerontology, University of Michigan, Ann Arbor MI  
2003-05 Research Professor, Institute of Gerontology, University of Michigan, Ann Arbor MI  
2005- Adjunct Professor, Department of Neurology, University of Michigan, Ann Arbor  
2005- Professor, Department of Neurology, University of Utah, Salt Lake City UT  
2005- Senior Investigator, The Brain Institute, University of Utah, Salt Lake City UT

Administrative Positions

1994-04 Associate Director, Michigan Alzheimer's Disease Research Center, Ann Arbor MI  
1984-05 Director, Cognitive Disorders Clinic, University of Michigan, Ann Arbor MI  
1989-05 Director, Clinical Core, Michigan Alzheimer's Disease Research Center, Ann Arbor MI  
2005- Director, Center for Alzheimer's Care, Imaging and Research, University of Utah, SLC UT

Selected Honors and Awards

1977 Alpha Omega Alpha, Upjohn Achievement Award  
1985-90 Clinical Investigator Development Award, NIH  
1986-87 President, American Society for Neurological Investigation  
1995 Doctor of Science (Honorary), MacMurray College, Jacksonville, Illinois

**B. SELECTED PEER-REVIEWED PUBLICATIONS (selected from 111 peer-reviewed papers):**

1. Bozoki A, Giordani B, Heidebrink JL, Berent S, Foster NL. Mild cognitive impairments predict dementia in non-demented elderly with memory loss. Arch Neurol 2001;58:411-416. PMID11255444
2. Connell CM, Shaw BA, Holmes SB, Foster NL. Caregiver's attitudes toward participation in Alzheimer's disease research: implications for recruitment and retention. Alzheimer Dis Assoc Disord 2001;15:137-145. PMID11522931
3. Doody RS, Dunn JK, Clark CM, Farlow M, Foster NL, Liao T, Gonzales N, Lai E, Massman P. Chronic donepezil treatment is associated with slowed cognitive decline in Alzheimer's disease. Dement Geriatr Cogn Disord 2001;12:295-300. PMID11351141
4. Minoshima S, Foster NL, Sima AAF, Frey KA, Albin RL, Kuhl DE. Alzheimer's disease versus dementia with Lewy bodies: cerebral metabolic distinction with autopsy confirmation. Ann Neurol 2001;50:358-365. PMID11558792

**SELECTED PEER-REVIEWED PUBLICATIONS (CONTINUED)**

5. Foster NL. Barriers to treatment: the unique challenges for physicians providing dementia care. *J Geriatr Psychiatry Neurol* 2001;14:188-198. PMID11794447
6. Hong M, Shah GV, Adams KM, Turner RS, Foster NL. Spontaneous intracranial hypotension causing reversible frontotemporal dementia. *Neurology* 2002;58:1285-1287. PMID11971102
7. Minoshima S, Foster NL, Petrie EC, Albin RL, Frey KA, Kuhl DE. Neuroimaging in dementia with Lewy bodies: metabolism, neurochemistry, and morphology. *J Geriatr Psychiatry Neurol* 2002; 15:200-209. PMID12489916
8. Foster NL. Validating FDG-PET as a biomarker for frontotemporal dementia. *Exp Neurol* 2003;184 (Supplement 1):S2-S8. PMID14597319
9. Higdon R, Foster NL, Koeppe RA, DeCarli CS, Jagust WJ, Clark CM, Barbas NR, Arnold SE, Turner RS, Heidebrink JL, Minoshima S. A comparison of classification methods for differentiating fronto-temporal dementia from Alzheimer's disease using FDG-PET imaging. *Stat Med* 2004;23:315-326. PMID14716732
10. Grundman M, Petersen RC, Ferris SH, Thomas RG, Aisen P, Bennett DA, Foster NL, Jack C, Galasko D, Doody R, Kaye J, Sano M, Mohs R, Gauthier S, Kim HT, Jin S, Schultz AN, Schafer K, Mulnard R, van Dyck C, Mintzer J, Zamrini EY, Cahn-Weiner D, Thal LJ, and the Alzheimer's Disease Cooperative Study. Mild cognitive impairment can be distinguished from Alzheimer's disease and normal aging for clinical trials. *Arch Neurol*, 2004;61:59-66. PMID14732621
11. Banaszak-Holl J, Fendrick AM, Foster NL, Herzog AR, Kabeto MU, Kent DM, Straus WL, Langa KM. Predicting nursing home admission: estimates from a seven year follow-up of a nationally representative sample of older Americans. *Alzheimer Dis Assoc Disord*, 2004;18:83-89. PMID15249852
12. Langa KM, Larson EB, Wallace RB, Fendrick AM, Foster NL, Kabeto MU, Weir DR, Willis RJ, Herzog AR. Out-of-pocket health care expenditures among older Americans with dementia. *Alzheimer Dis Assoc Disord*, 2004;18:90-98. PMID15249853
13. Moretti PM, Lieberman AP, Wilde E, Giordani B, Kluin KJ, Koeppe RS, Minoshima S, Kuhl DE, Seltzer WK, Foster NL. Novel insertional presenilin 1 mutation causing AD with spastic paraparesis. *Neurology*, 2004;62:1865-1868. PMID15159497
14. Langa KM, Foster NL, Larson EB. Mixed Dementia: Emerging Concepts and Therapeutic Implications. *JAMA* 2004;292:2901-2908. PMID15598922
15. Tasdizen T, Awate S, Whitaker R, Foster NL. MRI Tissue Classification with Neighborhood Statistics: A Nonparametric, Entropy-Minimizing Approach. *Proceedings of the 8th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI)*. 2005;8(Pt 2):517-525. PMID16685999
16. Morris JC, Weintraub S, Chui HC, Cummings J, Decarli C, Ferris S, Foster NL, Galasko D, Graff-Radford N, Peskind ER, Beekly D, Ramos EM, Kukull WA. The Uniform Data Set (UDS): Clinical and Cognitive Variables and Descriptive Data From Alzheimer Disease Centers. *Alzheimer Dis Assoc Disord*. 2006 October/December;20(4):210-216. PMID17132964
17. Foster NL. A new framework for the diagnosis of Alzheimer's disease [Invited Editorial]. *Lancet Neurol*. 2007 Aug;6(8):667-669.
18. Fletcher PT, Powell S, Foster NL, Joshi SC. Quantifying metabolic asymmetry modulo structure in Alzheimer's disease. *Inf Process Med Imaging*. 2007;20:446-457. PMID17633720
19. Porter AB, Healy L, Foster NL, Josephs KA. Compulsive urination as a presenting symptom of frontotemporal dementia. *Eur J Neurol*. 2007 Aug;14(8):e16-17. PMID17661991
20. Foster NL, Heidebrink JL, Clark CM, Jagust WJ, Arnold SE, Barbas NR, Decarli CS, Turner RS, Koeppe RA, Higdon R, Minoshima S. FDG-PET improves accuracy in distinguishing frontotemporal dementia and Alzheimer's disease. *Brain*. 2007;130:2616-2635. PMID17704526
21. Foster NL, Wang AY, Tasdizen T, Fletcher PT, Hoffman JM, Koeppe RA. Realizing the potential of positron emission tomography with 18F-fluorodeoxyglucose to improve the treatment of Alzheimer's disease. *Alzheimer's Dement*. 2008;4(S1):S29-36. PMID18631997
22. Habeck C, Foster NL, Perneczky R, Kurz A, Alexopoulos P, Koeppe RA, Drzezga A, Stern Y. Multivariate and univariate neuroimaging biomarkers of Alzheimer's disease. *Neuroimage*. 2008;40(4):1503-1515. PMID18343688

Principal Investigator/Program Director (Last, First, Middle): Foster, Norman L.

**C. RESEARCH SUPPORT:**

ONGOING RESEARCH SUPPORT:

51001866 Foster (PI) 11/01/06 - 10/31/09

Anonymous Foundation

Early Detection of Alzheimer's Disease in a Community Population Using Longitudinal Cognitive Assessment (Early AD Detection)

*Major goal(s):* Validate with neuroimaging a new approach of using repeated neuropsychological measures to identify Alzheimer's disease (AD) while cognition is still nominally within normal limits. This is a collaborative, feasibility pilot study between investigators at the University of Utah and faculty at Utah State University involved in the Cache County Memory and Aging Study (CCMS).

Role: Principal Investigator

10001600 Supiano (PI) 7/1/06 - 6/30/10

Donald W. Reynolds Foundation

Comprehensive Program to Strengthen Physicians' Training in Geriatrics

*Major goal(s):* Provide training in geriatrics to medical faculty who train medical students and residents in primary care. It will provide opportunities for lectures, telemedicine and new curriculum development, thereby improving the knowledge and practical experience of medical students and residents in caring for the growing number of older patients.

Role: Co-Investigator

U01 AG024904 Weiner (PI) 10/01/04 – 08/31/10

NIH/NIA

Alzheimer's Disease Neuroimaging Initiative

*Major goal(s):* Collect longitudinal biomarker data on normal elderly subjects and patients with MCI and AD. Our center is responsible for quality control and analysis of PET data.

Role: Site Principal Investigator (University of Utah)

ADC030 Zamrini (PI) 9/1/07 - 12/31/12

Alzheimer's Disease Cooperative Study (ADCS)

Home-Based Assessment of Elderly at Risk for Cognitive Decline, Mild Cognitive Impairment and Alzheimer's Disease

*Major goal(s):* Evaluate three methods of performing home-based assessments in AD prevention trials.

Role: Co-Investigator

AAB-001-AD301 Zamrini (PI) 4/1/08 - 4/10/10

Elan Pharmaceuticals, Inc.

A phase III, multicenter, randomized, double-blind, placebo-controlled, parallel-group, efficacy and safety trial of Bapineuzumab in patients with mild to moderate Alzheimer's disease who are apolipoprotein E4 non-carriers

*Major goal(s):* Evaluate efficacy and safety of bapineuzumab in male and female patients aged 50 to 89 years with mild to moderate AD.

Role: Co-Investigator

AAB-001-AD302 Zamrini (PI) 4/1/08 - 4/10/10

Elan Pharmaceuticals, Inc.

A phase III, multicenter, randomized, double-blind, placebo-controlled, parallel-group, efficacy and safety trial of Bapineuzumab in patients with mild to moderate Alzheimer's disease who are apolipoprotein E4 non-carriers

*Major goal(s):* Evaluate efficacy and safety of bapineuzumab in male and female patients aged 50 to 89 years with mild to moderate AD.

Role: Co-Investigator

Principal Investigator/Program Director (Last, First, Middle): Foster, Norman L.

**ONGOING RESEARCH SUPPORT (CONTINUED)**

Foster (PI)

9/1/07 - 10/31/09

University of Pennsylvania

PET Image Analysis for the University of Pennsylvania Commonwealth of PA Tobacco Settlement Grant

*Major goal(s):* Collect longitudinal biomarker data on subjects with multiple types of dementing illnesses. Our center is responsible for analysis of PET data.

Role: Principal Investigator

R01 EB00768

Joshi (PI)

7/1/07 - 6/30/12

NIH

Online tools for customizable ADNI atlases: technology and application

*Major goal(s):* Create software tools capable of generating high-resolution, customizable, study-specific brain atlases from the Alzheimer's Disease Neuroimaging Initiative (ADNI) database. These tools will be made available to all qualified investigators through an online portal.

Role: Co-Investigator

**COMPLETED RESEARCH SUPPORT:**

MK0249011

Zamrini (PI)

10/27/06 - 11/30/08

Merck & Co., Inc.

A Randomized, Double Blind, Placebo Controlled, Parallel Group Trial to Evaluate the Safety and Efficacy of MK-0249 for the Symptomatic Treatment of Alzheimer's Disease

*Major goal(s):* Test efficacy and safety of an investigational medication for improving symptoms of AD. Subjects receive active medication or placebo for 28 days, and undergo memory and concentration tests.

Role: Co-Investigator

51002062

Foster (PI)

12/01/07 - 11/30/08

Ben B. and Iris M. Margolis Foundation

Programmatic Support for Initial Studies to Validate a New Radiotracer to Image Amyloid Plaques In Vivo Synthesized at the Cyclotron Facility at the University of Utah

*Major goal(s):* Validate a new radiotracer to image amyloid plaques in vivo synthesized at the Cyclotron Facility at the University of Utah.

Role: Principal Investigator

MPC-7869-05-010.01

Zamrini (PI)

10/1/06 - 10/1/08

Myriad Genetics

Phase 3 Multinational, Randomized, Double Blind, Placebo Controlled Study of the Effect of Daily Treatment with MPC-7869 on Measures of Cognition, Activities of Daily Living and Global Function in Subjects with Mild Dementia of the Alzheimer's Type

*Major goal(s):* Evaluate change in cognitive ability and activities of daily living in patients with AD, as measured by specific evaluations during 18 months of dosing.

Role: Co-Investigator

1 R01 AG22394

Foster (PI)

09/30/03 - 07/31/08

NIH/NIA

Pilot Collaborative PET Imaging Trial

*Major goal(s):* Perform a pilot multi-center clinical trial to validate FDG-PET as a diagnostic biomarker in frontotemporal dementia.

Role: Principal Investigator