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## BIOGRAPHICAL SKETCH

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NAME Shill, Holly A.	POSITION TITLE Director, Thomas H. Christopher Center for Parkinson's Research, Sun Health Research Institute
eRA COMMONS USER NAME HShill	

EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Arizona, Tucson, AZ	BS	1991	Electrical Engineering
University of Arizona, Tucson, AZ	MD	1995	Medicine

### A. Positions and Honors.

#### Positions and Employment

1995 -1996	Residency, Internal Medicine. St. Joseph's Hospital and Medical Center, Phoenix, AZ
1996 -1999	Residency, Neurology. Barrow Neurological Institute at SJHMC, Phoenix, AZ
1999 -1999	Fellowship, Movement Disorders. Barrow Neurological Institute at SJHMC, Phoenix, AZ
2000 - 2002	Clinical Fellow, Human Motor Control Section. National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD
2002 -2006	Neurology faculty attending, Barrow Neurological Institute, Neurology residency program.
2002 -2003	Clinical Research Associate, Barrow Neurological Institute, July 2002-July 2003.
2002 -2003	Neurologist, private practice, affiliated with Barrow Neurological Institute and Muhammad Ali Parkinson Research Center, July 2002-July 2003.
2003-2004	Acting director, Muhammad Ali Parkinson Research Center, June 2003-March 2004.
2003-2006	Movement disorder faculty neurologist, Barrow Neurology Clinics, Barrow Neurological Institute,
2005-2006	Director, Muhammad Ali Parkinson Center, Barrow Neurological Institute
2006-present	Staff physician, Sun Health Neuroscience Associates, Sun City, AZ
2006-present	Director, Thomas H, Christopher Center for Parkinson's Research, Sun City, AZ

#### Other Experience and Professional Memberships

1990	Undergraduate Biology Research Program, University of Arizona
1991	Honors Thesis, EEG patterns during anesthesia, University of Arizona
1995 – Present	State of Arizona Medical License
1996 – Present	Member, American Academy of Neurology
2000-2001	Mentor, Summer Student Program, NINDS, NIH
	Mentor, Howard Hughes Medical Institute, Pre-college Science Education Program
2000 – Present	Ad hoc reviewer, Journal of Clinical Neurophysiology
2001	Certification, American Board of Psychiatry and Neurology
2002-present	Movement Disorder Society
2002-2006	Mentor, Fellowship program, Movement Disorders, Barrow Neurological Institute
2002-present	Community Interviewer, University of Arizona College of Medicine
2003, 2004	Mentor, summer student research program, Barrow Neurological Institute
2003-present	Member, Parkinson Study Group

#### Honors

1987	National Merit Scholarship
1987-1989	Baird Scholarship, University of Arizona
1987-1991	Honors Academic Scholarship, University of Arizona
1989-1991	Eta Kappa Nu, National Electrical and Computer Engineering Honor Society
1991	Magna Cum Laude, with Honors, University of Arizona

1991-1995	Dean's Scholarship, University of Arizona College of Medicine
1994	Alpha Omega Alpha, Honor Medical Society, University of Arizona
1999	American Academy of Neurology Resident Scholarship
2002	Fellows Award for Research Excellence (FARE), NIH

## B. Peer-Reviewed Publications

1. Verhagen-Metman L, Gillespie M, Farmer C, Bibbiani F, Spiridon K, Morris M, **Shill H**, Bara-Jimenez W, Mouradian M, Chase T. Levodopa sparing effect of a transdermal D2-dopamine agonist. *Clin Neuropharmacol* 2001;24:163-9.
2. Bushara KO, Goebel SU, **Shill H**, Goldfarb LG, Hallett M. Gluten sensitivity in sporadic and hereditary cerebellar ataxia. *Ann Neurol* 2001;49:540-3.
3. Molloy FM, **Shill HA**, Kaelin-Lang A, Karp BI. Accuracy of muscle localization without EMG: Implications for treatment of limb dystonia. *Neurology* 2002; 58: 805-7.
4. Toma K, Matsuoka T, Immisch I, Mima T, Waldvogel D, Koshy B, Hanakawa T, **Shill H**, Hallett M. Generators of movement-related cortical potentials: fMRI-constrained EEG dipole analysis. *NeuroImage* 2002; 17:161-173.
5. **Shill HA**, Reich M, Bushara KO, Grimes G, Hallett M. Dose- escalation study of oral 1-octanol in patients with essential tremor. *Mov Disord* 2002;17 (Suppl 5):S346.
6. Bushara KO, **Shill HA**, Hallett M. Octanol for essential tremor. A double-blind, placebo-controlled trial. *Mov Disord* 2002;17(Suppl 5):S350.
7. Bushara KO, **Shill HS**, Hallett M. Open-label trial of gluten-free diet in sporadic and hereditary cerebellar ataxia. *Mov Disord* 2002;17 (Suppl 5):S314.
8. **Shill HA**, Alaedini A, Latov N, Hallett M. Anti-ganglioside antibodies in sporadic and hereditary cerebellar degeneration. *Neurology* 2003;60:1672-3.
9. Lerner A, **Shill H**, Hanakawa T, Bushara K, Goldfine A, Hallett M. Regional cerebral blood flow correlates of the severity of writer's cramp symptoms. *NeuroImage*, 2004;21:904-13.
10. Ladha SS, Walker R, **Shill HA**. A case of neuroleptic malignant-like syndrome precipitated by abrupt fava bean discontinuance. *Mov Disord*, 2005; 20:630-1.
11. Zeuner KE, **Shill HA**, Sohn YH, Molloy FM, Thornton BC, Dambrosia JM, Hallett M. Motor training as treatment in focal hand dystonia. *Mov Disord* 2005; 20:334-341.
12. Ringenbach S, Van Gemmert A, **Shill H**, Stelmach G. Cue benefits on drawing task in parkinsonian patients depend on task requirements. Presented at the Society for Neuroscience Annual Meeting, November 15, 2005.
13. Caviness JN, **Shill, HA**, Sabbagh MN, Evidente VGH, Hernandez JL Adler CH. Cortico-muscular coherence is increased in the small postural tremor of Parkinson's disease 2006;21:492-9.
14. Karamohamed S, Latourelle JC, Racette BA, Perlmutter JS, Wooten GF, Lew M, Klein C, **Shill H**, Golbe LI, et al. BDNF genetic variants are associated with onset-age of familial Parkinson's disease. *Neurology* 2005; 65:1823-5.
15. Sun M, Latourelle JC, Wooten GF, Lew MF, Klein C, **Shill HA**, et al. Influence of heterozygosity for parkin mutation on onset age in familial Parkinson disease: the GenePD Study. *Arch Neurol*. 2006;63:826-32.
16. **Shill HA**, Shetter AG. Reliability in deep brain stimulation. *IEEE Trans Device Mater Rel* 2005;5:445-8.
17. **Shill HA** & Gerber P. Evaluation of clinical diagnostic criteria for psychogenic movement disorders. *Mov Disord* 2006;21:1163-8.
18. **NINDS Net-PD Investigators**. A randomized, double blinded, futility clinical trial of creatine and minocycline in early Parkinson's disease. *Neurology*;2006,66:664-71.
19. Elble, R for the Tremor Research Group and **conference attendees**. Report from a US conference on essential tremor. *Mov Disord* 2006;21:2052-61.
20. Pankratz N, Pauciulo MW, Elsaesser VE, Marek DK, Halter CA, Rudolph A, Shults CW, Foroud T, Nichols WC and the Parkinson Study Group – **PROGENI Investigators**. Mutations in LRRK2 other than G2019S are rare in a North American-based sample of familial Parkinson disease. *Mov Disord* 2006;21:2257-60.

21. Wilk JB, Tobin JE, Suchowersky O, **Shill H**, et al. Herbicide exposure modifies GSP1 haplotype association to Parkinson onset age: The GenePD Study. *Neurology* 2006;67:2206-10.
22. Coles MA, O'Donnell DA, **Shill HA**. The influence of the "art of moving" exercise program on quality of life for people with PD. Presented at the World Parkinson Congress, Washington, DC, USA. February 22-26, 2006.
23. Caviness JN, Hentz JG, Evidente VGH, Driver-Dunckley ED, Samanta J, Mahant P, Connor DJ, Sabbagh MN, **Shill HA**, Adler CH. Both early and late cognitive dysfunction affects the electroencephalogram in Parkinson's disease. *Parkinsonism and Related Disorders* 2007;13:348-54.
24. Caviness JN, Driver-Dunckley ED, Connor DJ, Sabbagh MN, Noble B, Hentz JG, Evidente VGH, **Shill HA**, Adler CH. Defining mild cognitive impairment in Parkinson's disease. *Movement Disorders, Mov Disord*;2007;22:1272-7.
25. Alaedini A, Okamoto H, Briani C, Wollenberg K, **Shill HA**, Bushara KO, Sander HW, Green PH, Hallett M, Latov N. Immune cross-reactivity in celiac disease: anti-gliadin antibodies bind to neuronal synapsin I. *J Immunol.* 2007; 178:6590-5.
26. **Parkinson Study Group PRECEPT Investigators** Mixed lineage kinase inhibitor CEP-1347 fails to delay disability in early Parkinson disease. *Neurology* 2007;69:1480-90.
27. Schwarzschild MA, Schwid SR, Marek K, Watts A, Lang AE, Oakes D, Shoulson I, Ascherio A. and the **Parkinson Study Group PRECEPT Investigators**. Serum urate as a predictor of clinical and radiographic progression in Parkinson's disease, *Arch Neurol*, in press.
28. **Shill HA**, Adler CH, Sabbagh MN, Connor DJ, Caviness JN, Beach TG. Pathological findings in prospectively ascertained essential tremor subjects. *Neurology*, in press.

### C. Research Support

#### Ongoing Research Support

Sun Health Research Institute. (Shen)  
present.

9/2007-

The peripheral circulation system marker for AD/PD study. Role: Co-investigator.

Department of Defense.

8/07- present.

Blood Alpha-Synuclein, Gene Expression, and Smell testing as diagnostic and Prognostic Biomarkers in Parkinson's Disease (PROBE). Role: Local Principal Investigator.

Boehringer-Ingelheim. (Poewe)

7/07-present.

A double-blind, double dummy, placebo-controlled randomized, three parallel groups study comparing the efficacy, safety and tolerability of Pramipexole ER versus placebo versus Pramipexole IR administered orally over a 26-week maintenance phase in patients with early Parkinson's disease (PD). Phase 3. Role: Local Principal Investigator

Arizona Biomedical Research Commission (Adler)

10/31/05-10/30/08

Arizona Parkinson Disease Center Prevention of Progression to Parkinson's Disease and Parkinson's Disease with Dementia: Development of Biomarkers and Novel Treatment Strategies: Clinical Core. Role: Co-Investigator

Parkinson's Study Group and NIH: RO1NS050324-01A1 (Beal)

7/07- present.

Effects of Coenzyme Q10 in Parkinson Disease-Phase 3. this is a multi-institutional project studying putative neuroprotective effects of conenzyme Q10. Role: Local Principal Investigator.

RO1-NS36711 (Myers)

9/30/97 – 7/31/07

NIH

Genetic Linkage Study in Parkinson's Disease (Gene PD). This is a multi-institutional project that studies affected sibling pairs from a clinical and genetic standpoint.

Role: Local Principal Investigator

Boehringer-Ingelheim. (Lang/Weintraub) 10/06-present.  
A cross-sectional, retrospective screening and case-control study examining the frequency of, and risk factors associated with, impulse control disorders in Parkinson's disease treated with Mirapex and other anti-parkinson agents (DOMINION study). Role: Local Principal Investigator.

### **Completed Research Support**

Merck KgaA. 7/05-7/06  
An open-label, multicenter, multinational Phase III follow-up study to investigate the long-term safety of Sarizotan HCl 1 mg BID in patients with Parkinson's disease suffering from treatment-associated dyskinesia. (PADDY-O). Role: Local Principal Investigator

Merck KgaA. 12/04-2/06.  
A double-blind, placebo-controlled, multinational Phase III study to evaluate the safety and efficacy of Sarizotan HCl 1 mg BID in patients with Parkinson's disease suffering from treatment-associated dyskinesia. (PADDY-2). Role: Local Principal Investigator

Parkinson Study Group and Cephalon. 12/04-2/06.  
PRECEPT. A randomized, double-blind, placebo-controlled, dose-finding study to assess the efficacy and safety of CEP-1347 in patients with early Parkinson's disease. 3/03-7/06. Role: Local Principal Investigator.

NIH: R01NS40266-02. 3/02-2/04.  
Bradykinesia in Parkinson's disease. George Stelmach (PI). Role: Consultant.

NIH: 1U10NS044458-01. 9/30/02-8/31-07.  
Parkinson's Disease Neuroprotection Trial (NET-PD). Role: Local Principal Investigator

Parkinson's Study Group and NIH 5R01NS037167-08. Tatiana Faroud (PI). 3/03-9/06.  
Parkinson's research: the organized genetic initiative (PROGENI). Role: Local principal investigator.

Parkinson Study Group. Caroline Tanner (PI). 5/05-9/06.  
Follow-up of persons with neurological diseases (FOUND). Role: Local principal investigator.

Parkinson's study group, NIH, Cephalon and H. Lundbeck A/S. . 7/06-09/06.  
A longitudinal observational follow-up of the PRECEPT cohort (Post-CEPT). Ira Shoulson (PI). Role: Local principal investigator.

State of Arizona Disease Control Commission (Adler) 7/01/02 – 10/30/05  
Parkinson's Disease Program Project-Clinical Core  
This is a multi-institutional project that correlates brain autopsy pathology and biochemical abnormalities with clinical course. Role: Clinical Core Investigator.

NIH/NINDS. Intramural funding. 2001 – 2002  
Motor Training as Treatment in Focal Hand Dystonia. This is a study of a novel treatment for patients with hand dystonia.  
Role: Co-Investigator

NIH/NINDS. Intramural funding. 2001 – 2002  
PET Activation Correlates of Severity of Focal Hand Dystonia. This is an imaging study of the brain activity in focal hand dystonia.  
Role: Co-Investigator.