

BIOGRAPHICAL SKETCH

NAME Fumiko Hoeft (aka MAEDA), M.D., Ph.D.		POSITION TITLE Associate Professor, Dept of Psychiatry, Division of Child and Adolescent Psychiatry University of California San Francisco (UCSF)	
eRA COMMONS USER NAME (credential, e.g., agency login) MAEDA.FUMIKO			
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>	MM/YY	FIELD OF STUDY
Keio Univ Sch of Med, Tokyo, Japan	B.Sc. / M.D.	03/'95	Medicine
Keio Univ Sch of Med, Tokyo, Japan	Residency / Fellowship	04/'98	Neuropsychiatry, Clinical Neurophysiology
Harvard Med Sch, BIDMC, Dept Neurology, MA	Research Fellowship	03/'00	Neurophysiology
UCLA Sch of Med, Brain Mapping Center, CA	Research Fellowship	03/'03	System Neuroscience
California Institute of Technology, Div of Biology, CA			
Keio Univ Sch of Med, Tokyo, Japan (Advisor: Alvaro Pascual-Leone MD PhD)	Ph.D.	10/'03	Neurophysiology & Clinical Neuroscience
Stanford University, Dept Psychology, CA (Advisor: John Gabrieli PhD)	Postdoc	03/'05	Developmental Cognitive Neuroscience

A. Personal Statement

I am a physician scientist and developmental cognitive neuroscientist with great interest in applying the latest neuroimaging analytical approaches to various clinical and developmental cognitive neuroscience questions. Most of my work over the past 10 years at Stanford/UCSF has been centered around research that leads to furthering the understanding of the brain basis of reading development and neurodevelopmental disorders such as dyslexia. One of the most recent projects funded by NICHD (K23) has been to examine the neural circuitries involved in reading and executive functioning in preliterate kindergarteners followed up until 3rd grade. In this project, we identified neuroimaging patterns that predict children who are at higher risk for developing reading disabilities. We use cutting-edge MRI neuroimaging acquisition and analytical techniques such as machine learning algorithms and graph theoretical analysis. We apply these to MRI, behavioral, demographic and genetic data to identify networks and patterns to further our understanding of neurobiological mechanisms underlying neurodevelopmental disorders. These efforts have resulted in several toolboxes, such as a toolbox on multivariate pattern analysis and on graph theoretical analysis, which are publically available to other laboratories.

I joined UCSF to help lead the UCSF Dyslexia Center in January of 2012. Prior to that, I was Associate Director of Center for Interdisciplinary Brain Sciences Research (CIBSR) at Stanford where I managed a number of large-scale multisite collaborative projects. Currently, in addition to projects in my lab and at UCSF, I serve as a subcontract-PI or consultant on 3 RO1s, 1 PO1 and 2 EU grants (Swiss and Austrian). My role on these projects is to provide consultation on neuroimaging analytical approaches and develop neuroimaging analysis tools as necessary.

B. Positions and Honors

POSITIONS AND EMPLOYMENT

2003 - 2007	Visiting Scientist, Division of Biology, California Institute of Technology, CA USA
2005 - 2011	Research Associate ('05-'06), Senior Research Scientist ('06-'08), Instructor ('08-'11), CIBSR, Stanford Univ Sch of Med (SOM), CA USA
2008 - 2011	Associate Director of Neuroimaging Applications, CIBSR, Stanford Univ SOM, CA USA
2012 - 2013	Visiting Associate Professor, Stanford Univ Sch of Med, CA USA
2011 -	Adjunct Faculty, Keio Univ Sch of Med, Tokyo, Japan
2012 -	Associate Professor of Child and Adolescent Psychiatry, UCSF, CA USA
2012 -	Director, Laboratory for Educational Neuroscience (brainLENS.org), UCSF, CA USA
2012 -	Leadership Team & Board Member, UCSF Dyslexia Center, CA USA
2012 -	Research Scientist, Haskins Laboratories, Yale Univ, CT USA

PROFESSIONAL MEMBERSHIPS

2001 - Org for Human Brain Mapp (OHBM), Soc for Neurosci (SFN), Cog Neurosci Soc (CNS); 2007 - Soc for the Scientific Studies of Reading (SSSR), Am Educational Res Assoc (AERA); 2009 - Assoc for Psychological Sci.s (APS); 2010 - Intl Mind Brain Educ Soc (IMBES), Intl Dyslexia Assoc (IDA); 2012 - Am Acad of Child & Adolesc Psychiatry (AACAP); 2014 - Am Assoc for the Advancement of Sci.s (AAAS)

SELECTED HONORS

1994 Summer Fellowship Award, Keio University School of Medicine & Mayo Clinic
1998 Young Investigator Award, Japan North America Medical Exchange Fndtn (JANAMEF)
Young Investigator Award, Yoshida Science Promotion Foundation
Young Investigator Award, Cellular Science Research Foundation
2002 Award for Outstanding Contribution [XII World Congress of Psychiatry, WCP]
2004 Early Career Award for Outstanding Contribution to Research [Japan Society for Psychiatry and Neurology] (declined)
2005 Tom Slick Research Award in Consciousness, Mind Science Foundation
2007 Spectrum Child Health & Clin & Transl Science Award, Lucile Packard Fndtn for Children's Health
2008 Stanford Postdoctoral Mentor Award (Honorary Mention)
Spectrum Child Health & Clin & Transl Science Award, Lucile Packard Fndtn for Children's Health
Young Investigator Award, Brain & Behavior Research Foundation

OTHER EXPERIENCE

I. Organizing Committees, Chairs

Member, Committee & Chair, Symposium, International Conference in Collaboration with World Psychiatric Association (WPA) and World Health Organization (WHO). February 1998; Tokyo, Japan (1997-1998)
Coordinator, TMS Continuing Medical Education Course. Department of Neurology, Beth Israel Deaconess Medical Center, Harvard Medical School, MA USA (1999-2000)
Member, 1a) Fellowship & 1b) Public Relations Committees; Chair of 2 Symposia, XI & XII WCP. August 1999 & 2002; Hamburg, Germany & Yokohama, Japan (1998-2002)
President, Organizer, 2003 (Inaugural) World Association for Young Psychiatrists and Trainees (WAYPT) Meeting, May 2003; San Francisco, CA USA
Consulting Member, UC Council for Postdoctoral Scholars (2003-2004)
Founding Member, Board Member, WAYPT (2002-2005)
Member, Poster Committee, Annual CNS Meeting (2009-2013)
Chair, Mini-symposium, SFN Annual Meeting, Oct 2011; Atlanta GA USA
Chair, Symposium, Annual AACAP Meeting, Oct 2012; San Francisco CA USA
Co-organizer, Dyslexia Beyond Reading: Memory, Cognition, Expertise, and Innovation. UCSF – Dyslexic Advantage Joint Scientific Meeting, March 2014; San Francisco CA USA

II. Review Panel, Other Panels and Editorial Board

REVIEW PANEL AND OTHERS

Member, NSF Advisory Panel, Cognitive Neuroscience Program, 06/'02, 12/'02
Member, NIH Review Panel, Surgical Sciences, Biomedical Imaging and Bioengineering IRG, 02/'08
Member, NICHD's Scientific Vision, Behavior Workshop Organizing Group, 02/'11
Member, NICHD's Scientific Vision Finale Meeting, 06/'11
Member, NICHD Learning Disabilities Research Center (LDRC) P50 SEP ZHD1 DSR-H (53), 07/'11
Member, DoD Cognitive Neuroscience of Second Language Acquisition Meeting, Washington DC, 11/'11
Member, NIH Forward Focus Workshop: Strategic Planning for the Common Fund, San Francisco, 05/'12
Member, NIH DP5 Review Panel NH DP5 Review Panel ZRG1 BBBP-E 53 R, 03/'13
Scientific Advisor, Center for Childhood Creativity, Board of Advisors, '12 - present
Member, UCSF Faculty Council, Dept of Psychiatry, '13 - present
Member, UCSF Resource Allocation Program Career Development Review Committee, '13 - present

EDITORIAL BOARD The Open Medical Imaging Journal, 2007-, Frontiers in Human Neuroscience, '08 -, Open Journal of Neuroscience, '09 -, New Directions in Child and Adolescent Development, '14 -

III. Adhoc Reviewers

JOURNALS: Am J Ment Retard, Ann Neurol, Arch Gen Psychiatry, Biol Psychiatry, Biol Psychol, Bipolar Disord, Brain, Brain Lang, Brain Struct Funct, Cereb Cortex, Conscious Cogn, Dev Neuropsych, Dev Sci, Exp Brain Res, Eur J Neurosci, Front Hum Neurosci, Hum Brain Mapp, Int J Dev Neurosci, Int J Neuropsychopharmacol, Invest Radiol, J Cogn Neurosci, JIDD, J Learn Disabil, J Neurosci, Lang Cogn

Process, Ment Retard Dev Disabil Res Rev, Neurocase, Neurolmage, Neuropsychologia, Neurosci Lett, Pain Med, PLoS ONE, PNAS, Psychophysiology, Scand J Psychol, TOMJ, The Tohoku J Exp Med
GRANTS: NIH, NSF, Medical Research Council (U.K.), Neurological Foundation of New Zealand, U.S.-Israel Binational Science Foundation

C. Selected Peer-Reviewed Publications (75 total; 26 first, 36 co-, & 13 senior authored, 03/25/'14)

RELEVANT (*reading development & disorder, **related analytical approach)

1. ***Hoef F**, Hernandez A, McMillon G, Taylor-Hill H, Martindale JL, Meyler A, Keller TA, Siok WT, Deutsch G, Just MA, Gabrieli-Whitfield S, Gabrieli JDE. Neural basis of dyslexia: a comparison between dyslexic children and non-dyslexic children equated for reading ability. *J Neurosci* 2006;26(42): 10700-10708. PMID: 17050709. Evaluated: F1000 Biology
2. ***Hoef F**, Meyler A, Hernandez A, Juel C, Taylor-Hill H, Martindale JL, McMillon G, Kolchugena G, Black JM, Faizi A, Deutsch GK, Siok WT, Reiss AL, Whitfield-Gabrieli S, Gabrieli JDE. Functional and morphometric brain dissociation between dyslexia and reading ability. *PNAS* 2007;104(10):4234-4239. PMID: 17360506, PMC1820738
3. ****Hoef F**, Lightbody AA, Patnaik S, Hazlett HC, Piven J, Reiss AL. Morphometric brain patterns differentiate boys with fragile X syndrome, typical development and developmental delay in early childhood. *Arch Gen Psychiatry* 2008;65(9):1087-97. PMID: 18762595, PMC2864400. Press release: Stanford
4. **Etkin A, Prater KE, **Hoef F**, Menon V, Schatzberg AG. Failure of anterior cingulate activation and connectivity with the amygdala during implicit regulation of emotional processing in generalized anxiety disorder. *Am J Psychiatry* 2010;167(5):545-54. PMID: 20123913. PMCID: in process. Press release: Stanford; Comment in: Am J Psychiatry. 2010 May;167(5):489-92
5. ****Hoef F**, Carter J, Lightbody AA, Hazlett HC, Piven J, Reiss AL. Region specific alterations in brain development in one to three year-old boys with fragile X syndrome. *PNAS* 2010;107(20):9335-9. PMID: 20439717, PMC2889103. Press release: NIMH & Stanford
6. *,****Hoef F**, McCandliss B, Black JM, Gantman A, Zakerani N, Hulme C, Lyytinen H, Whitfield-Gabrieli S, Glover GH, Reiss AL, Gabrieli JDE. Neural systems predicting long-term compensation in dyslexia. *PNAS* 2011; 108(1):361-6. PMID: 21173250, PMC3017159. Press release: NICHD, Stanford, MIT, & Vanderbilt; Covered by: Science
7. ****Hoef F**, Walter E, Lightbody AA, Hazlett HC, Chang C, Piven J, Reiss AL. Dissociation between behavioral and neuroanatomical phenotypes in toddler boys with fragile X syndrome and idiopathic autism. *Arch Gen Psychiatry* 2011;68(3):295-305. PMID: 21041609. PMCID: in process. Comment in: Arch Gen Psychiatry. 2011;68(3):230-1
8. *,**Tanaka H, Black JM, Hulme C, Stanley LM, Kesler SR, Whitfield-Gabrieli S, Reiss AL, Gabrieli JDE, **Hoef F**. The brain basis of the phonological deficit in dyslexia is independent of IQ. *Psychol Sci* 2011;22(11):1442-51. PMID: 22006060. PMCID: in process. Press release: NICHD, Psychol Sci, Stanford & MIT
9. ****Hoef F**, Gabrieli JDE, Whitfield-Gabrieli S, Haas BW, Bammer R, Menon V, Spiegel D. Functional brain basis of hypnotizability. *Arch Gen Psychiatry* 2012;69(10):1064-72. PMID: 23026956. PMCID: in process. Press release: NICHD, Stanford; Author ITV in: Arch Gen Psychiatry
10. **Kesler SR, Wefel JS, Hosseini SMH, Cheung M, Watson CL, **Hoef F**. Default mode network connectivity distinguishes chemotherapy-treated breast cancer survivors from controls. *PNAS* 2013;110(28):11600-5. PMID: 23798392, PMC3710809
11. *Pugh K, Frost SJ, Rothman DL, **Hoef F**, Del Tufo SN, Mason GF, Molfese P, Mencl WE, Grigorenko EL, Landi N, Preston JL, Jacobsen LK, Seidenberg MS, Fulbright RK. Glutamate and choline levels predict individual differences in reading ability in emergent readers. *J Neurosci* 2014;34(11):4082-98. PMID: 24623786, PMCID: in progress. Press release: Yale

OTHERS

12. **Maeda(Hoef F)**, Kanai R, Shimojo S. Changing pitch induced visual motion illusion. *Curr Biol* 2004; 14(23):R990-R991. PMID: 15589145.
13. deCharms RC, **Maeda(Hoef F)**, Glover GH, Ludlow D, Pauly JM, Soneji DJ, Gabrieli JDE, Mackey SC. Control over brain activation and pain learned by using real-time functional MRI. *PNAS* 2005; 102(51): 18626-18631. PMC1311906. Evaluated: F1000 Biol. Coverage: Nature, Nat Rev Neurosci
14. **Hoef F**, Barnea-Goraly N, Haas B, Golarai G, Ng D, Mills D, Korenberg J, Bellugi U, Galaburda A, Reiss, AL. More is not always better: Increased Fractional anisotropy of superior longitudinal fasciculus

associated with poor visuospatial abilities in Williams syndrome. *J Neurosci* 2007;27:11960-5. PMID: 17978036

15. Hong D, **Hoefl F**, Marzelli M, Lepage, J-F, Roeltgen, D., Ross J. and Reiss AL. Influence of the X-chromosome on neuroanatomy: evidence from Turner and Klinefelter syndromes. *J Neurosci* 2014;34(10):3509-16. PMID: 24599451 PMID: in progress

D. Research Support

ACTIVE

Departmental Startup Funds, UCSF Dept of Psychiatry (PI Hoefl) 01/01/2012 – 12/31/2014

UCSF RAP Pilot for Junior Investigators Grant (PI Hoefl) 02/01/2014 – 01/31/2015

Human Intergenerational Neuroimaging of Emotion Regulation: A Feasibility Study Goal: To dissociate biological, prenatal and postnatal influence on the corticolimbic system using a 'natural' cross-fostering design in humans.

UCSF Catalyst Award (PI Hancock, Role: co-PI & mentor) 03/01/2014 – 06/30/2015

Early Mobile Screening for Reading Disorder Risk Goal: To develop an iPad based application to screen risk for developing reading disorder in preschoolers and kindergarteners.

5R01HD067254-03 (PI Vanderbilt/Cutting; Role: Subcontract PI) 09/28/2010 – 07/31/2015

Predicting Late-Emerging RD: Neurobiological and Cognitive Factors Goal: This project will use both neurobiological and cognitive measures to discover the neurobiological profiles of those at risk for LERD in earlier grades and establish the developmental profile of LERD.

P01HD001994 (PI Haskins/Rueckl, Role: Subcontract PI) 10/01/2012 – 05/31/2017

The Nature and Acquisition of the Speech Code and Reading Goal: To examine oral and written language learning using neuroimaging, cognitive psychological and crosslinguistic approaches and computational modeling.

R01HD065794 (PI Haskins/Pugh, Role: Subcontract PI) 04/01/2013 – 03/31/2018

Neurological Predictors of Spoken and Written Language Learning Goal: To examine neurocognitive predictors related to procedural learning of oral and written language.

UCSF RAP Digital Health Research (PI Hancock, Role: co-I & mentor) 02/01/2014 – 06/30/2015

Early Mobile Screening for Reading Disorder Risk Goal: To validate an iPad based application to screen risk for developing reading disorder in preschoolers and kindergarteners.

5R01 HD067312 (PI MIT/Gabrieli / Harvard/Gaab, Role: consultant) 01/10/2011 – 12/31/2015

Using Cognitive Neuroscience to Predict Dyslexia among Kindergarten Children Goal: To characterize K children with and without behavioral risk for developing dyslexia and predict outcome using neuroimaging.

P23916 FWF Austrian Sci. Fund (PI U.Salzberg/Kronbichler, Role: consult.) 09/01/2011 – 09/30/2014

Dyslexia: Longitudinal Study of Brain Dysfunctions Goal: To investigate literacy development in at-risk preliterate children using multimodal imaging.

32003B_141201 Swiss Ntnl Sci Fndtn (PI U.Zurich/Brem, Role: consult.) 07/01/2013 – 06/30/2016

Neural Markers of Grapheme-Phoneme Training Response for Prediction of Successful Reading

Acquisition in Children at Familial Risk for Developmental Dyslexia Goal: To predict response to intervention using neuroimaging in preliterate children at-risk for developing dyslexia.

COMPLETED (< 3 years)

K23 HD054720 (PI Hoefl) 08/11/2008 – 07/31/2013

Predicting Reading Success Using a Multi-Modal Neuroimaging Approach Goal: To predict future reading ability in high-risk kindergarten children using neuroimaging.

NARSAD Young Investigator Award (PI Hoefl) 07/01/2008 – 06/30/2011

Improving Executive Function using Real-Time fMRI Feedback Training Goal: To investigate real-time fMRI training effects on executive function in neurodevelopmental disorders.