

KAREN L. SCHMIDT, Ph.D.

BIOGRAPHICAL

Name: Karen L. Schmidt

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Department of Oral Biology, University of Pittsburgh
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EDUCATION AND TRAINING

UNDERGRADUATE:

Dates Attended

Name and Location of Institution

Degree Received and Year

Major Subject

09/1983 – 05/1987

Cornell University
Ithaca, NY

Bachelor of Science, 1987

Biological
Sciences

GRADUATE:

Dates Attended

Name and Location of Institution

Degree Received and Year

Major Subject

09/1989 – 05/1994

University of California,
Berkeley
Berkeley, CA

Master of Arts, 1994

Anthropology

09/1989 – 05/1997

University of California,
Berkeley
Berkeley, CA

Doctor of Philosophy, 1997

Anthropology

POSTGRADUATE:

Dates Attended

Name and Location of Institution

Program Director and Discipline

05/2002 – 05/2005

University of Pittsburgh
Clinical Psychology
Program
Pittsburgh, PA

NIMH-Funded F32 Postdoctoral Fellowship
MH15279

Jeffrey F. Cohn, Ph.D., Mentor

APPOINTMENTS AND POSITIONS

ACADEMIC:

Years Inclusive

Name and Location of Institution or Organization

Rank/Title or Position

1995 – 1997

University of the Pacific Dental School
San Francisco, CA

Assistant Professor, Gross Anatomy

1997 – 1998

Diablo Valley College
Pleasant Hill, CA

Instructor

1998

University of California, Berkeley
Berkeley, CA

Lecturer

1998-2000, 2002	Indiana University of Pennsylvania Indiana, PA	Assistant Professor, Anthropology
2003 – 2009	University of Pittsburgh Pittsburgh, PA	Assistant Professor, Psychiatry
2009 - present	University of Pittsburgh Pittsburgh, PA	Assistant Professor, Oral Biology

NON-

ACADEMIC:

Years Inclusive	Name and Location of Institution or Organization	Rank/Title or Position
1987-1989	Sandoz Crop Protection Corporation Palo Alto, CA	Associate Scientist

CERTIFICATION AND LICENSURE

N/A

MEMBERSHIP IN PROFESSIONAL AND SCIENTIFIC SOCIETIES

Organization	Year
American Association of Physical Anthropologists	1992-present
Behavioral and Brain Sciences, Associate	2001-present
American Psychological Association	2003- present
International Society for Research on Emotion	2005- present

HONORS

Title of Award	Year
Isaac Roberts Scholar Cornell University	1983-1987
National Science Foundation Graduate Research Fellowship Honorable Mention	1990
Course Improvement Grant, Graduate Division University of California, Berkeley	1991
Outstanding Graduate Student Instructor Award University of California, Berkeley	1991
Regents Graduate Fellowship University of California, Berkeley	1992
Instructional Mini-Grant, Office of Educational Development University of California, Berkeley	1995
Robert H. Lowie Graduate Fellowship, Department of Anthropology University of California, Berkeley	1993-1995
University Senate Research Grant Indiana University of Pennsylvania	1999

PUBLICATIONS

1. Refereed articles

1. Allen, J.S., Lambert, A.J., Attah Johnson, F.Y., **Schmidt, K.**, Nero, K.L. (1996). Antisaccadic eye movements and attentional asymmetry in schizophrenia in three Pacific populations. *Acta Psychiatrica Scandinavica*, (4), 258-265.
2. Brewis, A.A., **Schmidt, K.L.**, Meyer, M. (2000). ADHD-type behavior and harmful dysfunction in childhood: A cross-cultural model. *American Anthropologist*, 102, 823-828.
3. **Schmidt, K.L.**, Allen, J.S., Attah Johnson, F.Y. (2000). Cross cultural analysis of eventfulness in the lives of people with schizophrenia. *Schizophrenia Bulletin*, 26, 825-834.
4. **Schmidt, K.L.**, Cohn, J.F. (2001). Human facial expressions as adaptations: Evolutionary Questions in Facial Expression Research. *Yearbook of Physical Anthropology*, 44, 3-24.
5. Brewis, A.A., Meyer, M., **Schmidt, K.L.** (2002). Does school, compared to home, provide a unique adaptive context for children's ADHD-associated behaviors? A cross-cultural test. *Cross-cultural Research*, 36(4), 303-320.
6. Brewis, A.A., **Schmidt, K.L.**, Meyer, M. (2002). On the biocultural study of children's hyperactive and inattentive behavior. *American Anthropologist*, 104(1), 287-289.
7. **Schmidt, K.L.** (2002). The evolutionarily novel context of clinical caregiving and facial displays of pain. *Behavioral and Brain Sciences*, 25(4), 471-472.
8. **Schmidt, K.L.**, Cohn, J.F., Tian, Y. (2003). Signal characteristics of spontaneous facial expressions: automatic movement in solitary and social smiles. *Biological Psychology*, 65(1), 49-66.
9. Cohn, J.F., **Schmidt, K.L.** (2004). The timing of facial motion in posed and spontaneous smiles. *International Journal of Wavelets, Multiresolution and Information Processing*, 2, 1-12.
10. Deleyiannis, FWB, Askari, M., **Schmidt, K.L.**, VanSwearingen, J.M., Manders, E.K. (2005). Muscle activity in the partially paralyzed face after placement of a fascial sling: A preliminary report. *Annals of Plastic Surgery*, 55(5), 449-455.
11. **Schmidt, K.L.**, VanSwearingen, J.M., Levenstein, R.M. (2005). Speed, amplitude, and asymmetry of lip movement in voluntary puckering and blowing expressions: Implications for facial assessment. *Motor Control*, 9(3), 270-280.
12. **Schmidt, K.L.**, Ambadar, Z., Cohn, J.F., Reed, L.I. (2006). Movement differences between deliberate and spontaneous facial expressions: Zygomaticus major action in smiling. *Journal of Nonverbal Behavior*, 30(1), 37-52.
13. **Schmidt, K.L.**, Liu, Y., Cohn, J.F. (2006). The role of structural facial asymmetry in asymmetry of peak facial expressions. *Laterality*, 11(6), 540-561.
14. Merkel, K.M., **Schmidt, K.L.**, Levenstein, R.M., VanSwearingen, J.M., Bentley, B.C. (2007). Positive affect predicts improved lip movement in facial movement disorder. *Otolaryngology—Head and Neck Surgery*, 137(1), 100-104.
15. Rogers, C.R., **Schmidt, K.L.**, VanSwearingen, J.M., Cohn, J.F., Wachtman, G.S., Manders, E.K., Deleyiannis, F. W.-B. (2007). Automated facial image analysis: Detecting improvement in abnormal facial muscle activity following treatment with Botulinum Toxin A. *Annals of Plastic Surgery*, 58, 1-9.

16. Denlinger, R.L., VanSwearingen, J.M., Cohn, J.F, **Schmidt, K.L.** (2008) Puckering and blowing facial expressions for patients with facial movement disorders. *Physical Therapy Journal*, 88, 909-915.
17. Santucci, A.K., Lingler, J.H., **Schmidt, K.L.**, Nolan, B.A., Thatcher, D.L., Polk, D.E. (2008). Peer-mentored research development meeting: A model for successful peer mentoring among junior level researchers. *Academic Psychiatry*, 32, 493-497.
18. **Schmidt, K.L.**, Bhattacharya, S, Denlinger, R.L. (2009) Comparison of deliberate and spontaneous facial movement in smiles and eyebrow raises. *Journal of Nonverbal Behavior*, 33, 35-45.
19. **Schmidt, K.L.**, Lingler, J.H., Schulz, R. (2009) Verbal Communication among Alzheimer's Disease Patients, their Caregivers, and Primary Care Physicians during Primary Care Office Visits. *Patient Education and Counseling*, 77, 197-201.
20. Hunsaker, A., **Schmidt, K.L.**, Lingler, J.H. (in press) Discussing dementia-related behaviors during medical visits for people with Alzheimer's disease. *American Journal of Alzheimer's Disease and other Dementias*

2. Reviews, invited published papers, proceedings of conferences and symposia, monographs, books and book chapters

1. Liu, Y, Weaver, R.L., **Schmidt, K.L.**, Serban, N., Cohn, J.F. (2001). Facial Asymmetry: A New Biometric. *CMU Technical Reports*, CMU-RI-TR-01-23.
2. **Schmidt, K.L.**, Cohn, J.F. (2001). Dynamics of Facial Expression: Normative Characteristics and Individual Differences. *International Conference on Media and Expo*, 728-730.
3. Liu, Y., **Schmidt, K.L.**, Cohn, J.F., Weaver, R.L. (2002). Facial Asymmetry Quantification for Expression Invariant Human Identification. *Proceedings of the 5th International Conference on Automatic Face and Gesture Recognition (FG'02)*, May, 2002.
4. Cohn, J.F., **Schmidt, K.L.**, Gross, R., Ekman, P. (2002). Individual differences in facial expression: stability over time, relation to self-reported emotion, and ability to inform person identification. *Proceedings of the International Conference on Multimodal User Interfaces*, Pittsburgh PA, October 2002. pp. 491-496.
5. Cohn, J.F., Reed, L.I., Moriyama, T., Xiao, J., **Schmidt, K.L.**, Ambadar, Z. (2004). Multimodal coordination of facial action, head rotation, and eye motion during spontaneous smiles. *Proceedings of the Sixth IEEE International Conference on Automatic Face and Gesture Recognition*, Seoul, Korea, 2004.
6. **Schmidt, K.L.**, Schulz, R. (2006). Emotions. In Birren, J.E. *Encyclopedia of Gerontology*, 2nd edition. Burlington, MA: Academic Press.

3. Published abstracts

1. **Schmidt, K.L.** (1999). Recognizing the strangeness of nonverbal behavior cross-culturally. *American Journal of Physical Anthropology*, 108, S28, 243.
2. **Schmidt, K.L.** (2000). Variation in the timing and display of the human smile. *American Journal of Physical Anthropology*, 111, S30, 272.

3. **Schmidt, K.L.**, Cohn, J.F. (2001). Dynamic modeling of facial expression. *American Journal of Physical Anthropology*, 114, S32, 132
4. Brewis, A., **Schmidt, K.L.** (2002). Childhood developmental trajectory of attention and impulse control. *American Journal of Physical Anthropology*, 117, S34,48.
5. **Schmidt, K.L.**, Ambadar, Z., Reed, L.I., Cohn, J.F. (2004). Timing characteristics of two different facial signals: Deliberate and spontaneous smiles. *American Journal of Physical Anthropology*, 123, S38, 174.
6. **Schmidt, K.L.** (2008). Movement analysis of two facial social signals in humans. *American Journal of Physical Anthropology*, 135, S46, 186-187.

4. Other publications/presentations

1. **Schmidt, K.L.**, Sullivan, R. and Allen, J.S. (2000). Social thinking in schizophrenia: implications for the consumers of mental health services. Society for Applied Anthropology annual meeting, San Francisco CA.
2. **Schmidt, K.L.**, Monaco, V., Peters, B., VanSwearingen, J., Tian, Y., Cohn, J.F. (2000). Relation between automatic tracking of lip-corner motion and facial surface EMG of the Zygomaticus major muscle during spontaneous smiles” Society for Psychophysiological Research annual meeting, San Diego CA
3. Wachtman, G.S., Liu, Y., Zhao, A., Cohn, J.F., **Schmidt, K.L.**, Henkelmann, T.C., VanSwearingen, J.M., Manders, E.K. (2002). Measurement of asymmetry in persons with facial paralysis. Combined Meeting of the Robert H. Ivy Society and the Ohio Valley Association of Plastic Surgeons, June 2, 2002, Cleveland OH.
4. **Schmidt, K.L.**, Merkel, K.E., Bentley, B.C., Levenstein, R.M., VanSwearingen, J.M. (2005). Duchenne smiling and improvement in lip corner movement in patients with facial movement disorders. The 11th European Conference on Facial Expression. September 2005, Durham University, Durham, UK.
5. **Schmidt, K.L.**, Lingler, J.H., Hunsaker, A.E. (2007). Verbal participation in the primary care of community-dwelling Patients with mild to moderate Alzheimer's Disease. Dementia Care Conference, August 2007, Chicago, IL.

PROFESSIONAL ACTIVITIES

TEACHING:

<u>Course Number</u>	<u>Course Title</u>	<u>Students Taught</u>	<u>Years Inclusive</u>
Psy 1903	Directed Research in Psychology/ Undergraduate (3 credits)	5	2003 – 2008
Geron 2000	Directed Reading in Gerontology (3 credits)	1	2006-2008

RESEARCH:**1.**

<u>Grant Number</u>	<u>Grant Title</u>	<u>Role in Project Percent Effort</u>	<u>Years Inclusive</u>	<u>Source \$ Amount</u>
NSF 0077633	Gender Differences in Children's Hyperactivity, Inattention, and Impulsivity	Co-Principal Investigator 12.5% effort	2000-2003	NSF

<u>Grant Number</u>	<u>Grant Title</u>	<u>Role in Project Percent Effort</u>	<u>Years Inclusive</u>	<u>Source \$ Amount</u>
F32-MH015279	Facial Display and Prosodic Signaling in Schizophrenia	Principal Investigator 100% Effort	2000 – 2002	NIMH \$75,000

This study investigated coordination of facial and vocal signaling in people with schizophrenia. The goal of this proposal was to learn skills and approaches relevant to the applicant's specific research objectives of assessing communication and social skills within psychiatric populations. Training with Dr. Cohn's Affect Analysis Group included psychiatric interviewing, certification in the Facial Action Coding System (FACS) for analysis of facial expression, Automated Facial Analysis (AFA) and acoustic analysis of vocal fundamental frequency (f_0) using the Computerized Speech Laboratory (CSL). This research was focused on understanding schizophrenic symptomatology cross-culturally, especially the relationships between facial display, prosody and unsuccessful social interaction.

<u>Grant Number</u>	<u>Grant Title</u>	<u>Role in Project Percent Effort</u>	<u>Years Inclusive</u>	<u>Source \$ Amount</u>
K01-MH067976	Psychiatric Comorbidity and Facial Nerve Dysfunction	Principal Investigator 100% Effort	2003 – 2008	NIMH \$590,000

This Mentored Research Scientist Development Award supports research on facial signaling and its association with psychiatric morbidity in patients with facial nerve dysfunction. The broad long-term objective is to understand the impact of facial nerve dysfunction and facial signaling on the psychological and social functioning of facial nerve patients. Ultimately, the goal is to understand the physical, psychological and social factors that put facial nerve patients at risk for depression, anxiety, and other mental illness. The short-term objective is to understand the nature of the relationship between impaired facial movement and current psychological symptoms and social disability. The correspondence of facial nerve dysfunction to psychiatric morbidity and social disability, and personality and social characteristics affecting this relationship, will be investigated. The research design combines objective measurement of facial movement including automated analysis of facial expression, and the analysis of social participation/integration, personality and social factors, and psychiatric symptoms.

2. Seminars and invited lectureships related to research

1. **Schmidt, K.L.** Anthropology Department Colloquium. Smiles: The role of facial movements in social signaling. University of Pittsburgh, October 30, 2000.

2. **Schmidt, K.L.** Anthropology Department Colloquium The evolution of human facial signaling: new research in facial expression. Kent State University, November 6, 2003.
3. **Schmidt, K.L.** Disruptions in facial signaling: social consequences of facial movement disorders. Anthropology Department Colloquium, Indiana University of Pennsylvania. March 1, 2005.
4. **Schmidt, K.L.** Emotions and facial movement in people with facial movement disorders. Invited presentation, Moebius Syndrome Foundation Scientific Research Conference (1R13NS056857-01). Bethesda MD, April 24-25, 2007
5. **Schmidt, K.L.**, symposium organizer and chair (with A. Burrows), symposium: The State of the Face, American Association of Physical Anthropologists annual meeting. Columbus, OH, April 9-12, 2008.

LIST OF CURRENT RESEARCH INTERESTS:

Facial expression and signaling in social interaction
 Psychosocial aspects of facial movement disorders
 Neuromotor control of facial and nonverbal expression
 Cognitive neurodegeneration and nonverbal expression

SERVICE:

Member, Institutional Review Board, University of Pittsburgh, 2008-present

Peer Mentor: Peer Mentored Research Development Meeting (PRDM), 2004-present

Student Mentorship: Department of Psychology: Sybil Streeter, L. Ian Reed, Rachel Denlinger, Brittney Uffner, Alison Schmieder, Barbara Bentley, Kathryn Merkel;
 Department of Surgery: Carolyn Rogers; Department of Education: Sharika Bhattacharya

Reviewer: *Emotion, Cognition and Emotion, Perception, Journal of Nonverbal Behavior, Evolution and Human Behavior, Behavioral and Brain Science, Clinical Anatomy, Behavior and Physiology*

Internal Grant Reviewer: WPIC Research Review Committee, University of Pittsburgh
 Institute on Aging, Steven Manners Pilot Research Grant Program

External Grant Reviewer: National Science Foundation, 2000-2007