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DEGREES

PhD (1983) and MS (1981) in Clinical Psychology, University of Massachusetts at Amherst
BA (1969) in Sociology, University of Wisconsin at Madison

LICENSE AND CERTIFICATION

Clinical Psychologist, Pennsylvania (License #PS-004660-L), 1988 to present

Certified School Psychologist, Pennsylvania, 1988 to present

PROFESSIONAL EXPERIENCE

Professor of Psychology, University of Pittsburgh, 2005-present

Associate Professor of Psychology, University of Pittsburgh, 1989-2005

Adjunct Faculty, Robotics Institute, Carnegie Mellon University, 1997-present

Associate Professor of Psychiatry, University of Pittsburgh, 1990-present

Assistant Professor of Psychology, University of Pittsburgh, 1983-1989

Special Education Teacher (LD/ED), 1971-1978

RESEARCH GRANT SUPPORT

ACTIVE RESEARCH GRANTS

Principal Investigator, "Facial Expression Analysis by Computer Processing." National Institute of Mental Health: 5/1/06 to 4/30/11. Total costs: \$2,358,836.

Co-Principal Investigator (PI: Kenneth M. Prkachin, University of Northern British Columbia). "Properties of Pain Expression." Canadian Institutes of Health Research. 10/1/05 to 9/31/08. Total direct costs: \$269,584.

Co-Principal Investigator (PI: Steven Boker, Notre Dame University). "Collaborative Research DHB: Coordinated Motion and Facial Expression in Dyadic Conversation." The National Science Foundation, 9/1/05 to 8/31/08. Total costs: \$730,616.

Co-Principal Investigator, "Automated Measurement of Facial Expression in Autism: Deficits in Facial Nerve Function," Autism Speaks, 10/1/07 to 9/30/2010. Total costs: \$450,000.

Co-Investigator (PI: Michael Sayette, University of Pittsburgh). "Reinforcing Effects of Alcohol during Group Formation." National Institute of Alcohol Abuse and Alcoholism."

Co-Principal Investigator, "Computer Assisted System to Increase Speed and Reliability of Manual FACS Coding." RealleaR, LLC. & Naval Research Laboratory, 9/1/07 to 8/31/09.

Co-Investigator, "Mobile Examination of Physiological Cues for Automatic Behavior Recognition," General Electric Corporation & Department of Homeland Security, 1/1/08 to 12/31/09.

RESEARCH GRANTS UNDER REVIEW

Co-Principal Investigator with Steve Boker, Simon Lucey, and Barry-John Theobald, "Collaborative Project (HSD): Coordinated motion and facial expression in dyadic conversation." National Science Foundation, 1/1/09 to 12/31/11.

Co-Principal Investigator with Judy Moskowitz, "Automated Facial Image Analysis for Health-Related Outcomes." National Institutes of Health, 4/1/09/ to 3/31/13.

Investigator, "A Pilot test of Automated Facial Image Analysis for Health-Relevant Facial Expressions," UCSF Academic Senate Committee on Research.

PAST RESEARCH GRANTS

Co-Principal Investigator with Nathan Fox (Program Project PI: Maria Kovacs), "Psychophysiology of Risk for Depression." National Institute of Mental Health: 8/1/07 to 6/30/07. Direct Costs (Year 10): \$254,657.

Co-Principal Investigator with Takeo Kanade, "Multimodal Analysis of Face and Body Gesture Indicators of Communicative Intent," Naval Research Laboratory, 5/1/05 to 4/30/06. Total costs: \$819,997.

Principal Investigator, "Facial Expression Analysis by Computer Processing." National Institute of Mental Health: 5/1/01 to 4/30/06. Total direct costs (TDC): \$1,541,786.

Co-Investigator (PI: T. Kanade, Carnegie Mellon University), "Space-Time Face- and Body Biometric for Human Identification from Video." Defense Advanced Research Projects Agency, 8/1/00 to 7/31/04. Total costs: \$1,032,000.

Co-Principal Investigator with Daniel Messinger, "Collaborative Proposal: Automated Measurement of Infant Facial Expressions and Human Ratings of Their Emotional Intensity." National Science Foundation, 8/01/04 to 7/31/05. Total Costs: \$100,000.

Principal Investigator, "Consortium on Nonverbal Communication for Human-Computer Interaction." Advanced Telecommunications Research Media Integration Center, Kyoto, Japan: 2/1/00 to 1/31/03, \$18,010 (TDC).

Co-Principal Investigator with P. Lewinsohn (Oregon Research Institute), "Parental Depression and Infant Development." National Institute of Mental Health: 4/1/97 to 3/31/02, \$2,379,187 (TDC).

Co-Principal Investigator (PI: T. Kanade, Carnegie Mellon University), "Facial Expression Coding System Project." Central Intelligence Agency, 8/1/00 to 7/31/01, \$41,086 (TDC).

Principal Investigator, "Facial Expression Analysis by Computer Processing." National Institute of Mental Health: 5/1/97 to 4/30/01, \$915,053 (TDC).

Co-Investigator (PI: M. Sayette, University of Pittsburgh), "Affective and Cognitive Processes in Smoking Craving." National Institute of Mental Health: 9/1/96 to 8/31/00, \$383,872 (TDC).

Principal Investigator, "Facial Expression Analysis by Computer Processing." National Institute of Mental Health: 8/1/95 to 7/31/97, \$348,973 (TDC).

Co-Principal Investigator (PI: J. Belsky, Pennsylvania State University), "NICHD Child Care Network." National Institute of Child Health and Development: 1/10/90 to 1/9/95, \$1,696,240 (TDC)

Principal Investigator, "Mother-Infant Coordination of Vocalization and Affect." National Science Foundation: 4/1/90 to 4/31/94, \$95,041 (TDC)

Co-Principal Investigator (PI: S.B. Campbell, University of Pittsburgh), "Postpartum Depression: A Risk Factor for Infants?" National Institute of Mental Health: 3/86 to 2/94, \$616,945 (TDC)

Co-Investigator (PI: K. Meadow, Gallaudet University), "Interaction and Support: Mothers and Deaf Infants," National Institutes of Health: 1/88 to 9/90, \$26,214 (TDC)

Principal Investigator, "Bidirectional Influence in Mother-Infant Interaction." National Institute of Mental Health: 1/85 to 12/85, \$14,979 (TDC)

Principal Investigator, Faculty Initiative Grant, Provost's Advisory Committee for Faculty Computing, University of Pittsburgh: 1/92, \$8495 (TDC)

Principal Investigator, "Neonatal Spontaneous Motor Behavior: Is It Rhythmic?" Faculty of Arts and Sciences Research Stipend, University of Pittsburgh: 7/86 to 12/86, \$2500 (TDC)

Principal Investigator, "Three-Month-Old Infants' Reaction to Contingent Changes in Maternal Behavior." NIH Biomedical Research Support Grant: 1/84 to 12/85, \$4000 (TDC)

Principal Investigator, "Behavioral Effects in Neonates of Gestational Alcohol Exposure." Mental Health Clinical Research Center, Western Psychiatric Institute and Clinic: 1/84 to 12/85, \$4000 (TDC)

Principal Investigator, "Face-to-Face Interaction of High-risk Mother-infant Pairs and Its Relation to Cognitive Development at 12 and at 18 Months." NIH Biomedical Research Support Grant: 1/84 to 5/84, \$1750 (TDC).

INDIVIDUAL FELLOWSHIPS SPONSORED AND AWARDED

Erika Forbes, National Science Foundation Pre-doctoral Fellowship, 1997-2001.

Karen Schmidt, National Institute of Mental Health Post-doctoral Fellowship, 2000-2002.

Christina Staszal, University of Pittsburgh Chancellor's Undergraduate Research Fellowship, 2001-2002.

Adena Zlochower, University of Pittsburgh Chancellor's Undergraduate Research Fellowship, 1991-1992.

PEER-REVIEWED PUBLICATIONS

Denlinger, R.L., Van Swearingen, J.M., Cohn, J.F., Schmidt, K.L. (In press). Puckering and blowing facial expressions for patients with facial movement disorders: Clinical relevance. *Physical Therapy*.

<http://www.ptjournal.org/papbyrecent.dtl>

Forbes, E.E., Shaw, D.S., Silk, J.S., Cohn, J.F., Fox, N.A., & Kovacs, M. (2008). Children's negative affect and right frontal EEG asymmetry contribute to change in mothers' symptoms over one year. *Journal of Abnormal Child Psychology*, 36 (2), 207-221.

Messinger, D.S., Cassel, T.D., & Cohn, J. F. (In press). The dynamics of infant smiling and perceived positive emotion. *Journal of Nonverbal Behavior*.

Vuga, M., Fox, N.A., Cohn, J.F., George, C.J., & Kovacs, M. (2008). Long-term stability of frontal electroencephalographic asymmetry and power in 3 to 9 year old children. *International Journal of Psychophysiology*, 67 (1), 70-77

Ramnath, K., Koterba, S., Xiao, J., Hu, C., Matthews, I., Baker, S., Cohn, J.F., & Kanade, T. (In press). Multi-view AAM fitting and construction. *International Journal of Computer Vision*, 76 (2), 183-204 .

Fox, N.A., Gross, R., Cohn, J.F., & Reilly, R.B. (2007). Robust biometric person identification using automatic classifier fusion of speech, mouth, and face experts. *IEEE Transactions on Multimedia*, 9, 701-714.

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 movement after treatment with Botulinum toxin A. *Annals of Plastic Surgery*, 58, 39-47.

Reed, L.I., Sayette, M., & Cohn, J.F. (2007). Impact of depression on response to comedy: A dynamic facial coding analysis. *Abnormal Psychology*, 116, 804-809.

Perez-Edgar, K, Fox, N.A., Cohn, J.F., & Kovacs, M. (2006). Behavioral and electrophysiological markers of selective attention in children of parents with a history of depression. *Biological Psychiatry*.60, 1131-1138.

Schmidt, K.L., Liu, Y., & Cohn, J.F. (2006). The role of structural facial asymmetry in asymmetry of peak facial expressions. *Laterality*, 11, No. 6, 40-561.

- Koraly, P.E., Fox, N.A., Cohn, J.F., & Kovacs, M. (2006). Behavioral and electrophysiological markers of selective attention in children of parents with a history of depression. *Biological Psychiatry*, *60*, 1131–1138.
- Kirchner, T.R., Sayette, M.A., Cohn, J.F., Moreland, R.L., & Levine, J.M. (2006). Effects of alcohol on group formation among male social drinkers. *Journal of Studies on Alcohol*, *67*, 785-793.
- Schmidt, K.L., Ambadar, Z., Cohn, J.F., & Reed, L. (2006). Movement differences between deliberate and spontaneous facial expressions: *Zygomaticus major* action in smiling. *Journal of Nonverbal Behavior*, *30*, 37-52.
- Forbes, E.E., Fox, N.A., Cohn, J.F., Galles, S.J., & Kovacs, M. (2006). Children's affect regulation during a disappointment: Psychophysiological characteristics, risk for depression, and behavior problems. *Biological Psychology*, *71*, 264-277.
- Moriyama, T., Xiao, J., Cohn, J.F., & Kanade, T. (2006). Meticulously detailed eye region model and its application to analysis of facial images. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, *28*, 738-752.
- Vuga, M., Fox, N.A., Cohn, J.F., George, C.J., Levenstein, R.M., & Kovacs, M. (2006). Long-term stability of frontal electroencephalographic asymmetry in adults with a history of depression. *International Journal of Psychophysiology*, *59*, 107-115.
- Slifer, K.J., Pulbrook, V., Amari, A., Vona-Messersmith, N., Cohn, J.F., Ambadar, Z., Beck, M., & Piszcor, R. (2006). Social acceptance and facial behavior in children with oral clefts. *The Cleft Palate-Craniofacial Journal*, *43*, 226-236.
- Forbes, E., Shaw, D. S., Fox, N.A., Cohn, J. F., Silk, J. S., & Kovacs, M. (2006). Maternal depression, child frontal asymmetry, and child affective behavior as factors in child behavior problems. *Journal of the American Academy of Child and Adolescent Psychiatry*, *47*, 79-87.
- Bolzani Dinehart, L.H., Messinger, D.S., Acosta, S.I., Cassel, T., Ambadar, Z., & Cohn, J.F. (2005). Adult perceptions of positive and negative infant expressions. *Infancy*, *8*, 279-306.
- Forbes, E.E., Miller, A., Cohn, J.F., Fox, N.A., & Kovacs, M. (2005). Affective modulation of the startle reflex in adults with a history of childhood-onset depression. *Psychiatry Research*, *134*, 11-25.
- Ambadar, Z., Schooler, J., & Cohn, J.F. (2005). Deciphering the Enigmatic Face: The Importance of facial dynamics in interpreting subtle facial expressions. *Psychological Science*, *16*, 403-410.
- Wallstrom, G. L., Kass, R. E., Miller, A., Cohn, J. F., & Fox, N. A. (2004). Automatic correction of ocular artifacts in the EEG: A comparison of regression- and component-based methods. *International Journal of Psychophysiology*, *53*, 105-119.
- 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.
- Forbes, E. E., Cohn, J. F., Allen, N., & Lewinsohn, P. (2004). Infant affect during parent-infant interaction at 3 and 6 months: Differences between mothers and fathers and influence of parent history of depression. *Infancy*, *5*, 61-84.
- Cohn, J. F. (2003) (Invited). Additional components of the still-face effect: Commentary on Adamson and Frick. *Infancy*, *4*, 493-497.
- Cohn, J. F., Xiao, J., Moriyama, T., Ambadar, Z., & Kanade, T. (2003). Automatic recognition of eye blinking in spontaneously occurring behavior. *Behavior Research Methods, Instruments, and Computers*, *35*, 420-428.
- Liu, Y., Schmidt, K., Cohn, J. F., & Mitra, S. (2003). Facial asymmetry quantification for expression invariant human identification. *Computer Vision and Image Understanding*, *91*, 138-159.

- Sayette, M., Wertz, J., Martin, C.S., Cohn, J. F., Perrott, M., & Hobel, J. (2003). Effects of smoking opportunity on cue-elicited urge: A facial coding analysis. *Experimental and Clinical Psychopharmacology*, *11*, 218-227.
- Schmidt, K., Cohn, J. F., & Tian, Y. L. (2003). Signal characteristics of spontaneous facial expressions: Automatic movement in solitary and social smiles. *Biological Psychology*, *65*, 49-66.
- Slifer, K. J., Diver, T., Amari, A., Cohn, J. F., Hilley, L., Beck, M., McDonnell, S., & Kane, A. (2003). Assessment of facial emotion encoding and decoding skills in children with and without oral clefts. *Journal of Cranio-Maxillofacial Surgery*, *31*, 304-315.
- Xiao, J., Moriyama, T., Kanade, T., & Cohn, J. F. (2003). Robust full-motion recovery of head by dynamic templates and re-registration techniques. *International Journal of Imaging Systems and Technology*, *13*, 85-94.
- Miller, A. Fox, N. A., Cohn, J. F., Forbes, E. E., Sherrill, J. T., & Kovacs, M. (2002). Regional brain activity in adults with a history of childhood-onset depression: Sex differences and clinical variability. *American Journal of Psychiatry*, *159*, 934-940.
- Moore, G. A., Cohn, J. F., & Campbell, S. B. (2001). Infant affective responses to mother's still-face at 6 months differentially predict externalizing and internalizing behaviors at 18 months. *Developmental Psychology*, *37*, 706-714.
- Sayette, M. A., Cohn, J. F., Wertz, J. M., Perrott, M. A., & Parrott, D. J. (2001). A psychometric evaluation of the Facial Action Coding System for assessing spontaneous expression. *Journal of Nonverbal Behavior*, *25*, 167-186.
- Schmidt, K. L. & Cohn, J. F. (2001). Human facial expressions as adaptations: Evolutionary questions in facial expression. *Yearbook of Physical Anthropology*, *44*, 3-24.
- Tian, Y. L., Kanade, T., & Cohn, J. F. (2001). Recognizing action units for facial expression analysis. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, *23*, 97-116.
- Wachtman, G. S., Cohn, J. F., Van Swearingen, J. M., & Manders, E. K. (2001). Automated tracking of facial features in facial neuromotor disorders. *Plastic and Reconstructive Surgery*, *107*, 1124-1133.
- Katz, G. S., Cohn, J. F., & Moore, C. A. (2000). Schematic pitch coding: A new, more efficient method for measurement of infant-directed speech. *Infant Behavior and Development*, *22*, 283-296.
- Lien, J. J. J., Kanade, T., Cohn, J. F., & Li, C. C. (2000). Detection, tracking, and classification of subtle changes in facial expression. *Journal of Robotics and Autonomous Systems*, *31*, 131-146.
- Wu, Y. T., Kanade, T., Li, C. C., & Cohn, J. F. (2000). Image registration using wavelet-based motion model. *International Journal of Computer Vision*, *38*, 129-152.
- Cohn, J. F., Zlochower, A., Lien, J., & Kanade, T. (1999). Automated face analysis by feature point tracking has high concurrent validity with manual FACS coding. *Psychophysiology*, *36*, 35-43.
- Van Swearingen, J. M., Cohn, J. F., & Bajaj-Luthra, A. (1999). Specific impairment of smiling increases severity of depressive symptoms in patients with facial neuromuscular disorders. *Journal of Aesthetic Plastic Surgery*, *23*, 416-423.
- Weinberg, M. K., Tronick, E. Z., Cohn, J. F., & Olson, K. L. (1999). Gender differences in emotional expressivity and self-regulation during early infancy. *Developmental Psychology*, *35*, 175-188.
- Shaw, D. S., Winslow, E. B., Owens, E. B., Vondra, J. I., Cohn, J. F., & Bell, R. Q. (1998). The development of early externalizing problems among children from low-income families: A transformational perspective. *Journal of Abnormal Child Psychology*, *26*, 95-107.

- Van Swearingen, J. M., Cohn, J. F., Turnbull, J., Mrzai, & Johnson, P. (1998). Psychological distress, impairment, and disability in facial neuro-motor disorders. *Otolaryngology, Head and Neck Surgery*, *118*, 790-796.
- NICHD Early Child Care Research Network (1997). The effects of infant child care on infant-mother attachment security: Results from the NICHD Study of Early Child Care. *Child Development*, *68*, 860-879.
- NICHD Early Child Care Research Network (1997). Child care in the first year of life. *Merrill-Palmer Quarterly*, *43*, 340-360.
- NICHD Early Child Care Research Network (1997). Familial factors associated with characteristics of non-maternal care for infants. *Journal of Marriage and the Family*, *59*, 389-408.
- Moore, G. A., Cohn, J. F., & Campbell, S. B. (1997). Mothers' affective behavior with infant siblings: Stability and change. *Developmental Psychology*, *33*, 856-860.
- Belsky, J., Campbell, S. B., Cohn, J. F., & Moore, G. (1996). Instability of infant-parent attachment security. *Developmental Psychology*, *32*, 921-924.
- Katz, G., Cohn, J. F., & Moore, C. A. (1996). A combination of vocal f_0 dynamic and summary features discriminates between three pragmatic categories of infant-directed speech. *Child Development*, *67*, 205-217.
- Moore, G., Cohn, J. F., Campbell, S. B., & Belsky, J. (1996). A comparison of traditional and quantitative classification of attachment status. *Infant Behavior and Development*, 265-268.
- NICHD Early Child Care Research Network (1996). Characteristics of infant child-care. Factors contributing to positive caregiving. *Early Childhood Research Quarterly*, *11*, 269-306.
- Orenstein, S. R., Shalaby, T. M., & Cohn, J. F. (1996). Reflux symptoms in 100 normal infants: Diagnostic validity of the infant gastro-esophageal reflux questionnaire. *Clinical Pediatrics*, *35*, 607-614.
- Zlochower, A. & Cohn, J. F. (1996). Vocal timing in face-to-face interactions of clinically depressed and nondepressed mothers and their 4-month-old infants. *Infant Behavior and Development*, *19*, 373-376.
- Campbell, S. B., Cohn, J. F., & Meyers, T. (1995). Depression in first-time mothers: Mother-infant interaction and depression chronicity. *Developmental Psychology*, *31*, 349-357.
- Feranchak, A. P., Orenstein, S. R., & Cohn, J. F. (1994). Behaviors associated with onset of gastro-esophageal reflux in infants: Prospective study using split-screen video and pH probe. *Clinical Pediatrics*, *33*, 654-662.
- Moore, C. A., Cohn, J. F., & Katz, G. (1994). Quantitative description and differentiation of fundamental frequency contours. *Computer Speech and Language*, *8*, 385-404.
- Matias, R. & Cohn, J. F. (1993). Are MAX-specified infant facial expressions during face-to-face interaction consistent with Differential Emotions Theory? *Developmental Psychology*, *29*, 524-531.
- NICHD Early Child Care Research Network (1993). Child-care debate: Transformed or distorted? *American Psychologist*, *48*, 692-693.
- Orenstein, S. R., Cohn, J. F., Shalaby, T. M., & Kartan, R. (1993). Reliability and validity of an infant gastro-esophageal reflux questionnaire. *Clinical Pediatrics*, *32*, 472-484.
- Campbell, S. B., Cohn, J. F., Flanagan, C., Popper, S., & Meyers, T. (1992). The course and correlates of postpartum depression during the transition to parenthood. *Development and Psychopathology*, *4*, 29-49.
- Campbell, S. B. & Cohn, J. F. (1991). Prevalence and correlates of postpartum depression in first-time mothers. *Abnormal Psychology*, *100*, 594-599.
- Cohn, J. F., Campbell, S. B., & Ross, S. (1991). Infant response in the still-face paradigm at 6 months predicts avoidant and secure attachment at 12 months. *Development and Psychopathology*, *3*, 367-376.

- Cohn, J. F., Campbell, S. B., Matias, R., & Hopkins, J. (1990) (Invited). Mother-infant face-to-face interactions of postpartum depressed and non-depressed mothers. *Developmental Psychology*, 26, 15-23.
- Popper, S. & Cohn, J. F. (1990). Individual differences in mastery motivation in infants. *Early Education and Development*, 1, 371-384.
- Cohn, J. F. & Tronick, E. Z. (1989). Specificity of infants' response to mothers' affective behavior. *Journal of the American Academy of Child and Adolescent Psychiatry*, 28, 242-248.
- Matias, R., Cohn, J. F., & Ross, S. (1989). A comparison of two systems to code infants' affective expression. *Developmental Psychology*, 25, 483-489.
- Tronick, E. Z. & Cohn, J. F. (1989). Infant-mother face-to-face interaction: Age and gender differences in coordination and the occurrence of miscoordination. *Child Development*, 60, 85-92.
- Cohn, J. F. & Elmore, M. (1988). Effect of contingent changes in mothers' affective expression on the organization of behavior in 3-month-old infants. *Infant Behavior and Development*, 11, 493-505.
- Cohn, J. F. & Tronick, E. Z. (1988). Mother-infant interaction: Influence is bidirectional and unrelated to periodic cycles in either partner's behavior. *Developmental Psychology*, 24, 386-392.
- Cohn, J. F. & Tronick, E. Z. (1988). Discrete versus scaling approaches to the description of mother-infant face-to-face interaction: Convergent validity and divergent applications. *Developmental Psychology*, 24, 396-397.
- Cohn, J. F. & Tronick, E. Z. (1987). Mother-infant interaction: The sequence of dyadic states at three, six, and nine months. *Developmental Psychology*, 23, 68-77.
- Cohn, J. F., Matias, R., Tronick, E. Z., Connell, D., & Lyons-Ruth, K. (1986). Face-to-face interactions, spontaneous and structured, of mothers with depressive symptoms. In T. Field & E. Tronick (Eds.), *Maternal Depression and Infant Disturbance: Vol. 34. New Directions for Child Development* (pp. 31-46). San Francisco: Jossey-Bass.
- Black, M. M., Cohn, J. F., Smull, M. W., & Crites, L. S. (1985). Individual and family factors associated with risk of institutionalization of mentally retarded adults. *American Journal of Mental Deficiency*, 90, 271-276.
- Cohn, J. F. & Tronick, E. (1983). Three-month-old infants' reaction to simulated maternal depression. *Child Development*, 54, 185-193.

PUBLISHED CONFERENCE PROCEEDINGS

- Messinger, D.S., Mahoor, M.H., & Cohn, J.F. (2008). Early interactive emotional development. *IEEE International Conference on Development and Learning 2008 (ICDL-08)*.
- Wang, Y., Lucey, S., & Cohn, J.F. (2008). Enforcing convexity for improved alignment with constrained local model. *Proceedings of the IEEE International Conference on Computer Vision and Pattern Recognition*, Anchorage, xxx-xxx.
- Cox, M., Lucey, S., & Cohn, J.F. (2008). Least squares congealing for unsupervised alignment of images. *Proceedings of the IEEE International Conference on Computer Vision and Pattern Recognition*, Anchorage, xxx-xxx.
- Wang, Y., Lucey, S., & Cohn, J.F. (2007). Non-rigid object alignment with a mismatch template based on exhaustive local search. *Proceedings of the IEEE Workshop on Non-Rigid Registration through Tracking*. Rio de Janeiro, Brazil, xxx-xxx.
- Theobald, B. J., Matthews, I., Wilkinson, N., Cohn, J. F., & Boker, S. M. (2007). Animating faces using appearance models. *Workshop on Vision, Video, and Graphics*, Warwick, UK, xxx-xxx.

- Ashraf, A.B., Lucey, S. Chen, T., Prkachin, K., Solomon, P., Ambadar, Z., & Cohn, J.F. (2007). The painful face: Pain expression recognition using active appearance models. *Proceedings of the ACM International Conference on Multimodal Interfaces (ICMI'07)*, Nagoya, Japan, 9-14.
- Theobald, B., Matthews, I., Cohn, J.F., & Boker, S. (2007). Real-time expression cloning using active appearance models. *Proceedings of the ACM International Conference on Multimodal Interfaces (ICMI'07)*, Nagoya, Japan, 134-139.
- De la Torre, F., Campoy, J., Cohn, J.F., & Kanade, T. (2007). Temporal segmentation of facial behavior. *Proceedings of the Eleventh IEEE International Conference on Computer Vision (ICCV 2007)*, Rio de Janeiro, Brazil, xxx-xxx.
- De la Torre, F., Collet, A., Quero, M., Cohn, J.F., & Kanade, T. (2007). Filtered component analysis to increase robustness to local minima in appearance models. *Proceedings of the IEEE Conference in Computer Vision and Pattern Recognition (CVPR 2007)*, Minneapolis, Minnesota, 1-8.
- De la Torre, F., Collet, A., Cohn, J.F., & Kanade, T. (2007). Robust appearance matching with filtered component analysis. *Proceedings of the 2nd International Conference on Computer Vision Theory and Applications*. Barcelona, Spain, 207-213.
- De la Torre, F., Campoy, J., Cohn, J.F., & Kanade, T. (2007). Simultaneous registration and clustering for temporal segmentation of facial gestures from video. *Proceedings of the 2nd International Conference on Computer Vision Theory and Applications*. Barcelona, Spain, 110-115.
- Cohn, J.F. (2007). Foundations of human-centered computing: Facial expression and emotion. *International Joint Conference on Artificial Intelligence, Workshop on AI for Human Computing*, Hyderabad, India, 5-12.
- Cohn, J.F. (2006). Foundations of human computing: Facial expression and emotion. *Proceedings of the ACM International Conference on Multimodal Interfaces (ICMI'06)*, Banff, Canada, 233-238.
- Valstar, M.F., Pantic, M., Ambadar, Z., & Cohn, J.F. (2006). Spontaneous vs. posed facial behavior: Automatic analysis of brow actions. *Proceedings of the ACM International Conference on Multimodal Interfaces (ICMI'06)*, Banff, Canada, 162-170.
- Lucey, S., Matthews, I., Hu, C., Ambadar, Z., De la Torre, F., & Cohn, J.F. (2006). AAM derived face representations for robust facial action recognition. *Proceedings of the Seventh IEEE International Conference on Automatic Face and Gesture Recognition (FG'06)*, Southampton, UK, 155-160.
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- Forbes, E.E., Galles, S.J., Fox, N.A., & Cohn, J.F. (2003, October). Children's emotion regulation during a disappointment: Vagal tone, heart period, and frontal EEG asymmetry. *Society for Psychophysiological Research*. Chicago, Illinois.
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- Schmidt, K. & Cohn, J. F. (2002, July). The temporal patterning of smile onsets discriminates posed from spontaneous smiles *International Society for Research in Emotion*. Cuenca, Spain.
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- Forbes, E. E., Miller, A., Cohn, J. F., Fox, N. A., Kovacs, M. (2001, October). Affective startle modulation and childhood-onset depression: Effects of bipolar course and comorbid early-onset anxiety. *Society for Psychophysiological Research*. Vancouver, Canada.
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- Cohn, J. F., Tian, Y. L., & Forbes, E. (2000, July). Detection, tracking, and classification of facial action units in infant and caregiver facial expression. *International Conference on Infant Studies*. Brighton, England.
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- Forbes, E. E., Cohn, J. F., Moore, G. A., Liu, D., Jankel, C., & Allen, N. (1999, April). Mothers' and fathers' personality and their affective behavior during parent-infant play. *Society for Research in Child Development*. Albuquerque, New Mexico.
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- Forbes, E. E., Zlochower, A. J., & Cohn, J. F. (1998, April). Infant expressiveness: The influences of infant affective stability, maternal mood, and maternal affective behavior. *International Society for Infant Studies*. Atlanta, Georgia.
- Moore, G. A., Cohn, J. F., & Campbell, S. B. (1998, April). Infant responses to maternal still-face predict toddler internalizing and externalizing behaviors. *International Society for Infant Studies*. Atlanta, Georgia.
- Cohn, J. F. (1998, January). Semi-automated analysis of facial and prosodic expression in humans. *NIMH Workshop : It's Not Just Context*. Potomac, Maryland.
- Cohn, J. F., Zlochower, A., Lien, J., Wu., Y. T., & Kanade, T. (1997, April). Facial expression can be measured by image processing of video sequences. *Society for Research in Child Development*. Washington, DC.
- Cohn, J. F., Moore, G. A., & Campbell, S. B. (1996, April). Trait emotion and bi-directional influence in the mother-infant relationship. *International Society for Infant Studies*, Providence, Rhode Island.
- Fox, N. A. & Cohn, J. F. (1996, April), Co-Chairs, Children's externalizing problems: The contribution of child temperament, parenting styles, and socio-demographic factors. *International Society for Infant Studies*. Providence, Rhode Island.
- NICHD Early Child Care Research Network (1996, April). Infant child care and attachment security: Results of the NICHD study of early child care. Invited symposium, *International Society for Infant Studies*. Providence, Rhode Island.
- NICHD Early Child Care Research Network (1995, March). Child care in the 1990's: The NICHD Study of Early Child Care. Poster symposium presented at the *Biennial Meeting of the Society for Research in Child Development*. Indianapolis, Indiana.
- Orenstein, S. R., Shalaby, T. S., & Cohn, J. F. (1995, November). Gastro-esophageal reflux symptoms in 100 normals: Diagnostic validity of the infant gastro-esophageal reflux questionnaire. *North American Society for Pediatric Gastroenterology and Nutrition*. Chicago, Illinois.
- Cohn, J. F. & Zlochower, A. (1995, June). Computerized analysis of facial expression: Feasibility of automated discrimination. *American Psychological Society*. New York, New York.
- Elmore, E. & Cohn, J. F. (1995, April). Comparison of micro-analytic and global ratings to assess mother-infant affect and synchrony. *Society for Research in Child Development*, Indianapolis, Indiana.
- Katz, G., Cohn, J. F., & Moore, C. A. (1995, April). A new method for coding vocal f₀ shape and quantitative summary features in very large samples of infant-directed speech. *Society for Research in Child Development*. Indianapolis, Indiana.
- Moore, G., Cohn, J. F., & Campbell, S. B. (1995, April). A comparison of traditional and quantitative classification of attachment status. *Society for Research in Child Development*. Indianapolis, Indiana.

- Moore, G., Cohn, J. F., & Campbell, S. B. (1995, April). Is maternal affect consistent toward infant siblings in face-to-face interaction? *Society for Research in Child Development*. Indianapolis, Indiana.
- Zlochower, A. & Cohn, J. F. (1995, April). Temporal organization of mother-infant interaction: Do depressed mothers and their infants coordinate vocal behavior? *Society for Research in Child Development*. Indianapolis, Indiana.
- Caro-Martinez, L., Cohn, J. F., & Campbell, S. B. (1993, June). Maternal behavior during the Strange Situation and infant attachment. *American Psychological Society*. Chicago, Illinois.
- Cohn, J. F. (1993, March). Discussant. In A. Fogel & D. S. Messinger (Chairs), Dynamics in the development of early emotion. *Society for Research in Child Development*. New Orleans, Louisiana.
- Katz, G., Cohn, J. F., & Moore, C. (1993, March). Infant-directed speech: Communicative intent and prosodic structure. *Society for Research in Child Development*. New Orleans, Louisiana.
- Meyers, T., Campbell, S. B., & Cohn, J. F. (1993, March). Infant feeding interactions: Depressed and non-depressed mothers. *Society for Research in Child Development*. New Orleans, Louisiana.
- Popper, S. D., Ross, S., Cohn, J. F., & Campbell, S. B. (1993, March). Social and object mastery play in 12-month-olds with depressed and non-depressed mothers: Developmental changes and correlates. *Society for Research in Child Development*. New Orleans, Louisiana.
- Campbell, S. B., Cohn, J. F., Meyers, T., Ross, S., & Flanagan, C. (1993, March). Chronicity of maternal depression and mother-infant interaction. *Society for Research in Child Development*. New Orleans, Louisiana.
- Moore, C., Cohn, J. F., and Katz, G. (1993, February). Differential analysis of mothers' pitch contours in infant-directed speech. *South-Western Pennsylvania American Speech*. Language, and Hearing Association, Pittsburgh, Pennsylvania.
- Moore, C., Cohn, J. F., and Katz, G. (1992, November). Differential analysis of mothers' pitch contours in infant-directed speech. *American Speech, Language, and Hearing Association*. San Antonio, Texas.
- Katz, G., Cohn, J. F., and Moore, C. (1992, November). Semi-automated processing of very large natural f₀ samples. *American Speech, Language, and Hearing Association*. San Antonio, Texas.
- Cohn, J. F. (1992, August). Discussant. In S.B. Campbell (Chair), *Maternal depression, parenting, and young children's development: Longitudinal perspectives*. American Psychological Association. Washington, DC.
- Cohn, J. F. and Campbell, S. B. (1992, May). The course and correlates of depression in postpartum women and their influence on infant socio-emotional development. *International Conference on Infant Studies*. Miami, Florida.
- Popper, S. D., Cohn, J. F., and Ross, S. (1992, May). Do securely attached infants show higher mastery motivation? *International Conference on Infant Studies*. Miami, Florida.
- Matias, R. and Cohn, J. F. (1992, May). Transitions among Max-specified discrete and blended expressions. *International Conference on Infant Studies*. Miami, Florida.
- Orenstein, S., Cohn, J. F., Shalaby, T., and Kartan, B. (1992). Reliability and validity of an infant gastroesophageal reflux questionnaire. *Pediatric Research*, 31(4 part 2),114A.
- Cohn, J. F., Campbell, S. B., Ross, S. H., and Caro-Martinez, L. (1991, April). Postpartum depression, mother-infant interaction, and infant coping two through 12 months. *Society for Research in Child Development*. Seattle, Washington.
- Ross, S. H., Cohn, J. F., and Campbell, S. B. (1991, April). Infant response at 6 months in still-face but not normal mother-infant interaction predicts attachment security. *Society for Research in Child Development*. Seattle, Washington.

- Cohn, J. F. (1990, October). Influence of parent affective disorder on infant affect regulation and development. *Rochester Symposium on Developmental Psychopathology*. Rochester, New York
- Cohn, J. F. and Campbell, S. B. (1990, August). Postpartum depression: Incidence, course, and influence on mothers and infants. *American Psychological Association*. Boston, Massachusetts.
- Cohn, J. F. and Beebe, B. (1990, April). Sampling interval affects time-series regression estimates of mother-infant influence. *International Conference on Infant Studies*. Montreal, Canada.
- Cohn, J. F., Campbell, S. B., and Matias, R. (1990, April). Face-to-face interactions of depressed and non-depressed mother-infant pairs at 2, 4, and 6 months. *International Conference on Infant Studies*. Montreal, Canada.
- Campbell, S. B., Cohn, J. F., Ross, S., Elmore, M., and Popper, S. (1990, April). Postpartum adjustment and postpartum depression in primiparous women. *International Conference on Infant Studies*. Montreal, Canada.
- Feranchak, A. P., Orenstein, S. R., and Cohn, J. F. (1990). Behaviors associated with gastro-esophageal reflux episodes in infants: A study using Ph probe and split-screen video. *Pediatric Research*, 27 (4, part 2), 9A.
- Cohn, J. F. (1989, December). Commentary: The effects of severe maternal depression and obsessive-compulsive disorder on infant development. *National Center for Clinical Infant Programs: 6th Bicentennial Training Institute*. Boston, Massachusetts.
- Cohn, J. F., Campbell, S. B., and Popper, S. (1989, August). Self-regulation in infants of postpartum depressed mothers. *American Psychological Association*. New Orleans, Louisiana.
- Matias, R. & Cohn, J. F. (1989, April). Differentiation of positive and negative affect from 2 to 6 months of age. *Society for Research in Child Development*. Kansas City, Kansas.
- Ross, S. & Cohn, J. F. (1989, April). Four-month-old infants' response to decreased intensity of mother's vocalization during face-to-face interaction. *Society for Research in Child Development*. Kansas City, Kansas.
- Cohn, J. F., Campbell, S. B., Matias, R., & Hopkins, J. (1988, April). Face-to-face interactions of depressed and non-depressed mother-infant pairs at 2 months. *International Conference on Infant Studies*.
- Matias, R., Cohn, J. F., & Ross, S. (1988, April). Convergent and discriminative validity of the Maximally Discriminative Facial Movement (MAX) and Monadic Phases coding systems. *International Conference on Infant Studies*.
- Cohn, J. F. (1987, April). Individual differences among depressed mothers and their infants during face-to-face interactions. *Society for Research in Child Development*. Baltimore, Maryland.
- Cohn, J. F., Matias, R., Connell, D., & Lyons-Ruth, K. (1985, April). At risk infants: Face-to-face interaction and developmental differences. *Society for Research in Child Development*. Toronto, Canada.
- Lyons-Ruth, K., Connell, D. B., Zoll, D., & Cohn, J. F. (1985, April). Maternal behaviors at home and their relation to avoidant and resistant infant responses in the lab. *Society for Research in Child Development*. Toronto, Canada.
- Cohn, J. F., Krafchuk, E., & Ricks, M. (1984, April). Mother-infant face-to-face interaction: Developmental modifications in sequential properties of the interaction. *International Conference on Infant Studies*. New York, New York.
- Cohn, J. F., Connell, D., and Lyons-Ruth, K. (1984, April). Face-to-face interactions of high-risk mother-infant pairs. *International Conference on Infant Studies*. New York, New York.
- Cohn, J. F. and Black, M.M. (1984, September). Individual and family factors associated with risk of institutionalization. *American Psychological Association*. Toronto, Canada.

Cohn, J. F. (1981, April). Three-month-old infants' reaction to simulated maternal depression. *Society for Research in Child Development*. Boston, Massachusetts.

Tronick, E., Cohn, J., Krafchuk, E., Ricks, M., and Winn, S. (1980, February). Social interaction, "normal and abnormal," maternal characteristics, and the organization of infant social behavior. *Clinical Applications of Research in Infant-Parent Relationships*. Institute on the Development of Infants and Parents, Boston, Massachusetts.

SYNERGISTIC ACTIVITIES

Schematic pitch coding. Custom software available as shareware to generate graphic representations of f_0 contours and quantitative estimates of acoustic parameters, utterance durations, and turn-taking pauses. (Katz, Cohn, & Moore, 2000).

Icode. Custom software available as shareware for computer-assisted coding of digital video. Image sequences or movie files may be played at variable speed; user inputs of FACS action units or other labels are precisely logged to target video frames. Icode has no pre-set limits on the number of codes that may be entered. A reliability function allows viewing and analysis of comparison-coded video. Data may be exported to Excel or statistical packages for analysis.

CMU/Pitt Automatic Facial Image Analysis (AFA). Automatic head tracking, 3D motion recovery, and analysis and recognition of facial action units. Versions 1-4 are described in Cohn & Kanade (2007).

Cohn-Kanade AU-Coded Face Image Database. (Kanade, Cohn, & Tian, 2000). The database is the most comprehensive test-bed to date for comparative studies of facial expression analysis. It is widely used internationally for research in computer vision and graphics. It includes 2105 digitized image sequences from 182 adult subjects of varying ethnicity, performing multiple tokens of most primary FACS action units.

CMU Multi-PIE Database. (Gross, Matthews, Cohn, Baker, & Kanade, 2007). The development of face recognition algorithms critically depends on the availability of facial image data spanning conditions of interest in a carefully controlled fashion. Subjects were recorded on four occasions inside the CMU 3D room using a hardware synchronized network of 15 high quality video cameras and 18 flashes. Subjects were instructed to display a range of different facial expressions including smile, surprise, squint, disgust and scream. A total of 337 subjects were recorded, with 129 subjects appearing in all four sessions. Overall the database contains more than 750,000 images for 305 GB of data.

MEDIA

My research in parent-infant interaction, depression, and facial expression analysis has appeared in both print and electronic media in the U.S. and internationally. Maternal depression research was featured in the documentary "*Breaking the Blues*" and in articles in *Psychology Today*, the *APA Monitor*, and the Philadelphia *Inquirer* among other print media. My work in facial expression analysis has been the topic of film documentaries in the U.S., Europe, and Japan, TV in Europe, radio in Europe, Australia, and the U.S. and international newspapers including the *Washington Post*, *Chicago Tribune*, and the *Times of London*. Most recently, it was featured in a DVD produced by Thomson/Wadsworth publishers for distribution with Introductory Psychology textbooks and in a documentary by Quest of Paul Ekman's *Emotions Revealed*.

TEACHING EXPERIENCE

Abnormal Psychology (undergraduate),
Developmental Psychopathology (undergraduate)
Introductory Psychology (undergraduate)
Psychology of Emotion (undergraduate, graduate)
Psychological Assessment (graduate)
Infant Social and Emotional Development (graduate)

EDITORIAL BOARDS

Child Development, 1989 to 1996
Developmental Psychology, 1992 to 1998
Infant Behavior and Development, 1994 to 1999
Infancy, 2003 - 2008

CONFERENCE PROGRAMS

CONFERENCE CHAIR OR CO-CHAIR

Co-Chair (with T. Huang, R. Cowie, & M. Pantic), *IEEE International Conference on Automatic Face and Gesture Recognition (FG2008)*, Amsterdam, The Netherlands.
Co-Chair (with T. Huang, R. Cowie, & M. Pantic), *First IEEE Workshop on CVPR for Human Communicative Behavior Analysis (CVPR4HB)*, Anchorage.
Special Section Co-Chair with Maja Pantic, Automatic Facial Expression Analysis. *IEEE International Conference on Systems, Man & Cybernetic, (SMC 2004)*, the Hague, the Netherlands.

PROGRAM COMMITTEE

Program Committee, *Eight International Conference on Intelligent Virtual Agents (IVA'08)*, Tokyo, Japan.
Program Committee, *IEEE Workshop on Human Computer Interaction (HCI 2007)*, Rio De Janeiro, Brazil.
Program Committee, *IEEE Workshop on Analysis and Modeling of Faces and Gestures (AMFG-07)*, Rio De Janeiro, Brazil.
Program Committee, *Twentieth International Joint Conference on Artificial Intelligence (IJCAI-07)*, Hyderabad, India.
Program Committee, *Fifth International Conference on Development and Learning (ICDL-06)*, Bloomington, Indiana.
Program Committee, *IEEE International Workshop on Human-Computer Interaction, 2005*, Beijing, China
Program Committee, *IEEE International Workshop on modeling People and Human Interaction (PHI'05)*, Beijing, China.
Program Committee, *IEEE International Conference on Automatic Face and Gesture Recognition (FG 2006)*, Southampton, England.
Program Committee, *IEEE Workshop on Analysis and Modeling of Faces and Gesture (AMFG 2005)*, Beijing, China.

Program Committee, *the Fourth International Conference on Development and Learning (ICDL-05): From Interaction to Cognition..* Osaka, Japan.

Program Committee, *International Conference on Active Media Technology (AMT 2005)*, Takamatsu, Japan.

Program Committee, *the Third International Conference on Development and Learning (ICD 2004): Developing Social Brains*, La Jolla, California.

Program Committee, *IEEE Computer Society Conference on Computer Vision and Pattern Recognition, (CVPR 2004)*, Washington, DC.

Program Committee, *3rd International Conference on Entertainment Computing, (ICEC 2004)*, Eindhoven, the Netherlands.

Scientific Committee, *7th European Meeting of the Association for the Advancement of Assistive Technology in Europe (AAATE 2003)*, Dublin, Ireland.

Program Committee, *Florida Association for Artificial Intelligence Research Society (FLAIRS 2003), Special Track: Integrating Emotion and Cognition in Formal Models*, St. Augustine, Florida.

Program Committee, *International Computer Science Conference: Active Media Technology (AMT 2003)*, Chongqing, China.

Program Committee, *IEEE International Conference on Multimodal Interfaces (ICMI 2002)*, Pittsburgh, PA.

Program Committee, *First International Workshop on Entertainment Computing, (IWEC 2002)*, Chiba, Japan.

Program Committee, *IEEE International Workshop on Cues in Communication (CUES 2001)*, Kauai, Hawaii.

Program Committee, *International Computer Science Conference: Active Media Technology (AMT 2001)*, Hong Kong, China.

Chair, Panel 14, Affect and Temperament, *Society for Research in Child Development: Biennial Meeting (SRCD 1999)*, Albuquerque, NM.

GRANT REVIEWS

National Institutes of Health Psychosocial Development, Risk, and Prevention Study Section (2005 – 2008)

Ad hoc member:

Council of Physical Sciences of the Netherlands Organization for Scientific Research

National Institute of Alcohol Abuse and Alcoholism

National Institute of Child Health and Development

National Institute of Mental Health

National Institute of Health Biobehavioral Regulation, Learning and Ethology Study Section

National Institute of Mental Health Social and Group Processes Study Section, Interim member 1998-99

National Science Foundation

Scientific Directorate of the Center for Interdisciplinary Research (ZiF) (Germany)

Swiss National Science Foundation

Western Psychiatric Institute and Clinic Research Committee

JOURNAL AND CONFERENCE REVIEWS

Abnormal Psychology
Autism
Behavioral and Brain Sciences
Behavior Research Methods
Biological Psychiatry
Biological Psychology
Child Development
Current Directions in Psychological Science
Development and Psychopathology
Developmental Psychology
Emotion
Emotion and Cognition
Eurographics
Florida Artificial Intelligence Research Society
Journal of Experimental Social Psychology
Journal of Personality and Social Psychology
Human-Computer Interaction
IEEE Transactions on Multimedia
IEEE Transactions on Vision, Image, and Signal Processing
IEEE Signal Processing Magazine
Image
Infancy
Infant Behavior and Development
International Journal on Artificial Intelligence Tools
International Journal on Computer Vision
Journal of Language and Speech
Journal of Vision
Psychological Assessment
Psychological Bulletin
Psychophysiology
Social Development
Society for Research in Child Development
The Nuffield Foundation

CLINICAL EXPERIENCE

Consultation and assessment, 1983 to present

Clinical Supervision, Clinical Psychology Center, University of Pittsburgh, 1983 to 2000.

APA-Approved Internship in Child Clinical and Pediatric Psychology, University of Maryland School of Medicine, Department of Pediatrics, Division of Pediatric Psychology, 1982-1983

Clinical Associate, Pediatric Psychology Program, Bay State Medical Center, Springfield, MA, 1981-1982

Clinician, Psychological Services Center, University of Massachusetts, 1978-1981

ADMINISTRATIVE EXPERIENCE

University Research Council, University of Pittsburgh, 2006 to present.

Chair, Computer Committee, Department of Psychology, University of Pittsburgh, 2003 to 2007.

Chair, Colloquium Committee, Department of Psychology, University of Pittsburgh, 1989 to 1992, 2007 to 2008.

Director of Admissions, Clinical Psychology Program, University of Pittsburgh, 1985 to 1990, 1998, 2000.

Faculty Research Grants Committee, 1995-1997. (Chair, 1997).

FAIS Administrator (Computer Administrator), Department of Psychology, 1991 to 1999.

IRB Pre-Scientific Review, Department of Psychology, 2001-present.

Racial Justice Committee, Department of Psychology, University of Pittsburgh, 1984 to 1988.

Undergraduate Curriculum Committee, Psychology Department, University of Pittsburgh, 1988 to 1989.

PROFESSIONAL AFFILIATIONS

American Association for the Advancement of Science

Association for Computing Machinery

American Psychological Association

American Psychological Society

Institute of Electronic and Electrical Engineers

International Society of Infant Studies

International Society for Research in Emotion

Society for Research in Child Development

Society for Psychophysiology