

JEFFREY F. COHN

Department of Psychology
4327 Sennott Square
University of Pittsburgh
Pittsburgh, PA 15260
412-624-8825 (voice) -2023 (fax)

7517 Tuscarora St.
Pittsburgh, PA 15208

<mailto:jeffcohn@pitt.edu>
www.pitt.edu/~jeffcohn

DEGREES1

LICENSE AND CERTIFICATION1

PROFESSIONAL EXPERIENCE.....1

RESEARCH GRANT SUPPORT 2

INDIVIDUAL FELLOWSHIPS SPONSORED AND AWARDED 3

PEER-REVIEWED PUBLICATIONS 4

PUBLISHED CONFERENCE PROCEEDINGS 9

BOOK CHAPTERS.....13

TECHNICAL REPORTS15

MANUSCRIPTS UNDER REVIEW 16

TUTORIALS AND WORKSHOPS 16

INVITED PRESENTATIONS17

PUBLISHED ABSTRACTS AND CONFERENCE PRESENTATIONS 19

SYNERGISTIC ACTIVITIES 27

MEDIA 27

TEACHING EXPERIENCE28

EDITORIAL BOARDS28

CONFERENCE PROGRAM COMMITTEES.....28

GRANT REVIEWS.....29

JOURNAL AND CONFERENCE REVIEWS.....30

CLINICAL EXPERIENCE31

ADMINISTRATIVE EXPERIENCE31

PROFESSIONAL AFFILIATIONS.....31

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 to present
Affiliated Faculty, Virginia Commonwealth University, 2009 to present

Associate Professor of Psychology, University of Pittsburgh, 1989 to 2005
Adjunct Faculty, Robotics Institute, Carnegie Mellon University, 1997 to present
Associate Professor of Psychiatry, University of Pittsburgh, 1990 to present
Assistant Professor of Psychology, University of Pittsburgh, 1983 to 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-Investigator (PI: Martial Herbert, CMU). Robotics Collaborative Technology Alliance (RCTA), Army Research Laboratory, 7/1/2010 to 6/30/2019.
Scientific Advisor, Network of Excellence on Social Signal Processing (SSPNet NoE), "European Commission's Seventh Framework Program." 2/1/2009 to 1/31/2014.
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."

RESEARCH GRANTS UNDER REVIEW

Co-Principal Investigator with Daniel Messinger, "Collaborative Research: Communication, Perturbation, and Early Development." National Science Foundation, 1/1/2011 to 12/31/2013.
Co-Principal Investigator with Lijun Yin, "EAGER: Spontaneous 4D-Facial Expression Corpus for Automated Facial Image Analysis." National Science Foundation, 1/1/2011 to 12/31/2011.

PAST RESEARCH GRANTS

Principal Investigator, "Automated Facial Expression Recognition System (AFERS)." Platinum Solutions and Technical Support Working Group, 3/26/09 to 3/25/10.
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 9/30/09. Total direct costs: \$269,584.
Principal Investigator, "Collaborative Research DHB: Coordinated Motion and Facial Expression in Dyadic Conversation." The National Science Foundation, 1/1/06 to 12/31/09. Total costs: \$730,616.
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-Principal Investigator (PI: Judy Moskowitz), "A Pilot test of Automated Facial Image Analysis for Health-Relevant Facial Expressions," UCSF Academic Senate Committee on Research.
Co-Principal Investigator with Nathan Fox (Program Project PI: Maria Kovacs), "Psychophysiology of Risk for Depression." National Institute of Mental Health: 8/1/97 to 7/31/07. 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

Cohn, J. F. (In press). Advances in behavioral science using automated facial image analysis and synthesis. *IEEE Signal Processing Magazine*.

Cohn, J. F., & Sayette, M. A. (In press). Spontaneous facial expression in a small group can be automatically measured: An initial demonstration. *Behavior Research Methods*.

Boker, S. M., Cohn, J. F., Theobald, B.-J., Matthews, I., Mangini, M., Spies, J. R., et al. (In press). Something in the way we move: Motion, not perceived sex, influences nods in conversation. *Journal of Experimental Psychology*.

Boker, S. M., Cohn, J. F., Theobald, B.-J., Matthews, I., Brick, T., & Spies, J., (2009). Effects of damping head movement and facial expression in dyadic conversation using real-time facial expression tracking and synthesized avatars. *Philosophical Transactions B of the Royal Society*, 364 (1535), 3485-3495. PubMed PMID: 19884143.

Gross, R., Matthews, I., Cohn, J. F., Kanade, T., & Baker, S. (2010). Multi-PIE. *Image and Vision Computing*, 28(5), 807-813.

Pantic, M. & Cohn, J.F. (2009). Visual and multimodal analysis of human spontaneous behavior: Introduction to the special issue of *Image & Vision Computing Journal*. *Image & Vision Computing*, 27, 1741-1742.

Ashraf, A. B., Lucey, S., Cohn, J. F., Chen, T., Prkachin, K., & Solomon, P. (In press). The painful face: Pain expression recognition using active appearance models. *Image and Vision Computing*, 27, 1788-1796.

Lucey, S., Wang, Y., Saragih, J. M., & Cohn, J. F. (2010). Non-rigid face tracking with enforced convexity and local appearance consistency constraint. *Image and Vision Computing*, 28(5), 781-789.

Messinger, D.S., Mahoor, M.H., Chow, S.M., & Cohn, J.F. (2009). Automated measurement of facial expression in infant-mother interaction: A pilot study. *Infancy*, 14 (3), 285-305. PubMed PMID: 19885384; PubMed Central PMCID: PMC2746084.

Lucey, S., Wang, Y., Cox, M., Sridharan, S., & Cohn, J.F. (2009). Efficient constrained local model fitting for non-rigid face alignment. *Image and Vision Computing*, 27 (12), 1804-1813.

Pollak, S. D., Messner, M., Kistler, D. J., & Cohn, J. F. (2009). Development of perceptual expertise in emotion recognition. *Cognition*, 110(2), 242-247. PubMed PMID: 19059585; PubMed Central PMCID: PMC2673797.

Ambadar, Z., Cohn, J.F., & Reed, L.I. (2009). All smiles are not created equal: Morphology and timing of smiles perceived as amused, polite, and embarrassed/nervous. *Journal of Nonverbal Behavior*, 33 (1), 17-34. PubMed PMID: 19554208; PubMed Central PMCID: PMC2701206.

Theobald, B.J., Matthews, I., Mangini, M., Spies, J., Brick, T., Cohn, J.F., & Boker, S. (2009). Mapping and manipulating facial expression. *Language and Speech*, 52 (2&3), 369-386. PubMed PMID: 19624037; PubMed Central PMCID: PMC2716035.

Denlinger, R.L., Van Swearingen, J.M., Cohn, J.F., Schmidt, K.L. (2008). Puckering and blowing facial expressions in people with facial movement disorders. *Physical Therapy*. 88, 909-915. PubMed PMID: 18617578; PubMed Central PMCID: PMC2518217.

- Forbes, E.E., Shaw, D.S., Silk, J.S., Feng, X., Cohn, J.F., Fox, N.A., & Kovacs, M. (2008). Children's affect expression and frontal EEG asymmetry: transactional associations with mothers' depressive symptoms. *Journal of Abnormal Child Psychology*, 36 (2), 207-221. PubMed PMID: 17851752.
- Messinger, D.S., Cassel, T.D., Acosta S.I., Ambadar, Z., & Cohn, J. F. (2008). Infant smiling dynamics and perceived positive emotion. *Journal of Nonverbal Behavior*, 32 (3), 133-155. PubMed PMID: 19421336; PubMed Central PMCID: PMC2676856.
- Vuga, M., Fox, N.A., Cohn, J.F., Kovacs, M., & George, C.J. (2008). Long-term stability of electroencephalographic asymmetry and power in 3 to 9 year old children. *International Journal of Psychophysiology*, 67 (1), 70-77. PubMed PMID: 18045715; PubMed Central PMCID: PMC2704384.
- Ramnath, K., Koterba, S., Xiao, J., Hu, C., Matthews, I., Baker, S., Cohn, J.F., & Kanade, T. (2008). Multi-view AAM fitting and construction. *International Journal of Computer Vision*, 76 (2), 183-204 . PubMed PMID: 19838316; PubMed Central PMCID: PMC2762225.
- 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. PubMed PMID: 17197940.
- Reed, L.I., Sayette, M., & Cohn, J.F. (2007). Impact of depression on response to comedy: A dynamic facial coding analysis. *Journal of Abnormal Psychology*, 116, 804-809. PubMed PMID: 18020726.
- 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. PubMed PMID: 16934774.
- 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. PubMed PMID: 16966242.
- 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. PubMed PMID: 16847549.
- 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. PubMed PMID: 19367343; PubMed Central PMCID: PMC2668537.
- Forbes, E.E., Fox, N.A., Cohn, J.F., Galles, S.J., & Kovacs, M. (2006). Children's affect regulation during a disappointment: Psychophysiological responses and relation to parent history of depression. *Biological Psychology*, 71, 264-277. PubMed PMID: 16115722.
- Moriyama, T., Kanade, T., Xiao, J., & Cohn, J.F. (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. PubMed PMID: 16640260.
- 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 and controls. *International Journal of Psychophysiology*, 59, 107-115. PubMed PMID: 16002168.
- 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. PubMed PMID: 16526929.

- 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. PubMed PMID:16405644.
- 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). Affect-modulated startle in adults with childhood-onset depression: relations to bipolar course and number of lifetime depressive episodes. *Psychiatry Research*. 134, 11-25. PubMed PMID: 15808286.
- 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. PubMed PMID: 15869701.
- 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-based and component-based methods. *International Journal of Psychophysiology*, 53, 105-119. PubMed PMID: 15210288.
- 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. PubMed PMID: 16915346; PubMed Central PMCID: PMC1550219.
- 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. PubMed PMID: 14587550.
- 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. PubMed PMID: 12940501; PubMed Central PMCID: PMC2632972.
- 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. PubMed PMID: 14638288.
- 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. PubMed PMID: 14563332.
- 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 patterns of brain activity in adults with a history of childhood-onset depression: Gender differences and clinical variability. *American Journal of Psychiatry*, 159, 934-940. PubMed PMID: 12042180.
- 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 Pediatric*, *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

- Zhou, F., De la Torre, F., & Cohn, J. F. (June 2010). Unsupervised discovery of facial events: Learning a dynamic vocabulary for facial expression analysis. Proceedings of the *IEEE International Conference on Computer Vision and Pattern Recognition*, San Francisco, CA.
- Simon, T. K., Nguyen, M. H., Torre, F. D. I., & Cohn, J. F. (June 2010). Action unit detection with segment-based SVM's. *Proceedings of the IEEE International Conference on Computer Vision and Pattern Recognition*, San Francisco, CA.
- Cox, M., Lucey, S., Cohn, J. F., & Sridharan, S. (October 2009). Least-squares coagulating for large numbers of images. *Proceedings of the IEEE International Conference on Computer Vision*, Kyoto, Japan.
- Saragih, J. M., Lucey, S., & Cohn, J. F. (October 2009). Probabilistic constrained adaptive local displacement experts. *Workshop at the International Conference on Computer Vision*, Kyoto, Japan.
- Saragih, J., Lucey, S., & Cohn, J. F. (October 2009). Probabilistic constrained adaptive local displacement experts. *Workshop at the International Conference on Computer Vision*, Kyoto, Japan.
- Saragih, J. M., Lucey, S., & Cohn, J. F. (October 2009). Face alignment through subspace constrained mean-shifts. *Proceedings of the IEEE International Conference on Computer Vision*, Kyoto, Japan.
- Ryan, A. H., Cohn, J. F., & Hamerski, R. (October 2009). Automated facial expression recognition system. *Proceedings of the IEEE International Carnahan Conference on Security Technology*, Zurich, Switzerland.
- Brick, T. R., Hunter, M., & Cohn, J. F. (September 2009). Get the FACS fast: Automated FACS face analysis benefits from the addition of velocity. *International Conference on Affective Computing & Intelligent Interaction (ACII2009)*, Amsterdam.
- Cohn, J. F., Kreuz, T. S., Yang, Y., Nguyen, M. H., Padilla, M. T., Zhou, F., et al. (September 2009). Detecting depression from facial actions and vocal prosody. *International Conference on Affective Computing & Intelligent Interaction (ACII2009)*, Amsterdam.
- Lucey, P., Cohn, J. F., Lucey, S., & Matthews, I., I., Sridharan, S., & Prkachin, K. M. (September 2009). Automatically detecting pain using facial actions. *International Conference on Affective Computing & Intelligent Interaction (ACII2009)*, Amsterdam, The Netherlands.
- Mamoor, M., Messinger, D., Cadavid, S., & Cohn, J. F. (September 2009). Automated classification of gaze direction using spectral regression and support vector machine. *International Conference on Affective Computing & Intelligent Interaction (ACII2009)*, Amsterdam, The Netherlands.

- Zhu, Y., De la Torre, F., & Cohn, J. F. (2009). Dynamic cascades with bidirectional bootstrapping for spontaneous facial action unit detection. *Proceedings of the International Conference on Affective Computing & Intelligent Interaction (ACII2009)*, Amsterdam, The Netherlands.
- Cohn, J. F. (June 2009). Use of active appearance models for analysis and synthesis of naturally occurring behavior. *2nd IEEE Workshop on CVPR for Human Communicative Behavior analysis (CVPR4HB)*, Miami, FL, xxx-xxx.
- Lucey, P., Cohn, J. F., Lucey, S., Sridharan, S., & Prkachin, K. (June 2009). Automatically detecting action units from faces of pain: Comparing shape and appearance features. *2nd IEEE Workshop on CVPR for Human Communicative Behavior Analysis (CVPR4HB)*, Miami, FL, xxx-xxx.
- Mahoor, M. H., Cadavid, S., Messinger, D. S., & Cohn, J. F. (June 2009). A framework for automated measurement of the intensity of non-posed facial action units. *2nd IEEE Workshop on CVPR for Human Communicative Behavior Analysis (CVPR4HB)*, Miami, FL, xxx-xxx.
- Lucey, P., Howlett, J., Cohn, J. F., Lucey, S., Sridharan, S., & Ambadar, Z. (September 2008). *Improving pain recognition through better utilization of temporal information*. International Conference on Audio-Visual Speech Processing, Tangalooma, Australia, xxx-xxx.
- Lucey, P., Lucey, S., Cox, M., Sridharan, S., & Cohn, J. F. (2008). Comparing object alignment algorithms with appearance variation: Forward-additive vs. inverse-composition. *IEEE International Workshop on Multimedia Signal Processing*, Cairns, Queensland, Australia, xxx-xxx.
- Gross, R., Matthews, I., Cohn, J.F., Baker, S., & Kanade, T. (2008). Multi-PIE. *IEEE International Conference on Automatic Face and Gesture Recognition*, Amsterdam, xxx-xxx.
- Saragih, J., Lucey, S., & Cohn, J.F. (2008). Deformable face fitting with soft correspondence constraints. *IEEE International Conference on Automatic Face and Gesture Recognition*, Amsterdam, xxx-xxx.
- Wang, Y., Lucey, S., & Cohn, J.F. (2008). Non-rigid tracking with local appearance consistency constraint. *IEEE International Conference on Automatic Face and Gesture Recognition*, Amsterdam, xxx-xxx.
- Messinger, D.S., Mahoor, M.H., & Cohn, J.F. (2008). Early interactive emotional development. *IEEE International Conference on Development and Learning 2008 (ICDL-08)*.xxx-xxx.
- 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.
- Koterba, S., Baker, S., Matthews, I., Xiao, J., Hu, C., Cohn, J.F., & Kanade, T. (2005). Multi-view face model fitting. *Proceedings of the IEEE International Conference on Computer Vision*, Beijing, China, 511-518.
- Fox, N.A., Gross, R., Cohn, J.F., & Reilly, R.B. (2005). Robust automatic human identification using face, mouth, and acoustic information. *Proceedings of the IEEE International Workshop on Analysis and Modeling of Faces and Gestures*, Beijing, China.
- Pantic, M., Sebe, N., Cohn, J.F., & Huang, T. (2005). Affective multimodal human-computer interaction. *Proceedings of the ACM International Conference on Multimedia*, Singapore, xxx-xxx.
- Kanade, T. & Cohn, J.F. (2005). The CMU/Pitt Automated Facial Image Analysis System. *Proceedings of the International Conference on Methods and Techniques in Behavioral Research, Wageningen*, The Netherlands, xxx-xxx.
- Hu, C., Xiao, J., Matthews, I., Baker, S., Cohn, J.F., & Kanade, T. (2004). Fitting a single active appearance model simultaneously to multiple images. *British Machine Vision Conference*. London, United Kingdom, 437-446.
- Cohn, J.F., Reed, L.I., Ambadar, Z., Xiao, J., & Moriyama, T. (2004). Automatic analysis and recognition of brow actions and head motion in spontaneous facial behavior. *Proceedings of the IEEE Conference on Systems, Man, and Cybernetics*. The Hague, the Netherlands, 210-216.
- Moriyama, T., Xiao, J., Cohn, J.F., & Kanade, T. (2004). Meticulously detailed eye model and its application to analysis of facial image. *Proceedings of the IEEE Conference on Systems, Man, and Cybernetics*. The Hague, the Netherlands, 629-634.
- Cohn, J.F., Reed, L.I., Moriyama, T., Xiao, J., Schmidt, K., & Ambadar, Z. (2004). Multimodal coordination of facial action, head rotation, and eye motion. *Proceedings of the Sixth IEEE*

- International Conference on Automatic Face and Gesture Recognition (FG'04)*, Seoul, Korea, 129-135.
- De la Torre, F., Caoliva, J., & Cohn, J.F. (2004). Learning 3D appearance models from video. *Proceedings of the Sixth IEEE International Conference on Automatic Face and Gesture Recognition (FG'04)*, Seoul, Korea, 645-650.
- Fox, N., Gross, R., de Chazal, P., Cohn, J.F., & Reilly, R. (2003). Person identification using multi-modal features: Speech, lip, and face. *ACM Multimedia Workshop in Biometrics Methods and Applications (WBMA 2003)*, Berkeley, California, 25-32.
- Cohn, J. F. & Schmidt, K. L. (Invited) (2003). The timing of facial motion in posed and spontaneous smiles. *Proceedings of the 2nd International Conference on Active Media Technology (ICMAT 2003)*, Chongqing, China. 2, 57-72.
- Cohn, J. F., Schmidt, K., 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 (ICMI 2002)*, Pittsburgh, PA, 491-496.
- Cohn, J. F., Xiao, J., Moriyama, T., Gao, J., Ambadar, Z., & Kanade, T. (Invited) (2002). Action unit recognition in spontaneous facial behavior. *Proceedings of the International Conference on Methods and Techniques in Behavioral Research*, Amsterdam, The Netherlands, 48-50.
- Liu, Y., Schmidt, K., Cohn, J. F., & Mitra, S. (2002). Human facial asymmetry for expression-invariant facial identification. *Proceedings of the Fifth IEEE International Conference on Automatic Face and Gesture Recognition (FG'02)*, Washington, DC, 208-214.
- Moriyama, T., Kanade, T., Cohn, J. F., Xiao, J., Ambadar, Z., Gao, J., et al. (2002). Automatic recognition of eye blinking in spontaneously occurring behavior. *Proceedings of the International Conference on Pattern Recognition (ICPR 2002)*, Quebec, Canada, 78-81.
- Tian, Y. L., Kanade, T., & Cohn, J. F. (2002). Evaluation of Gabor-wavelet-based facial action unit recognition in image sequences of increasing complexity. *Proceedings of the Fifth IEEE International Conference on Automatic Face and Gesture Recognition (FG'02)*, Washington, DC, 229-234.
- Xiao, J., Kanade, T., & Cohn, J. F. (2002). Robust full motion recovery of head by dynamic templates and re-registration techniques. *Proceedings of the Fifth IEEE International Conference on Automatic Face and Gesture Recognition (FG'02)*, Washington, DC, 163-169
- Gross, R., Shi, J., & Cohn, J. F. (2001). Quo vadis face recognition? *Third Workshop on Empirical Evaluation Methods in Computer Vision*, Kauai, Hawaii, 119-132.
- Schmidt, K. & Cohn, J.F. (2001). Dynamics of facial expression: Normative characteristics and individual differences. *IEEE International Conference on Multimedia and Expo (ICME 2001)*, Tokyo, Japan, 728-731.
- Wallstrom, G., Kass, R.E., Miller, A., Cohn, J. F., & Fox, N. A. (2001). Correction of ocular artifacts in the EEG using Bayesian adaptive regression splines. *6th Workshop on Bayesian Statistics*, Pittsburgh, PA, xxx-xxx.
- Kanade, T., Cohn, J. F., & Tian, Y. (2000). Comprehensive database for facial expression analysis. *Proceedings of the Fourth IEEE International Conference on Automatic Face and Gesture Recognition (FG'00)*, Grenoble, France, 46-53.
- Tian, Y., Kanade, T., & Cohn, J. F. (2000). Recognizing lower face action units in facial expression. *Proceedings of the Fourth IEEE International Conference on Automatic Face and Gesture Recognition (FG'00)*, Grenoble, France, 484-490.
- Tian, Y., Kanade, T., & Cohn, J. F. (2000). Eye-state detection by local regional information. In T. Tan, Y. Shi, & W. Gao (Eds.). *Proceedings of the International Conference on Multimodal User Interfaces (ICMI 2000)*, Beijing, China. *Lecture Notes in Computer Science, 1948*, 143-150. New York: Springer.

- Tian, Y., Kanade, T., & Cohn, J. F. (2000). Recognizing upper face action units for facial expression analysis. *Proceedings of the IEEE Sponsored Conference in Computer Vision and Pattern Recognition (CVPR 2000)*, Hilton Head, Georgia, 294-301.
- Tian, Y., Kanade, T., & Cohn, J. F. (2000). Dual-state parametric eye tracking. *Proceedings of the Fourth IEEE International Conference on Automatic Face and Gesture Recognition (FG'00)*, Grenoble, France, 110-115.
- Tian, Y., Kanade, T., & Cohn, J. F. (2000). Robust lip tracking by combining shape, color and motion. *Proceedings of the Asian Conference on Computer Vision*, Taipei, Taiwan, 1040-1045.
- Cohn, J. F. & Katz, G. S. (1998). Bimodal expression of emotion by face and voice. *ACM and ATR Workshop on Face/Gesture Recognition and Their Applications* (pp. 41-44). Bristol, United Kingdom: ACM.
- Cohn, J. F., Lien, J. J., Kanade, T., Hua, W., & Zlochow, A. (1998) (Invited). Beyond prototypic expressions: Discriminating subtle changes in the face. *Proceedings of the IEEE Workshop on Robot and Human Communication (ROMAN'98)*, Takamatsu, Japan, 33-39.
- Cohn, J. F., Zlochow, A., Lien, J. J., & Kanade, T. (1998). Feature-point tracking by optical flow discriminates subtle differences in facial expression. *Proceedings of the Third IEEE International Conference on Automatic Face and Gesture Recognition (FG'98)*, Nara, Japan, 396-401.
- Lien, J. J., Kanade, T. K., Zlochow, A., Cohn, J. F., & Li, C. C. (1998). Subtly different facial expression recognition and emotion expression intensity estimation. *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR 1998)*, Santa Barbara, CA, 853-859.
- Lien, J. J., Kanade, T., Cohn, J. F., & Li, C. C. (1998). Automated facial expression recognition. *Proceedings of the Third IEEE International Conference on Automatic Face and Gesture Recognition (FG'98)*, Nara, Japan, 390-395.
- Wu, Y. T., Kanade, T., Cohn, J. F. and Li, C. C. (1998). Optical flow estimation using wavelet motion model. *Proceedings of the International Conference on Computer Vision (ICCV 1998)*, Bombay, India, 992-998.
- Cohn, J. F., Zlochow, A., Lien, J., Wu, Y. T., & Kanade, T. (1997). Automated face coding: A computer-vision based method of facial expression analysis. *Proceedings of the 7th European Conference on Facial Expression, Measurement, and Meaning*, Salzburg, Austria, 329-333.
- Wu, Y. T., Kanade, T., Cohn, J. F., & Li, C. C. (1997). Optical flow estimation using wavelet motion model. *Proceedings of the Image Understanding Workshop, NASA Goddard Space Flight Center*, Greenbelt, Maryland.
- Cohn, J. F., Kanade, T. K., Wu, Y. T., Lien, J., & Zlochow, A. (1996). Facial expression analysis: Preliminary results of a new image-processing based method. *Proceedings of the 9th Conference of the International Society for Research in Emotion*, Toronto, Canada, 329-333.
- Lien, J.J., Kanade, T., Cohn, J.F., Zlochow, A., & Li, C.C. (1997). Automatically recognizing facial expressions in spatio-temporal domain using hidden Markov models. *Proceedings of the Workshop on Perceptual User Interfaces*, Banff, Canada, 94-97.

BOOK CHAPTERS

- Boker, S. & Cohn, J.F. (In press). Real-time dissociation of facial appearance and dynamics during natural conversation. *Dynamic faces: Insights from experiments and computation*. Cambridge, MA: MIT.
- Messinger, D. S., Mahoor, M., Chow, S.-M., Haltigan, J. D., Cadavid, S., & Cohn, J. F. (In press). Early emotional communication: Novel approaches to interaction. In J. Gratch & S. Marsella (Eds.), *Social emotions in nature and artifact: Emotions in human and human-computer interaction*. NY: Oxford.

- Gross, R., Sweeney, L., Cohn, J.F., De la Torre, F., & Baker, S. (2009). Face de-identification. In A. Senior (Ed.), *Protecting privacy in video surveillance*, Berlin Heidelberg: Springer
- Burrows, A. & Cohn, J.F. (2009). Anatomy of the face. In S.Z. Li (Ed.), *Encyclopedia of biometrics*, pp. 16-23. Berlin Heidelberg: Springer.
- Theobald, B.J. & Cohn, J.F. (In press). Facial image synthesis. In D. Sander & K. R. Scherer (Eds.). *Oxford companion to emotion and the affective sciences*, pp 176-179. NY: Oxford University Press.
- Moriyama, T., Xiao, J., Cohn, J.F., & Kanade, T. (2008). Meticulously detailed eye region model. In R. I. Hammoud (Ed.), *Passive eye monitoring: Algorithms, applications and experiments*, pp. 17-40. NY: Springer.
- Cohn, J.F. (2007). Foundations of human computing: Facial expression and emotion. In T. Huang, A. Nijolt, M. Pantic, & A. Pentland (Eds.), *State of the Art Survey. Lecture notes in artificial intelligence, 4451*, Berlin Heidelberg: Springer, 1-16.
- Lucey, S., Ashraf, B.A., & Cohn, J.F. (2007). Investigating spontaneous facial action recognition through AAM representations of the face. In K. Delac & M. Grgic (Eds.) *Face recognition*, pp. 275-284. Vienna: I-TECH.
- Cohn, J. F., Ambadar, Z., & Ekman, P. (2007). Observer-based measurement of facial expression with the Facial Action Coding System. In J. A. Coan & J. B. Allen (Eds.), *The handbook of emotion elicitation and assessment. Oxford University Press Series in Affective Science*, pp. 203-221. New York: Oxford.
- Cohn, J. F. & Kanade, T. (2007). Automated facial image analysis for measurement of emotion expression. In J. A. Coan & J. B. Allen (Eds.), *The handbook of emotion elicitation and assessment. Oxford University Press Series in Affective Science*, pp. 222-238. New York: Oxford.
- Fox, N.A., Gross, R., Cohn, J.F., & Reilly, R.B. (2005). Robust automatic human identification using face, mouth, and acoustic information. In W. Zhao, S. Gong, & X. Tang (Eds.), *AMFG 2005, Lecture Notes in Computer Science, 3723*. Berlin & Heidelberg: Springer-Verlag, 263-277.
- Cohn, J. F. & Ekman, P. (2005). Measuring facial action. In J.A. Harrigan, R. Rosenthal, & K.R. Scherer (Eds.), *The new handbook of nonverbal behavior research*, pp. 9-64. NY: Oxford.
- Van Swearingen, J. & Cohn, J. F. (2005). Depression, smiling and facial paralysis. In R. van Gelder (Ed.). *The facial palsies*, pp. 373-386. Amsterdam, the Netherlands: Lemma Holland.
- Tian, Y. L., Kanade, T., & Cohn, J. F. (2005). Facial expression analysis. In S. Z. Li & A. K. Jain (Eds.), *Handbook of face recognition*, pp. 247-276. NY: Springer.
- Cohn, J. F. (2005). Automated analysis of the configuration and timing of facial expression. In P. Ekman & E. Rosenberg, *What the face reveals (2nd edition): Basic and applied studies of spontaneous expression using the Facial Action Coding System (FACS)*. Oxford University Press Series in Affective Science, pp. 388-392. New York: Oxford.
- Cohn, J. F., Zlochower, A., Lien, J., & Kanade, T. (2005). Automated face analysis by feature point tracking has high concurrent validity with manual FACS coding. In P. Ekman & E. Rosenberg, *What the face reveals (2nd edition): Basic and applied studies of spontaneous expression using the Facial Action Coding System (FACS)*. Oxford University Press Series in Affective Science. New York: Oxford. (Reprinted from *Psychophysiology*, 36, 35-43).
- Schmidt, K., Cohn, J. F., & Tian, Y. L. (2005). Signal characteristics of spontaneous facial expressions: Automatic movement in solitary and social smiles. In P. Ekman & E. Rosenberg, *What the face reveals (2nd edition): Basic and applied studies of spontaneous expression using the Facial Action Coding System (FACS)*. Oxford University Press Series in Affective Science. New York: Oxford. (Reprinted from *Biological Psychology*).
- Tian, Y. L, Kanade, T., & Cohn, J. F. (2002). Recognizing action units for facial expression analysis. In Y. Y. Tang, P. C. Yuen & P. S. P. Wang (Eds.), *Multi-modal interface for human machine*

- communication. *Machine Perception and Artificial Intelligence Series*, 48, 32-66. New York: World Scientific.
- Wallstrom, G. L., Kass, R. E., Miller, A., Cohn, J. F., & Fox, N. A. (2002). Correction of ocular artifacts in the EEG using Bayesian adaptive regression splines. In Carriquiry, A., Gatsonis, C., Gelman, A., Higdon, D., Kass, R., Pauler, D., & Verdinelli, I. (Eds.). *Case Studies in Bayesian Statistics. Vol. 6*. New York: Springer-Verlag.
- Cohn, J. F., Zlochower, A., Lien, J. J., Hua, W., & Kanade, T. (2000). Automated face analysis. In C. Rovee-Collier & L. Lipsitt (Eds.), *Progress in infancy research*, 1, 155-182. Hillsdale, NJ: Erlbaum.
- Campbell, S.B. & Cohn, J.F. (1997). The timing and chronicity of postpartum depression: Implications for infant development. In L. Murray and P.J. Cooper (Eds.), *Postpartum depression and child development*, pp.165-200. New York: Guilford.
- NICHD Early Child Care Research Network (1997). Poverty and patterns of child care. In J. Brooks-Gunn & G. Duncan (Eds.), *Consequences of growing up poor*, (pp. 100-131). New York: Russell-Sage.
- NICHD Early Child Care Research Network (1994). Child Care and Child Development: The NICHD Study of Early Child Care. In S.L. Friedman & H.C. Haywood (Eds.), *Developmental follow-up: Concepts, domains, and methods*, pp. 378-396. New York: Academic.
- Cohn, J. F. (1993). Influence of maternal depression on mother-infant play. In K. MacDonald (Ed.), *Play and culture*, pp. 239-258. State University of New York.
- Cohn, J. F. and Campbell, S. B. (1992). Influence of maternal depression on infant affect regulation. In D. Cicchetti and S. Toth (Eds.), *Rochester Symposium on Developmental Psychopathology, A developmental approach to affective disorders* (Vol. 4, pp. 105-130). Hillsdale, NJ: Erlbaum.
- Tronick, E. Z., Cohn, J. F., and Shea, E. (1986). The transfer of affect between mothers and infants. In T.B. Brazelton and M.W. Yogman (Eds.), *Affective development in infancy* (pp. 11-26). NJ: Ablex.
- Tronick, E., Ricks, M., and Cohn, J. F. (1982). Maternal and infant affective exchange: Patterns of adaptation. In T. Field and A. Fogel (Eds.), *Emotion and interaction: Normal and high risk infants* (pp. 83-100). NJ: Erlbaum.
- Cohn, J. F. and Tronick, E. (1982). Communicative rules and the sequential structure of infant behavior during normal and depressed interaction. In E. Tronick (Ed.), *Social interchange in infancy: Affect, cognition, and communication* (pp. 59-78). MD: University Park Press.

TECHNICAL REPORTS

- De la Torre, F., Zhou, F., & Cohn, J. F. (2010). *Unsupervised discovery of facial events. Technical Report CMU-RI-TR-09-23*. Carnegie Mellon University, Robotics Institute.
- Saragih, J., Lucey, S., & Cohn, J. F. (2009). *Subspace constrained mean-shift. Technical Report CMU-RI-09-15*, Pittsburgh, PA: Carnegie Mellon University, Robotics Institute.
- Gross, R., Matthews, I., Cohn, J. F., Baker, S., & Kanade, T. (2007). *The CMU Multi-pose, illumination, and expression (Multi-PIE) face database. Technical Report CMU-RI-TR-07-08*. Pittsburgh, PA: Carnegie Mellon University, Robotics Institute.
- Cohn, J. F., Kanade, T., Moriyama, T., Ambadar, Z., Xiao, J., Gao, J., et al. (2001, November). *A comparative study of alternative FACS coding algorithms. Technical Report CMU-RI-TR-02-06*. Pittsburgh, PA: Carnegie Mellon University, Robotics Institute.
- Liu, Y., Weaver, R. L., Schmidt, K., Serban, N., & Cohn, J. F. (2001, August). *Facial asymmetry: A new biometric. Technical Report CMU-RI-TR-01-23*. Pittsburgh, PA: Carnegie Mellon University, Robotics Institute.
- Gross, R., Shi, J., & Cohn, J. F. (2001, June). *Quo vadis face recognition? Technical Report CMU-RI-TR-01-17*. Pittsburgh, PA: Carnegie Mellon University, Robotics Institute.

- Tian, Y., Kanade, T., & Cohn, J. F. (2001, January). *Recognizing facial actions by combining geometric features and regional appearance patterns*. Technical Report CMU-RI-TR -01-01. Pittsburgh, PA: Carnegie Mellon University, Robotics Institute.
- Tian, Y., Kanade, T., & Cohn, J. F. (1999). *Recognizing action units for facial expression analysis*. Technical Report CMU-RI TR-99-40. Pittsburgh, PA: Carnegie Mellon University, Robotics Institute.

MANUSCRIPTS UNDER REVIEW

- Lucey, P., Cohn, J. F., Howlett, J., Member, S. L., & Sridharan, S. (Submitted). Recognizing emotion with head pose variation: Identifying pain segments in video.
- Lucey, S., Lucey, P., & Cohn, J. F. (Submitted). Registration invariant representations for expression detection. *International Conference on Digital Image Computing: Techniques and Applications (DICTA)*.
- Moore, G. A., Powers, C. J., Cohn, J. F., Propper, C. B., Allen, N. B., & Lewinsohn, P. M. (Submitted). Dyadic behavioral regulation promotes effective infant physiological regulation.
- Feng, X., Forbes, E. E., Kovacs, M., George, C. J., Lopez-Duran, N., Fox, N. A., et al. (Submitted). Children's depressive symptoms in relation to baseline and task-related electroencephalographic asymmetry and risk for depression

TUTORIALS, WORKSHOPS, ADVIORY GROUPS

- Pantic, M., Cohn, J.F., Cowie, R., & Huang, T. (June 2009). *Second IEEE Workshop on CVPR for Human Communicative Behavior Analysis (CVPR4HB)*, Miami, Florida.
- Rosenberg, E., Messinger, D., & Cohn, J.F. (July 2008). Advanced FACS methodological issues. *The 12th European Conference on Facial Expression*, University of Geneva, Switzerland.
- Pantic, M., Cohn, J.F., Cowie, R., & Huang, T. (June 2008). *First IEEE Workshop on CVPR for Human Communicative Behavior Analysis (CVPR4HB)*, Anchorage.
- Pantic, M., Cohn, J.F., & Niholt, A. (January 2007). *International Joint Conference on Artificial Intelligence, Workshop on AI for Human Computing*, Hyderabad, India,
- Working Group on Multimodal Communication, *Cyberinfrastructure for Collaborative Research in the Social and Behavioral Sciences*. NSF grant to University of Chicago.
- Pantic, M., Sebu, N., Cohn, J.F., & Huang, T. (November 2005). Affective multimodal human-computer interaction. *ACM International Conference on Multimedia*, Singapore.
- Pantic, M. & Cohn, J.F. (October 2004). Automatic facial expression analysis. *IEEE Conference on Systems, Man, and Cybernetics*, the Hague, the Netherlands.
- Cohn, J. F. et al. (2004 July). Automatic facial expression analysis. Workshop, *International Society for Research in Emotion (ISRE)*. New York, NY.
- Cohn, J. F. (2000 July). Emotion and paralinguistic communication. Tutorial, *IEEE International Conference on Multimedia and Expo*. New York, NY.
- Cohn, J. F. (2000 December). Automated face analysis for emotion recognition. *Neural Information Processing Systems*. Breckenridge, Colorado.
- Cohn, J. F. & Katz, G. S. (1998 September). Bimodal expression of emotion by face and voice. *ACM and ATR Workshop on Face/Gesture Recognition and Their Applications*. Bristol, United Kingdom.

INVITED PRESENTATIONS

- Cohn, J.F. (October, 2010). Facial expression analysis for forensic science and practice. *World Congress of Forensic Science and Polygraph*, Cartagena, Columbia.
- Cohn, J.F. (October, 2010). Social signal processing in depression. ACM International Conference on Multimodal Interfaces Workshop on Social Signal Processing, Florence, Italy.
- Cohn, J.F. (August 2010). Bimodal communication of depression severity by face and voice. *Workshop on Predictive Models of Human Communication Dynamics, USC Institute of Creative Technologies, Marina del Rey, CA.*
- Cohn, J.F. (September 2009). Co-constructing social signals. *IEEE International Workshop on Social Signaling*. Amsterdam, The Netherlands.
- Cohn, J.F. (June 2009). Use of active appearance models for analysis and synthesis of naturally occurring behavior. *2nd IEEE Workshop on CVPR for Human Communicative Behavior Analysis (CVPR4HB)*, Miami, Fl.
- Cohn, J.F. (April 2009). Effects of damping facial expression in dyadic conversation using real-time facial expression tracking and synthesized avatars. *Royal Society, Computation of Emotion in Man and Machines*, London, Great Britian.
- Cohn, J.F. (September 2008). Facial dynamics reveals person identity and communicative intent, regulates person perception and social interaction. *International Conference on Audio-Visual Speech Processing*, Tangalooma, Australia.
- Cohn, J.F. (September 2008). Configuration and timing of facial expression. *Weta Digital*, Wellington, New Zealand.
- Cohn, J.F. (September 2008). Making sense of faces by orientation, (a)symmetry, and timing. *Workshop on Psychology of Face and Gesture Recognition*, Amsterdam, The Netherlands.
- Cohn, J.F. (June 2008). Look to the dynamics. *CVPR Workshop for Human Communicative Behaviour Analysis (CVPR4HB'08)*, Anchorage, Alaska.
- Cohn, J.F. (March 2008). Facial expression and emotion. *The Magic of Body Language*, Tilburg University, Tilburg, The Netherlands.
- Cohn, J.F. (March 2008). Affective computing: Facial expression and emotion. *Digital Human Symposium, National Institute of Advanced Science and Technology*, Tokyo, Japan.
- Cohn, J.F. (December 2007). Automated facial image analysis for psychology and biomedicine. *Rutgers University Center for Cognitive Science*, New Brunswick, NJ.
- Cohn, J.F. (January 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. (November 2006). Foundations of human computing: Facial expression and emotion. *Proceedings of the ACM International Conference on Multimodal Interfaces (ICMI'06)*, Banff, Canada.
- Cohn, J.F. (October 2006). Foundations of human computing: Facial expression and emotion. *People Image Analysis Consortium Workshop*, Pittsburgh, PA.
- Cohn, J.F. (June 2006). Multi-modal analysis of face and body gesture indicators of communicative intent. *NSF Workshop on Detecting and Countering IED's*. Washington, DC.
- Cohn, J.F. (June 2006). CMU/Pitt Automatic Facial Image Analysis System. *2nd International Forum on Children's Emotional Development and Competence*. Nanjing, China.
- Kanade, T., Hu, C., & Cohn, J.F. (October 2005). Facial expression analysis. *IEEE International Workshop on Modeling and Analysis of Faces and Gestures*. Beijing, China.

- Cohn, J.F. (October 2005). Dynamics of mother-infant interaction. *The IEEE International Workshop on modeling people and human interaction*, Beijing, China.
- Cohn, J.F. (September 2005) (Keynote address). Measuring facial expression using FACS, facial EMG, and computer vision. *International Conference on Methods and Techniques in Behavioral Research, Wageningen.*, The Netherlands.
- Cohn, J.F. (August 2005). Configuration and timing of facial actions. Department of Electrical Engineering, Ohio State University, Columbus, Ohio.
- Cohn, J.F. (December 2004). Machine and human perception of emotion expression and paralinguistic communication. *User Interface Technologies Seminar Series*, IBM T.J. Watson Research Center, Yorktown Heights, New York.
- Cohn, J.F. (December 2004). Machine and human perception of emotion expression and paralinguistic communication. *Artificial Intelligence Seminar*, Carnegie Mellon University, Pittsburgh, Pennsylvania.
- Cohn, J.F. (November 2004). Machine and human perception of emotion expression and paralinguistic communication. *Henkels Visiting Scholar Colloquium*, Notre Dame University, South Bend, Indiana.
- Cohn, J.F. (October 2004). Machine and human perception of emotion expression and paralinguistic communication. Delft University of Technology, Delft, the Netherlands.
- Cohn, J.F. (October 2004). Configuration and timing of multimodal communication. *Altenberg Workshop in Theoretical Biology*, Konrad Lorenz Institute for Evolution and Cognition Research. Altenberg, Austria.
- Cohn, J.F. (December 2003). Automatic Face Analysis. *Frontier Silver Robot Project Kick-off Workshop*, Jeju Island, South Korea.
- Cohn, J.F. (December 2003). Configuration, timing, & symmetry of facial expression by Automatic Face Analysis. Computer Science and Engineering, Sejong University, Seoul, South Korea.
- Cohn, J.F. (November 2003). Automatic analysis of the configuration, timing, & symmetry of facial expression. Institute for Personality and Social Research, University of California Berkeley.
- Cohn, J.F. & Schmidt, K.S. (June 2003). The timing of facial motion in posed and spontaneous smiles. *International Conference on Active Media Technology*, Chongqing, China.
- Cohn, J.F. (January 2003). Facial expression: Applications and analysis. Department of Psychobiology, New York State Psychiatric Institute, New York, NY.
- Cohn, J.F., Xiao, J., Moriyama, T., Gao, J., Ambadar, Z., & Kanade, T. (August 2002). Action unit recognition in spontaneous facial behavior. *International Conference on Methods and Techniques in Behavioral Research*, Amsterdam, Netherlands.
- Cohn, J.F. (May 2002). Automatic facial expression analysis. Department of Psychology, University of California, Santa Barbara, California.
- Cohn, J.F. (February 2002). Facial Expression: Interpretation and automatic analysis. Child Study Center and Department of Psychology, Pennsylvania State University, State College, Pennsylvania.
- Cohn, J.F. (January 2002). Facial expression: Interpretation and automatic analysis. Media Lab Europe, Dublin, Ireland.
- Cohn, J.F. (April 2001). Computer perception of human emotion. Department of Psychology, Bucknell University, Lewisburg, Pennsylvania.
- Cohn, J.F. (March 2001). Automated detection, tracking, and recognition of facial expression. Department of Psychology, Duke University, Durham, North Carolina.

Cohn, J.F., Lien, J.J., Kanade, T., Hua, W., & Zlochow, A. (September 1998). Beyond prototypic expressions: Discriminating subtle changes in the face. *IEEE Workshop on Robot and Human Communication*, Takamatsu, Japan.

Cohn, J.F. (September 1998). Computer perception of emotion in the face and voice. Robotics Institute Colloquium, Carnegie Mellon University, Pittsburgh, Pennsylvania.

Cohn, J. F. (1992). Influence of maternal depression on infant affect regulation. Rochester Symposium on Developmental Psychopathology, University of Rochester, Rochester, New York.

PUBLISHED ABSTRACTS AND CONFERENCE PRESENTATIONS

Cohn, J. F., & Sayette, M. A. (2010 May). Automatic measurement of facial expression in small groups. *American Psychological Society*, Boston, MA.

Mattson, W. I., Mahoor, M., Cadavid, S., Martinez, O., Cohn, J. F., & Messinger, D. S. (2010 March). *Eye constriction in positive and negative emotional expressions. International Conference on Infant Studies*, Baltimore, MD.

Brick, T. R., Hunter, M. D., & Cohn, J. F. (2009). Abstract: Towards automatic coding of facial expression. *Multivariate Behavioral Research*, 44(4).

Cohn, J.F., Lucey, P., Ashraf, A., Ambadar, A., Lucey, S., Solomon, P., & Prkachin, K. (2009 May). The face of pain: Automatic recognition and analysis using computer vision and machine learning. *American Psychological Society*, San Francisco, CA.

Cohn, J.F. & Lucey, P. (2009 April). Advanced methods for assessing facial impairment: Automatic facial image analysis. *Eleventh International Facial Nerve Symposium*, Rome, Italy.

Messinger, D., Mahoor, M., Cadavid, S., Kimijima, M., Haltigan, J. D., & Cohn, J. F. (2009 August). *Eye constriction in positive and negative infant emotional expressions. International Society for Research in Emotion*. Leuven, Belgium.

Mahoor, M.H., Messinger, D., Ibanez, L.V., Cadavid, S., & Cohn, J.F. (2009 April). Automated measurement of gaze direction in infants. *Society for Research in Child Development*, Denver.

Gross, R., Cohn, J.F., De la Torre, F., Baker, S., & Sweeny, L. (2008 October). Multi-factor de-identification of facial images. *American Medical Informatics Association*, Washington, DC.

Ashraf, A.B., Cohn, J.F., Prkachin, K.M., Ambadar, Z., Lucy, S., Solomon, P.E. (2008 August) Automatic detection of pain. *12th World Congress on Pain*, Glasgow, Scotland.

Messinger, D.S., Haltigan, J.D., Mahoor, M., Chow, S.M., Cohn, J.F. (2008, July). Continuous FACS measurement software. *12th European Conference on Facial Expression*, Geneva, Switzerland.

Mahoor, M.M., Messinger, D.S., Kimijima, M., Brewster, R., Kelly, K.M., & Cohn, J.F. (2008, April). Using computer vision techniques to measure facial expression in mother-infant interaction. *Marino Autism Research Institute Scientific Symposium*, Nashville, Tennessee.

Boker, S. M., Cohn, J. F., Theobald, B.-J., & Matthews, I. (2008, March). Dissociating facial appearance and dynamics in real time during natural conversation. *Workshop on Dynamic Faces: From Experiments to Novel Computational Neural Theories, Computational and Systems Neuroscience*, Snow Shoe, Utah.

Matthews, I., Boker, S., Theobald, B.J., Cohn, J.F., & Mangini, M. et al. (2007, November). Facial expression and motion in dyadic conversation. *Meeting of Minds: The Thinking Head Thinking Systems Project*, Parramatta, Australia.

Boker, S., Cohn, J.F., Theobald, B., Lucey, S., Matthews, I., Mangini, M., Spies, J., Villano, M., Brick, T., Ambadar, Z., & Ashenfelter, K. (2006, October). Coordinated motion and facial expression in dyadic interaction. *NSF Human and Social Dynamics Principal Investigators Meeting*, Washington, DC.

- Boker, S., Cohn, J.F., Matthews, I., Ashenfelter, K., Spies, J., Brick, T., Deboeck, P., Covey, E., & Tiberio, S. (2006, September). Coordinated motion and facial expression in dyadic conversation. *NSF Human and Social Dynamics Principal Investigators Meeting*, Washington, DC.
- Ibanez, L., Messinger, D., Ambadar, Z., & Cohn, J.F. (2006, June). Automated measurement of infant and mother interactive smiling. *International Society for Infant Studies*. New York, New York.
- Ibanez, L., Messinger, D., Ambadar, Z., & Cohn, J.F. (2006, June). Automated measurement of infant and mother interactive smiling. *American Psychological Society*, New York, New York.
- Messinger, D.S., Chow, S. M., Koterba, S., Hu, C., Haltigan, J. D., & Cohn, J. F. (2005, July). Smile and emotion dynamics in infant-mother interaction. *International Society for Research in Emotion*, Bari, Italy.
- Cohn, J.F. (2005, April). Comments on temporally based dyadic processes. In A.A. Hane & S. Feldstein (Chairs), Temporally based dyadic processes. *Society for Research in Child Development*, Atlanta, Georgia.
- Messinger, D. S., Hu, C., Venezia, M., Hamilton, L.S., Cohn, J.F. (2005, April). Interactive influence in mutual smiling. *Society for Research in Child Development*, Atlanta, Georgia.
- Bard, K., Oster, H., & Cohn, J.F. (2005, April). Measuring facial actions: new approaches for studying emotion. *Society for Research in Child Development*, Atlanta, Georgia.
- Forbes, E.E., Shaw, D.S., Cohn, J.F., Fox, N.A., & Gesselman, T. (2005, April). Do children's emotion regulation characteristics influence change in mothers' depressive and anxiety symptoms? *Society for Research in Child Development*, Atlanta, Georgia.
- Messinger, D., Hu, C., Venezia, M., Hamilton, L., & Cohn, J.F. (2005, April). Interactive influence in mutual smiling. *Society for Research in Child Development*, Atlanta, Georgia.
- Oster, H., Bard, K.A., & Cohn, J.F. (2005, April). Measuring facial actions: new approaches for studying emotion. *Society for Research in Child Development*, Atlanta, Georgia.
- Santucci, A.K., Shaw, D.S., Fox, N.A., Cohn, J.F., & Silk, J.S. (2005, April). Resting and recovery vagal tone as predictors of emotion regulation strategies in offspring of childhood-onset depressed mothers. *Society for Research in Child Development*, Atlanta, Georgia.
- Forbes, E. E., Shaw, D. S., Fox, N. A., Cohn, J. F., & Silk, J. S. (2004, October). Maternal depression, child frontal EEG asymmetry, and mother-child affective behavior as factors in child behavior problems. *Society for Psychophysiological Research*, Santa Fe, New Mexico.
- Santucci, A.K., Cohn, J.F., Fox, Nathan, A., & Galles, S. (2004, October). Resting vagal tone in adults with a history of depression. *Society for Psychophysiological Research*, Santa Fe, New Mexico.
- Essl M., Cohn J.F., Fox N.A., & George C. (2004, October). Long-term stability of frontal electroencephalographic asymmetry in 3- to 9 year-old children. *Society for Psychophysiological Research*, Santa Fe, New Mexico.
- Galles S., Essl M., Santucci A., Cohn J.F., & Fox N.A. (2004, October). Long-term stability of heart period and heart rate variability in adults with history of depression. *Society for Psychophysiological Research*, Santa Fe, New Mexico.
- Cohn, J.F., Bartlett, M., Chenu, J., & Ambadar, Z. (2004, July). Digital scoring tools. *International Society for Research in Emotion*, New York, New York.
- Messinger, D., Acosta, S., Cassel, T., Ambadar, Z., & Cohn, J.F. (2004, July). Automated measurement of infant expressions: Are the dynamics emotional or facial? Digital scoring tools. *International Society for Research in Emotion*, New York, New York.

- Ambadar, Z., Schooler, J., & Cohn, J.F. (2004, July). The effect of dynamic display on recognition of facial expressions. *International Society for Research in Emotion*, New York, New York.
- Schmidt, K.L., Ambadar, Z., Reed, I., & Cohn, J.F. (2004, April) Timing characteristics of two different facial signals: Deliberate and spontaneous smiles. *American Association of Physical Anthropologists*, Tampa, Florida.
- Cassell, T., Messinger, D., Escobar, J., Ambadar, Z., Cohn, J.F. (2004, April). What causes some infant smiles to be perceived as more positive than others? Contributions of automated measurement and ratings. *International Society for Infant Studies*, Chicago, Illinois.
- 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.
- Essl, M., Cohn, J.F., Fox, N.A., & George, C. (2003, October). Stability in EEG power and asymmetry over 1-3 years in relation to gender and history of depression. *Society for Psychophysiological Research*. Chicago, Illinois.
- Schmidt, K.L., Liu, Y., & Cohn, J.F. (2003, September). The role of structural facial asymmetry in symmetry of peak facial expressions. *European Conference on Facial Expression, Measurement and Meaning*, Rimini, Italy.
- Bolzani-Dinehart, L., Messinger, D. S., & Acosta, S., Cassel, T., Ambadar, Z. & Cohn, J.F. (2003, April). A dimensional approach to infant facial expressions. *Society for Research in Child Development*. Tampa, Florida.
- Cohn, J. F., Schwartz, M. M., & Allen, N. (2003, April). Differential influence of current and previous depression in father- and mother-infant dyads. *Society for Research in Child Development*. Tampa, Florida.
- Fox, N. A., Forbes, E. E., Cohn, J. F., Miller, A. M., Keich, Y., & Kovacs, M. (2003, April). Frontal EEG asymmetry in the children of women with childhood onset depression: Effects on social behavior. *Society for Research in Child Development*. Tampa, Florida.
- Galles, S. J., Miller, A., Ware, M., Cohn, J. F., Fox, N., & Kovacs, M. (2002, October). Autonomic regulation and childhood-onset depression: Gender influence on vagal tone. *Society for Research in Psychophysiology*. Washington, DC.
- Galles, S. J., Miller, A., Cohn, J. F., & Fox, N. A. (2002, October). Estimating parasympathetic control of heart rate variability: Two approaches to quantifying vagal tone. *Society for Research in Psychophysiology*. Washington, DC.
- 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.
- Wachtman, G. S., Liu, Y., Zhao, A., Cohn, J.F., Schmidt, K. L., Henkelmann, T.C., et al. (2002, June). Measurement of asymmetry in persons with facial paralysis. *Robert H. Ivy Society of Plastic and Reconstructive Surgeons*. Pittsburgh, Pennsylvania.
- 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.
- Van Meenen, K. M., Cohn, J. F., Miller, A., Fox, N. A., Kovacs, M. (2001, October). Patterns of Electroencephalographic Activity in Adults with a History of Childhood-Onset Depression During a State of Induced Anxiety. *Society for Psychophysiological Research*. Montreal, Canada.

- Schmidt, K. & Cohn, J. F. (2001, October). Quantitative relation between velocity and amplitude of lip-corner motion in diverse types of smiles. *9th European Conference on Facial Expression, Measurement and Meaning*. Innsbruck, Austria.
- Van Swearingen, J., Henkelmann, T. C., Wachtman, G. S., Manders, E. K., & Cohn, J. F. (2001, July). Evidence for Neuromuscular Reeducation of Eye Closure in Persons with Facial Palsy. *9th International Facial Nerve Symposium*. San Francisco, California.
- Fox, N. A., Cohn, J. F., Forbes, E. E., & Miller, A. (2001, June). Psychophysiology of risk for childhood-onset depression. *International Society for Research in Child and Adolescent Psychopathology*. Vancouver, British Columbia.
- Fox, N. A., Cohn, J. F., Miller (Keener), A., & Forbes, E. E. (2001, May). EEG asymmetry and vagal tone in childhood onset depression probands and offspring. *American Psychiatric Association*. New Orleans, Louisiana.
- Forbes, E. E., Miller, A., & Cohn, J. F. (2001, April). Patterns of EEG asymmetry, problem behavior, and emotion expression in children of parents with childhood-onset depression. *Society for Research in Child Development*. Minneapolis, Minnesota.
- Long, M., Cohn, J. F., Lewinsohn, P., & Allen, N. (2001, April). Parent and infant responsiveness in relation to sex of parent and infant, history of psychopathology, and current depressive symptoms. *Society for Research in Child Development*. Minneapolis, Minnesota.
- Schmidt, K. & Cohn, J. F. (2001, March). Dynamic modeling of human facial expression. *American Association of Physical Anthropology*. Kansas City, Kansas.
- Forbes, E., Keener, A. D., Monaco, V., Cohn, J. F., Fox, N. A., & Kovacs, M. (2000, October). Affective startle blink magnitude in relation to history of childhood depression. *Society for Research in Psychophysiology*. San Diego, California.
- Keener, A. D., Monaco, V., LeMenager, M., S., Forbes, E. Peters, B. A., Cohn, J. F., Fox, N. A., & Kovacs, M. (2000, October). Electroencephalographic asymmetry in adults with a history of childhood-onset depression. *Society for Research in Psychophysiology*. San Diego, California.
- Schmidt, K. L., Monaco, V., Peters, B., Van Swearingen, J., Tian, Y., and Cohn, J. F. (2000, October). Relation between automatic tracking of lip-corner motion and facial surface EMG of the *zygomaticus major* muscle during spontaneous smiles. *Society for Psychophysiological Research*. San Diego, California.
- Wachtman, G. S., Cohn, J. F., Van Swearingen, J., & Manders, E. K. (2000, October). Automatic tracking of facial features in patients with facial neuromuscular dysfunction. *Plastic Surgery Forum, ASPS Meeting*. Chicago, Illinois.
- Ting J., Wachtman G. S., Cohn J. F., Van Swearingen J., & Manders E. K. (2000, October). Analyzing the effects of Botulinum Toxin in the treatment of Facial Synkinesis. *Plastic Surgery Forum, ASPS Meeting*. Chicago, Illinois.
- 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.
- Forbes, E., Cohn, J. F., Lewinsohn, P., & Moore, G. A. (2000, July). Mother-father differences in parent and infant affect. *International Conference on Infant Studies*. Brighton, England.
- Moore, G. A., Cohn, J. F., & Campbell, S. B. (2000, July). Developmental patterns of infant affective behaviors from 2 to 6 months are related to secure and insecure attachment at 12 months. *International Conference on Infant Studies*. Brighton, England.

- Moore, G., Cohn, J. F., & Lewinsohn, P. (2000, July). Adolescents' relationships with parents are prospectively related to adult recall of relationships. *American Psychological Society*. Miami, Florida.
- Ting, J., Wachtman, G., Cohn, J. F., Van Swearingen, J., & Manders, E. (2000, May). Treatment of facial synkinesis. *Plastic Surgery Research Council*. Seattle, Washington.
- Cohn, J. F., Nonverbal Information Processing: Facial Expression Analysis (1999, October). *International Workshop on Very Low Bit-Rate Video Coding (VLVB'99)*. Kyoto, Japan.
- Keener, A., Monaco, V., Cohn, J. F., Fox, N., & Kovacs, M. (1999, October). Individual differences in frontal brain symmetry and dimensions of personality. *Society for Research in Psychophysiology*. Granada, Spain.
- Liu, D., Cohn, J. F., Forbes, E., Balik, J., & Fox, N. (1999, October). Vagal tone varies with emotion valence and depression, *Society for Research in Psychophysiology*. Granada, Spain.
- Jankel, C., Keener, A., Cohn, J. F., & Monaco, V. (1999, October). Affective startle modulation: A psychometric comparison of alternative electrode placements and computational algorithms. *Society for Research in Psychophysiology*. Granada, Spain.
- Cohn, J. F., Tian, Y., & Kanade, T. (1999, September). Computer perception of expressive changes in the face. *8th European Conference on Facial Expression, Measurement, and Meaning*. Saarbruecken, Germany.
- Cohn, J. F., Tian, Y., & Kanade, T. (1999, June). Computer perception of subtle changes in facial expression. *American Psychological Society*. Denver, Colorado.
- Katz, G. S., Valdes-Perez, R., & Cohn, J. F. (1999, June). Systematic variation of acoustic features in spontaneous expression of emotion. *American Psychological Society*. Denver, Colorado.
- 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.
- Wachtman, G. S., Cohn, J. F., Van Swearingen, J., and Manders, E.K. (1999, May). Pixel-wise tracking of facial movement by computer image processing. *Plastic Surgery Research Council*. Pittsburgh, Pennsylvania.
- Wachtman, G. S., Cohn, J. F., Van Swearingen, J., and Manders, E. K. (1999, March). Pixel-wise tracking of facial movement by computer image processing. *Robert H. Ivy Society of Plastic and Reconstructive Surgeons*. Pittsburgh, Pennsylvania.
- Katz, G. S. & Cohn, J. F. (1998, September). Emotional expression: Vocal acoustics and psychophysiology. *Society for Psychophysiological Research*. Denver, Colorado.
- Cohn, J. F., Zlochower, A. J., Lien, J. J., Hua, W., & Kanade, T. (1998, August). Automated analysis of facial action has high concurrent validity with human FACS coding. *International Society for Research in Emotion*. Wuerzburg, Germany.
- Zlochower, A. J., Cohn, J. F., Lien, J. J., & Kanade, T. K. (1998, April). Automated face analysis: A computer- vision based method of facial expression analysis in adults and infants. *International Society for Infant Studies*. Atlanta, Georgia.
- 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 f_0 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 f_0 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 gastro- esophageal 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 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 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). Person-specific automatic head tracking, 3D motion recovery, and analysis and recognition of facial action units. Versions 1-4.0 are described in Cohn & Kanade (2007). http://www.pitt.edu/~jeffcohn/biblio/fulltext/InPress/Cohn_Use.pdf

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

http://vasc.ri.cmu.edu/idb/html/face/facial_expression/index.html

CMU Multi-PIE Database. (Gross, Matthews, Cohn, Baker, & Kanade, 2008). The development of face recognition algorithms critically depends on the availability of facial image data spanning conditions of interest in a carefully controlled fashion. Neutral and emotion expressions were recorded on four occasions using a hardware synchronized network of 15 video cameras and 18 flashes. A total of 337 subjects were recorded, with 129 subjects appearing in all four sessions. The database contains more than 750,000 images. For licensing inquiries, contact Office of Technology Transfer, Carnegie Mellon University. <http://www.multipie.org>

Intraface: A tool for facial feature tracking, action unit recognition and fast facial action unit coding (De la Torre & Cohn, 2008). Offline facial feature tracking with very limited manual training, automated FACS action unit detection, and FastFACS coding. For licensing inquiries, contact Office of Technology Transfer, Carnegie Mellon University.

<http://www.cmu.edu/corporate/tech-transfer.shtml>

CMU/Pitt Automatic Facial Image Analysis V4.2 (Saragih, Lucey, Wang, & Cohn, 2009). The system detects and tracks fiduciary points around facial features on the human face from video or camera input. Shape and appearance features are extracted for the purpose of automatically recognizing or detecting facial expressions of emotion, anatomically based facial actions, as defined by the Facial Action Coding System (FACS: Ekman & Friesen, 1978), emotion expressions and pain, and changes in head pose with respect to the camera. With appropriate integration, the system can enable emotionally sensitive human-computer interfaces, provide empirical data for expression transcriptions of video-recorded interviews, and actuate virtual avatars. For licensing inquiries, contact Office of Technology Transfer, Carnegie Mellon University.

<http://www.cmu.edu/corporate/tech-transfer.shtml>

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*, <http://www.channels.com/episodes/show/2434237/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)

EDITING AND EDITORIAL BOARDS

Associate Editor, *IEEE Transactions on Affective Computing*
Co-Editor, Special Issue on Spontaneous Behavior, *Image and Vision Computing Journal*
Co-Editor, Special Issue on Best of Face and Gesture Recognition, *Image and Vision Computing Journal*
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, *Third IEEE Workshop on CVPR for Human Communicative Behavior Analysis (CVPR4HB 2010)*, San Francisco, California.
Co-Chair with M. Pantic & Anton Nijholt, *International Conference on Affective Computing and Intelligent Interaction (ACII 2009)*, Amsterdam, The Netherlands.
Co-Chair with T. Huang, R. Cowie, & M. Pantic, *Second IEEE Workshop on CVPR for Human Communicative Behavior Analysis (CVPR4HB 2009)*, Tampa, Florida.
Co-Chair with T. Huang, R. Cowie, & M. Pantic, *IEEE International Conference on Automatic Face and Gesture Recognition (FG 2008)*, Amsterdam, The Netherlands.
Co-Chair with T. Huang, R. Cowie, & M. Pantic, *First IEEE Workshop on CVPR for Human Communicative Behavior Analysis (CVPR4HB 2008)*, Anchorage, Alaska.
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

IEEE International Conference on Automatic Face and Gesture Recognition (FG 2001), Santa Barbara, California.
ACM Second International Workshop on Social Signal Processing (2010), Fierenze, Italy.

IEEE Workshop on Human Behaviour Understanding (2010), Istanbul, Turkey.

IEEE International Workshop on Human-Computer Interaction (HCI2009), Kyoto, Japan.

Eight International Conference on Intelligent Virtual Agents (IVA'08), Tokyo, Japan.

IEEE Workshop on Human Computer Interaction (HCI 2007), Rio De Janeiro, Brazil.

IEEE Workshop on Analysis and Modeling of Faces and Gestures (AMFG-07), Rio De Janeiro, Brazil.

Twentieth International Joint Conference on Artificial Intelligence (IJCAI-07), Hyderabad, India.

Fifth International Conference on Development and Learning (ICDL-06), Bloomington, Indiana.

IEEE International Workshop on Human-Computer Interaction, 2005, Beijing, China

IEEE International Workshop on modeling People and Human Interaction (PHI'05), Beijing, China.

IEEE International Conference on Automatic Face and Gesture Recognition (FG 2006), Southampton, England.

IEEE Workshop on Analysis and Modeling of Faces and Gesture (AMFG 2005), Beijing, China.

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

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

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

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

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

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

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

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

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

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

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

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

Council of Physical Sciences of the Netherlands Organization for Scientific Research

Engineering and Physical Sciences Research Council (United Kingdom)

National Institutes of Health

College of CSR Reviewers (2010 – present)

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

Ad hoc member:

National Institute of Alcohol Abuse and Alcoholism

National Institute of Child Health and Development

National Institute of Mental Health

National Institute of Health Bio-behavioral 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

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 Psychology –Applied

Journal of Experimental Social Psychology

Journal of Personality and Social Psychology

Journal of Vision

Human-Computer Interaction

IEEE Transactions on Biomedical Engineering

*IEEE Transactions on Vision, Image, and
Signal Processing*

IEEE Signal Processing Magazine

IET Computer Vision

Image

Image and Vision Computing

Infancy

Infant Behavior and Development

*International Journal on Artificial Intelligence
Tools*

International Journal on Computer Vision

*International Journal of Human-Computer
Studies*

Journal of Language and Speech

Journal of Vision

Psychological Assessment

Psychological Bulletin

Psychophysiology

Social Development

Society for Research in Child Development

The Nuffield Foundation

IEEE Transactions on Multimedia

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 2010.

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

HUMAINE Association, Executive Board 2009-2014

Institute of Electronic and Electrical Engineers

International Society of Infant Studies

International Society for Research in Emotion

Society for Research in Child Development