

Xiao-Fei Yang, PhD

Center for Affective Neuroscience, Development, Learning and Education (CANDLE)
Rossier School of Education, Brain and Creativity Institute
University of Southern California
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CURRENT PROFESSIONAL APPOINTMENT

- 2023- **Assistant Research Professor**
University of Southern California
- 2021- **Scientific Director of CANDLE**
University of Southern California
- 2019-2023 **Senior Research Associate**
University of Southern California

EDUCATION

- 2014-2019 **Postdoctoral Research Associate**
University of Southern California
- 2006 - 2013 **Ph.D. in Neuroscience**
University of Southern California
Dissertation: Individual differences in heart rate responses and expressive behavior during social emotions:
Effects of resting cardiac vagal tone and culture, and relation to the default mode network
- 2002 - 2006 **B.S. Biological Sciences**
Fudan University, Shanghai China

EXTRAMURAL FUNDING

XFY's role is in bold.

- 2022-2025 *Supporting and measuring what matters for at-promise youth and their teachers: A practitioner and researcher consortium for innovation, sustainability and scaling.* Chan Zuckerberg Initiative. (**Project Leader**; M.H. Immordino-Yang, PI; Total grant=\$1.5M)
- 2021 *To err is human and how the brain learns: A transdisciplinary COP approach to schooling for adaptive error monitoring and intellectual humility.* (not funded) Templeton Foundation (**co-PI**; M.H. Immordino-Yang, PI; Total grant \$1M)
- 2020 *Making mistakes matter: a cross-sectional and longitudinal neuropsychological study of educational practices and performance monitoring.* (finalist, not funded) Spencer Foundation (**co-PI**; M.H. Immordino-Yang, PI; Total grant \$1M).

- 2019- 2022 *The role of enhanced mindfulness practices for educators in promoting self-direction among adolescent girls of color.* Chan Zuckerberg Initiative. (USC **co-PI**; M.H. Immordino-Yang, USC PI; P. Noguera, UCLA PI; #CZIF2020-004095; Total grant \$650K.)
- 2018-2020 *Summer program for involving underrepresented, low-SES high school students in interdisciplinary neuroscience investigations.* Army Educational Outreach Program. (**co-PI**; M.H. Immordino-Yang, PI; Battelle Task Order Agreement #610608; Total Grant \$11K)
- 2018-2020 *Neurophysiological predictors of emotion regulation and educational mindset development.* Army Research Laboratory-West Interdisciplinary Collaboration Grant. (**Senior Project Personnel**; M.H. Immordino-Yang, PI; Grant #W911NF-18-2-0084; Total grant \$161,822).

HONORS AND AWARDS

- 2018 Fellow, Latin American School for Education, Cognitive and Neural Sciences (Santiago, Chile)
- 2014 International Mind, Brain and Education Society Conference Distinguished Poster Award
- 2013 Fellow, UCLA Advanced Neuroimaging Training Program (NITP) Summer Course
- 2013 International Cultural Neuroscience Consortium Student Travel Award (\$1000)
- 2012 USC Social Neuroscience Initiative Summer Funding (\$1,000)
- 2011-2012 Neuroscience Merit Fellowship (\$27,000)
- 2010 USC Graduate and Professional Student Senate Conference Travel Grant (\$500)
- 2009 Women in Science and Engineering (WiSE) Travel Grant (\$500)
- 2008 USC U.S.-China institute Graduate Student Summer Fieldwork Grant (\$5,000)

PUBLICATIONS

- Riveros, R., **Yang, X.-F.**, & Immordino-Yang, M. H. (in press). Sages and seekers: Intergenerational conversations increase abstract talk and values-oriented purpose among low-SES adolescents. *Journal of Positive Psychology*.
- Gotlieb, R. J. M., **Yang, X.-F.**, & Immordino-Yang, M. H. (2022). Concrete and abstract dimensions of diverse adolescents' social-emotional meaning-making, and associations with broader functioning. *Journal of Adolescent Research*. <https://doi.org/10.1177/07435584221091498>
- Gotlieb, R., **Yang, X.-F.**, Immordino-Yang, M.H. (2022). Default and executive networks' roles in diverse adolescents' emotionally engaged construals of complex social issues. *Social Cognitive and Affective Neuroscience*, 17(4), 421–429. <https://doi.org/10.1093/scan/nsab108>
- Gotlieb, R., **Yang, X.-F.**, Immordino-Yang, M.H., (2021). Measuring Learning in the Blink of an Eye: Adolescents' Neurophysiological Reactions Predict Long-Term Memory for Stories. *Front. Educ.* 5:594668. <https://doi.org/10.3389/feduc.2020.594668>
- Dénervaud, S., Fornari, E., **Yang, X.-F.**, Hagmann, P., Sander, D., Immordino-Yang, M.H. (2020). Error-monitoring is influenced by school pedagogy: fMRI evidence from Montessori and traditional schoolchildren. *Nature Learning Science*, 5(11), 1-11. <https://doi.org/10.1038/s41539-020-0069-6>
- ***Yang, X.-F.**, *Pavarini, G., Schnall, S. & Immordino-Yang, M.H. (2018). Looking up to virtue: Averted gaze facilitates moral construals via posteromedial cortical activations. *Social Cognitive and Affective*

Neuroscience, 13(11), 1131-1139. <https://doi.org/10.1093/scan/nsy081> *GP and X-FY contributed equally to this work.

- Butler, O., **Yang, X.-F.** & Immordino-Yang, M.H. (2018). Community violence exposure correlates with smaller gray matter volume and lower IQ in urban adolescents. *Human Brain Mapping*, 39(5), 2088–2097. <https://doi.org/10.1002/hbm.23988>
- Yang, X.-F.**, Immordino-Yang, M.H. (2017). Cultural group and cardiac vagal tone independently influence emotional expressiveness. *Culture and Brain* 5:36-49. <https://doi.org/10.1007/s40167-017-0048-9>
- Immordino-Yang, M.H. & **Yang, X.-F.** (2017, invited submission) Cultural differences in the neural correlates of social-emotion experiences: An interdisciplinary, developmental perspective. *Current Opinion in Psychology, Special Issue on Emotion* edited by L. Feldman Barrett and B. Mesquita, 17, 34-40. <https://doi.org/10.1016/j.copsyc.2017.06.008>
- Immordino-Yang, M.H., **Yang, X.-F.**, Damasio, H. (2016). Cultural modes of expressing emotions influence how emotions are experienced. *Emotion* 16(7)1033-1039. <https://doi.org/10.1037/emo0000201>
- Immordino-Yang, M.H., **Yang, X.-F.**, Damasio, H. (2014). Correlations between social-emotional feelings and anterior insula activity are independent from visceral states but influenced by culture. *Front. Hum. Neurosci.* 8, 728. <https://doi.org/10.3389/fnhum.2014.00728>
- Yang X.-F.**, Bossmann J., Schiffhauer B., Jordan M. & Immordino-Yang M. H. (2013). Intrinsic default mode network connectivity predicts spontaneous verbal descriptions of autobiographical memories during social processing. *Front. Psychology* 3, 592. <https://doi.org/10.3389/fpsyg.2012.00592>
- Saxbe, D. E., **Yang, X.-F.**, Borofsky, L. A. & Immordino-Yang, M. H. (2013). Embodiment of emotion: Language use during the feeling of social emotions predicts cortical somatosensory activity. *Social Cognitive and Affective Neuroscience*, 8(7), 806-812. <https://doi.org/10.1093/scan/nss075>
- Jin, X. C., Lu, Y. F., **Yang, X.-F.**, Ma, L., & Li, B. M. (2007). Glucocorticoid receptors in the basolateral nucleus of amygdala are required for post-reactivation reconsolidation of auditory fear memory. *European Journal of Neuroscience*, 25(12). <https://doi.org/10.1111/j.1460-9568.2007.05621.x>

Peer-reviewed articles in preparation

- Gotlieb, R., **Yang, X.-F.**, & Immordino-Yang, M.H. (in revision). Beyond IQ, Diverse Adolescents' Transcendent Thinking Predicts Young Adult Outcomes via Brain Network Development.
- Yang, X.-F.**, Heine, K., & Immordino-Yang, M.H. (abstract accepted, to be submitted in November, 2023). Longitudinal effects of community violence exposure during mid-adolescence on structural and functional neural network development in diverse urban youth. *Journal of Research on Adolescence*.
- Kundrak, C., **Yang, X.-F.**, & Immordino-Yang, M.H. (in late-stage preparation). Teachers' neurophysiology mediates the effect of pedagogical practices on secondary students' experiences of challenge.
- Denervaud, S., Baniqued, P., **Yang, X.-F.**, Immordino-Yang, M.H. (in late-stage preparation). Making mistakes matter: Neuropsychological correlates of performance monitoring in math learning.
- Kundrak, C., Candaux, E., **Yang, X.-F.**, Baniqued, P., & Immordino-Yang, M.H. (in late-stage preparation). Secondary teachers' beliefs about learning and pedagogical practices are linked via pedagogical orientations, and mediated by cultivated cardiac regulatory capacities.
- Jahner, E., Kundrak, C., **Yang, X.-F.**, Farrington, C., Porter, S. & Immordino-Yang, M.H. (in late-stage preparation). Developmental neural, psychological, and emotional correlates of academic mindsets: A 5-

year longitudinal study from adolescence to young adulthood

Yang, X.-F., Immordino-Yang, M.H. (in late-stage preparation). Heart-rate responses during social emotion is influenced by culture and relates to individuals' expressiveness.

Yang, X.-F., Immordino-Yang, M.H. (in late-stage preparation). Orienting heart rate deceleration during social emotion processing predicts deactivation in default mode network regions.

SELECTED CONFERENCE PRESENTATIONS

Moliterni, C., **Yang, X.-F.**, Kundrak, C., & Immordino-Yang, M. H. (August 31-September 1, 2022). Heart-rate dynamics suggest teachers' implicit social processing while evaluating students' work. SIG Earli 2022 Conference, Southampton, United Kingdom.

Moliterni, C., **Yang, X.-F.**, Kundrak, C., & Immordino-Yang, M. H. (July 9-13, 2022). Heart rate deceleration as a biomarker of implicit processing: A demonstration of measure sensitivity in a real-world teaching task. FENS 2022 Forum, Paris, France.

Kundrak, C., **Yang, X.-F.**, & Immordino-Yang, M. H. (March 30-April 2, 2022). Secondary teachers' pedagogical practices and teaching-specific heart rate variability dynamics additively contribute to students' perceptions of classroom support. Society for Affective Science Annual Meeting (virtual) .

Hilliard, K., **Yang, X.-F.**, Stone, M. & Immordino-Yang, M.H. (November, 2021). Community violence exposure during mid-adolescence is related to greater grey matter volume reduction in urban youth. Poster presented at the Society for Neuroscience Annual Conference, Chicago, Illinois (virtual).

Gotlieb, R., **Yang, X.-F.**, & Immordino-Yang, M.H. (May, 2020). Executive Control, Default Mode, and Salience Networks' Activity and Inter-Network Connectivity are related to Adolescents' Concrete and Abstract Interpretations of Social Stories. Poster presented at the Social and Affective Neuroscience Society, Santa Barbara, California. (Conference Canceled)

Yang, X.-F. & Immordino-Yang, M.H. (June, 2019). Cultural modes of expressing emotion influence how emotions are experienced. In Fortier, M. (Chair), *The cultural shaping of consciousness*. Plenary symposium presented at the 23rd Annual Meeting of Association for the Scientific Study of Consciousness, London, ON, Canada.

Yang, X.-F., Pavarini, G., Schnall, S. & Immordino-Yang, M.H. (September 2018). Learning to appreciate others' virtues: Behavioral and neural processes facilitate moral thinking. Poster presented at *the International Mind, Brain and Education Society conference*, Los Angeles, CA.

Krone, C., **Yang, X.-F.**, Farrington, C., & Immordino-Yang, M.H. (September 2018). Developmental neural, psychological, and emotional correlates of academic mindsets. Poster presented at *the International Mind, Brain and Education Society conference*, Los Angeles, CA.

Jahner, E., **Yang X.-F.**, & Immordino-Yang, M. (2018) Streams of thought: An ICA methodology for lagged resting state analysis. Poster presented at *the 25th Cognitive Neuroscience Society annual meeting*, Boston, MA.

Riveros, R., **Yang, X.-F.**, Gotlieb, R., Jahner, E. & Immordino-Yang, M.H. (March, 2017). Intrinsic functional connectivity of the default mode network predicts the purposefulness of youths' intended adult lives. Poster presented at 10th annual meeting of the Social & Affective Neuroscience Society, Los Angeles, CA.

Jahner, E., **Yang, X.-F.**, & Immordino-Yang, M.H. (March, 2017). Resting state temporal dynamics and mind wandering frequency during reading. Poster session presented at *the Cognitive Neuroscience Society annual meeting*, San Francisco, CA. NOTE: This poster received the Best Student Poster Award with a cash prize and enrollment in the week-long human connectome workshop for the first author.

- Gotlieb, R., **Yang, X.-F.**, Rajana, H., Cremat, D., & Immordino-Yang, M.H. (March, 2017). Adolescents' empathic reactions to social stories predict subsequent long-term memory for those stories and connectivity between right anterior insula and medial prefrontal cortices moderates this effect. Poster accepted at the 10th annual convention of the *Social and Affective Neuroscience Society*, Los Angeles, CA.
- Riveros, R., **Yang, X.-F.**, Gotlieb, R., Jahner, E., & Immordino-Yang, M.H. (2016, September). Intrinsic functional connectivity of the default mode network predicts the purposefulness of youths' intended adult lives. Poster presented at *the International Mind, Brain and Education Society conference*, Toronto, ON.
- Gotlieb, R., **Yang, X.-F.**, Cheng, T.W., Hobeika, L. & Immordino-Yang, M.H. (June, 2016). Culture moderates how bicultural adolescents' interoceptive sensitivity impacts their empathy for triumph over adversity. Poster presented at *the European Association for Research on Learning and Instruction: Neuroscience and Education Special Interest Group*, Amsterdam, Netherlands.
- Gotlieb, R., **Yang, X.-F.**, Rhoads, S., Miranda, R.R., & Immordino-Yang, M.H. (June, 2016). Adolescents' empathic reaction to others' triumph over adversity is positively related to intrinsic default mode network connectivity. Poster presented at *the Federation of all European Neuroscience Societies*, Copenhagen, Denmark.
- Rhoads, S. A., **Yang, X.-F.**, Miranda, R. R., Immordino-Yang, M. H. (October, 2015). Adolescents' intrinsic default mode network connectivity is positively related to social media use, but negatively related to non-social media use. Poster presented at *the 2015 "Digital Media and Developing Minds" Sackler colloquium*, Irvine, CA.
- Immordino-Yang, M.H., **Yang, X.-F.**, Damasio, H. (April, 2015). Cultural modes of expressing emotions influence how emotions are experienced [Abstract]. Poster presented at *the 2015 Meeting of the Social and Affective Neuroscience Society*, Boston, MA.
- Yang, X.-F.**, Cheng, T., Hobeika, L., Vergara, S., Immordino-Yang, M.H. (February, 2015). Interoceptive awareness and cultural identity are related negatively in East-Asian American adolescents, but positively in Latino American adolescents [Abstract]. Poster presented at *the Advances in Cultural Psychology Preconference of the 16th Annual Meeting of the Society for Personality and Social Psychology*, Long Beach, CA.
- Yang, X.-F.**, Immordino-Yang, M.H. (February, 2015). East-Asian adolescents' emotional home life predicts the acquisition of an acculturated pattern of correlation between anterior insula activity and social-emotional feelings [Abstract]. Poster presented at *the Emotion Preconference of the 16th Annual Meeting of the Society for Personality and Social Psychology*, Long Beach, CA.
- Immordino-Yang, M.H., **Yang, X.-F.** (February, 2015). Cultural and individual differences in the contributions of somatosensory neural activity to social-emotional feelings [Abstract]. Poster presented at *the 16th Annual Meeting of the Society for Personality and Social Psychology*, Long Beach, CA.
- Immordino-Yang, M.H., **Yang, X.-F.** (November, 2014). Adolescents' age and emotional home life predict the acquisition of strong and culture-specific patterns of correlation between neural activity and social-emotional feelings [Abstract]. Poster presented at *the 2014 International Mind, Brain and Education Society Conference*, Fort Worth, TX. **Winner of Distinguished Student Poster Award.**
- Jahner, E., Pound, V., **Yang, X.-F.**, Immordino-Yang, M.H. (November, 2014). Cultural literacy, intellectual curiosity, academic resilience and the road to "self as scientist": Qualitative analyses of low-SES adolescents' experiences in a neuroscience camp [Abstract]. Poster presented at *the 2014 International Mind, Brain and Education Society Conference*, Fort Worth, TX. **Winner of Distinguished Student Poster Award.**
- Immordino-Yang, M.H., **Yang, X.-F.** (October, 2014). Cultural influences on emotional expressiveness influence

the neural processing of emotional experiences [Abstract]. In Daphna Oyserman & Kees van den Bos (organizers) *From cultural differences as stable characteristics to characteristics malleable by context*. Symposium presented at the 50th Annual meeting of the Society for Experimental Social Psychology Conference, Columbus, Ohio.

- Yang, X.-F.**, Immordino-Yang, M.H. (April, 2014). Culture and cardiac vagal tone independently influence expressiveness and heart-rate response during emotion [Abstract]. Presented at the 2014 International Cultural Neuroscience Consortium Conference, Ann Arbor, MI.
- Yang, X.-F.**, Immordino-Yang, M.H. (February, 2014). Cultural background and resting cardiac vagal tone additively influence emotional expressiveness [Abstract]. In J. Chiao (chair) *Culture and emotion: Advances from cultural psychology and cultural neuroscience*. Symposium presented at the 15th Annual Meeting of the Society for Personality and Social Psychology, Austin, TX.
- Yang, X.-F.**, Immordino-Yang, M.H. (November, 2013). Resting cardiac vagal tone inversely relates to intrinsic salience network connectivity [Abstract]. Presented at 43rd annual meeting of Society for Neuroscience, San Diego, CA.
- Yang, X.-F.**, Immordino-Yang, M.H. (May, 2013). Cultural and individual differences in heart rate response during the experience of social emotions [Abstract]. Presented at the inaugural meeting of the International Cultural Neuroscience Consortium, Chicago, IL. **Winner of ICNC Student Travel Award.**
- Yang, X.-F.**, Wong, S. W. H., & Immordino-Yang, M. H. (June, 2012). Heart rate deceleration predicts BOLD activity in default mode regions during emotion processing. [Abstract]. Presented at the 18th annual meeting of the Organization of the Human Brain Mapping, Beijing, China. **Selected for oral presentation.**
- Yang, X.-F.**, Pavarini, G., Schnall, S., Immordino-Yang, M. H. (May, 2012). Spontaneous gaze aversion during interview-induced moral elevation predicts subsequent default network activation. [Abstract]. Presented at the 2012 Association for Psychological Science Convention, Chicago, IL.
- Yang, X.-F.**, Saxbe, D. E., Borofsky, L. A., Murphy, M. C., Immordino-Yang, M. H. (November, 2011). Do you think it or feel it? Language and neural activity reflect individual differences in emotion processing. [Abstract]. Presented at 41st annual meeting of Society for Neuroscience, Washington, D. C.
- Yang, X.-F.**, Wong, S. W. H., & Immordino-Yang, M. H. (November, 2010). Resting Cardiac Vagal Activity Predicts Heart Rate Change during Compassion for Physical Pain. [Abstract]. Presented at 40th annual meeting of Society for Neuroscience, San Diego, CA.
- Yang, X.-F.**, Shoemaker, K., & Wong, S. W. H. (October, 2009). A wavelet analysis of the dynamic changes in heart rate variability during a 30-sec isometric handgrip task. [Abstract]. Presented at 39th annual meeting of Society for Neuroscience, Chicago, IL. Supported by WiSE travel grant.

TEACHING AND MENTORING EXPERIENCE

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| Fall 2006 – present | <i>Research mentor</i> , USC
Mentored 7 graduate students, 15+ undergraduate students and 10+ high school students on cognitive neuroscience research including fMRI techniques, psychophysiological recording techniques, data analysis and statistics, with 9e undergraduates receiving university fellowships for their research |
| 2012-2013 | Invited lecture at Neuroscience Graduate Program Core course, USC |
| 2011 | Outstanding TA award during the 2010/2011 academic year, USC |
| Fall 2010/2009/2008 | <i>Teaching Assistant</i> , How the body works: Topics in human physiology, USC
Course Organizers: Dr. Chien-Ping Ko & Dr. Michael Moore |
| Spring 2010 | <i>Teaching Assistant</i> , General Physiology, USC
Course Organizers: Dr. Albert Herrera & Dr. Michael Moore |

Spring 2009 *Teaching Assistant, Statistics I, USC*
Course Organizer: Dr. Stephen, Madigan

OUTREACH ACTIVITIES

February 2014 Organized and hosted a one-day neuroscience field trip for the 4th grade class from Venn W. Ferguson Elementary School, CA.

Summer 2014 Designed curriculum and hosted a 9-day neuroscience summer camp for second-generation low SES high school students in the Los Angeles area.
Featured in LA register, [link](#)

2012 – 2015 *Neuroscience Instructor and Curriculum Consultant, STAR Education Inc.*