

Tianying Cai, Ph.D.

Department of Human Development and Family Science
College of Human Sciences
Auburn University
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Academic Position

- Jul 2025-
present **Assistant Professor, Department of Human Development and Family Science, Auburn University**
Director, CONTEXTual and NEurophysiological Correlates of Teen Development (CONNECT) Lab, Auburn University
- Oct 2023-
Jul 2025 **Postdoctoral Scholar, Institute of Child Development, University of Minnesota, Twin Cities** (*Advisor: Ka I Ip, Ph.D.*)
Research Affiliate, Masonic Institute for the Developing Brain, University of Minnesota, Twin Cities
- Jan 2023-
Oct 2023 **Postdoctoral Scholar, Center for Culture, Brain, Biology and Learning, Department of Human Development and Social Policy, School of Education and Social Policy, Northwestern University** (*Advisors: Yang Qu, Ph.D. & Emma K. Adam, Ph.D.*)

Education

- Dec 2022 **Doctor of Philosophy (Ph.D.), Human Development and Family Studies, University of Illinois, Urbana-Champaign**
- *Dissertation:* Physiology of Parenting and Adolescent Adjustment in Peer Context (*Committee chair:* Kelly M. Tu, Ph.D.; *Committee members:* Nancy L. McElwain, Ph.D., Reed L. Larson, Ph.D., Karen D. Rudolph, Ph.D.)
 - *Qualifying Exam:* Bidirectional Spillover between Family and Peer Stress: The Role of Adolescent Parasympathetic Nervous System Regulation (*Committee chair:* Nancy L. McElwain, Ph.D.; *Committee members:* Kelly M. Tu, Ph.D., Reed L. Larson, Ph.D.)
- Dec 2022 **Master of Science, Statistics, University of Illinois, Urbana-Champaign**
- May 2019 **Master of Science, Human Development and Family Studies, University of Illinois, Urbana-Champaign**
- *Thesis:* Parenting and Internalizing Symptoms in Early Adolescence: The Moderating Role of Vagal Tone (*Advisor:* Kelly M. Tu, Ph.D.)

June 2017 **Bachelor of Science, Psychology**, Fudan University, Shanghai, China

Awards and Honors

- 2023 **Flux Travel Award** (\$500), Society for Developmental Cognitive Neuroscience (Flux)
- 2019-2022 **List of Teachers Ranked as Excellent**, University of Illinois, Urbana-Champaign
- 2020-2022 **College of ACES International Research Grant** (\$3,000), University of Illinois, Urbana-Champaign
- 2019 **Student Travel Award** (\$500), University of Illinois, Urbana-Champaign
- 2017-2018 **University of Illinois Graduate Fellowship** (\$3000), University of Illinois, Urbana-Champaign
- 2017-2018 **Massey Fellowship** (\$4000), University of Illinois, Urbana-Champaign
- 2017-2018 **Ernest Anderson Fellowship** (\$2000), University of Illinois, Urbana-Champaign
- 2017-2018 **Emily Schroeder Graduate Fellowship** (\$1000), University of Illinois, Urbana-Champaign
- 2015, 2017 **Scholarship for Outstanding Students**, Fudan University

Research Interests

Guided by biopsychosocial framework, my research examines how various ecological contexts, including family, school, and neighborhood, combined with neurophysiology, jointly influence youth social-emotional development and health. I have developed a multidisciplinary program of research that uses longitudinal modeling, naturalistic interactions, psychophysiology, neuroimaging, and computational models to (a) understand parenting and parent-child interactions via developmental neurophysiology; (b) unpack ecological influences on adolescent neurocognitive and health disparities via developmental neuroscience.

Publications

Peer-reviewed

(*Indicates student mentee)

17. Zhou, L.*, **Cai, T.**, & Ip, K. I. (2025). Association Between Neighborhood Opportunity, Cognitive Function, and Brain Structure in Youths. *Biological Psychiatry Global Open Science*, 5(5), 100533. <https://doi.org/10.1016/j.bpsgos.2025.100533>
16. Yang, B., Zhou, Z., Chen, Y., Devakonda, V., **Cai, T.**, Lee, T., & Qu, Y. (2025). Parental warmth buffers the negative impact of weaker fronto-striatal connectivity on early

- adolescents' academic achievement. *Journal of Research on Adolescence*, 35(1), e12949.
<https://doi.org/10.1111/jora.12949>
15. **Cai, T.**, Zhou, Z.*, Yang, B.*, Wang, F.*, Chen, B.-B., & Qu, Y. (2025). Antecedents and influences of Chinese parental communication about COVID-19 pandemic: The moderating role of parental burnout. *Developmental Psychology*. Special issue on “Family conversations in the context of the COVID-19 pandemic.”
 14. Bricant, A., **Cai, T.**, Ip, K. I., Holt-Gosselin, B., & Gee, D.G. (2025). Heterogeneity in developmental trajectories of internalizing and externalizing symptomatology: Associations with risk and protective factors. *Child Psychiatry and Human Development*.
<https://doi.org/10.1007/s10578-024-01804-0>
 13. Martinez, M., **Cai, T.**, Yang, B., Zhou, Z., Shankman, S. A., Mittal, V. A., Haase, C. M., & Qu, Y. (2024). Depressive symptoms during the transition to adolescence: Left hippocampal volume as a marker of social context sensitivity. *Proceedings of the National Academy of Sciences*, 121(37). <https://doi.org/10.1073/pnas.2321965121>
 12. **Cai, T.**, Li, X., Chen, S., Wang, X., Liu, Y., Zhang, K., Wu, G., & Qu, Y. (2024). The impact of school reopening on Chinese adolescents' mental health During COVID-19: Considering the role of academic stress and academic orientation. *Journal of Adolescent Health*.
<https://doi.org/10.1016/j.jadohealth.2024.05.011>
 11. **Cai, T.**, Yang, B.*, Zhou, Z.*, Ip, K. I., Adam, E. K., Haase, C. M., & Qu, Y. (2024). Longitudinal associations between neighborhood safety and adolescent adjustment: The moderating role of affective neural sensitivity. *Developmental Cognitive Neuroscience*, 67, 101380.
<https://doi.org/10.1016/j.dcn.2024.101380>
 10. Tu, K. M., Li, X., Guntzviller, L. M., & **Cai, T.** (2024). Academic challenges during early adolescence: Mothers' advice and youth responses to advice. *Journal of Applied Developmental Psychology*, 92, 101648. <https://doi.org/10.1016/j.appdev.2024.101648>
 9. McMath, A. L., Barton, J. M., **Cai, T.**, Khan, N. A., Fiese, B. H., & Donovan, S. M. (2024). Western, healthful, and low-preparation diet patterns in preschoolers of the STRONG Kids2 program. *Journal of Nutrition Education and Behavior*, 56(4), 219–229.
<https://doi.org/10.1016/j.jneb.2023.12.012>
 8. **Cai, T.**, Sutter, C., Donovan, S. M., & Fiese, B. H. (2023). The relationship between maternal and infant sleep duration across the first two years. *Journal of Developmental & Behavioral Pediatrics*, 44(6), e421–e428. <https://doi.org/10.1097/DBP.0000000000001195>
 7. Rudolph, K. D., Li, Y.*, Li, X., & **Cai, T.** (2023). Social goals as predictors of children's in vivo emotional responses to social challenges. *Child Development*, 94(2), 424–438.
<https://doi.org/10.1111/cdev.13869>
 6. Li, X., **Cai, T.**, Jimenez, V., & Tu, K. M. (2022). Youth coping and cardiac autonomic functioning: Implications for social and academic adjustment. *Developmental Psychobiology*, 64(8). <https://doi.org/10.1002/dev.22338>

5. **Cai, T.**, & Tu, K. M. (2021). Linking academic worries and youth academic adjustment: The role of parental involvement. *Journal of Applied Developmental Psychology, 76*, 101325. <https://doi.org/10.1016/j.appdev.2021.101325>
4. Fiese, B. H., **Cai, T.**, Sutter, C., & Bost, K. K. (2021). Bedtimes, bedtime routines, and children's sleep across the first 2 years of life. *Sleep, 44*(8), 1–9. <https://doi.org/10.1093/sleep/zsab045>
3. **Cai, T.**, & Tu, K. M. (2020). Linking parental monitoring and psychological control with internalizing symptoms in early adolescence: The moderating role of vagal tone. *Journal of Abnormal Child Psychology, 48*(6), 809–821. <https://doi.org/10.1007/s10802-020-00631-w>
2. Tu, K. M., **Cai, T.**, & Li, X. (2020). Adolescent coping with academic challenges: The role of parental socialization of coping. *Journal of Adolescence, 81*, 27–38. <https://doi.org/10.1016/j.adolescence.2020.03.008>
1. Tu, K. M., & **Cai, T.** (2020). Reciprocal associations between adolescent peer relationships and sleep. *Sleep Health, 6*(6), 743–748. <https://doi.org/10.1016/j.sleh.2020.01.019>

Book chapters

- Shi, Z., **Cai, T.**, Chen, B.-B., & Qu, Y. (2024). Cultural influences. *Encyclopedia of Adolescence*. Elsevier press.
- Tu, K. M., Rudolph, K. D., Li, X., **Cai, T.**, & Jimenez, V. (2023). Beyond the “dark side”: The “bright side” of peer experiences and physiological adaptation. In *Encyclopedia of Child and Adolescent Health* (pp. 142–166). Elsevier. <https://doi.org/10.1016/B978-0-12-818872-9.00045-5>

Under review

- Cai, T.** & Tu, K. M. (under review). Link Mothers' Autonomic Functioning and their Autonomy-Relevant Parenting.
- Furtado, E. J*., **Cai, T.**, Bricant, A., Ip, K. I. (under review). Longitudinal examination of multifaceted early life adversity, cortico-limbic connectivity, and emotion regulation difficulties in adolescence.
- Nguyen, N. P*., **Cai, T.**, Rider, N., McMorris, B., Eisenberg, M., Ip, K. I. (under review). Disaggregating Asian American adolescents data: Examining adversity and mental health disparities.
- Cai, T.**, Furtado, E. J*., Hartung, C*., Latham, B*., Klimes-Dougan, B., Luciana, M., Ip, K. I. (under review). Stress-accelerated resting-state corticolimbic development: A neurodevelopmental adaptation to ecological adversity.
- Gong, Q., & **Cai, T.** (under review). The impact of parenting stress on adolescents' positive functioning: The mediating role of parents' psychological aggression.

Liu, E*. Y, Lin, J., Shaw, S., Lee, S., **Cai, T.**, Ip, K. I., Gendron, M. (under review).
Do global profiles of emotion regulation use translate to daily strategy use?

Conference Presentations

Cai, T., Furtado, E. J*, Luciana, M., Ip, K. I. (May 2025). *Accelerated development of corticolimbic circuitry as short-term adaptation mechanism to ecological stress*. Paper presented at the biennial meeting of the Society for Research in Child Development.

Cai, T., Furtado, E., Ip, K. I. (September 2024). *Accelerated development of corticolimbic circuitry buffers against internalizing symptoms in socioeconomically disadvantaged youth: Longitudinal evidence from the ABCD study*. Poster presented at the annual meeting of the Society for Developmental Cognitive Neuroscience (Flux), Baltimore, MD.

Cai, T., Zhou, Z., Yang, B., Wang, F., Chen, B.-B., & Qu, Y. (June 2024). *Antecedents and influences of Chinese parental communication about COVID-19 pandemic: The moderating role of parental burnout*. Poster presented at the biennial meeting of the International Society for the Study of Behavioral Development, Lisbon, Portugal.

Cai, T., Tu, K. M. (April 2024). *Syncing hearts: Mother-youth physiological synchrony and adolescent well-being*. Paper presented at the annual meeting of the Society for Research in Adolescence, Chicago, IL.

Liu, E. Y, Ip, K. I., **Cai, T.**, Y, Lee, S., Lin, S., Shaw S., Gendron M. (February 2024).
Do global profiles of emotion regulation use translate to daily strategy use? Poster presented at the 2024 Society of Personality and Social Psychology, San Diego, CA.

Cai, T., Yang, B., Zhou, Z., Qu, Y. (September 2023). *Longitudinal association between neighborhood safety and adolescent health: The moderating role of affective neural sensitivity*. Poster presented at the annual meeting of the Society for Developmental Cognitive Neuroscience (Flux), Santa Rosa, CA.

Yang, B., Chen, Y.-Y., Zhou, Z., **Cai, T.**, Devakonda, V., Lee, T.-H., & Qu, Y. (September 2023). *Positive parenting buffers the negative impact of weaker inhibitory control network connectivity on adolescents' school performance*. Poster presented at the annual meeting of the Society for Developmental Cognitive Neuroscience (Flux), Santa Rosa, CA.

Cai, T., Qu, Y., Chen, N., & Wang, Q. (April 2023). *Parents' stereotypes of teens on individuation: Implications for parenting practices and youth's socioemotional adjustment in China*. Paper presented at the annual meeting of the Society for Research in Adolescence, San Diego, CA.

Cai, T., Li, X., & Tu, K. M. (April 2021). *Linking parental physiological regulation and parenting behavior*. Paper presented at the biennial meeting of the Society for Research in Child Development (Virtual).

Tu, K. M., Genuneit, J., **Cai, T.**, & Ricci, C. (April 2021). *Positive friendship experiences and sleep in adolescence: Data from the GABRIELA Ulm Cohort*. Paper presented at the biennial meeting of the Society for Research in Child Development (Virtual).

- Li, Y., **Cai, T.**, Li, X., & Rudolph, K. D. (April 2021). *Task-specific and general social goals as predictors of in vivo emotional responses to social challenge*. Poster presented at biennial meeting of the Society for Research in Child Development (Virtual).
- Li, X., **Cai, T.**, Jimenez, V., & Tu, K. M. (April 2021). *Domain-specific examinations linking youth coping and adjustment: The moderating role of cardiac autonomic functioning*. Poster presented at biennial meeting of the Society for Research in Child Development (Virtual).
- Cai, T.**, & Tu, K. M. (March 2021). *Linking parental monitoring and psychological control with internalizing symptoms in early adolescence: The moderating role of vagal tone*. Poster to presented at the biennial meeting of the Society for Research on Adolescence (Conference canceled).
- Tu, K. M. & **Cai, T.** (March 2021). *Reciprocal associations between adolescent peer relationships and sleep*. Paper to be presented at the biennial meeting of the Society for Research on Adolescence, San Diego, CA. (Conference canceled)
- Cai, T.**, & Tu, K. M. (March 2019). *Academic worries about middle school and adolescent academic outcomes: The role of parental involvement*. Poster presented at the biennial meeting of the Society for Research in Child Development, Baltimore, MD.
- Tu, K. M. & **Cai, T.** (March 2019). *Adolescent coping with academic failure: The role of parental socialization of coping*. Poster presented at the biennial meeting of the Society for Research in Child Development, Baltimore, MD.
- Cai, T.**, & Li, X. (November 2016). *Pubertal stress: Implications for depression symptoms and study motivation in Chinese adolescents*. Paper presented at 2016 Convention of the Shanghai Psychology Society, Shanghai, China.

Teaching Experiences

- 08/2022-12/2022 **Teaching Assistant**, HDFS 208: Child and Family Inclusion: Disability, Health, and Diversity
Department of Human Development and Family Studies
University of Illinois, Urbana-Champaign
Supervisor: Jan Brooks
- 08/2021-05/2022 **Instructor**, HDFS 105: Introduction to Human Development (Online)
Department of Human Development and Family Studies
University of Illinois, Urbana-Champaign
- 01/2021-05/2021 **Teaching Assistant**, HDFS 594: Intermediate Statistical Analysis (**Graduate Level**)
Department of Human Development and Family Studies
University of Illinois, Urbana-Champaign
Supervisor: Kelly F. Bost, PhD

- 08/2020-12/2020 **Teaching Assistant**, HDFS 405: Adolescent Development
Department of Human Development and Family Studies
University of Illinois, Urbana-Champaign
Supervisor: Kelly M. Tu, PhD
- 08/2019-05/2020 **Teaching Assistant**, HDFS 290: Introduction to Research Methods
Department of Human Development and Family Studies
University of Illinois, Urbana-Champaign
Supervisor: Nancy L. McElwain, PhD
- 05/2019-08/2019 **Co-Instructor**, HDFS 105: Introduction to Human Development (Online)
Department of Human Development and Family Studies
University of Illinois, Urbana-Champaign
- 08/2018-05/2019 **Teaching Assistant**, HDFS 105: Introduction to Human Development
Department of Human Development and Family Studies
University of Illinois, Urbana-Champaign
Supervisor: Jan Brooks

Professional Activities and Service

Advanced Statistical & Methodological Training

Coursework

- STAT 430: Unsupervised learning, 2022
- STAT 432: Statistical learning, 2021
- STAT 429: Time series analysis, 2021
- STAT 425: Applied regression and design, 2021
- ESPY 590: Longitudinal data analysis, 2020
- STAT 587: Hierarchical linear models, 2020
- ESPY 590: Structural equation modeling, 2019
- ESPY 590: Messy data in SEM, 2019
- STAT 448: Advanced statistical analysis, 2018

Workshop

- Machine learning for the social and behavioral sciences (Instructor: Fred Oswald, PhD), 2021
- Intensive longitudinal data analysis (Instructor: Jean-Philippe Laurenceau, PhD & Niall Bolger, PhD), 2021
- Longitudinal data analysis (Instructor: Stephen Vaisey, PhD), 2020
- Meta-analysis reading group (Instructor: Yan Xia, PhD), 2020

Mentorship

Graduate Students

- Zexin Zheng, Psychology, Illinois, 2025
- Nora Nguyen, Developmental Psychology, Minnesota, 2024-2025
- Emily Furtado, Developmental Psychology, Minnesota, 2024-2025
- Jiayi Fan, Developmental Psychology, Penn State, 2024-2025
- Feiyu Wang, Education, Northwestern, 2023-2025

- Beiming Yang, Human Development and Social Policy, Northwestern, 2023
- Varun Devakonda, Human Development and Social Policy, Northwestern, 2023
- Matías Martínez, Human Development and Social Policy, Northwestern, 2023
- Eva Yuchen Liu, Social Psychology, Yale, 2023
- Phil Lamb, Developmental Psychology, Minnesota, 2023
- Yuetian Li, Developmental Psychology, UIUC, 2020-2021

Undergraduate Research Projects & Internship

- Bernadette Latham, Neuroscience, Colorado College, 2025
- Jing Lin, Psychology, Minnesota, 2025
- Carsyn Hartung, Psychology, Minnesota, 2024-2025
- Christine Friendshuh, Psychology, Minnesota, 2024
- Pengxiang Xia, Psychology, Minnesota, 2024
- Allegra Hinojosa-Cabrera, Human Development and Family Studies, UIUC, 2021-2022
- Kaila Chan, IGNITE Project, Human Development and Family Studies, UIUC, 2021-2022
- Erin Curley, IGNITE Project, Human Development and Family Studies, UIUC, 2021-2022
- Elijah Greenwood, ACES Summer Internship, Human Development and Family Studies & Instrumental Music, UIUC, 2020-2021
- Jacqueline Lee, Psychology, UIUC, 2020-2021
- Erin Henderson, ACES Summer Internship, Human Development and Family Studies, UIUC, 2020-2021
- Brett Cohen, Molecular and Cellular Biology & Psychology, UIUC, 2019-2020
- Kelsie Olsen, Human Development and Family Studies, UIUC, 2019-2020
- Santiago Duran, Clinical Psychology, UIUC, 2019-2020
- Cara Geoghegan, Molecular and Cellular Biology, UIUC 2019-2020
- Allison Morettini, Kinesiology, UIUC, 2019-2020
- Samantha Sample, Interdisciplinary Health Science, UIUC, 2019-2020
- Monisha Roychoudhury, ACES Summer Internship, Human Development and Family Studies, UIUC, 2019
- Saira Gonzalez, IGNITE Project, Human Development and Family Studies, UIUC, 2018-2019

Journal and Conference Peer Review & Service

Consulting Editor

Journal of Research on Adolescence (2024-2025)

Ad-Hoc Peer-Reviewer

Journal of Adolescent Health

British Journal of Developmental Psychology

BMC Public Health

Cognition and Emotion

Development and Psychopathology

Developmental Psychology

European Child & Adolescent Psychiatry

Journal of Applied Developmental Psychology

Journal of Research on Adolescence

Parenting: Science and Practice

Society for Research on Adolescence
Society for Research on Child Development

Guest Lectures and Talks

- *Longitudinal associations between neighborhood safety and adolescent adjustment: The moderating role of affective neural sensitivity.* Department of Psychology, Colloquium Series, UIUC, 2024
- *Introduction to longitudinal data analysis.* Department of Psychology, Fudan University, China, 2021
- *Academic writing and publication.* Department of Psychology, Fudan University, China, 2021
- *Linking parental monitoring and psychological control with internalizing symptoms in early adolescence: The moderating role of vagal tone.* Department of Human Development and Family Studies, Colloquium Series, UIUC, 2020
- *Parenting and middle school transition.* HDFS 105: Introduction to Lifespan Development, UIUC, 2018-2019

University Service

2018-2019 **Graduate Student Representative**, Graduate Committee, HDFS, UIUC
2017-2022 **Member**, Graduate Student Organization, HDFS, UIUC

Professional Affiliations

Society for Research on Child Development
Society for Research on Adolescence
Society for Developmental Cognitive Neuroscience (flux)
International Society for the Study of Behavioral Development

Relevant Skills

Statistical Analysis: Survey design & delivery, statistical analysis (Python, R, MPlus, SPSS, SAS, HLM), neuroimaging and physiological data collection & analysis (Aurora, Hyperscan, Psychopy, BioLab, HRV, EDA, PEP).

Mentoring & Communication: Supervising & training student assistants, dissemination of findings (written and verbal)

Project Development, Implementation, and Dissemination: Proposal development, presentations, report and manuscript writing

Languages: Chinese, English

References

Kelly M. Tu, Ph.D.

Associate Professor, Human Development and Family Studies
University of Illinois, Urbana-Champaign
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Yang Qu, Ph.D.

Associate Professor, Human Development and Social Policy
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Ka I Ip, Ph.D.

Assistant Professor, Institute of Child Development
University of Minnesota, Twin Cities
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Claudia Haase, Ph.D.

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Northwestern University
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Emma K. Adam, Ph.D.

Edwina S. Tarry Professor, Human Development and Social Policy
Northwestern University
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