

## Tianying Cai, Ph.D.

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

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

### Education

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Dec 2022	<b>Doctor of Philosophy (Ph.D.), Human Development and Family Studies,</b> University of Illinois, Urbana-Champaign <ul style="list-style-type: none"><li><i>Dissertation:</i> Physiology of Parenting and Adolescent Adjustment in Peer Context (<i>Committee chair:</i> Kelly M. Tu, Ph.D.; <i>Committee members:</i> Nancy L. McElwain, Ph.D., Reed L. Larson, Ph.D., Karen D. Rudolph, Ph.D.)</li><li><i>Qualifying Exam:</i> Bidirectional Spillover between Family and Peer Stress: The Role of Adolescent Parasympathetic Nervous System Regulation (<i>Committee chair:</i> Nancy L. McElwain, Ph.D.; <i>Committee members:</i> Kelly M. Tu, Ph.D., Reed L. Larson, Ph.D.)</li></ul>
Dec 2022	<b>Master of Science, Statistics,</b> University of Illinois, Urbana-Champaign
May 2019	<b>Master of Science, Human Development and Family Studies,</b> University of Illinois, Urbana-Champaign <ul style="list-style-type: none"><li><i>Thesis:</i> Parenting and Internalizing Symptoms in Early Adolescence: The Moderating Role of Vagal Tone (<i>Advisor:</i> Kelly M. Tu, Ph.D.)</li></ul>

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

## Awards and Honors

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

## Research Interests

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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

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### 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. Brieant, 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.**, Brieant, 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

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**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 be 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

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

## Professional Activities and Service

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### 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

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**Kelly M. Tu, Ph.D.**

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University of Illinois, Urbana-Champaign  
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**Ka I Ip, Ph.D.**

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