

## UNIVERSITY OF COLORADO SCHOOL OF MEDICINE

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### Biographical sketch

Drew E. Winters, PhD. is a post-doctoral fellow at the University of Colorado Anschutz Medical Campus in the department of Psychiatry under the Developmental Psychobiology and Behavior T32 program. His research focuses on brain and behavior mechanisms underlying neurocognitive and socio-affective processes with an emphasis on adolescents with callous-unemotional traits. In this vein, this work aims to identify replicable neural mechanisms that may improve development and testing of interventions for youth with callous-unemotional traits.

### Education

University of Colorado Anschutz Medical Campus, Aurora, CO.	Current
- Post-Doctoral Fellow: Developmental Psychobiology Research Group (DPRG)	
- Primary mentor: Dr. Joseph Sakai, M.D.	
Indiana University, Indianapolis, IN. – Ph.D.	April 2020
Indiana University, Indianapolis, IN. – MSW	May 2016
Purdue University, Fort Wayne, IN. – B.S.	May 2013

### Certifications

Machine Learning Using Scikit-Learn in Python – Inira	May 2022
Data Scientist in Python - DataCamp	Nov 2021
Computational Neuroscience – Neuromatch Academy	July 2021
Data Scientist in R – DataCamp	April 2020
Multilevel Modeling II Advanced Topics – EITM	Oct 2020
Network Analysis II Advanced Topics – EITM	Oct 2020
Structural Equation Modeling with Latent Variables – EITM	Oct 2018

### Academic appointments

University of Colorado	Research Analyst	2021-Present
University of Colorado	Post-Doctoral Fellow	2020-Present
Indiana University	Adjunct Professor	2017-2020
University of Michigan	Teaching Assistant	2019 & 2020
Indiana University SOM	Research Analyst	2018-2020
Indiana University SOM	Research Assistant	2016-2020
Indiana University	Research Assistant	2014-2015

### Hospital, government, or other professional positions

School Evaluation – Aurora, CO	Statistician	2021-Present
UCHealth Encompass program - Aurora, CO	Therapist	2020-2021
Family Works Inc. - Indianapolis, IN	Therapist	2016-2020
Rogers behavioral health – Skokie IL	Behavioral Therapist	2014-2016

### Honors, special recognitions, and awards

Postdoctoral Association Travel Award	2021
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University of Colorado, Aurora, CO	
Empirical Implications of Theoretical Models – Statistics Mastery	2021
Multilevel Modeling II: Advanced Topics	
Empirical Implications of Theoretical Models – Statistics Mastery	2021
Network Analysis II: Advanced Topics	
Empirical Implications of Theoretical Models – Statistics Mastery	2018
Structural Equation Modeling with Latent Models	
Developmental, Child, and Family Psychology Fellowship	2018
ICPSR Quantitative Methods of Social Research Ann Harbor, MI	
Indiana University Travel Fellow	2017-2019
Graduate Professional Student Government Fellowship	2016
Miranda Pang Endowment	2014
Phi Kappa Phi: Academic Honor Society	2013
Tau Upsilon Alpha: Human Services Academic Honor Society	2013
Hellen I. and Rodney E. Nern Scholarship	2013

#### **Membership in professional organizations**

Society for the Scientific Study of Psychopathy (SSSP)	2022-current
Society of Clinical Child and Adolescent Psychology	2020-current
Society for Social Work and Research (SSWR)	2017-current

#### **Major Committee and Service Responsibilities**

Board of Directors, National Association of Alcohol and other Drugs of Abuse Counselors, Indiana Chapter, Indianapolis, IN	2011-2018
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#### **Licensure and board certification**

<u>License</u>	<u>Certified</u>	<u>Recertified</u>
Licensed Social Worker – Colorado	7/2020	7/2021
Licensed Social Worker – Indiana	7/2016	8/2019

#### **Review and referee work**

Emotion	Ad hoc reviewer	2022
Journal of Drug Issues	Ad hoc reviewer	2022
Brain and Behavior	Ad hoc reviewer	2022
Cerebral Cortex	Ad hoc reviewer	2021
Psychophysiology	Ad hoc reviewer	2021
Journal of Drug and Alcohol Dependence	Ad hoc reviewer	2021
Neuroscience Letters	Ad hoc reviewer	2021
Journal of Juvenile Justice	Ad hoc reviewer	2018
Journal of Child and Family Studies	Ad hoc reviewer	2017
Mindfulness	Ad hoc reviewer	2016

#### **Open-Source Software Packages**

**resmod.** A python package that calculates interaction terms using centered residuals that can be used in any regression framework <https://pypi.org/project/resmod/>

**fsub\_extractor.** A python package that ties brain structural for functional data together. [https://github.com/smeisler/fsub\\_extractor](https://github.com/smeisler/fsub_extractor)

#### **Invited extramural lectures, presentations and visiting professorships**

Winters, D.E., Sakai, J.T., Carter, R.M., <i>Computational Lesioning</i>	7/2022
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*of Heterogenous Functional Connectomes Explains Variance in Adolescent Callous-Unemotional Traits.* Neurohackadamy, University of Washington, Seattle, WA

Sanchez, C.R., Cooley, J.L., **Winters, D.E.**, Ricker, B.T., & Fite, P.J. 7/2022

*Prospective associations between forms of aggression and peer victimization: The moderating role of prosocial behavior.* Biennial Research Conference on Relational Aggression, Virtual Conference.

**Winters, D.E.**, *Introduction to R for medical students.* University of Colorado Anschutz Medical Campus, Aurora, CO 4/2022

**Winters, D.E.**, *Cognitive Load Sensitivity Impacts Theory of Mind Impairments in Callous-Unemotional Traits.* Developmental Psychobiology Research Group, Denver, CO 4/2022

**Winters, D.E.**, *Affective Theory of Mind Impairments in Youth with Callous-Unemotional Traits: The Role of Cognitive Control.* American College of Neuropsychopharmacology. San Juan, PR 12/2021

**Winters, D.E.**, *Network typology of adolescents with callous-unemotional traits.* Department of Psychiatry Poster Session, University of Colorado Anschutz Medical Campus, Aurora, CO 3/2021

**Winters, D.E.**, *Adolescent Prosocial Behavior and Affective Theory of Mind: The Role of Cognitive Control and Callousness.* Developmental Psychobiology Research Group, Denver, CO 3/2021

**Winters, D.E.**, *Longitudinal Data Analysis Using Secondary Data.* S728 multivariate statistics, Dr. Sadaaki Fukui. Indiana University School of Social Work, Indianapolis, IN. 1/2021

**Winters, D.E.**, *Neural Connectivity of Empathy and its Impairments in Adolescents.* Developmental Psychobiology Research Group, Denver, CO 10/2020

**Winters, D.E.**, *Statistical Approaches of Propensity Score Matching.* Training the Indiana Department of Children Services data analysis and evaluation team, Indianapolis, IN. 3/2020

**Winters, D.E.**, *Secondary data analysis.* S728 multivariate statistics, Dr. Sadaaki Fukui. Indiana University School of Social Work, Indianapolis, IN. 1/2020

**Winters, D.E.** *Mindfulness and Acceptance and Commitment Therapy in Clinical Practice.* Advanced clinical practice, Dr. Vincent Starnino, instructor. Indiana University School of Social Work, Indianapolis, IN. 6/2017

**Winters, D.E.** *Mindfulness in Addictions Treatment.* Presentation to staff and clients at the Life Recovery Center, Indianapolis, IN. 8/2016

**Winters, D.E.** *Mindfulness in Clinician Self-Care, and Clinical Practice.* Presented to the staff and honor society recipients of Chi Eta Sigma for marriage and family therapist. Purdue University, Fort Wayne, IN. 4/2016

## Teaching record

**Indiana University School of Social Work – Teaching Assistant**

S623 Practice Research Integrative Seminar	Online	Summer 2017
S623 Practice Research Integrative Seminar	Online	Spring 2017
S623 Practice Research Integrative Seminar	Seminar	Fall 2016

#### **University of Michigan – ICPSR**

Regression Analysis II: Linear models	Online	Summer 2020
Regression Analysis II: Linear models	Seminar	Summer 2019

#### **Indiana University– Adjunct Professor**

S728 Advanced Statistics – Statistics Lab	Seminar	Spring 2020
S718 Intermediate Statistics – Statistics Lab	Seminar	Fall 2019
S728 Advanced Statistics – Statistics Lab	Seminar	Spring 2019
S718 Intermediate Statistics – Statistics Lab	Seminar	Fall 2018
S517 Assessment in Mental Health & Addictions	Seminar	Summer 2018

#### **Mentoring**

Neuromatch Academy – Computational Neuroscience Mentor	2022
- I mentored a group of five participants in the computational neuroscience track on completing capstone project.	
Gabriel Yepes, M.D. – Research Mentor	2021
- I mentored Dr. Yepes on conducting research and writing manuscripts resulting in one research publication.	

#### **Grant support**

Developmental Psychobiology Endowment Fund. Project title: ‘The effects of cognitive load on prosocial behavior amongst early adolescents with high callous-unemotional traits and typically developing controls.’ Funding amount \$7,220 <u>Role</u> : PI	2021-2022
National Institutes of Mental Health T32MH015442-42; Laudenslager, Mark (PI), Developmental Psychopathology, Psychobiology & Behavior. <u>Role</u> : Postdoctoral Fellow	2020 - present
Indiana Department of Children Services Title IV-E Waiver A93-3-13-4F-C0-0981; Pierce, Barbra (PI), Indiana University School of Medicine. <u>Role</u> : Research Analyst	2019 - 2020
Indiana Department of Children Services Title IV-E Waiver A93-3-13-4F-C0-0981; Hall, Jim (PI), Indiana University School of Medicine. <u>Role</u> : Research Assistant	2017 - 2019

#### **Bibliography**

##### **Published**

##### ***Published Peer-Reviewed Articles***

**Winters, D. E.,** Hyde, L. W. (2022). Shared Functional Network Connectivity Between Callous-Unemotionality and both Cognitive and Affective Empathy. *Journal of Affective Disorders*.

**Winters, D.E.,** Pruitt P. J., Damoiseaux J.S, Sakai, J.T. (2021). Moderating effect of CU traits on functional connectivity underlying empathy in adolescents. *Psychiatry Research Neuroimaging*. Doi: 10.1016/j.psychresns.2021.111429

- Winters D.E., Sakai, J.T., Carston, R.M.** (2021) Resting-state network topology characterizing callous-unemotional traits in adolescence. *Neuroimage: Clinical*, 2021: p. 102878.
- Winters, D.E., Susan M., Hopfer, C., Sakai, J.T.** (2021). Moderating effects of CU traits on transdiagnostic symptoms association with suicidality in adolescents. *Child Psychiatry and Human Development*. <https://doi.org/10.1007/s10578-021-01256-w>
- Winters D.E., Pruitt P. J., Fukui S., Cyders M.A., Pierce B. J., Lay K., Damoiseaux J.S.** (2021). Indirect paths between functional connectivity underlying heterogenous depression symptoms in adolescents via cognitive and affective empathy. *Child Psychiatry and Human Development*. <https://doi.org/10.1007/s10578-021-01242-2>
- Winters, D.E., Pruitt P.J., Fukui, S., Cyders, M. A., Pierce, B. J., Lay, K., Damoiseaux, J. S.** (2021). Network functional connectivity underlying dissociable cognitive and affective components of empathy in adolescence. *Neuropsychologia*. 10.1016/j.neuropsychologia.2021.107832
- Winters, D.E., Brandon-Friedman, R., Yepes, G., Hinkley, J.** (2020). Systematic review and meta-analysis of socio-cognitive and socio-affective processes association with adolescent substance use. *Drug and Alcohol Dependence*. <https://doi.org/10.1016/j.drugalcdep.2020.108479>
- Winters, D.E., Pierce, B. J., Imburgia, T.** (2020) Concrete services usage on child placement stability: Propensity score matched effects. *Child and Youth Service Review*. DOI: 10.1016/j.chilyouth.2020.105362
- Winters, D.E., Wu, W., Fukui, S.** (2020). Longitudinal effects of cognitive and affective empathy on adolescent substance use. *Substance Use & Misuse*, 1-7. DOI: 10.1080/10826084.2020.1717537
- Winters, D.E., Fukui, S., Leibenluft, E., Hulvershorn L.A.,** (2018). Improvements in Irritability with Open-Label Methylphenidate in Youth with Comorbid Attention Deficit/Hyperactivity Disorder and Disruptive Mood Dysregulation Disorder. *Journal of Child and Adolescent Psychopharmacology*, 28(5): 298-305.
- Beerbower, E., **Winters, D.E., Kondrat, D.** (2018). Bio-psycho-social-spiritual needs of adolescents and young adults with life-threatening illnesses: Implications for social work practice. *Social Work in Health Care*, 1-17. DOI: 10.1080/00981389.2018.1430091
- Winters, D.E., Beerbower, E.** (2017). Mindfulness and Meditation as an Adjunctive Treatment for Adolescents Involved in the Juvenile Justice System: Is Repairing the Brain and Nervous System Possible? *Social Work in Health Care*, 1-21. Doi:10.1080/00981389.2017.1316341

#### ***Published Book Chapters***

- Armstrong, E., **Winters, D.E., Jagers, J.** (2018). Mental Health in Prison Populations. Serving the Stigmatized: Working within the Incarcerated Environment. W.T. Church and D.W. Springer, Oxford University Press.

#### ***Technical Reports for the State of Indiana***

- Winters, D.E., Imburgia, T., Pierce, B. J.** (2017, 2018, 2019, 2020). Concrete Services Spending and outcomes for youth. Indiana Department of Child Services Child Welfare Title IV-E Waiver Demonstration Project Extension: Final Report.

#### **Unpublished**

#### ***Under Review***

**Winters, D.E., Sakai, J.T.** (under review). Affective theory of mind impairments underlying callous-unemotional traits and the role of cognitive control: A pilot study.

**Winters, D.E., Massey, S.H., Sakai, J.T.** (under review). Adolescent substance use outcomes in response to social consequences of use: the role of empathy.

**Winters, D.E., Sakai, J.T.** (under review). Prosocial behavior limitations associated with callous-unemotional traits are moderated by internalizing symptoms

Sakai, J.T., Chintaluru, Y., Raymond, K., McWilliams, S., Carter, R., **Winters, D.E., Mikulich, S.** (under review). Can Moral Elevation Response Increase Prosocial Behavior? Examining the Effects of Psychopathic Traits.

**Winters, D.E., Sakai, J.T.** (under review) Callous-Unemotional traits association with prosocial behavior and the mediating role of cognitive control.

**Winters, D. E., Leopold, D.R., Sakai, J.T., Carter, R.M.** (under review) Resting-state connectivity underlying cognitive control's association with perspective taking in callous-unemotional traits.

***In preparation***

**Winters, D. E., Leopold, D.R., Sakai, J.T., Carter, R.M.** Efficiency of heterogeneous functional connectomes explains variance in callous-unemotional traits after computational lesioning cortical midline and salience regions

**Winters, D.E., Sakai, J.T.** Cognitive processes underlying prosocial decision making in callous-unemotional traits.