THE UNIVERSITY OF TENNESSEE
COLLEGE OF SOCIAL WORK

SW 528: Neurophysiologic Development in Social Work
Section 304, CRN No. 81550
1 credit hour
First Summer Session 2018

Instructor: Phyllis Thompson, Ph.D., LCSW **Office: Henson Hall** 320
Class Meeting Format: Zoom (*Live Online*) **Email:** pthomp11@utk.edu
Office hours: Telephone or Zoom by appt. **Cell Phone:** 210-748-1861
Live Online: *6:30 – 8:00 (EST) 5:30-7:00 pm (CST) on 5/31, 6/07, 06/28*

Code of Conduct

It is the student's responsibility to have read the College of Social Work Ethical Academic and Professional Conduct Code that is in the College of Social Work MSSW Handbook (www.csw.utk.edu). Students are also expected to sign and adhere to the Social Work Field Placement Code of Conduct.

The Honor Statement

An essential feature of The University of Tennessee is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the University, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity. (*Hilltopics*).

University Civility Statement

Civility is genuine respect and regard for others: politeness, consideration, tact, good manners, graciousness, cordiality, affability, amiability and courteousness. Civility enhances academic freedom and integrity, and is a prerequisite to the free exchange of ideas and knowledge in the learning community. Our community consists of students, faculty, staff, alumni, and campus visitors. Community members affect each other's well-being and have a shared interest in creating and sustaining an environment where all community members and their points of view are valued and respected. Affirming the value of each member of the university community, the campus asks that all its members adhere to the principles of civility and community adopted by the campus: http://civility.utk.edu/

Disability

If you need course adaptations or accommodations because of a documented disability or if you have emergency information to share, please contact The University of Tennessee Office of Disability Services at 100 Dunford Hall (865) 974-6087. This will ensure that you are properly registered for services.

Dimensions of Diversity

The College of Social Work and the University of Tennessee welcome and honor all people. In accordance with the U.S. National Association of Social Workers (NASW) and the U.S. Council on Social Work Education (CSWE 2015 Educational Policy Statement), "the dimensions of diversity are understood as the intersectionality of multiple factors including" age, class, color, culture, mental or physical disability and ability, ethnicity, gender, gender expression, gender identity, immigration status, marital status, national origin, political ideology, race, regionality, religion and spirituality, sex, sexual orientation, and tribal sovereign status. The College values intellectual curiosity, pursuit of knowledge, and academic freedom and integrity. "A person's diverse life experiences may include oppression, poverty, marginalization, and alienation as well as privilege, power, and acclaim" (CSWE 2015 Educational Policy Statement). The College of Social Work promotes social justice and social change, and strives to end discrimination, oppression, poverty, and other forms of social injustice.

COURSE DESCRIPTION

This course will examine neurophysiologic development. Neurophysiologic development provides a foundation for understanding the processes of human development and how these processes are influenced by culture and the environment. The course examines the effects of risk and protective factors at various ecological levels, such as attachment, poverty, and culture. This course also covers genetics and how genes express themselves as well as genetic potentials. Typical development will be covered as well as atypical developmental patterns that are consistent with neurodevelopmental disorders. Processes critical to human behavior and risk and resilience for vulnerable populations are emphasized to understand individual or family behavior.

Content in this course will be illustrated and centered around a case study approach in which students read case studies that are paired with theoretical and research material. Class discussion about the theoretical and research material will be linked to case studies, and students will use theory and research to construct hypotheses about individual or family adaptation to the environment. In addition, students will practice forming research questions and going to the literature to assess what is known about their questions.

COURSE RATIONALE

To practice accountably and effectively, social workers must be able to understand their clients and their presenting issues within their clients' developmental contexts. In supportive environments, individuals flourish as they progress through developmental stages and stage-salient tasks. Other environments, because of risk factors associated with them, are less supportive of wellbeing. Even so, brain plasticity provides humans with an amazing capacity to adapt to these less supportive and sometimes frankly maladaptive environments, although sometimes at great cost to themselves. Especially for young children, the costs to the developing brain of less adaptive environments are profound because their brains actually become organized around repeated experiences within these less adaptive environments. Also, genetics play a role in terms of gene expression and potential in regards to these less adaptive environments. Neurophysiological changes and

behaviors resulting from these earlier less adaptive environments are often conceptualized by clinicians as psychopathology or presenting problems of clients. Understanding human development as a series of processes mediated by the brain within an environment-dependent context profoundly reframes not only our understanding of our clients and their presenting problems, but also how to intervene appropriately with clients and their environments. This different understanding of human development also suggests the critical importance of effective prevention programs and social policies that promote wellbeing, as well as interventions directed at changing the larger environments of individuals. Thus, knowledge gained in this course will allow social workers not only to better understand, contextualize, and assess clients and their presenting problems, but also to develop more appropriate interventions, prevention programs, or policies for working with or for the benefit of clients and for the necessary environments to support human wellbeing.

COURSE COMPETENCIES

By the completion of this course, the students are expected (through course activities, assignments, and/or exams) to:

1. Explain the roles of neurophysiology, adaptive and maladaptive environments, and experiences, including the effects of trauma and chronic stress, on brain development and the role of genetics and epigenesis in development during the sensitive period of the first three years of life and across the life span. (EBIP 4.1, 6.1) *(content: basic introduction to Mendelian genetics and the Human Genome Project; gene expression; effects of stress and trauma on hormones, brain development, and gene expression; effects of parenting on brain development and gene expression; explain how this research can impact practice and service delivery;* Adverse Childhood Experiences (ACEs) study and related literature describing lifelong impact of early adverse experiences, including implications for individual and population health outcomes and ACEs as a public health framework; neurophysiology of toxic stress, trauma, and the cycle of adverse childhood experiences within families and communities, including related policies and practices such as trauma-informed care; impact of ACEs on child development and importance of fostering resilience and healthy "serve and return" behaviors in infancy (i.e. attachment) and how toxic stress and ACEs can impact a child's "air traffic control" system (i.e. cognitive development).

2. Explain the interaction between nature (genetic potential of an individual) and nurture (effect of the environment on the individual) as it relates to cultural differences and disparities by race/ethnicity, class, sex, and sexual orientation. (EBIP 2.1) *(content: traits, phenotypes, health disparities in race; kindling hypothesis; mundane extreme environmental stress; tend and befriend hypothesis; epigenesis; effects of early deprivation on brain development.)*

3. Explain how neurophysiological processes may place individuals at risk or, conversely, how environments of at-risk individuals contribute to neurophysiological processes that increase their levels of vulnerability. (EBIP 7.1) (*Content: epigenesis, allostasis,*

attachment, stress, trauma, kindling; HPA axis; amygdala; pruning; synaptogenesis; windows of opportunity)

Official Correspondence
University e-mail and Canvas serves as the official correspondence mediums with students. Please check your email and Canvas announcements for course-related information and announcements.

Learning Environment
This course involves synchronous learning experiences in the online class environment. The student is a co-creator of the learning experience and environment. It is the purpose of this class to provide knowledge and access to resources that will serve as a springboard for class collaboration. The course includes synchronous course discussions based on reading assignments and previous professional experiences that enhances collaborative learning.

Extra Credit
Readings, activities and assignments are thoughtfully chosen to help you master the objectives that this course offers. Therefore, extra credit is not offered.

Grades, Assignments, and Course Expectations

This course provides information that is crucial to the rest of your MSSW studies. You can expect to devote about 4-6 hours a week to this class, including in-class time, readings, preparation of papers, and communication with the professor and your fellow students. There are no shortcuts. Participation and readings are necessary for you to learn this material, which is not only a foundation for the rest of your studies, but also for your career as a social worker.

Your grade in this class is based on four weekly quizzes and one optional extra credit opportunity.

Assignments	Available Points 100	Course Competencies	Dimensions of Course Competencies
Quiz 1	20	1, 2, 3	Knowledge
Quiz 2	20	1, 2, 3	Knowledge
CTE Group Presentation	30	1, 2, 3	Knowledge; Cognitive and affective processes
Scholarly dialogue	3@10 pnts each =30	1, 2, 3	Knowledge; Cognitive and affective processes

Grading Values

The following grading scale will be used for the final course grade.

Grade	Point range	Standard
A	95-100	Outstanding/Superior – Exceptional performance. Consistently exceeds expectations
B+	90-94	Very Good – Student consistently meets and occasionally exceeds normal expectations for the course.
B	85-89	Good – Student consistently meets normal expectations for the course.
C+	80-84	Average – There is unevenness in grasping course content. Student is inconsistent in meeting the normal expectations for the course.
C	70-79	Poor - There is a lack of understanding of course content. Student does not meet course expectations.
F	69 or below	Very Poor – There is a lack of attendance or incomplete or unacceptable assignments. Course expectations are not met.

Required Readings
There is no required textbook for this course. Journal articles and other required reading material, videos, and lectures will be posted on the Canvas course site under each unit.

Quizzes
This semester there are two quizzes related to the covered material. The quizzes consist of multiple choice and true and false. *Quiz 1* covers weeks 1-3 and is worth 20 points. *Quiz 2* covers weeks 4-5 and is worth 20 points. You may only take each quiz once so please make sure you do not accidentally close the exam because you will not be allowed access to it again. All exams will close after 1 hour. You may use any of your resources to answer the questions but you may not talk to anyone about it. This is an opportunity for you to think through the material on your own and apply your knowledge. Discussing this exam will lead to your grade turning into a zero. Beginning this exam means that you acknowledge these rules and agree to them. Good luck everyone.

Group Presentation
At the beginning of the semester, students will be assigned to groups of 4-5 in order to prepare a 10-15 minute teaching exercise for the class based on a Critical Thinking Exercise (CTE) provided for that unit. These presentations are to be well prepared and showcase students' understanding of required course material and their ability to synthesize complex concepts into easy to understand language for all audiences. The format for the presentation should be creative, cohesive, and may include the use of PowerPoint, handouts, class engagement exercises, skits, etc. The presentations are to be recorded with a link posted to the discussion board for your classmates to be able to view. A grading rubric will be posted on Canvas.

Note: All group members must actively participate in the presentation and contribute equally to the group process. It is highly inappropriate for students to "not pull their weight" or to complete other student's assigned work. Disrespectful behavior or subpar

contributions will not be tolerated, and the instructor reserves the right to grade students on an individual basis if this occurs.

Scholarly Dialogues

This semester the instructor will match student groups together. The members of each group will work to create a scholarly dialogue based on the CTE presentations. The goal will be to build upon and constructively expand the dialogue. Thus, in order to earn the highest score possible, at least one of the three required posts must integrate at least one peer reviewed research article that is not included in the assigned material. Posts need to demonstrate understanding of the material through the use of appropriate use of vocabulary words, critical thinking, and synthesis of the required materials. Presenters are also responsible to answer questions and provide clarification if needed, which means there may be times when accessing more research information is necessary.

Please keep in mind that the discussion board is a tool to help you engage with each other about the material; become exposed to different perspectives; and share your professional experiences. It is therefore important to be checking the discussion board throughout the week, which will allow more time to process the information and formulate thoughts. The discussion board is not a helpful tool when most of the postings come in at the end of the week. After the scheduled time for closing the discussion board has ended you may continue to discuss the material but there will not be any credit offered for late posts. The following rubric will be used to grade your posts.

- A score of 9-10 is the highest score you can achieve. To earn 8-10 points you must: post one initial post and provide two substantive responses that can facilitate further discussion. At least one of the three posts most also include an outside peer reviewed research article that supports the discussion ***in a scholarly and meaningful way***. Posts are to incorporate vocabulary words, exhibit critical thinking, and demonstrate concepts learned with applications and examples, is concise, and well written. Incorporation of material is cited according to APA.
- A score of 8 is ***better than average*** work. To earn 8 points you must: post one initial post and provide two substantive responses that can facilitate further discussion. Posts are to incorporate vocabulary words, exhibit critical thinking, and demonstrate concepts learned with applications and examples, is concise, and well written. Incorporation of material is cited according to APA.
- A score of 7 is ***average work*** that utilizes vocabulary, reviews the concepts, and shares your interpretations but does little if anything to further the dialogue in any of three of the required posts. APA is appropriately applied.
- A score of 4-6 is ***below average*** and means that less than the three required posts were made or that the posts were not substantive. For example, if more then one post was made the postings were only partially relevant, lacked substance, was poorly written and/or not proofed adequately.
- A score of 1-3 means that less than the three required posts were made or that the posts were not substantive. For example, if more then one post was made the postings lacked relevance and/or substance was poorly written, and the use of APA was problematic.

- A score of 0 means there was a failure to make any posts, posts were not relevant or easily understood, or posts were plagiarized.

Class Participation

This is an intense course that takes quite a bit of time. Expect to spend about 4-6 hours per week, including time reading, viewing videos and recorded lectures, and completing both graded assignments.

There is no substitute for active, ongoing participation in this course. Class exercises, videos and speakers will provide examples or illustrations of important material. In a good class, you learn as much from each other as you do from the professor, so students are required to be part of class discussions. As this is a very short summer course, attendance for all scheduled *Live Online* (Zoom) classes is required.

UT CSW acknowledges students' right to privacy. You are under no obligation to share personal information. Therefore, when dealing with personal information either in class or in an assignment, share only to the level at which you are comfortable.

Course Outline
Summer Semester 2018

Class/Date	Topics	Required Readings and Materials	Assignment & Due Dates
Class 1 05/31/18	1) Course overview and expectations 2) Critical thinking 3) Review of theories from HBSE 4) Framework Institute	Review of syllabus, course expectations, weekly assignments and Canvas course site. ***Students should study the syllabus and the Canvas website before class begins. You are responsible for all information in the syllabus.*** If you have questions you can post them on the discussion board in Canvas or bring them to class next week.	
Class 2 06/07/18 *Live Online*	1) Intro to epigenetics 2) ACEs 3) Resilience	**Required Readings** Combs-Orme, T. (2013). Epigenesis and the social work imperative. *Social Work, 58*(1): 23-30. doi: 10.1093/sw/sws052 Karatoreos, I. N., & McEwen, B. S. (2013). Annual research review: The neurobiology and physiology of resilience and adaptation across the life course. *Journal of Child Psychology and Psychiatry*, *54*(4), 337-347. O'Dougherty Wright, M., Masten, A.S. &	

		Narayan, A.J. (2013). Resilience processes in development: Four waves of research on positive adaptation in the context of adversity. In S. Goldstein & R.B. Brooks, eds. (pp. 15-37). *Handbook of Resilience in Children*. **Required Videos** Paper Tigers (4.59 min) https://vimeo.com/139998006 Perks, B. (2015). *Adverse Childhood Experiences is not a life sentence.* TEDxPodgorica (15:53 min) https://www.youtube.com/watch?v=qp0kV7JtWiE	
Class 3 06/14/18	1) Genetics and Epigenetics	***Remember: learning this material **does not require memorization**. As you continue to go through the readings, videos and web sites, the material will come together for you. **Required Readings** Kim, B. & Evans, G. W. (2010). Family resources, genes, and human development. In *Biosocial Foundations of Family Processes*. Proceedings, National Symposium on Family Issues, p. 221. Sullivan, S. (2013). Inheriting racist disparities in health: Epigenetics and the transgenerational effects of white racism. *Critical Philosophy of Race, 1*(2), 190-218. [doi: 10.1353/por.2013.0018] Szyf, M., & Bick, J. (2013). DNA methylation: A mechanism for embedding early life experiences in the genome. *Child Development, 84*(1), 49-57. doi:10.1111/j.1467-8624.2012.01793.x. Thayer, Z. M. & Kuzawa, C. W. (2011). Biological memories of past environments. *Epigenetics, 6*(7), 798-803. **Required Materials** • Dr. Terri Combs-Orme recorded guest lecturer (Canvas) • Ghost In Your Genes (Video) (46 min hour) • Genetic disorders Genetics interactive tutorial • The 5-HTT Gene	***1) Genetic and Epigenetic CTE presentations due*** ***2) Begin critical thinking dialogues*** ***3) Quiz 1 on first three weeks opens at 7:00am on 6/14/18 and closes at 11:59pm on 06/20/2018***

		• The Genome • Utah Genetic Science Interactive Learning Center and explore the following: √ Tour the Basics √ DNA to Protein √ Heredity and Traits √ Amazing Cells √ The Epigenome at a glance √ Epigenetics http://learn.genetics.utah.edu/ **In Brief: Gene Environment Intervention** http://developingchild.harvard.edu/science/deep-dives/gene-environment-interaction	
Class 4 06/21/18	1) Brain and Behavior	**Required Readings** Belsky, J., & de Haan, M. (2011). Annual research review: Parenting and children's brain development: The end of the beginning. *Journal of Child Psychology and Psychiatry*, *52*(4), 409-428. Fagiolini, M., Jensen, C. L. & Champagne, F. A. (2009). Epigenetic influences on brain development and plasticity. *Current Opinion in Neurobiology, 19*, 207-212. Fox, S.E., Levitt, P. & Nelson, C.A. (2010). How the timing and quality of early experiences influence the development of brain architecture. *Child Development, 81*(1), 28-40. **Required Lessons** Complete Lessons 1. *Beginning with the Human Brain*; 2. *Brain Organization and Function;* and 3. *The Brain's Building Blocks* of the *Amazing Human Brain and Human Development* by Dr. Bruce Perry and the Child Trauma Academy. Take the quiz to evaluate your comprehension. You do not need to complete the assignments, although some of the information in the assignments is quite interesting and will strengthen your understanding and knowledge base. http://www.childtraumaacademy.com/amazing_brain/index.html	**1) *Brain and Behavior CTE presentations due*** **2) *Begin critical thinking dialogues***

		Required Videos Dr. Terri Combs-Orme recorded guest lecturer (Canvas) O'Connell, C. (2013). *A Game that Maps the Human Brain*. Claire O'Connell at TEDxAtlanta (19:01) https://www.youtube.com/watch?v=8L_ATqjfjbY The Fantastic plastic brain. The Kavli Foundation. http://www.kavlifoundation.org/science-spotlights/columbia-kibs-fantastic-plastic-brain#.Vap4RdZQipd Executive Function and Self-regulation (5:35 min video) http://developingchild.harvard.edu/science/key-concepts/executive-function *Stranger anxiety (54 sec)* *http://www.youtube.com/watch?v=Y6QtuU1L_A8&feature=related* Shore, A. *Emotions: Regulation and Dysregulation* (6.14 min) http://www.youtube.com/watch?v=aybKnSZ26Sw Three Core Concepts in Early Development (All three videos 5.18 minutes) http://developingchild.harvard.edu/resources/multimedia/videos/three_core_concepts/ Mirror Neurons by Nova. (14 min.) http://www.pbs.org/wgbh/nova/sciencenow/3204/01.html The Backwards Brain Bicycle - Smarter Every Day 133: (~8 min) https://www.youtube.com/watch?v=MFzDaBzBlL0 The story of Phineas Gage: https://www.youtube.com/watch?v=NFO6ts6vZic	
Class 5 06/28/18	1) Stress, Trauma, and Hormones	**Required Readings** Cowan, C. S. M., Callaghan, B. L., Kan, J. M., &	**1) *Stress, Trauma, and Hormones***

Live Online		Richardson, R. (2016). The lasting impact of early-life adversity on individuals and their descendants: potential mechanisms and hope for intervention. *Genes, Brain and Behavior, 15*, 155-168. Dich, N., Lange, T., Head, J., & Rod, N. H. (2015). Work stress, caregiving, and allostatic load: prospective results from the Whitehall II cohort study. *Psychosomatic medicine*, *77*(5), 539-547. Geronimus, A., Hicken, M., Keene, D. & Bound, J. (2006). "Weathering" and age patterns of allostatic load scores among Blacks and Whites in the United States. *American Journal of Public Health, 96*(5), 826-833. Lupien, S. J., McEwen, B. S., Gunnar, M. R. & Heim, C. (2009). Effects of stress throughout the lifespan on the brain, behavior and cognition. *Nature, 10*, 434-445. Manuck, S.B. & McCaffery, J.M. (2010). Genetics of stress: Gene-stress correlation and interaction. Chapter 31 (pp. 1-20) in *Handbook of Behavioral Medicine: Methods and Applications*. New York: Springer. Shonkoff, J. and Garner, A. (2012). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics, 129(*1). *129*, e232; doi: 10.1542/peds.2011-2663. Waller, R. J. (2003). Application of the kindling hypothesis to the long-term effects of racism. *Social Work in Mental Health, 3*(3), 81- 89. **Required Lessons** Complete Lesson 4. *Communication and Defense* and Complete Lesson 5. *Plasticity, Memory, and Cortical Modulation* in the Brain the *Amazing Human Brain and Human Development* by Dr. Bruce Perry and the Child Trauma Academy. Take the quiz to evaluate your comprehension. You do not need to complete the assignments, although some of the information in the assignments is quite interesting and will strengthen your understanding and knowledge base.	***CTE presentations due*** **2) *Begin critical thinking dialogues*** ***3) Quiz 2 on weeks 4 and 5 opens at 7:00am on 06/28/18 and closes at 11:59pm on 07/05/2018***

		http://www.childtraumaacademy.com/amazing_brain/index.html **Required Videos** • Dr. Terri Combs-Orme recorded lecture *Toxic Stress Derails Healthy Development* (1:42 min. Video) http://developingchild.harvard.edu/science/key-concepts/toxic-stress **In-Brief- The Foundations of Lifelong Health (7-min video)** http://developingchild.harvard.edu/resources/multimedia/videos/inbrief_series/inbrief__the_foundations_of_lifelong_health/ Shore, A. *Emotions: Regulation and Dysregulation* (6.14 min) http://www.youtube.com/watch?v=aybKnSZ26Sw *Social Learning (5.46 min)* *http://www.learner.org/vod/vod_window.html?pid=1622*	
Class 6 07/06/18	1. Course wrap-up	McGonigal, J. (2012). The game that can give you 10 extra years of life (19:23) https://www.ted.com/talks/jane_mcgonigal_the_game_that_can_give_you_10_extra_years_of_life	***1) All discussion board posts for presentation dialogues due by 11:59 pm on 7/6/2018***

Value Added Readings

Class 3 – Value Added Readings

NASW Standards for Integrating Genetics into Social Work Practice. pp. 2-20.

Mayer, L.S. & McHugh, P.R. (2016). Sexuality and Gender: Findings from the biological, psychological, and social sciences. *The New Atlantis: A Journal of Technology and Society*, 50, 1-143. Washington, D.C.

Roselli, C.E. (2017). Neurobiology of Gender Identity and Sexual Orientation. *Journal of Neuroendocrinology*.

Class 4 -Value Added Readings

Champagne, F.A., & Curley, J. P. (2005). How social experiences influence the brain. *Current Opinion in Neurobiology 15*, 704–709.

Charil, A., Laplante, D.P., Vaillancourt, C., King, S. (2010). Prenatal stress and brain development. *Brain Research Reviews,* 56-79.

Hanson, J. L., Hair, N., Shen, D. G., Shi, F., Gilmore, J. H., Wolfe, B. L., & Pollak, S. D. (2013). Family poverty affects the rate of human infant brain growth. *PloS One, 8*(12), e80954, 1-9.

Lipina, Sebastian, J., & Posner, M. I. (2012) The impact of poverty on the development of brain networks. *Frontiers in Human Neuroscience, 6,* 1-12. doi: 10.3389/fnhum.2012.00238

Parsons, C. E., Young, K. S., Murray, L., Stein, A., & Kringelbach, M. L. (2010). The functional neuroanatomy of the evolving parent–infant relationship. *Progress in Neurobiology, 91*, 220-241.

Perry, B.D. (2002). Brain structure and functions I. Basics of organization. pp. 1-19.

Schore, J. R., & Schore, A. N. (2008). Modern attachment theory: The central role of affect regulation in development and treatment. *Clinical Social Work Journal, 36*(1), 9-20.

Sinclair, D., Purves-Tyson, T. D., Allen, K. M., & Weickert, C. S. (2014). Impacts of stress and sex hormones on dopamine neurotransmission in the adolescent brain. *Psychopharmacology*, *231*(8), 1581-1599.

Sullivan, R. M. (2012). The neurobiology of attachment to nurturing and abusive caregivers. *Hastings Law Journal, 63*(6), 1553–1570.

Class 5- Value Added Readings

Braveman et al. (2010). Poverty, near-poverty, and hardship around the time of pregnancy.

Maternal and Child Health Journal, 14, 20-35.

Charil, A., Laplante, D.P., Vaillancourt, C., King, S. (2010). Prenatal stress and brain development. *Brain Research Reviews,* 56-79.

Combs-Orme, T., Wilson, E., Cain, D., Page, T., & Kirby, L. (2003). Context-based parenting of infants. *Child and Adolescent Social Work Journal, 20*(6), 437-472.

Cronholm, P. F., Forke, C. M., Wade, R., Bair-Merritt, M. H., Davis, M., Harkins-Schwarz, M., Pachter, L. M., & Fein, J. A. (2015). Adverse childhood experiences: Expanding the concept of adversity. *Am J Prev Med, 9*(3), 354–361.

Dich, N., Lange, T., Head, J., & Rod, N. H. (2015). Work stress, caregiving, and allostatic load: prospective results from the Whitehall II cohort study. *Psychosomatic medicine*, *77*(5), 539-547.

DiPietro, J. (2012). Maternal stress in pregnancy: Considerations for fetal development. *Journal of Adolescent Health, 51*, S3-S8.

Finkelhor, D., Shattuck, A., Turner, H., & Hamby, S. (2015). A revised inventory of Adverse Childhood Experiences. *Child Abuse & Neglect, 48*, 13-21.

Guinosso, S. A., Johnson, S. B., & Riley, A. W. (2016). Multiple adverse experiences and child cognitive development. *Pediatric Research, 79*(1), doi: 10.1038/pr.2015.195

Hasenfratz, L., Benish-Weisman, M., Steinberg, T., & Knafo-noam, A. (2015). Temperament and peer problems from early to middle childhood: Gene–environment correlations with negative emotionality and sociability. *Development and Psychopathology,* 27, 1089–1109. doi: 10.1017/S095457941500070X

Jaffee, S. R., & Christian, C. W. (2014). The biological embedding of child abuse and neglect. *Social Policy Report*, *28*(1), 1-36.

Latendresse, G. (2009). The interaction between chronic stress and pregnancy: Preterm from a biobehavioral perspective. *Journal*

Monnat, S. M. & Chandler, R. F. (2015). Long-term physical health consequences of adverse childhood experiences. *The Sociological Quarterly*, 56, 723-752. doi: 10.1111/tsq.12107

Sachs-Ericsson, N. J., Rushing, N. C., Stanley, I. H., & Sheffler, J. (2016). In my end is my beginning: Developmental trajectories of adverse childhood experiences to late-life suicide. *Aging & Mental Health, 20*(2), 139-165. doi: 10.1080/13607863.2015.1063107

Sinclair, D., Purves-Tyson, T. D., Allen, K. M., & Weickert, C. S. (2014). Impacts of stress and sex hormones on dopamine neurotransmission in the adolescent brain. *Psychopharmacology*, *231*(8), 1581-1599.

Sullivan, S. (2013). Inheriting racist disparities in health: Epigenetics and the transgenerational effects of white racism. *Critical Philosophy of Race, 1*(2), 190-218. doi: 10.1353/por.2013.0018

Vaughn, M. G., Salas-Wright, C. P., Huang, J., Qian, Z., Terzis, L. D., & Helton, J. J. (2015). Adverse childhood experiences among immigrants to the United States. *Journal of Interpersonal Violence*, 1-22. doi: 10.1177/0886260515589568

Weiss, S.J. (2007). Neurobiological alterations associated with traumatic stress. *Perspectives in Psychiatric Care, 43*(3), 114-122.

Widom, C. S., Horan, J., & Brzustowicz, L. (2015). Childhood maltreatment predicts allostatic load in adulthood. *Child Abuse & Neglect,* http://dx.doi.org/10.1016/j.chiabu.2015.01.016