

## **Recent Trends in Mindfulness and Contemplative Pedagogy in Higher Education: The Brain Booth Initiative**

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The Brain Booth initiative at the Humboldt State University (HSU) Library (<https://libguides.humboldt.edu/brainbooth>) is an innovative project promoting mindfulness and contemplative pedagogy as a means of introducing students to metacognition for academic success. The Brain Booth is an experiential space that fosters learning about the mind body connection, reducing stress and optimizing learning. The Brain Booth is focused on serving student needs, and supporting their learning, persistence, retention, and success.

Mindfulness is a mental state of focused attention in the present moment without judgmental perspectives. Scholars and practitioners have discussed in length mindfulness theories and practices (Hassed, 2015; Khazan, 2013; Langdon et al., 2011; McCown, Reibel & Micozzi, 2016; McKay, 2016; Paulson et al., 2013; Vago & Silbersweig, 2012; etc.) with their perceived positive effects on the human wellbeing (Broderick, 2013; Brown & Ryan, 2003; Cayoun, 2015; Kabat-Zinn, 2003; Rogers, 2012, etc.).

Scholarly research and literature have explored mindfulness and mindfulness practices over the last decade in relation to high-school and college students. Some studies focus on using mindfulness practices to help with substance abuse and increase effectiveness of substance abuse treatments of teenagers, e.g., Butzer, LoRusso, Shin & Khalsa, 2017; Fishbein et al., 2016; Himmelstein, 2015, 2016; Otto et al, 2020; Patton et al., 2019; Pentz, Riggs & Warren, 2016; Russell et al., 2018; Sibinga et al., 2016; Wilson et al., 2017. Other studies focus on using mindfulness to help with the treatments of adolescent clinical patients. Our project supports student success through optimizing learning and we have

focused on exploring mindfulness approaches to help with improving study skills and academic performance.

The Brain Booth addresses an essential need of college and high school students. Nowadays, college and high school students face a multitude of challenges in a very fast-paced society. They have to navigate between two major factors affecting their performance and wellbeing, i.e., coping with stress (Coiro, Bettis & Compas, 2017; Denovan & Macaskill, 2013; Li & Yang, 2016; Rose, Godfrey & Rose, 2015; etc.) and dealing with distractions to sustain productive cognitive activities (Berry & Westfall, 2015; Chen, 2015, etc.). These factors lead to a lack of concentration, also known as mind wandering. Contemplative pedagogy offers educational methods that support the development of student attention, emotional balance, empathetic connection, compassion, and altruistic behavior, while also providing new pedagogical techniques that support creativity and the learning of course content (Zajonc, 2013).

Approximately 50% of our college students are Generation Z (HSU Office of Institutional Effectiveness), the most ethnically diverse generation yet. A 100% of high school students are Generation Z as well. A study by Seemiller & Grace (2016) found that Generation Z multitasks across at least five screens daily and that 1 in 3 reported ongoing sadness or hopelessness. More specifically, they reported the top factors impacting academic performance as follows: 1 in 3 reports that stress has impact and 1 in 5 reports that anxiety has impact.

Scholarly research and literature supports mindfulness approaches and practices to reduce stress and anxiety and help students improve study skills and knowledge retention (Hartel, Nguyen & Guzik, 2017; Hassed, 2015; Lindsey, Lindsey & Robertson, 2018, etc.). The literature suggested that mindfulness practices could have a positive impact on student learning (Jennings, 2015; Rechtschaffen, 2016; Srinivasan, 2014, etc.). The Brain Booth introduces these practices to students, faculty and staff in Humboldt State University as well as to the broader community. We use three basic tenets of mindfulness or contemplation practices to help us accomplish that:

- Intentional Brain Breaks: Reminding the campus community that taking as little as two minutes to give the brain a break from thinking can lead to better focus and optimize learning (Bamber & Kraenzle-Schneider, 2016; Hassed, 2015, etc.).
- Emotional Self-Regulation (Cayoun, 2015; Mckay, 2016, Potek, 2012; Warren, Wray-Lake & Shubert, 2020, etc.): We ask students to engage in courageous conversations both in- and outside of the classroom. Teaching reflection and mindfulness is a way to prepare students to engage more successfully in those conversations, while also teaching them to cultivate patience and compassion for diverse viewpoints (Kabat-Zinn, 2012; Shapiro et al., 2008). All of the above facilitate and complement applying Critical Pedagogy in the classroom as well.
- Singular Thoughtful Focus: Many of our students struggle with fostering strong, singular focus when it is needed for short or sustained periods of time. Mindfulness training has quite immediate impacts on attention and focus (Hassed, 2015; Moniz et al., 2015; Mourer & Karadjova, 2017; Shapiro et al., 2008, etc.).

Some scholars and practitioners have gone even further by designing and conducting ongoing mindfulness training in the classroom across curriculum to support an attentive, present centered, and non-reactive mental mode (Bartel et al, 2018; Bennett & Dorjee, 2016; Colaianne, Galla & Roeser, 2020; Fung et al., 2019, Hartel, Nguyen & Guzik, 2017; Metz et al., 2013; Morrison et al., 2014; Sanger, Thierry & Dorjee, 2018; etc.) as well as by development and standardization of mindfulness qualities scale for college students (Arunya & Thamilselvan, 2017).

Some studies have used qualitative approaches to observe feelings and experiences by using self-report data and journal entries from students as well as semi-structured interviews. Primary themes include: experiencing mindfulness as expansiveness; experiencing focused attention; experiencing peace; experiencing relaxation; experiencing self-awareness; and experiencing connection with others. Other themes include: experiencing moments of inspiration or resourcefulness; experiencing mindfulness and sound; experiencing reduced stress; and experiencing learning. The

results showed that high-school students positively benefit from learning mindfulness and meditative practices (Thomas, 2016).

Most of the studies have focused on employing breath awareness, and mindfulness meditation (seated, lying, and walking ) as mindfulness practices, e.g., Felver et al., 2018; Fung et al., 2019; Metz et al., 2013; Potek, 2012; Quach, 2016; Wisner, 2013; Wisner & Starzec, 2016, etc. Some studies have explored other mindfulness approaches, such as effectiveness of mindfulness-based coloring (Carsley & Heath, 2018; Lindsey, Lindsey & Robertson, 2018; Mourer & Karadjova, 2017).

Lately, academic librarians have started to pay attention to mindfulness and to engage with mindfulness practices (Karadjova, 2018, 2019; Mastel & Innes, 2013; Moniz et al., 2015; Mourer & Karadjova, 2017; Ruhlmann, 2017, etc.). A few university libraries have even started to dedicate time and spaces to mindfulness activities. Most of these libraries focus primarily on meditation. A recent study (Mourer & Karadjova, 2017) was the first one to involve a broader spectrum of mindfulness activities, which offer intentional brain breaks to students, faculty and staff. The results report on high interest for this innovative approach among students. Further analysis of patterns of use suggested preferences for certain mindfulness activities. This and other research studies provided evidence to support educators' use of broader mindfulness practices through contemplative pedagogy and its value in the educational field (Karadjova, 2018, 2019, etc.).

Studies attest that mindfulness does not develop naturally (Warren, Wray-Lake & Shubert, 2020), hence we need to teach students how to develop it and to provide them with spaces and activities suitable for that purpose. Studies also show that students are not familiar with stress managing activities and techniques and the positive effects they have on learning and the overall well-being (Bennett & Dorjee, 2016; Campbell et al., 2019; Lindsey, Lindsey & Robertson, 2018; Shapiro, Heath & Carsley, 2016; etc.). This attests that students and the broader community can highly benefit from an offering such as the Brain Booth initiative. Also, it is important to note that despite high social validity, many students do not continue to practice mindfulness in their daily lives at home after one intervention practice (Worthen & Luiselli, 2019), hence providing designated space on

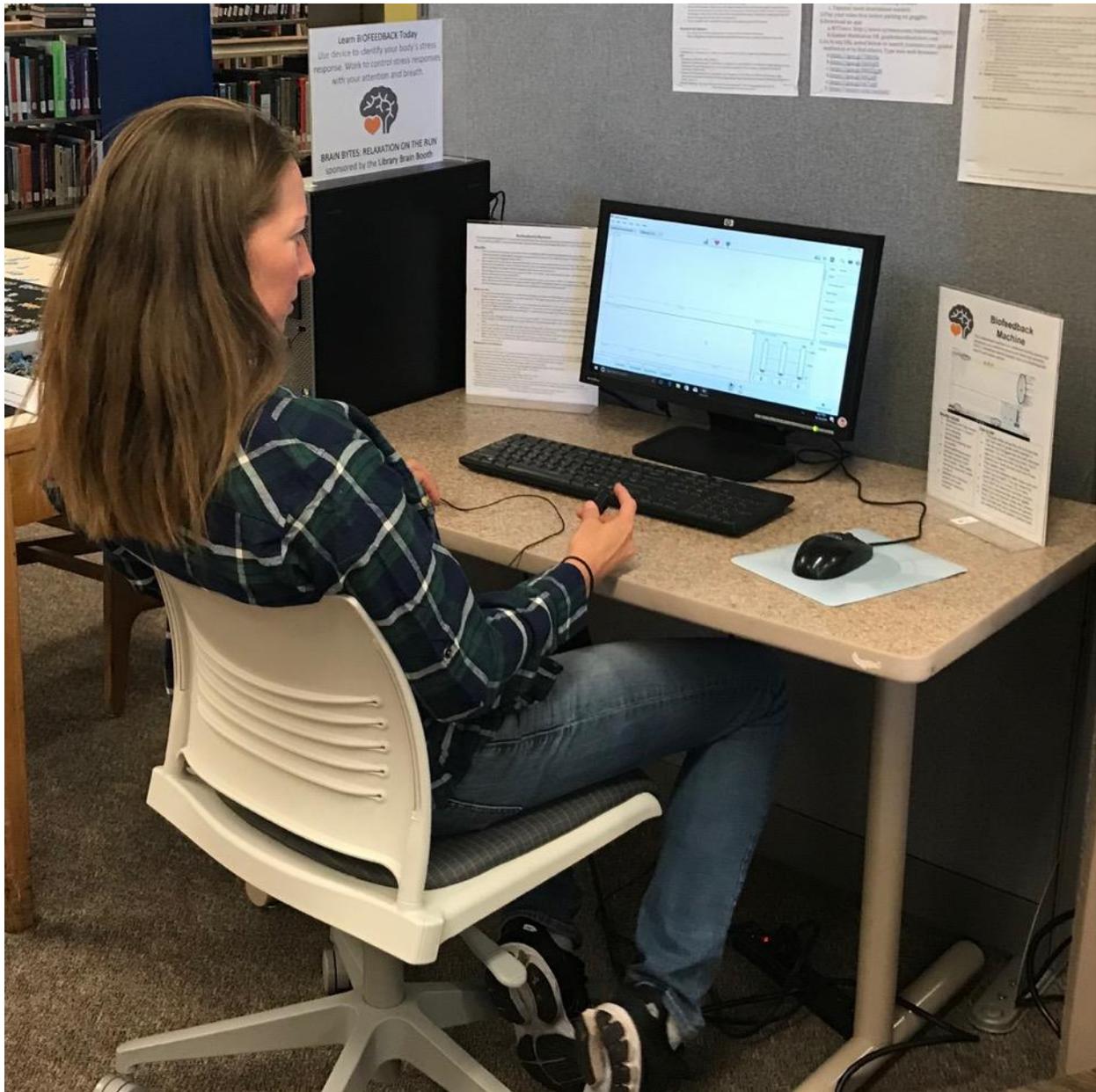
school/university premises, such as the Brain Booth, for mindfulness practices could be very accommodating and helpful.

**The Brain Booth** is located in the HSU Library and offers different mindfulness activity stations such as: Coloring, Light-Sound Therapy, Audio-Meditate, Prompt-Meditate, Video-Meditate, Gratitude-Express, Virtual Reality-Immerse, Biofeedback, Origami, Game station, Puzzle Station, Full-body-massage Chair, Curated books and media collections and more.



For example, keeping gratitude logs (see above) enhances well-being. Simply taking a minute to write down what we are grateful for can boost our happiness and reduce stress.

Another example, the **biofeedback** unit (see below) is a resilience training device that measures your coherence levels and heart rate variability (HRV). Coherence directly impacts how a person physiologically reacts to and reduces stress.



The Brain Booth maintains weekly drop-in hours on Wednesdays & Thursdays, 5 hours per day with all activity stations set up for use. During drop-in hours the Brain Booth is staffed by trained student assistants. Outside of drop-in hours some of the activities are still available at the Brain Booth designated space during library working hours, such as coloring, origami, puzzle station, chess table, full-body massage chair, gratitude logs, fit desks, stationary biofeedback unit. The rest of the equipment, VR goggles, sound machines, light-therapy units and portable biofeedback units are available to check out at the library circulation desk and use at the Brain Booth. During the past year the Brain

Booth had 1100+ visitors. With the Covid-19 pandemic and the HSU Library being closed, we have transferred some of the Brain Booth activities online.



The Brain Booth supports academic preparation also by being embedded across the HSU curricula in 8 departments and 12 courses, so far. Two courses have students completing their service learning components with the Brain Booth each semester. More faculty and departments are interested in incorporating the Brain Booth into their classes. The Brain Booth also provides two SkillShops (50 min extracurricular workshops) per week on Well-being and Stress Management. The Brain Booth has also been assessed through student reflections on their experience with the Brain Booth. We have collected many reports on the positive impacts the Brain Booth activities have had on students' academic performance and overall well-being.

Below are just a few examples of student feedback:

“There is a sanctuary on the second floor of the HSU Library. Turn right at the top of the main second floor stairwell, walk straight ahead and you will run into the Brain Booth. The relaxing feeling in the Brain Booth envelops the visitor, washing off the mental fatigue of the day.” This is how Humboldt State University (HSU) students describe the Brain Booth in an article about the recent developments of the initiative in the HSU student newspaper *The Lumberjack* from February 27<sup>th</sup>, 2018.

“After my time at the Brain Booth I feel clear headed and revitalized. It put into perspective how important mindfulness is and also how simple it is to incorporate into your everyday routine. Our mental and emotional health are unquestioningly important, but our lives are so fast paced sometimes we forget to slow down and take a brain break or even practice emotional self-regulation.” - Testimonial from a recent student visit

“The most rewarding part about the Brain Booth has been to see the transformation of students from when they first walk in to when they leave. A majority of students come in looking stressed out and gloomy. After trying out the activities that the Brain Booth has to offer they walk out with a smile on their face and look renewed and energized. It feels good to be able to contribute to the wellbeing of the community.” Brain Booth student assistant

”Thank you for thinking and helping us with our well being and stress we endure. The brain booth is amazing! Thank you!” - Testimonial from a recent student visit

Two universities have already replicated and adapted the Brain Booth Initiative to their needs: Drexel University, PA and University of Southern California (USC), CA. In addition, other California State University Campuses are interested in replicating the initiative. For example, a chemistry faculty at Cal Poly Pomona expressed interest in collaboration after attending a conference presentation on the Brain Booth Initiative.

## What is next for the Brain Booth Initiative?

The Brain Booth will continue its ongoing activities and pending on a successful National Science Foundation (NSF) grant will also pilot a Brain Booth affiliate at a local high school, Arcata High School (AHS). Introducing high school students to mindfulness practices will provide them with much needed training and support in optimizing learning and overall wellbeing. Through collaboration with HSU this initiative will also introduce them to the opportunity of a college education and the vast possibilities to engage with STEM disciplines. Another goal of the project is to design, develop and execute a feasibility study of establishing Brain Booth affiliates in more high schools located in Humboldt County, CA.

## References cited

- Arunya, B., & Thamilselvan, P. (2017). Development and standardization of Mindfulness Qualities Scale for college students. *Indian Journal of Positive Psychology, 8*(1), 64-67
- Bamber, M. D., & Kraenzle Schneider, J. (2016). Mindfulness-based meditation to decrease stress and anxiety in college students: A narrative synthesis of the research. *Educational Research Review, 18*, 1–32.  
Doi: 10.1016/j.edurev.2015.12.004
- Bartel, K., Huang, C., Maddock, B., Williamson, P., & Gradisar, M. (2018). Brief school-based interventions to assist adolescents' sleep-onset latency: Comparing mindfulness and constructive worry versus controls. *Journal of Sleep Research, 27*(3), 1–9. <https://doi.org/10.1111/jsr.12668>
- Bennett, K., & Dorjee, D. (2016). The impact of a mindfulness-based stress reduction course (MBSR) on well-being and academic attainment of sixth-form students. *Mindfulness, 7*(1), 105–114. <https://doi.org/10.1007/s12671-015-0430-7>
- Berry, M. & Westfall, A. (2015). Dial d for distraction: The making and breaking of cell phone policies in the college classroom. *College Teaching, 63*(2), 62-71.
- Broderick, P. (2013). *Learning to Breathe: A Mindfulness Curriculum for Adolescents to Cultivate Emotion Regulation, Attention, and Performance*. Oakland, CA: New Harbinger Publications.

- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology: Interpersonal Relations and Group Processes*, *84*(4), 822-848. doi:<http://dx.doi.org/10.1037/0022-3514.84.4.822>
- Butzer, B., LoRusso, A., Shin, S. H., & Khalsa, S. B. S. (2017). Evaluation of yoga for preventing adolescent substance use risk factors in a middle school setting: A preliminary group-randomized controlled trial. *Journal of Youth and Adolescence*, *46*(3), 603–632. <https://doi-org.ezproxy.humboldt.edu/10.1007/s10964-016-0513-3>
- Campbell, A. J., Lanthier, R. P., Weiss, B. A., & Shaine, M. D. (2019). The impact of a schoolwide mindfulness program on adolescent well-being, stress, and emotion regulation: A nonrandomized controlled study in a naturalistic setting. *Journal of Child and Adolescent Counseling*. <https://doi.org/10.1080/23727810.2018.1556989>
- Carsley, D., & Heath, N. L. (2018). Effectiveness of mindfulness-based coloring for test anxiety in adolescents. *School Psychology International*, *39*(3), 251–272. <https://doi.org/10.1177/0143034318773523>
- Cayoun, B. (2015). *Mindfulness-integrated CBT for Well-being and Personal Growth: Four Steps to Enhance Inner Calm, Self-confidence and Relationships*. Chichester, West Sussex: John Wiley & Sons Inc.
- Chen, V. (2015). From distraction to contribution: A preliminary study on how peers outside the group can contribute to students' learning. *Canadian Journal for the Scholarship of Teaching and Learning*, *6*(3),
- Cheong, P., Shuter, R., & Suwinyattichaiporn, T. (2016). Managing student digital distractions and hyperconnectivity: Communication strategies and challenges for professorial authority. *Communication Education*, *65*(3), 272-289.
- Coiro, M. , Bettis, A. , & Compas, B. (2017). College students coping with interpersonal stress: Examining a control-based model of coping. *Journal of American College Health*, *65*(3), 177-186.
- Colaianne, B. A., Galla, B. M., & Roeser, R. W. (2020). Perceptions of mindful teaching are associated with longitudinal change in adolescents' mindfulness and compassion. *International Journal of Behavioral Development*, *44*(1), 41–50. <https://doi.org/10.1177/0165025419870864>
- Denovan, A., & Macaskill, A. (2013). An interpretative phenomenological analysis of stress and coping in first year undergraduates. *British Educational Research Journal*, *39*(6), 1002-1024. doi:10.1002/berj.3019
- Felver, J. C., Clawson, A. J., Morton, M. L., Brier-Kennedy, E., Janack, P., & DiFlorio, R. A. (2018). School-based mindfulness intervention supports adolescent resiliency: A

- randomized controlled pilot study. *International Journal of School & Educational Psychology*. <https://doi.org/10.1080/21683603.2018.1461722>
- Fishbein, D., Miller, S., Herman-Stahl, M., Williams, J., Lavery, B., Markovitz, L., Kluckman, M., Mosoriak, G., & Johnson, M. (2016). Behavioral and psychophysiological effects of a yoga intervention on high-risk adolescents: A randomized control trial. *Journal of Child and Family Studies*, 25(2), 518–529. <https://doi-org.ezproxy.humboldt.edu/10.1007/s10826-015-0231-6>
- Fung, J., Kim, J. J., Jin, J., Chen, G., Bear, L., & Lau, A. S. (2019). A randomized trial evaluating school-based mindfulness intervention for ethnic minority youth: Exploring mediators and moderators of intervention effects. *Journal of Abnormal Child Psychology*, 47(1), 1–19. <https://doi.org/10.1007/s10802-018-0425-7>
- Hassed, C. (2015). *Mindful Learning : Reduce Stress and Improve Brain Performance for Effective Learning*. Boston: Shambhala Publications.
- Himmelstein, S. (2016). *Mindfulness-based substance abuse treatment for adolescents : A 12-session curriculum*. Taylor & Francis Group.
- Himmelstein, S. (2015). Does mindfulness meditation increase effectiveness of substance abuse treatment with incarcerated youth? A pilot randomized controlled trial. *Mindfulness*, 6(6), 14-72.
- Jennings, P. (2015). *Mindfulness for Teachers: Simple Skills for Peace and Productivity in the Classroom*. New York: W.W. Norton & Company.
- Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: past, present, and future. *Clinical psychology: Science and practice*, 10(2), 144-156.
- Karadjova, K.G. (2019). Mindfulness Experiences at the Library Brain Booth, In R. Moniz & J. Covlin (Eds). *Recipes for Mindfulness in Your Library: Supporting Resilience and Community Engagement*. 37-43, Chicago, IL: ALA.
- Karadjova, K.G. (2018). *Mindfulness and Gamification in the Higher Education Classroom: Friends or Foes?*, The International Conference on Higher Education Advances (HEAd'18), June 2018, Valencia, Spain. Valencia: Editorial Universitat Politècnica de València.
- Khazan, I. (2013). *The Clinical Handbook of Biofeedback: A Step by Step Guide for Training and Practice with Mindfulness*. Chichester, West Sussex, U.K.: Wiley-Blackwell.
- Langdon, S., Jones, F. W., Hutton, J., & Holttum, S. (2011). A grounded-theory study of mindfulness practice following mindfulness-based cognitive therapy. *Mindfulness*, 2(4), 270-281.

- Li, M., & Yang, Y. (2016). A Cross-Cultural Study on a Resilience-Stress Path Model for College Students. *Journal Of Counseling & Development, 94*(3), 319-332. doi:10.1002/jcad.12088
- Lindsey, L., Lindsey, b., & Robertson, P. (2018). Expressive arts and mindfulness: Aiding adolescents in understanding and managing their stress, *Journal of Creativity in Mental Health, 13*(3), 288-297. <https://doi.org/10.1080/15401383.2018.1427167>
- Lineweaver, T., Kercood, S. , O'Keeffe, N. , O'Brien, K. , Massey, E. , et al. (2012). The effects of distraction and a brief intervention on auditory and visual-spatial working memory in college students with attention deficit hyperactivity disorder. *Journal of Clinical & Experimental Neuropsychology, 34*(8), 791-805.
- Mastel, K., & Innes, G. (2013). Insights and practical tips on practicing mindful librarianship to manage stress. *LIBRES: Library and Information Science Research Electronic Journal, 23*(1), 1-8.
- Mckay, M. (2016). *Emotion Efficacy Therapy: A Brief, Exposure-based Treatment for Emotion Regulation Integrating ACT and DBT*. Oakland, CA: Context Press.
- McCown, D., Reibel, D., & Micozzi, M. (2016). *Resources for Teaching Mindfulness: An International Handbook*. Switzerland: Springer Verlag.
- Metz, S. M., Frank, J. L., Reibel, D., Cantrell, T., Sanders, R., & Broderick, P. C. (2013). The effectiveness of the learning to breathe program on adolescent emotion regulation. *Research in Human Development, 10*(3), 252–272. <https://doi.org/10.1080/15427609.2013.818488>
- Moniz, R., Eshleman, J., Henry, J., Slutzky, H., & Moniz, L. (2015). *The Mindful Librarian: Connecting the Practice of Mindfulness to Librarianship*. Chandos Publishing.
- Mourer, M. M & Karadjova, K.G. (2017). Dare to Share the Silence: Tools & Practices of Contemplative Pedagogy in a Library Brain Booth, In S. Kurbanoglu et al. (Eds.) *Information Literacy in the Workplace. Communications in Computer and Information Science*, v. 810, pp. 781-790. Heidelberg, Germany: Springer.
- Otto, M. W., Rosenfield, D., Gorlin, E. I., Hoyt, D. L., Patten, E. A., Bickel, W. K., Zvolensky, M. J., & Doan, S. N. (2020). Targeting cognitive and emotional regulatory skills for smoking prevention in low-SES youth: A randomized trial of mindfulness and working memory interventions. *Addictive Behaviors, 104*. <https://doi-org.ezproxy.humboldt.edu/10.1016/j.addbeh.2019.106262>
- Patton, K. A., Connor, J. P., Sheffield, J., Wood, A., & Gullo, M. J. (2019). Additive effectiveness of mindfulness meditation to a school-based brief cognitive-behavioral

- alcohol intervention for adolescents. *Journal of Consulting and Clinical Psychology*, 87(5), 407–421. <https://doi.org/10.1037/ccp0000382>
- Paulson, S., Davidson, R., Jha, A., & Kabat-Zinn, J. (2013). Becoming conscious: the science of mindfulness. *Annals of the New York Academy of Sciences*, 1303(1), 87-104.
- Pentz, M. A., Riggs, N. R., & Warren, C. M. (2016). Improving substance use prevention efforts with executive function training. *Drug and Alcohol Dependence*, 163. <https://doi-org.ezproxy.humboldt.edu/10.1016/j.drugalcdep.2016.03.001>
- Potek, R. (2012). Mindfulness as a school-based prevention program and its effect on adolescent stress, anxiety and emotion regulation. *Dissertation Abstracts International: Section B: The Sciences and Engineering* 73(5), 3272.
- Quach, D. (2016). Differential effects of sitting meditation and hatha yoga on working memory, stress, anxiety, and mindfulness among adolescents in a school setting. *Dissertation Abstracts International: Section B: The Sciences and Engineering* 76(8)
- Rechtschaffen, D. (2016). *The Mindful Education Workbook: Lessons for Teaching Mindfulness to Students*. New York: W.W. Norton & Company.
- Rogers, H. (2012). *Mindfulness for the Next Generation: Helping Emerging Adults Manage Stress and Lead Healthier Lives*. New York, New York: Oxford University Press.
- Rose, C., Godfrey, K., & Rose, K. (2015). Supporting student wellness: De-stressing initiatives at memorial university libraries. *Partnership: The Canadian Journal of Library and Information Practice and Research*, 10(2), 1-21.
- Ruhlmann, E. (2017). Mindful librarianship. *American Libraries*, 48(6), 44-47.
- Russell, K. C., Gillis, H. L., Law, L., & Couillard, J. (2018). A pilot study examining outcomes associated with the implementation of progress monitoring at a substance use disorder treatment program for adolescents. *Child & Youth Care Forum*, 47(3), 403–419. <https://doi-org.ezproxy.humboldt.edu/10.1007/s10566-018-9437-2>
- Seemiller, C., & Grace, M. (2016). *Generation Z goes to college*. San Francisco, CA: Jossey-Bass.
- Shapiro, A. J., Heath, N. L., & Carsley, D. (2016). Pilot evaluation of the feasibility and acceptability of StressOFF Strategies: A single-session school-based stress management program for adolescents. *Advances in School Mental Health Promotion*, 9(1), 12–28. <https://doi.org/10.1080/1754730X.2015.1110494>

- Shapiro, S. L., Brown, K. W., & Astin, J. A. (2008). Toward the integration of meditation into higher education: A review of research. *The Center for Contemplative Mind in Society*. Retrieved from [http://www. contemplativemind. org/admin/wp-content/uploads/2012/09/MedandHigherEd.pdf](http://www.contemplativemind.org/admin/wp-content/uploads/2012/09/MedandHigherEd.pdf).
- Sibinga, E. M. S., Webb, L., Ghazarian, S. R., & Ellen, J. M. (2016). School-based mindfulness instruction: An RCT. *Pediatrics*, *137*(1), 1–8.
- Srinivasan, M. (2014). *Teach, Breathe, Learn: Mindfulness in and out of the Classroom*. Berkeley, California: Parallax Press.
- Sanger, K. L., Thierry, G., & Dorjee, D. (2018). Effects of school-based mindfulness training on emotion processing and well-being in adolescents: Evidence from event-related potentials. *Developmental Science*, *21*(5). <https://doi.org/10.1111/desc.12646>
- Thomas, I. M. (2016). The experience of mindfulness and learning: A qualitative research study. *Dissertation Abstracts International: Section B: The Sciences and Engineering* 77(3).
- Warren, M. T., Wray-Lake, L., & Shubert, J. (2020). Developmental changes in mindful awareness during adolescence. *International Journal of Behavioral Development*, *44*(1), 31–40. <https://doi-org.ezproxy.humboldt.edu/10.1177/0165025419885023>
- Wilson, J. D., Vo, H., Matson, P., Adger, H., Barnett, G., & Fishman, M. (2017). Trait mindfulness and progression to injection use in youth with opioid addiction. *Substance Use & Misuse*, *52*(11), 1486–1493. <https://doi-org.ezproxy.humboldt.edu/10.1080/10826084.2017.1289225>
- Wisner, B. L. (2013). Less stress, less drama, and experiencing monkey mind: Benefits and challenges of a school-based meditation program for adolescents. *School Social Work Journal*, *38*(1), 49–63.
- Wisner, B. L., & Starzec, J. J. (2016). The process of personal transformation for adolescents practicing mindfulness skills in an alternative school setting. *Child & Adolescent Social Work Journal*, *33*(3), 245–257. <https://doi.org/10.1007/s10560-015-0418-0>
- Warren, M. T., Wray-Lake, L., & Shubert, J. (2020). Developmental changes in mindful awareness during adolescence. *International Journal of Behavioral Development*, *44*(1), 31–40. <https://doi-org.ezproxy.humboldt.edu/10.1177/0165025419885023>
- Worthen, D., & Luiselli, J. K. (2019). Comparative effects and social validation of support strategies to promote mindfulness practices among high school students. *Child & Family Behavior Therapy*, *41*(4), 221–236. <https://doi.org/10.1080/07317107.2019.1659544>

Vago, D. R., & Silbersweig, D. A. (2012). Self-awareness, self-regulation, and self-transcendence (S-ART): a framework for understanding the neurobiological mechanisms of mindfulness. *Frontiers in human neuroscience*, 6.

Zajonc, A. (2013). Contemplative pedagogy: a quiet revolution in higher education. *New Directions for Teaching and Learning*, 2013(134), 83-94.