USC School of Cinematic Arts
Interactive Media & Games Division
Creative Media & Behavioral Health Center

CTIN 599
Interactive Entertainment Intersections: Neuroscience, Public Health and Medicine

Spring 2015
2 Units

Instructor:
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"Mental health ultimately means that an individual, through rich emotion affirming encounters with living, has integrated his or her life in such a way that the emergent self-structures, deeply affective, can steer a satisfying, cognitive course through future emotional jungles of lived lives."

- Jaak Panksepp (2009, pp.6-7)

PREREQUISITE

Instructor permission.

COURSE OVERVIEW

This course will give students an overview of foundational concepts required for design, development and evaluation of interactive entertainment and transmedia-based interventions at the intersection of neuroscience, public health and medicine. Students will develop a unique transdisciplinary perspective of intervention rationale and impact related to wellness, illness and resilience, following a trajectory of critical periods of life and living. They will develop critical reading, writing skills, and experience analysis and synthesis skills.

COURSE OBJECTIVE

The purpose of this course is to prepare students for transdisciplinary collaboration with teams of artists, designers, scientists, health professionals, and engineers, whose mission is to develop and evaluate interventions focused on improving human health and the experience of living. Students will obtain basic mastery of core concepts in the field, including challenges and opportunities. They will acquire necessary skills for analyzing prior art and for proposing future work through a transdisciplinary lens, which will integrate their own skills and experiences. Students will learn how to apply a common philosophical and theoretical framework that underlies intervention design and evaluation. They will practice conducting literature reviews from diverse fields, conducting design analyses, and synthesizing concepts from

multiple disciplines. Students will acquire a basic understanding of study design, instrument selection, and ethics.

Course Requirements & Activities

READINGS/RESOURCES

Assigned readings will be available via Blackboard and ARES. They will be organized as required vs. recommended. In addition to readings, resources such as websites, videos, and interactive works will be made available. Such works are not considered optional or supplemental, but are extremely critical for experiential design processes. A sample reading list is included in the Readings Appendix.

	% of Grade
4 written assignments (I=5%, II=10%, III=10% IV=10%)	35
1 take-home exam	30
2 group projects (I=10%, II=10%)	20
Final digital portfolio	5
Participation	10
TOTAL	**100**

WRITTEN ASSIGNMENTS

Students will be asked to complete 4 key writing assignments (see COURSE SCHEDULE) that will exercise existing knowledge and skills, as well as provided readings and experiences. These assignments are meant to sharpen their *critical, analytical, integrative* and *empathic* skills. The types of written assignments assigned represent common types of written documents students will need to be ready to prepare for team science, such as sections in grant proposals, internal communications, results report preparation, scholarly publications, and essential documents for research that involves human subjects. Such documents involve basic science writing, technical writing, or translation to lay audience language. Students are required to submit these documents on time in Microsoft Word format in order to be eligible for full credit. Students will be provided with constructive criticism and comments toward final revisions of the documents for assignments I-III and will receive a preliminary grade, which may be improved with a final re-write. All re-writes will be due by the last day of class to be included in the Final Digital Portfolio (see below) for grading.

Proper authorship and attribution of creative works is required, including students' own original work. Students are strongly encouraged to use reference management software, such as Endnote, RefWorks, Mendeley or Zotero and to adhere to a recognized style, such as APA, IEEE or AMA.

Point Allocation for Individual Written Assignments

- 50% for intellectual merit
- 40% for clarity, style, and organization
- 10% of points for submitting on time

TAKE-HOME EXAM

Students will be assigned questions and short essay topics, in the form of challenges, which will be announced three weeks before the exam is due. In order to respond to the exam, students will have to have reviewed all required and some recommended readings, and are expected do some additional research on their own. The exam requires a written narrative with links to supplemental materials to illustrate their response to the challenge, such as video, games, art and any other media. Students will be able to choose between multiple challenges and can work together to review works, but each one must make, and document, their unique contribution in their own exam. The exam is expected to stimulate a deeper review and reflection of the chosen challenge area, with an opportunity for the student to exercise

their creative, critical, analytical and synthetic skills on-demand. Students will not be judged on their mastery of concepts, as much as their ability to pull things together and guide the reader to see something in a completely new way. The reader must be persuaded on what is interesting, what is valuable, and/or what is worth knowing using both evidence and opinion. Students who receive at least a B- grade on their exam may be provided comments toward a re-write of their exam. Students who receive less than a B- on their can choose another challenge topic and submit it with their Digital Portfolio, with a 10% deduction on the exam grade.

Sample challenge topics:

- Describe/critique the shortcomings of obesity interventions using games in children and/or adolescents.
- Critique popular design strategies for sound-based feedback in movement disorders.
- Choose a popular off-the-shelf game and explain how its design promotes, enables, discourages or encourages prosocial behavior.
- Describe various parameters of intersubjectivity in a given scenario? Where do the core interactions lie? Who has agency/when? How do the subjects enter, exit and navigate the relationship?

Proper authorship and attribution of creative works is required, including students' own original work. Students are strongly encouraged to use reference management software, such as Endnote, RefWorks, Mendeley or Zotero and to adhere to a recognized style, such as APA, IEEE or AMA.

Point Allocation for Take-Home Exam

- 70% for intellectual merit
- 20% for clarity, style and organization
- 10% of points for submitting on time

GROUP PROJECTS

I. Values-at-Play Project

(Values at play (n.d). [see http://valuesatplay.org/grow-a-game-overview], which are commonly used as a design method for integrating social values into an interactive experience, such as a boardgame or a prototype for a digital game, or other type of interactive entertainment experience. Based on their assigned card combination, students will be asked to prepare a simple paper, playable prototype of an experience that has a beginning, middle, and end, or that is comprised of one round of play that may introduce a larger, more complex topic. This exercise will be completed in randomly assigned teams and students must provide written instructions on how to play the game. The experience should take participants no more than 10 minutes to complete. Teams will be expected to test each others' prototypes and provide feedback throughout the semester and present the prototype to the instructor by appointment. Final playables will be included in the Digital Portfolio (see below) and be available to the public on the final day of the semester. Students will be given a brief survey to rate their team members on their team contribution.

Point Allocation for Values-at-Play Project (includes rating by classmates)

- 30% for broader impact
- 30% for quality of experience design
- 30% for collaboration
- 10% for documentation process (instructions, ratings, notes)

II. Experience Observation and Analysis Project

Students will be asked to video record one of their classmates using a full-body game title or other interactive entertainment experience (e.g., mixed reality, augmented reality) and to volunteer to be taped for one of their classmates to video record them for their chosen experience. Observers will be asked to code the video using a simple qualitative method supplied by the instructor and provide a short objective and subjective summary of the observed experience. The participant will be asked to do the same for their own video. Both parties should remain blind to each other's coding and analysis. Results will be made available to classmates for review, unless participants experience regret or embarrassment after

reviewing their session. Students are expected to treat each other with respect and dignity during this project. Students will also be given a brief survey to rate their Observer.

Point Allocation for Experience Observation and Analysis Project
(includes rating by classmates)
- 30% qualitative coding quality/attention to detail
- 60% for analytical summary insight
- 10% for ethical/professional conduct

DIGITAL PORTFOLIO

The instructor will provide you will feedback on most written and group assignments so that you can complete a personal portfolio that contains your semester's work. The digital portfolio must include a public presence, which could be a WordPress site, Facebook Page, Tumblr site, traditional web site, or other tool/medium that contains a curated glimpse of your projects. You are not required to make the works and paper publicly available in their entirety, but a visitor must be able to quickly understand what your skills, experience, analytical and integrative capabilities are. Think of this as your collaboration portal – not a dumping ground. What would others like to know about you as a future collaborator? In addition, you will be required to provide the instructor with a digital folder of all revised assignments, neatly organized in subfolder by assignment name.

Point Allocation for Digital Portfolio
- 50% for quality of presentation
- 60% for quality of content
- (late submission loses 1% per day)

CLASS PARTICIPATION

Although your physical presence may not always be possible in the class, absenteeism will naturally result in your inability to meet course objectives. If you can't be there for a class, but can participate virtually, we may be able to connect you via videoconference. Students are encouraged to participate virtually if they have a cold or something that can be transmitted to others. Participation in playing the Brain Architecture game is mandatory and if you cannot make it to that class, you are required to find two people who can play the game with you outside of class during a time convenient to the instructor. You are also required to participate and help organize the Open House of the last day of class, which will be open to the public, and will include community members from academia, healthcare, and industry who are invited to review, discuss and critique your work. Unexcused absences or regular tardiness will affect this portion of your grade and bring down your overall grade. If you have an unavoidable conflict, please contact me via email or phone as far in advance as possible.

Statement on Academic Conduct and Support Systems

Academic Conduct
Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Section 11, *Behavior Violating University Standards*https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, http://policy.usc.edu/scientific-misconduct/.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* http://equity.usc.edu/ or to the *Department of Public Safety* http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us. This is important for the safety whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* http://www.usc.edu/student-affairs/cwm/ provides 24/7 confidential support, and

the sexual assault resource center webpage sarc@usc.edu describes reporting options and other resources.

Support Systems

A number of USC's schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the *American Language Institute* http://dornsife.usc.edu/ali, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.htmlprovides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information http://emergency.usc.edu/*will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

Course Schedule & Readings List - subject to change.

	Topics/Daily Activities	Deliverable/Due Dates
Week 1 Jan 13	**LECTURE:** From Epicurus to Panksepp: course introduction, philosophical and historical perspective of the field **IN-CLASS**: Take brief survey (not for grade) on class core concepts	
Week 2 Jan 20	**SCREENING:** *Brain Hero* **IN-CLASS:** Brain Architecture Game (in teams of 3-4 people) (1 credit toward participation)	
Week 3 Jan 27	**LECTURE:** The impact of timing and quality of early childhood experiences in brain development, toxic stress, executive function	**EXTRA CREDIT:** Prepare a 1-2 page reflective blog post of one's personal environment of relationships at critical periods (submit via Blackboard)
Week 4 Feb 3	**LECTURE:** Resilience and lifelong health outcomes, sensitive periods, neuroplasticity, what lies ahead, unanswered questions vs. hard evidence, junk science, brain training games **DEMO:** *Lumosity, Nevermind, Mindlight, Sparx*	**TAKE-HOME EXAM:** topics announced by email
Week 5 Feb 10	**LECTURE:** Affect regulation, emotional systems, trauma, anxiety, depression, science of psychotherapy, challenges of measuring emotion **IN-CLASS:** Form groups for GROUP PROJECT	

	I, receive topics	
Week 6 Feb 17	**LECTURE:** Theory of mind, mentalization, mindfulness, presence, empathy assessments and interventions **DEMO:** *Pluff*, *Blowing Blues, A Game for Two, Night Journey*	
Week 7 Feb 24	**LECTURE:** Sensorimotor control, action perception, biological motion perception, mirroring, synchrony, affinity, motion sensing technology **DEMO:** *Watergait, Adventurous Dreaming Highflying Dragon*	**TAKE-HOME EXAM DUE via Blackboard**
Week 8 Mar 3	**LECTURE:** Self and identity, gender, LGBTQ issues, bullying, personality, activist games, school-based training, social dynamics of play, modeling **SCREENING/DEMO:** *Oral History Project (The Lavender Effect), Finding Zoe*	
Week 9 Mar 10	**LECTURE:** Orphan & emerging challenges in public health, neuroscience and medicine; the legacy of mind/body dualism, reframing mental health, redefining the user/patient/ client/human experience **DEMO:** *Next Week's Game, Code Black excerpt*	**WRITTEN ASSIGNMENT I DUE: 2-3 page critical experience analysis of an existing intervention OR, 2-3 page design rationale proposal for a new intervention**
Week 10 - Spring Break Mar 17		
Week 11 Mar 24	**LECTURE:** Aging, chronic illness, quality of life, isolation, intergenerational issues, gerotechnology, interactive neurotherapeutics **DEMO:** *Skyfarer, The Voice in the Garden*	**GROUP PROJECT I DUE**
Week 12 Mar 31	**LECTURE:** Death, grief and bereavement, suicide, survivor guilt, epigenetic impact, social media, virtual archiving **DEMO:** *The Green Ward, Inner Vision, Journey*	

Week 13 Apr 7	**LECTURE:** Using a transtheoretical heuristic to design theory-informed interventions I: cognitive challenge, affect regulation, dialectical engagement, somatic gratification, socioecological validity, semiotic integrity **SCREENING:** *[experiment excerpts]*	**WRITTEN ASSIGNMENT II DUE: 2-3 page literature review on special topic related to aging with critical look at implementation of existing interventions**
Week 14 Apr 14	**LECTURE:** Using a transtheoretical heuristic to evaluate theory-informed interventions: cognitive challenge, affect regulation, dialectical engagement, somatic gratification, socioecological validity, semiotic integrity **SCREENING:** *[experiment excerpts]*	**GROUP PROJECT II DUE**
Week 15 Apr 21	**IN-CLASS INTERACTIVE EXERCISE:** *Match the intervention design to the desired outcomes and vice-versa*	**WRITTEN ASSIGNMENT III DUE: Use the transtheoretical heuristic to refine your previous paper to propose an intervention and study design that can help answer a research question or provide data for testing a hypothesis.**
Week 16 Apr 28	**LECTURE:** Study design as experience design, ethics, consent form design, recruitment, data collections; class exit survey	
FINAL May 11 4:30-6:30pm	**OPEN HOUSE @ SCI 308**	**DIGITAL PORTFOLIO DUE** **WRITTEN ASSIGNMENT IV DUE: Prepare a study informed consent form for your previously proposed intervention**

READINGS LIST BY WEEK

WEEK 1

Vogt, K. M. (2011). All Sense-Perceptions are True : Epicurean responses to skepticism and relativism. In J. Lezra (Ed.), *Lucretius and Modernity* (pp. 1–23). New York, New York, USA. Retrieved from http://katjavogt.com/pdf/katja_vogt_truth_perception.pdf

Panksepp, J. (2009). Brain emotional systems and qualities of mental life: From animal models of affect to implications for psychotherapeutics. In D. Fosha, D. J. Siegel, & M. Solomon (Eds.), *The Healing Power of Emotion: Affective Neuroscience, Development & Clinical Practice* (p. 368). New York, New York, USA: W. W. Norton.

Gotsis, M. (2009). Games, virtual reality, and the pursuit of happiness. *IEEE Computer Graphics and Applications*, *29*(5), 14–19. doi:10.1109/MCG.2009.94

Ryff, C. D. (2014). Psychological well-being revisited: Advances in the science and practice of eudaimonia. *Psychotherapy and Psychosomatics*, *83*(1), 10–28. doi:10.1159/000353263

Granic, I., Lobel, A., & Engels, R. C. M. E. (2014). The benefits of playing video games. *The American Psychologist*, *69*(1), 66–78. doi:10.1037/a0034857

Wattanasoontorn, V., Boada, I., García, R., & Sbert, M. (2013). Serious games for health. *Entertainment Computing*, *4*(4), 231–247. doi:10.1016/j.entcom.2013.09.002

(optional)

Epicurus, Inwood, B., & Gerson, L. P. (1994). *The Epicurus reader: Selected writings and testimonia* Hackett Publishing (pp 1-48). Retrieved from http://books.google.com/books?hl=en&lr=&id=NUiYEH3H0S4C&pgis=1

Prot, S., Anderson, C., Gentile, D., Brown, S., & Swing, E. (2014). The positive and negative effects of video game play. In A. Jordan & D. Romer (Eds.), *Children and Media* (pp. 109–128). New York: Oxford University Press. Retrieved from http://www.psychology.iastate.edu/faculty/caa/abstracts/2010-2014/14PAGBS.pdf

Gamito, P., Oliveira, J., Morais, D., Rosa, P., Saraiva, T., & Cis, I. (2007). Serious games for serious problems: From Ludicus to Therapeuticus. In J.-J. Kim (Ed.), *Virtual Reality Edited* (pp. 515–536). InTech. Retrieved from http://www.intechopen.com/books/virtual-reality/serious-games-for-serious-problems-from-ludicus-to-therapeuticus

WEEK 2

National Scientific Council on the Developing Child. (2014). Excessive stress disrupts the architecture of the developing brain: Working paper No.3. Retrieved from http://developingchild.harvard.edu/index.php/download_file/-/view/469/

National Scientific Council on the Developing Child. (2011). Building the brain's "air traffic control" system: How early experiences shape the development of executive function: Working paper No.11. Retrieved from http://developingchild.harvard.edu

Lillard, A. S., Lerner, M. D., Hopkins, E. J., Dore, R. a, Smith, E. D., & Palmquist, C. M. (2013). The impact of pretend play on children's development: A review of the evidence. *Psychological Bulletin*, *139*(1), 1–34. doi:10.1037/a0029321

Christakis, D. A. (2014). Interactive media use at younger than the age of 2 years. *JAMA Pediatrics*, *168*(5), 399. doi:10.1001/jamapediatrics.2013.5081

Diamond, A., & Lee, K. (2011). Interventions shown to aid executive function development in children 4 to 12 years old. *Science (New York, N.Y.)*, *333*(6045), 959–64. doi:10.1126/science.1204529

WEEK 3

Southwick, S. M., & Charney, D. S. (2012). The science of resilience: Implications for the prevention and treatment of depression. *Science (New York, N.Y.)*, *338*(6103), 79–82. doi:10.1126/science.1222942

Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, *18*(2), 76–82. doi:10.1002/da.10113

(optional)

Southwick, S. M., & Charney, D. S. (2012). *Resilience: The science of mastering life's greatest challenges (Google eBook)*. Cambridge University Press. Retrieved from http://books.google.com/books?hl=en&lr=&id=evUgAwAAQBAJ&pgis=1

WEEK 4

Bavelier, D., & Davidson, R. J. (2013). Brain training: Games to do you good. *Nature*, *494*(7438), 425–6. doi:10.1038/494425a

Jolles, D. D., & Crone, E. a. (2012). Training the developing brain: a neurocognitive perspective. *Frontiers in Human Neuroscience*, *6*(April), 76. doi:10.3389/fnhum.2012.00076

Rabipour, S., & Raz, A. (2012). Training the brain: Fact and fad in cognitive and behavioral remediation. *Brain and Cognition*, *79*(2), 159–79. doi:10.1016/j.bandc.2012.02.006

Bohil, C. J., Alicea, B., & Biocca, F. A. (2011). Virtual reality in neuroscience research and therapy. *Nature Reviews. Neuroscience*, *12*(12), 752–62. doi:10.1038/nrn3122

(optional)

Bavelier, D., Green, C. S., Han, D. H., Renshaw, P. F., Merzenich, M. M., & Gentile, D. a. (2011). Brains on video games. *Nature Reviews. Neuroscience*, *12*(12), 763–8. doi:10.1038/nrn3135

Berkman, E. T., Graham, A. M., & Fisher, P. a. (2012). Training self-control: A domain-general translational neuroscience approach. *Child Development Perspectives*, *6*(4), 374–384. doi:10.1111/j.1750-8606.2012.00248.x

Ream, G. L., Elliott, L. C., & Dunlap, E. (2013). Trends in video game play through Childhood, Adolescence, and Emerging Adulthood. *Psychiatry Journal*, *2013*, 301460. doi:10.1155/2013/301460

WEEK 5

The origin of emotions with Jaak Panksepp (BSP 91). (2012). Brain Science Podcast. Retrieved from http://brainsciencepodcast.com/bsp/the-origin-of-emotions-with-jaak-panksepp-bsp-91.html

Schore, A. N. (2005). Back to basics: Attachment, affect regulation, and the developing right brain: Linking developmental neuroscience to pediatrics. *Pediatrics in Review*, *26*(6), 204–217. doi:10.1542/pir.26-6-204

Jeste, D. V, Depp, C. a, & Vahia, I. V. (2010). Successful cognitive and emotional aging. *World Psychiatry: Official Journal of the World Psychiatric Association (WPA)*, *9*(2), 78–84. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/22050770

WEEK 6

Cheng, Y., Chen, C., Lin, C.-P., Chou, K.-H., & Decety, J. (2010). Love hurts: An FMRI study. *NeuroImage*, *51*(2), 923–9. doi:10.1016/j.neuroimage.2010.02.047

Carlson, S. M., Koenig, M. A., & Harms, M. B. (2013). Theory of mind. *Wiley Interdisciplinary Reviews: Cognitive Science*, *4*(4), 391–402. doi:10.1002/wcs.1232

Silani, G., Zucconi, A., & Lamm, C. (2013). Carl Rogers meets the neurosciences: Insights from social neuroscience for client-centered therapy. In J. H. D. Cornelius-White, R. Motschig, & M. Luz (Eds.), *Interdisciplinary Handbook of the Person-Centered Approach: Research and Theory* (pp. 1–14). Wien: Springer-Verlag. Retrieved from http://link.springer.com/chapter/10.1007/978-1-4614-7141-7_5

Chatel-Goldman, J., Congedo, M., Jutten, C., & Schwartz, J.-L. (2014). Touch increases autonomic coupling between romantic partners. *Frontiers in Behavioral Neuroscience*, *8*(March), 95. doi:10.3389/fnbeh.2014.00095

Wright, P., & McCarthy, J. (2008). Empathy and experience in HCI. In *Proceeding of the twenty-sixth annual CHI conference on Human factors in computing systems - CHI '08* (p. 637). New York, New York, USA: ACM Press. doi:10.1145/1357054.1357156

WEEK 7

Mueller, F., & Isbister, K. (2014). Movement-based game guidelines. *Proceedings of the 32nd Annual ACM Conference on Human Factors in Computing Systems - CHI '14*, 2191–2200. doi:10.1145/2556288.2557163

Barry, G., Galna, B., & Rochester, L. (2014). The role of exergaming in parkinson's disease rehabilitation: A systematic review of the evidence. *Journal of Neuroengineering and Rehabilitation*, *11*(1), 33. doi:10.1186/1743-0003-11-33

Whyatt, C., & Craig, C. (2013). Sensory-motor problems in autism. *Frontiers in Integrative Neuroscience*, *7*(July), 51. doi:10.3389/fnint.2013.00051

Sigrist, R., Rauter, G., Riener, R., & Wolf, P. (2013). Augmented visual, auditory, haptic, and multimodal feedback in motor learning: A review. *Psychonomic Bulletin & Review*, *20*(1), 21–53. doi:10.3758/s13423-012-0333-8

Warburton, D. E. R. (2013). The health benefits of active gaming: Separating the myths from the virtual reality. *Current Cardiovascular Risk Reports*, *7*(4), 251–255. doi:10.1007/s12170-013-0322-0

WEEK 8

Sebastian, C., Burnett, S., & Blakemore, S.-J. (2008). Development of the self-concept during adolescence. *Trends in Cognitive Sciences*, *12*(11), 441–6. doi:10.1016/j.tics.2008.07.008

Ttofi, M. M., & Farrington, D. P. (2010). Effectiveness of school-based programs to reduce bullying: A systematic and meta-analytic review. *Journal of Experimental Criminology*, *7*(1), 27–56. doi:10.1007/s11292-010-9109-1

Twemlow, S. W., & Sacco, F. C. (2013). How & why does bystanding have such a startling impact on the architecture of school bullying and violence? *International Journal of Applied Psychoanalytic Studies*, *10*(3), 289–306. doi:10.1002/aps.1372

Bradshaw, C. P., Goldweber, A., Fishbein, D., & Greenberg, M. T. (2012). Infusing developmental neuroscience into school-based preventive interventions: Implications and future directions. *The Journal of Adolescent Health : Official Publication of the Society for Adolescent Medicine*, *51*(2 Suppl), S41–7. doi:10.1016/j.jadohealth.2012.04.020

De Hooge, I. E., Nelissen, R. M. a, Breugelmans, S. M., & Zeelenberg, M. (2011). What is moral about guilt? Acting "prosocially" at the disadvantage of others. *Journal of Personality and Social Psychology*, *100*(3), 462–73. doi:10.1037/a0021459

WEEK 9

Koelsch, S. (2014). Brain correlates of music-evoked emotions. *Nature Reviews Neuroscience*, *15*(3), 170–180. doi:10.1038/nrn3666

Mauldin, L. (2014). Precarious plasticity: Neuropolitics, cochlear implants and the redefinition of deafness. *Science Technology Human Values*, *39*(1), 130–153. doi:10.1177/0162243913512538

Theunissen, F. E., & Elie, J. E. (2014). Neural processing of natural sounds. *Nature Reviews. Neuroscience*, *15*(6), 355–66. doi:10.1038/nrn3731

Engberg, M. (2013). Performing apps touch and gesture as aesthetic experience. *Performance Research*, *18*(5), 20–27. doi:10.1080/13528165.2013.828932

Century, M., Hustvedt, S., Pelli, D., Scott, J., Wiley, K. C. (KC), & Levy, E. K. (2013). Neuroscience and the arts today. *PAJ: A Journal of Performance and Art*, *35*(3), 8–23. doi:10.1162/PAJJ_a_00157

Lapham, L. H. (2009). The god in the machine. *Lapham's Quarterly*, Online. Retrieved from http://www.laphamsquarterly.org/preamble/the-god-in-the-machine.php?page=all

Doherty, A. M., & Gaughran, F. (2014). The interface of physical and mental health. *Social Psychiatry and Psychiatric Epidemiology*, *49*(5), 673–82. doi:10.1007/s00127-014-0847-7

Orji, R., & Mandryk, R. L. (2014). Developing culturally relevant design guidelines for encouraging healthy eating behavior. *International Journal of Human-Computer Studies*, *72*(2), 207–223. doi:10.1016/j.ijhcs.2013.08.012

WEEK 10 – SPRING BREAK

WEEK 11

Marston, H. R. (2013). Digital gaming perspectives of older adults: Content vs. interaction. *Educational Gerontology*, *39*(3), 194–208. doi:10.1080/03601277.2012.700817

Wiemeyer, J., & Kliem, A. (2011). Serious games in prevention and rehabilitation—a new panacea for elderly people? *European Review of Aging and Physical Activity*, *9*(1), 41–50. doi:10.1007/s11556-011-0093-x

Czaja, S., Beach, S., Charness, N., & Schulz, R. (2013). Technologies for active aging. doi:10.1007/978-1-4419-8348-0

Jeste, D. V, Depp, C. a, & Vahia, I. V. (2010). Successful cognitive and emotional aging. *World Psychiatry : Official Journal of the World Psychiatric Association (WPA)*, *9*(2), 78–84. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/22050770

Lustig, C., Shah, P., Seidler, R., & Reuter-Lorenz, P. A. (2009). Aging, training, and the brain: A review and future directions. *Neuropsychology Review*, *19*(4), 504–22. doi:10.1007/s11065-009-9119-9

Pichierri, G., Wolf, P., Murer, K., & de Bruin, E. D. (2011). Cognitive and cognitive-motor interventions affecting physical functioning: a systematic review. *BMC Geriatrics*, *11*(1), 29. doi:10.1186/1471-2318-11-29

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