**Topics and Readings: Judy Grisel’s 2010 Neuroethics Seminar, Furman University**

**Week 1: Introduction**

Readings:

Neuroethics needed: Researchers should speak out on claims made on behalf of their science (2009).

 *Nature, 441*(7096). Retrieved from [http://www.nature.com/](http://www.nature.com/nature)

Caplan, Arthur. “No-brainer: Can we cope with the ethical ramifications of new knowledge of the human brain?” Neuroethics: Mapping the Field. San Francisco, CA. 13 May 2002.

Safire, William. “Visions for a new field of ‘neuroethics.’” Neuroethics: Mapping the Field. San Francisco, CA. 13 May 2002.

The next big thing? Chapter 11 in *The Future of the Brain* (pp. 265-296).

Part II: Major moral principles. In *Moral Principles, Ethical Theories, and Medical Decisions: An Introduction* (pp. 31-45).

**Week 2: Mind-Body Questions and Personal Autonomy**

Read chapter 6 in Ackerman.

Ackerman, S.J. (2006). *Hard science, hard choices.* Washington, DC: Dana Press.

Readings I:

Carey, B. (2007, July 31). Who’s minding the mind? *The New York Times*. Retrieved from <http://www.nytimes.com/>

Ganson, T. S. (2008). Finding freedom through complexity. *Science, 319*. Retrieved from

 <http://www.sciencemag.org/>

Nagel, T. (1974). What is it like to be a bat? *Philosophical Review*.

Nichols, S. (2008). Free will vs. the programmed brain: If our actions are determined by prior events, then do we have a choice about anything – or any responsibility for what we do? *Scientific American*. Retrieved from <http://www.sciam.com/>

Haig, S. (2007). The power of hope. *Time*. Retrieved from <http://www.time.com/>

Tolson, J. (2006, Oct. 23). Is there room for the soul? New challenges to our most cherished beliefs about self and the human spirit*. US News and World Report*. Retrieved from <http://www.usnews.com/>

Readings II:

Bower. B (2006). Self-serve brains: Personal identity veers to the right hemisphere. *Science News Online 169*(6). Retrieved from <http://www.sciencenews.org/>

Slack, G. (2009). *You are not your brain*. Retrieved from <http://www.salon.com/>

Gergen, Kenneth J. “The Self: Colonization in Psychology and Society.” Berlin-Brandenburg Academy of Sciences, Psychological Thought and Practice Conference. July 2003.

Wegner, D. M. (2008). Self is magic. In J. Baer, J. C. Caufman, & R. F. Baumeister (Eds.), *Are We Free? Psychology and Free Will* (pp. 226-247). Oxford University Press.

Preston, J. & Wegner, D. M. Ideal agency: The perception of self as an origin of action. Chapter 5 in *On Building, Defending and Regulating the Self* (pp. 103-125).

**Week 3: Free Will?**

Readings:

Hallet, M. & McHugh, P. R. (2007). Seeking free will in our brains: A debate. *The Dana Foundation*. Retrieved from <http://www.dana.org/>

Strawson, G. (2010, July 22). Your move: The maze of free will. *The New York Times*. Retrieved from <http://www.nytimes.com/>

Overbye, D. (2007, Jan. 2). Free will: Now you have it, now you don’t. *The New York Times*. Retrieved from <http://www.nytimes.com/>

(repeat) Nichols, S. (2008). Free will vs. the programmed brain: If our actions are determined by prior events, then do we have a choice about anything – or any responsibility for what we do? *Scientific American*. Retrieved from <http://www.sciam.com/>

(repeat) Ganson, T. S. (2008). Finding freedom through complexity. *Science, 319*. Retrieved from

 <http://www.sciencemag.org/>

Moreno, Jonathan D. “Gaging Ethics.” Neuroethics: Mapping the Field. San Francisco, CA. 13 May 2002.

Callaway, E. (2009). Possible site of free will found in brain. *New Scientist*. Retrieved from <http://www.newscientist.com/>

The Fear of Nihilism (chapter 11).

(repeat) Carey, B. (2007, July 31). Who’s minding the mind? *The New York Times*. Retrieved from <http://www.nytimes.com/>

Bargh, J. A. & Morsella, E. (2008). The unconscious mind. *Association for Psychological Science, 3*(1), 73- 79.

Rock, D. (2010). *Is free will real? Better believe it (even if it’s not).* Retrieved from <http://www.psychologytoday.com/>

**Week 4: Genes and Behavior**

Read *Brave New World* by Aldous Huxley.

Readings:

Sapolsky, R. (1997). *A gene for nothing*.

Gazzaniga, N. S. (2005). Better brains through genes. In *The Ethical Brain* (pp. 37-54). New York: Dana Press.

Caulfield, T. et al. (2008). Research ethics recommendations for whole-genome research: Consensus statement. *PLoS Biology, 6*(3). Retrieved from <http://www.plosbiology.org/>

Costello, K. *Genetic diagnosis and wrongful life: DNA testing shouldn’t be impeded due to inherent risk.*

Cervinski, M. A. & Tsongalis, G. J. (2010). Direct-to-consumer genotyping : Are we ready for a brave new world ? *The American Association for Clinical Chemistry*. Retrieved from <http://www.clinchem.org/>

Duncan, R.E., Froddy, B., & Delatycki, M.B. (2006). *Refusing to provide a prenatal test: Can it ever be ethical?* Retrieved from <http://bmj.com/>

Evers-Kiebooms, G., de Wert, G., Decruyenaere, M., de Die, C., Quaid, K., & Fryns, J. P. (2006). *Rights of future children.* Retrieved from <http://bmj.com/>

Harmon, A. (2007). Facing life with a lethal gene. *The New York Times*. Retrieved from <http://www.nytimes.com/>

Half fertility clinics allow parents to pick gender (2006). *MSNBC.* Retrieved from <http://www.msnbc.msn.com/>

Greely, H. T. “Neuroethics and the ELSI: Some comparisons and considerations.” Neuroethics: Mapping the Field. San Francisco, CA. 13 May 2002.

Tierney, J. (2007). Are scientists playing god? It depends on your religion. *The New York Times*. Retrieved from <http://www.nytimes.com/>

Pennisi, E. (2007). Human genetic variation. *Science*, *318*. Retrieved from <http://www.sciencemag.org/>

Harmon, A. (2007). In DNA era, new worries about prejudice. *The New York Times*. Retrieved from <http://www.nytimes.com/>

McGuire, A. L., Cho, M. K., McGuire, S. E, & Caulfield, T. (2007). The future of personal genomics. *Science*, *317*. Retrieved from <http://www.sciencemag.org/>

Ng, P. C. Murray, S. S., Levy, S., & Venter, J. C. (2009). An agenda for personalized medicine.

 *Nature, 461*(8). Retrieved from [http://www.nature.com/](http://www.nature.com/nature)

Duster, R. (2005). Race and reification in science. *Science, 307*. Retrieved from <http://www.sciencemag.org/>

Harmon, A. (2008). Gene map becomes a luxury item. *The New York Times*. Retrieved from <http://www.nytimes.com/>

Sangavi, D. M. (2006). Wanting babies like themselves, some parents choose genetic defects. *The New York Times*. Retrieved from <http://www.nytimes.com/>

Eltis, K. Genetic determinism and discrimination: A call to reorient prevailing human rights discourse to better comport with the public implications of individual genetic testing. *Journal of Law, Medicine, & Ethics* (pp. 282-294).

**Week 5: Imaging**

Read Chapter 4 in Ackerman.

Readings:

Check, E. (2005). Ethicists urge caution over emotive power of brain scans. *Nature, 435*, 254.

Monitoring and imaging the brain (2004). In Garland, B. (Ed.), *Neuroscience and the Law: Brain Mind and the Scales of Justice* (PP. 7-24). New York: Dana Press.

Nicholson, C. (2006). Thinking it over: fMRI and psychological science. *The Association for Psychological Science*, 20-27.

Russo, F. (2007). Who should read your mind? *Time*. Retrieved from <http://www.time.com/>

Schiff, N. D. et al. (2005). fMRI reveals large-scale network activation in minimally conscious patients. *Neurology, 64*, 514-523.

**Week 6: Neuroeconomics**

Readings:

Walton, D. (2010). Can brain scans help boost sales? *BBC NEWS.* Retrieved from <http://news.bbc.co.uk/>

Anderson, J. (2008). Craving the high that risky trading can bring. *The New York Times*. Retrieved from <http://www.nytimes.com/>

Park, A. (2007). Marketing to your mind. *Time*. Retrieved from <http://www.time.com/>

Calloway, E. (2010). Unconscious purchasing urges revealed by brain scans. *Journal of Neuroscience* doi: 10.1523/jneurosci.0064-10-2010

Baker, S. (2008). What you really want to buy. *Business Week*. Retrieved from <http://www.businessweek.com/>

Fecteau, S. et al. (2007). Activation of prefrontal cortex by direct transcranial current stimulation reduces appetite for risk during ambiguous decision making. *The Journal of Neuroscience, 27*(23), 6212-6218.

Harbaugh, W. T., Mayr, U., & Burghart, B. R. (2007). Neural responses to taxation and voluntary giving reveal motives for charitable donations. *Science, 316*, 1622-1625.

Coates, J. M. & Herbert, J. (2008). Endogenous steroids and financial risk taking on a London trading floor. *PNAS, 105*(16), 6167-6172.

**Week 7: Pharmacological Enhancement**

Readings I:

Parens, Erik. “How far will the treatment/enhancement distinction get us as we grapple with new ways to shape ourselves?” Neuroethics: Mapping the Field. San Francisco, CA. 13 May 2002.

Farah, M. J. & Wolpe, P. R. (2004). Monitoring and manipulating brain function: New neuroscience technologies and their ethical implications. *Hastings Center Report, 34*(3), 35-45.

Readings II:

Carey, B. (2008). Brain enhancement is wrong, right? *The New York Times*. Retrieved from <http://www.nytimes.com/>

Fritz, M. (2006, February 1). A doctor’s fight: More forced care for the mentally ill. *The Wall Street Journal*, pp. A1.

Gorner, P. (2006, March 3). Drug eases pain of bad memories: Blood pressure pill helps ex-soldiers, rape and disaster victims put their tortured pasts behind them. *The Chicago Tribune.* Retrieved from <http://www.dana.org/>

Laurance, J. (2009). Mind-enhancing drugs: Are they a no-brainer? *The Independent.*

Benedetti, F., Pollo, A., & Colloca, L. (2007). Opioid-mediated placebo responses boost pain endurance and physical performance: Is it doping in sport competitions? *The Journal of Neuroscience, 27*(44), 11934-11939.

Harris, G. (2007). Psychiatrists top list in drug maker gifts. *The New York Times*. Retrieved from <http://www.nytimes.com/>

Haig, S. (2007). The ethics of erasing a bad memory. *Time*. Retrieved from <http://www.time.com/>

Humphrey, N. (2004). The placebo effect. *The Oxford Companion to the Mind*.

**Week 8: Neuroenhancement and Neurotechnology**

Read Chapters 11-14 in Ackerman.

Readings:

Boodman, S. G. (2006). Mood machine. *The Washington Post*, pp. F1.

Bland, E. (2010). Magnets could manipulate morality. *Discovery News*. Retrieved from <http://news.discovery.com/>

Shachtman, N. (2007). Pentagon preps mind fields for smarter war stations. *Wired*. Retrieved from <http://www.wired.com/>

Schmundt, H. (2009). The dawning age of mind-reading machines. *Spiegel Online*. Retrieved from <http://www.spiegel.de/international/>

Wolpe, Paul. “Neurotechnology, cyborgs, and the sense of self.” Neuroethics: Mapping the Field. San Francisco, CA. 13 May 2002.

**Week 9: Legal Considerations**

Readings I:

Dresser, R. (1999). “Criminal responsibility and the ‘genetics defense’.” In J. Botkin, W. M. McMahon, & L.P. Fransis (Eds.), Genetics and Criminality: The Potential Misuse of Scientific Information in Court. Washington, D.C.: The American Psychological Association.

Gazzaniga, M.S. & Steven, M.S. “Free will in the twenty-first century: a discussion of neuroscience and the law.” Neuroscience and the Law. Washington, D.C. 2004.

Shapiro, M.H. (1994). Law, culpability, and the neural sciences. In R.D. Masters & M.T. McGuire (Eds.), *The Neurotransmitter Revolution: Serotonin, Social Behavior, and the Law* (pp.179-202).

Gazzaniga, N. S. (2005). My brain made me do it. In *The Ethical Brain* (pp. 87-102). New York: Dana Press.

Rosen, J. (2007). The brain on the stand. *The New York Times*. Retrieved from <http://www.nytimes.com/>

Tancredi, L. R. (2005). *Hardwired behavior: what neuroscience reveals about morality.*  Cambridge: Cambridge University Press

Longino, H. E (2001). What do we measure when we measure aggression? *Studies in History and Philosophy of Science, 32*(4), 685-704.

Rigoni, D. et al. (2010). How neuroscience and behavioral genetics improve psychiatric assessment: Report on a violent murder case. *Frontiers in Behavioral Neuroscience, 4*(160), 1-10. doi: 10.3389/fnbeh.2010.00160

Science: Can we stop antisocial behavior? (2007). *The Telegraph*. Retrieved from <http://www.telegraph.co.uk/>

Readings II:

McKenna, P. (2007). Can a brain scan prove you’re telling the truth? *New Scientist Tech*.

Caruso, D.B. (2008). Can brain scans get defendants off the hook? *MSNBC.* Retrieved from <http://www.msnbc.msn.com/>

Hughes, V. (2010). Head Case. *Nature, 464*(18), 340-342. Retrieved from <http://www.nature.com/>

Ganguli, I. (2007). The brain lie: Can fMRI replace the polygraph? *The Scientist*, pp. 41-46.

Kluger, J. & Masters, C. (2006). How to spot a liar. *Time*. Retrieved from <http://www.time.com/>

Pearson, H. (2006). Lure of lie detectors spooks ethicists. *Nature, 441*, 918.

Couzin-Frankel, J. (2010). Brain scans not acceptable for detecting lies, says judge. *Science Insider* Retrieved from <http://news.siencemag.org/scienceinsider/>

**Week 10: Morality and Brain Function (Neuroscience of Ethics)**

Read Chapter 7 in Ackerman.

Readings:

Churchland, P. (2002). “Neuroconscience: Reflections on the neural basis of morality.” Neuroethics: Mapping the Field. New York, New York: Dana Foundation.

Ga zzaniga, M. S. (2005). The believing brain. *Morality and the brain* (pp 145-178). New York, Washington, D.C.: The Dana Press

Haidt. J. (2008). “Morality.” Perspectives on Psychological Science, The Journal of the Association for Psychological Science, 3(1), 65-72.

Haidt, J., et al. (2007). The new synthesis in moral psychology. *Science*, 316, 998-1002. doi: 10.1126/science.1137651

Miller, G. (2008). The roots of morality. *Science*, 320, 734-737. Retrived from www.sciencemag.org

Pope, S. J. (2001). “Natural law and Christian ethics.” The Cambridge Companion to Christian Ethics. Cambridge: Cambridge University Press.

(repeat) Tancredi, L. R. (2005). *Hardwired behavior: what neuroscience reveals about morality.*  Cambridge: Cambridge University Press

Wade, N. (2007, September 18). Is ‘do unto others’ written into our genes? *The New York Times.* Retrieved from <http://www.nytimes.com/>

**Week 11: Consciousness and End of Life**

Readings:

Kaplan, K. (2006). As man lay in coma-like state, his brain was busy rebuilding. *The Los Angeles Times*.

Bechara, A., Damasio, H., Tranel, D., & Damasio, A.R. (1997). Deciding advantageously before knowing the advantageous strategy. *Science, 275*, 1293-1295. Retrieved from <http://www.sciencemag.org/>

Truog, R.D. (2007). Brain death – Too flawed to endure, too ingrained to abandon. *Journal of Law, Medicine & Ethics*, 273-281.

O’Conner, A. (2005, May 4). Brain-injured fireman’s recovery takes science into a murky area. *The New York Times.* Retrieved from <http://www.nytimes.com/>

Keim, B. Brain scanners can see your decisions before you make them. *Wired*. Retrieved from <http://www.wired.com/magazine/>

Emspak, J. (2010). Consciousness-raising: Kick-starting the brain’s dopamine system may revive some vegetative patients. *Scientific American*. Retrieved from <http://www.scientificamerican.com/>

Shadlen, M.N. & Kiani, R. (2007). An awakening. *Nature, 448*(2), 539-540.

Dijksterhuis, A., Bos, M.W., Nordgren, L.F., & van Baaren, R.B. (2006). On making the right choice: The deliberation-without-attention effect. *Science, 311*, 1005-1007.

Owen, A.M., Coleman, M.R., Boly, M., Davis, M.H., Laureys, S. & Pickard, J.D. (2006). Detecting awareness in the vegetative state. *Science, 313*, 1402.

Greenberg, D.L. (2007). Comment on “Detecting awareness in the vegetative state”. *Science, 315*, 1221.

Miller, G. (2006). Tough decision? Don’t sweat it. *Science, 311*, 935.

Hopkin, M. (2006). *Thoughts of woman in “waking coma” revealed*. Retrieved from <http://news.nature.com//news/>

Stewart, A. (2005). New perceptions of damaged brains. *Newark Star-Ledger*.

Ehrsson, H.H. (2007). The experimental induction of out-of-body experiences. *Science, 317*, 1048.

Phillips, H. (2006). *“Rewired brain” revives patient after 19 years*. Retrieved from <http://www.newscientist.com/>

Schiff, N. *A Remarkable Patient’s Recovery.* Retrieved from <http://www.dana.org/>

Dabby, D. (2005). *The Consciometer.*

Pinker, S. (2007). The mystery of consciousness. *Time*. Retrieved from <http://www.time.com/>

Rosenbaum, R.S., Stuss, D.T., Levine, B., & Tulving, E. (2007). Theory of mind is independent of episodic memory. *Science, 318*, 1257.

Winslade, William. “Traumatic brain injury and legal responsibility.” Neuroethics: Mapping the Field. San Francisco, CA. 13 May 2002.

Hluchy, P. (2008, April 13). When brain death isn’t terminal. *Toronto* Star. Retrieved from <http://healthzone.ca/>

 Hoffman, J. (2006, October 10). The last word on the last breath. *The New York Times.* Retrieved from <http://www.nytimes.com/>

**Week 12: Religion, Spirituality and the Brain**

Readings:

Barbour, I.G. (2000). Science and religion: Ways of interaction. *When Science Meets Religion.*

Murphy, N. Bodies and souls, or spirited bodies? In I. Torrance (Ed.), *Current Issues in Theology* (pp. 71-147). Cambridge University Press.

Heffern, R. (2008). Consciousness: Science’s biggest mystery. *National Catholic Reporter*. Retrieved from <http://findarticles.com/>

**Week 13: Neuroethics in the World**

Readings:

Illes, Judy. “From the ‘public understanding of science’ to scientists’ understanding of the public.” Neuroethics: Mapping the Field. San Francisco, CA. 13 May 2002.

The ones who walk away from omelas. In *The Wind’s Twelve Quarters* pp. 275-284.

Midgely, M (1989). Moon-monsters and free people. *In Wisdom, Information and Wonder: What Is Knowledge For?*, 3-11. Routledge: London.

Taylor, H.A., Johnson, S. (2007). Ethics of population-based research. *Journal of Law, Medicine & Ethics*, 295-299.