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COGNITIVE ENHANCEMENT IN EDUCATION: A LITERATURE REVIEW

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GUEST CONTRIBUTOR

Editor's Note: This is the second of a two-part examination of the ethics of and attitudes toward cognitive enhancement. The first installment by Dr. Rouse, "Cognitive Enhancement in Education: The State of the Issue," appeared in the Fall 2013 issue of *Dignitas.*

Is Cognitive Enhancement in Education an Issue that Deserves Public Policy Attention?

While ethical analysis of potentially dangerous dilemmas is a thought-provoking philosophical exercise, the need for public policy development is usually tied directly to their actual prevalence and their near-term effects on society. For this reason, many authors have focused on whether or not the use of pharmaceutical cognitive enhancers is really a clear and present danger to society, and, if so, what types of policies might be crafted to protect society from that danger. Those who see the use of cognitive-enhancing drugs as morally illicit or potentially physically dangerous call for extreme caution in the development and approval of these drugs for enhancement purposes.[1] Generally, even those who advocate the approval of these drugs for enhancement purposes recognize that their availability would need to be regulated. That said, there are those who, while notably rare, advocate for the free and unfettered public access to these medications.

The current legal reality in the U.S. is that these drugs are prohibited for the use of enhancement. Drugs like methylphenidate (Ritalin® is one example) are approved by the FDA only for the treatment of diagnosable disorders such as ADHD. However, a parallel reality exists: College students and other individuals are illegally seeking, obtaining, and using these drugs for reasons beyond their therapeutic use. A number of studies have been done to ascertain the extent of such off-label use; they are reviewed below. Clearly, there already exists a black market for these drugs. Several authors warn that simple prohibition would not only perpetuate the black market for these drugs, but would be impractical to implement and police in the first place.[2] For this reason, well-conceived public policy on this issue is a widely recognized need.

Since there is still much to learn about these cognitive-enhancing drugs,[3] and because they are currently only approved for the treatment of particular disorders, one suggested option is simply to implement educational initiatives that will inform the public about the risks of taking such medication for the purpose of enhancement.[4] Proponents of this approach opine that the off-label use of nootropic (mind enhancing) drugs is inevitable, and, as such, we should ensure that users have access to our most current and reliable information about their efficacy and risks. Cakic notes that

> the widespread non-medical use of methylphenidate suggests that students will use nootropics regardless of their safety and legality. Perhaps the most that can be hoped for is to have a better understanding of the dangers of nootropics so that students will take this into consideration when deciding whether or not to use them.[5]

Schermer suggests making this type of information available to students around the time of exams and adds that the government should be responsible for publishing public service announcements that inform potential users of "the realistic effects and risks" of nootropic drugs.[6]

Conceding the inevitable off-label use of cognitive-enhancing drugs and calling for better information dissemination may be a useful place to start, but many authors are also thinking ahead to the day when these pharmaceuticals might become legally available to the healthy. A 2008 *Nature* article by Greely et al. has become a well-known essay advocating for the widespread use of cognitive enhancers. The article makes a multi-faceted call for evaluation of risks and benefits, research into safety and an "enforceable set of policies to protect individuals from coercion and minimize enhancement-related socioeconomic disparities."[7] Yet, Greely et al. stop short of suggesting actual

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BY PAIGE COMSTOCK CUNNINGHAM, JD, MA
EXECUTIVE DIRECTOR

CELEBRITY EPIDEMICS

What immediately comes to mind when you see the word "epidemic"? Most likely, the outbreak of the Ebola virus in West Africa. As I write this, the Centers for Disease Control and Prevention estimates that one million patients could be infected by January, if nothing is done.

But something is being done. The outbreak has been simmering for months, but the issue did not grab national attention until two Americans contracted the disease. (And, just before this went to press, a Liberian national is critically ill in a Dallas hospital with the Ebola virus.) The United States and other nations have begun sending resources, troops, and healthcare workers.

If pressed to give a second answer on your "epidemic list," you might mention HIV/AIDS. For years, celebrities have spotlighted attention on research for prevention and treatment. Cary Grant's death motivated his friend Elizabeth Taylor to take up the cause. More recently, Bono has concentrated his considerable influence to help eliminate AIDS in Africa. Malaria, too, has gained celebrity attention.

Celebrities—or deaths of Americans—are often the fuse that lights the fires of charitable engagement. There is no harm, and much good, that can be generated through celebrity engagement. But what about epidemics that lack a big name champion?

I am thinking about the epidemic of multidrug-resistant tuberculosis (MDR-TB) burning through Vietnam, India, and elsewhere. Nearly two decades ago, the World Health Organization declared TB as a global public health emergency.[1] The rate of decline is lethargic (2% per year). Meanwhile, a new form of MDR-TB has emerged. MDR-TB patients who misuse or are prey to mismanagement of drugs may succumb to the even more tenacious extensively drug-resistant tuberculosis (XDR-TB). Estimates are admittedly imprecise, but WHO suggests that 170,000 died from MDR-TB in 2012, and 450,000 new cases of MDR-TB had emerged by 2013.[2] India's Union Health Minister recently declared MDR-TB a "national emergency."[3]

Who is the celebrity face of tuberculosis? Is that what is needed to mobilize prevention and treatment resources?

Cornelia Hennig, WHO medical officer in Vietnam, laments that, "TB is still a neglected disease." Also in Vietnam, CDC director Michelle McConnell agrees, "It doesn't get quite as much attention as some newer and more publicized diseases."[4]

Granted, the United States cannot supply resources to prevent, treat, and cure every serious disease. But tuberculosis is one of the five deadliest infectious diseases worldwide, and is the primary cause of death for people with HIV infection.[5]

Recently, attention has been focused on tuberculosis in the United States. This is not because of an epidemic—only one person exhibited the disease—but because of the population that was exposed. In a Texas hospital, more than 700 infants may have been exposed over the course of one year to a nurse who tested positive for TB in August 2014.[6]

Don't chastise the U.S. for not taking care of every crisis. The point is, we *do* respond. Even if it takes "one of our own" or a celebrity to bring the attention to the forefront, we generally do not ignore the crisis. In Texas, the response was swift and comprehensive. The hospital made multiple attempts to contact all parents, urging them to bring in their child for free TB screening. Currently, over 500 are scheduled for testing.[7]

The point here is not to cast aspersions on those who are focused on the currently popular issues such as HIV/AIDS, malaria, and human trafficking. Rather, we must not forget the less popular, and perhaps overly familiar, diseases that are major causes of deaths worldwide. In low income countries, the number one cause of death is lower respiratory infections, followed by HIV/AIDS. Also on the list are stroke, diarrhoeal disease, ischaemic heart disease, and, yes, tuberculosis. You might respond that stroke awareness is high in the United

The Center for Bioethics & Human Dignity (CBHD) is a Christian bioethics research center at Trinity International University.

"Exploring the nexus of biomedicine, biotechnology, and our common humanity."

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States. Naturally so, because it is also the second leading cause of death.

There will always be epidemics and pandemics, generating national and worldwide attention and responses. I applaud those who are selflessly working and giving to prevent and cure "celebrity diseases." And I am just as grateful for those who concentrate on diseases affecting the poor that may be less prevalent in the U.S. For example, the Bill & Melinda Gates Foundation is funding innovative strategies for rapid diagnosis and treatment of tuberculosis, even as their top priority is innovative, accelerated approaches to TB vaccine development.[8] And the connection between HIV/AIDS and tuberculosis helps draw attention to both.

The next time you meet a researcher working on a neglected disease, a missionary doctor caring for the overlooked, or an organization dedicated to disease prevention, thank them. I suggest that we go even farther, and pay attention to what is not in the headlines or trending on Twitter. Look beyond chic causes. Passion for healthcare as a matter of social justice should not be dictated by what is trendy. As Christians, we should be alert to extend compassion and practical help to those who are often disenfranchised or marginalized. You may not be a celebrity, but you can be a champion.

1 World Health Organization, *Global Tuberculosis Report 2013*, http://apps.who.int/iris/bitstream/10665/91355/1/9789241564656_eng.pdf?ua=1.

2 World Health Organization, "Multidrug-resistant Tuberculosis (MDR-TB), October 2013 Update," http://www.who.int/tb/challenges/mdr/mdr_tb_factsheet.pdf?ua=1.

3 "Tuberculosis a National Emergency: Harsh Vadhan," *DNAIndia,* September 6, 2014. http://www.dnaindia.com/india/report-tuberculosis-a-national-emergency-harsh-vardhan-2016671.

4 Jens Erik Gould, "TB Battle is Global," *Chicago Tribune*, August 15, 2014. Sec. 5, p. 1.

5 The National Academies of Sciences, "What You Need to Know about Infectious Disease: Disease Threats: Global Killers," http://needtoknow.nas.edu/id/threats/global-killers/.

6 Andrew Soergel, "Nurse Exposes More Than 700 Infants to Tuberculosis," *U.S. News & World Report*, September 24, 2014, http://www.usnews.com/news/newsgram/articles/2014/09/24/el-paso-nurse-exposes-more-than-700-infants-to-tuberculosis. Another 45 infants were added to the number exposed. Jacque Wilson, "45 Infants Added to TB Exposure List," *CNN*, September 24, 2014, http://www.cnn.com/2014/09/24/health/infants-tb-texas/.

7 Diana Washington Valdez, "Providence CEO Apologizes Over Massive TB Exposure to Babies," *El Paso Times,* September 24, 2014, http://www.elpasotimes.com/news/ci_26590269/45-more-babies-may-have-been-exposed-tuberculosis.

8 Bill & Melinda Gates Foundation, "Tuberculosis Strategy Overview," http://www.gatesfoundation.org/What-We-Do/Global-Health/Tuberculosis.

BIOETHICS IN TRANSITION

2014 CONFERENCE REVIEW

JENNIFER L. MCVEY, MDIV
EVENT AND EDUCATION MANAGER

Transitions can be uncertain and, at times, intimidating. The end result is not always clear, and yet, during those times, wisdom often dictates staying the course, not straying too far from the path that will get you to the desired destination. Bioethics has gone through its own transitions, from addressing basic ethical questions of life and medical care, to pondering the ethics of technologies that once were the things of the dreams of our most forward thinking scholars and writers. How do we engage this new era of bioethics that is moving at a quicker pace than ever before? That was the question our 21st annual summer conference, *Bioethics in Transition*, set out to answer.

Each year, we are privileged to host some of the top, thoughtful leaders in academic bioethics who challenge us to continue thinking deeply about the ethical, theological, and philosophical implications of the rapidly changing landscapes in medicine, science, and technology; to look forward while remaining rooted in certain unshakable principles. This year those plenary speakers included: Lisa Anderson-Shaw, DrPH, MA, MSN, University of Illinois Medical Center; Jeffrey P. Bishop, MD, PhD, Saint Louis University; Richard M. Doerflinger, MA, United States Conference of Catholic Bishops; Gilbert C. Meilaender, PhD, Valparaiso University; and Henk A. M. J. ten Have, MD, PhD, Duquesne University.

They highlighted several of these transitions, from brain death and end-of-life care; to rural healthcare and professional development in the medical field; from shifts in domestic policy concerns to the emergence of a more global bioethics. (Dr. Sleasman lays out many of these specific transitions in bioethics in his article "Bioethics in Transition" in the Summer 2014 issue of *Dignitas*). One of the most significant transitions in bioethics, over the more than forty years since its inception, is the lens through which it is viewed: moving from the theological roots that were an integral part of the dialogue, to becoming a predominantly secular enterprise. As Dorothy so famously said in *The Wizard of Oz*, "Toto, I've a feeling we're not in Kansas anymore."

It is true, as medicine, science, and technology continue to advance, that the contemporary bioethical landscape can become daunting and difficult to navigate. In the midst of all these transitions, Professor Meilaender reminded us that even though some of the specific issues addressed by bioethics have changed, the core moral considerations remain essentially the same. Bioethics should still invite us to think about the character of human life, reflecting on the deepest meaning of our humanity. Meilaender highlighted three areas for such reflection: the unity and integrity of the human person; the relation between the generations; and human suffering and vulnerability; suggesting that these considerations, at times, should cause us to pause and proceed with caution in our endless pursuit of trying to enhance human life.

Quoting Reinhold Niebuhr, Professor Meilaender said, "'Man's involvement in finiteness and his transcendence over it is the basic paradox of human existence' . . . therefore, tempting us by reductionisms of various sorts." One such temptation that continues to play a significant role in bioethics is the duality of person and body vs. the unity and integrity of the human person; enticing us to view a human being in his or her various parts rather than as a whole, embodied spirit, equal in dignity to all other human beings despite perceived limitations or disabilities. Another temptation is the shifting response to our relationship between the generations. The desire to extend life indefinitely can blur the lines between "kinship and descent," fueling our desire to not be replaced by the next generation,

rather than teaching and nurturing them to take our place in this world. Finally, he reminded us that relief from suffering and vulnerability, when seen through a wider lens, is not the greatest good and our pursuit to end it may "destroy other equally important goods in an authentically human life."

How then do we respond to the Promethean desire for control to overcome our finite state? Professor Meilaender suggested our response can be similar to that proposed by the President's Council on Bioethics:

> "Yes, perhaps we could have helped you through the research we thought was wrong to do, but we could have done so only by destroying, in the present, the sort of world in which both you, and we, wish to live. The world in which, as best as we can, we respect human life and human individuals, the weak and the strong. To have done more would have meant transgressing boundaries essential to our humanity and although we very much want to leave to our children a world where suffering can be more effectively relieved, that is not all we want to leave. We want to bequeath a world that honors moral limits, a world in which the good of some human lives are not entirely subordinated to the good of others, a world in which we seek to respect, as best we can, the time each human being has and the place each fills."

Another summer has come and gone, and with it, another successful, thought-provoking conference. The staff at The Center for Bioethics & Human Dignity is so grateful for those who give of their time, finances, and other resources to

Top: Gilbert Meilaender, PhD, left: Richard Doerflinger, MA, right: Henk ten Have, MD, PhD, deliver their plenary addresses at CBHD's 2014 annual summer conference.

Top-right: Michael J. Sleasman, PhD, top-left: Jeffrey P. Bishop, MD, PhD, bottom-right: Lisa Anderson-Shaw, DrPH, MA, MSN, bottom-left: Paige C. Cunningham, JD, deliver their plenary addresses at CBHD's 2014 annual summer conference.

,make this event a priority, whether they are a plenary speaker or simply attending as a participant. It is not lost on us the sacrifices many of you make to be here and we look forward with anticipation each year to "conference time." It is a time for us, and I know for many of you as well, to see our friends and make new ones.

While it is a huge effort for our small staff of four full-time people, it always refreshes our souls. It refreshes us, because of the encouragement we receive from all of you to press on in the work we do, to be a distinctly Christian voice in bioethics. It refreshes us because we are encouraged to hear the stories of how you are that same voice in your professions, in the places you work and live. It refreshes us, because you stimulate our thinking as well, as we listen to you present or have conversations during the breaks and lunch. It refreshes us, because it is just always good to be with our extended "bioethics family."

We are already looking forward to being with you again, June 18-20, 2015 for our 22nd annual summer conference, *Science, Research, and the Limits of Bioethics,* when we will hear from another excellent group of speakers: **Nigel M. de S. Cameron, PhD, MBA; Maureen Condic, PhD; Robert P. George, JD, DPhil; Fabrice Jotterand, PhD; C. Jimmy Lin, MD, PhD, MHS; Rosalind W. Picard, ScD; and Jennifer Wiseman, PhD.** See you then!

EBOLA TIMELINE FROM BIOETHICS.COM

BY HEATHER ZEIGER, MS, MA
CBHD RESEARCH ANALYST

The Ebola outbreak in West Africa is the largest Ebola outbreak in history. It can be traced back to a boy who died of Ebola in December; he lived in Guéckédou in southeastern Guinea, which is surrounded by Sierra Leone and Liberia. Easy movement in and out of these countries, combined with poor facilities and delayed identification, have contributed to Ebola's rapid spread, creating a public health disaster. As of this writing, approximately 3,000 people have died from Ebola since December and over 6,000 people have been infected. This particular strain of Ebola (i.e., Zaire Strain) is thought to be spread through animals, perhaps by bats. Prior Ebola outbreaks were easily contained because they occurred in sparsely populated regions.

CBHD's news blog—**bioethics.com**—documents disasters through the lens of news headlines and journal articles. The timeline of news events since March when the outbreak made international news, highlights the outbreak's rapid progression as well as bioethics questions that are specific to epidemics: the slow response of international aid groups, the use of Ebola drugs that were untested on humans, hastening clinical trials of Ebola remedies and vaccines, medical workers being flown back to their home country while infected West African medical workers must stay, appropriate allocation of resources from foreign countries, and containment practices that may violate human dignity. For a more complete timeline of headlines see the full resource on bioethics.com at **www.bioethics.com/ebola-timeline**.

"4 Health Care Workers among 66 Dead in Ebola Outbreak" by Sydney Lupkin, *ABC News,* March 27, 2014

> The ongoing outbreak has sickened 103 people in Guinea in all, and this Ebola strain has a 64 percent fatality rate, WHO officials said. The number of people reported sickened by Ebola in Guinea has more than doubled in the past five days. (http://tinyurl.com/m8j533u)

"Ebola Virus Claims Lives of More than 200 People in Guinea" by AFP, *The Guardian*, June 4, 2014

> More than 200 people have died from the highly contagious Ebola virus in Guinea, amounting to one of the worst ever outbreaks of the disease, the World Health Organisation said on Wednesday. The UN's health agency said it had so far registered 328 confirmed or suspected cases of Ebola in Guinea, including 208 deaths. (http://tinyurl.com/lbevfyl)

"Ebola Challenges West African Countries as WHO Ramps Up Response" by The World Health Organization, June 26, 2014

> Since March 2014, more than 600 cases of Ebola and over 390 deaths have been reported in Guinea, Liberia and Sierra Leone. . . . [T]he outbreak is causing concern among health authorities because the deadly disease is being transmitted in communities and in health-care settings, and it has appeared in cities as well as rural and border areas. (http://tinyurl.com/q7yepbu)

"Ebola's Deadly Spread in Africa Driven by Public Health Failures, Cultural Beliefs" by Dick Thompson, *National Geographic*, July 2, 2014

> [H]ealth authorities from 11 West African countries and international agencies began a two-day crisis meeting today in Accra, Ghana, on how to combat the crisis. The World Health Organization (WHO) says "drastic action" is needed to stem the outbreak, which since March has grown to 759 confirmed cases in Guinea, Sierra Leone, and Liberia, including 467 deaths. (http://tinyurl.com/l4rg7js)

"Sierra Leone's Top Ebola Doctor Is Dead from Ebola" by Abby Ohlheiser, *Washington Post*, July 29, 2014

> A Sierra Leone doctor who treated more than 100 Ebola patients has died from the virus, the country's chief medical officer Brima Kargbo confirmed to the media on Tuesday. Sheik Umar Khan has been hailed as a "national hero" for his work treating Ebola. (http://tinyurl.com/kgtv2z6)

"Emergency Efforts in Africa to Contain Ebola as Toll Rises" by Adam Nossiter and Denise Grady, *New York Times*, July 31, 2014

> West African leaders quickened the pace of emergency efforts on Thursday, deploying soldiers and authorizing house-to-house searches for infected people in an effort to combat the disease. . . . The viral illness has exacted a terrible toll, killing 729 people, including top physicians in

Liberia and Sierra Leone. (http://tinyurl.com/o5dts3k)

"Ebola Crisis: Infected Doctor Kent Brantly Lands in US" by BBC, August 2, 2014

> A US doctor infected with the deadly Ebola virus in Liberia has arrived in the US for treatment at a specialised unit in Atlanta, Georgia. . . . Fellow infected US aid worker Nancy Writebol is expected to follow shortly. . . . The current mortality rate is about 55%. (http://tinyurl.com/pl7khpn)

"Ebola Crisis: World Bank Announces $200m Emergency Fund" by BBC, August 4, 2014

> The World Bank has announced that it is allocating $200m (£120m) in emergency assistance for West African countries battling to contain the Ebola outbreak. (http://tinyurl.com/mvvc523)

"Two Americans Who Contracted Ebola in Africa Received an Experimental Serum" by Brady Dennis and Lenny Bernstein, *Washington Post*, August 4, 2014

> This so-called experimental serum is a cocktail of antibodies that have the capability of blocking the virus," Fauci said, adding: "The physicians in charge of the patients' care made a risk-benefit decision. The risk was less than the potential benefit." (http://tinyurl.com/kv8ounz)

"WHO to Convene Panel on Use of Experimental Ebola Drugs" by Brady Dennis and Lenny Bernstein, *Washington Post*, August 6, 2014

> The World Health Organization said Wednesday that it would convene a group of medical ethicists early next week to wrestle with questions about the use of experimental treatments in the deepening Ebola outbreak in West Africa. (http://tinyurl.com/m3emfge)

"Ebola Declared a Public-Health Emergency" by Erika Check Hayden, *Nature*, August 8, 2014

> The WHO has formally declared the outbreak to be a "public health emergency of international concern," . . . By 6 August, 932 people had died in the current outbreak, most in Sierra Leone, Guinea and Liberia. (http://tinyurl.com/nsa8dbd)

"Tracing Ebola's Outbreak to an African 2-Year-Old" by Denise Grady and Sheri Fink, *New York Times*, August 9, 2014

> Patient Zero in the Ebola outbreak, researchers suspect, was a 2-year-old boy who died on Dec. 6, just a few days after falling ill . . . . A week later, it killed the boy's mother, then his 3-year-old sister, then his grandmother. All had fever, vomiting and diarrhea, but no one knew what had sickened them. (http://tinyurl.com/pet3vnt)

"WHO Says It Is Ethical to Use Experimental Drugs to Fight Ebola Virus" by Monte Morin, *Los Angeles Times*, August 12, 2014

> A World Health Organization panel advised Tuesday that it was ethical to use experimental, nonapproved drugs to combat the ongoing Ebola virus epidemic in West Africa. . . . To date, 1,013 have died in the outbreak. (http://tinyurl.com/psnbtlh)

"Ethical Considerations for Use of Unregistered Interventions for Ebola Virus Disease (EVD)" by World Health Organization, August 12, 2014

> Ethical criteria must guide the provision of such interventions. These include transparency about all aspects of care, informed consent, freedom of choice, confidentiality, respect for the person, preservation of dignity and involvement of the community. (http://tinyurl.com/kleowcf)

"WHO: Toll of Ebola Outbreak Has Been 'Vastly' Underestimated" by Abby Phillip, *Washington Post*, August 15, 2014

> There have been 1,069 deaths attributed to Ebola so far, but the true toll of the virus could be far greater. (http://tinyurl.com/nb4j5sx)

"Ebola Patient Revels in 'Miraculous Day' as He and Another Exit Hospital" by Alan Blinder and Donald G. McNeil, Jr. *New York Times*, August 21, 2014

> Emory said on Thursday that Dr. Brantly . . . and Nancy Writebol, a missionary from Charlotte, N.C., who also contracted Ebola while in Africa this summer, had been released from its specialized isolation unit this week. (http://tinyurl.com/omjtbnq)

"Anecdotal Evidence about Experimental Ebola Therapies" by World Health Organization, August 21, 2014

> Clinicians working in Liberia have informed WHO that 2 doctors and 1 nurse have now received the experimental Ebola therapy, ZMapp. The nurse and one of the doctors show a marked improvement. . . . According to the manufacturer, the very limited supplies of this experimental medicine are now exhausted. (http://tinyurl.com/ntlwt5f)

"Ebola Drug Trials Set to Begin amid Crisis" by Declan Butler, *Nature*, September 2, 2014

> The first phase of clinical trials, to test for a product's safety, is usually carried out in healthy volunteers in facilities with sophisticated clinical-trials infrastructure. But an unusual combination of factors — the difficulty of implementing public-health measures to control the disease's spread in the affected countries, the huge social and economic disruption that it is causing and the fact that the current outbreak kills about 53% of the people it infects — makes this crisis an exception. (http://tinyurl.com/ooy82gv)

"Ebola Vaccines Racing Forward at Record Pace" by Jon Cohen, *Science*, September 9, 2014

> In as little as 2 months, this [Ebola] vaccine may go into the arms of thousands of health care workers and other first-line responders to the Ebola epidemic now wreaking havoc in West Africa. No experimental vaccine has ever been on a faster track toward widespread use. (http://tinyurl.com/ml4jetd)

"U.S. to Commit Up to 3,000 Troops to Fight Ebola in Africa" by Helene Cooper, Michael D. Shear, and Denise Grady, *New York Times*, September 15, 2014

> Mr. Obama will offer help to President Ellen Johnson Sirleaf of Liberia in the construction of as many as 17

Ebola treatment centers in the region, with about 1,700 treatment beds. (http://tinyurl.com/q79s6dy)

"Eight Bodies Found after Attack on Guinea Ebola Education Team" by Saliou Samb, Bate Felix, Robin Pomeroy, and Ken Willis, *Reuters*, September 18, 2014

Eight bodies, including those of three journalists, were found after an attack on a team trying to educate locals on the risks of the Ebola virus in a remote area of southeastern Guinea, a government spokesman said on Thursday… Since then the virus has killed some 2,630 people and infected at least 5,357 people, according to World Health Organization (WHO). (http://tinyurl.com/orh9guv)

"Sierra Leone to Start 3-Day Nationwide Lockdown to Stop Ebola" by Sydney Lupkin, *ABC News*, September 18, 2014

Sierra Leone is set to begin a three-day lockdown tonight at midnight to curb the spread of Ebola . . . . Government authorities have ordered the country's 6 million people to stay in their homes from Sept. 19 through Sept. 21, while volunteers go door-to-door to screen for Ebola. (http://tinyurl.com/n9gat6t)

"Ebola Death Toll Nears 3,000 in West Africa, Says WHO" by Andrew Morse, *The Wall Street Journal*, September 25, 2014

2,917 people had likely died from the disease as of Sept. 21, 2014. A total of 6,263 people had confirmed, suspected or probable cases of the disease. (http://tinyurl.com/kz28pc5)

"CDC: Ebola Confirmed in Dallas Patient" by Janet St. James and Josh Davis, *WFAA*, September 30, 2014

A patient in a Dallas hospital was confirmed Tuesday to have the deadly Ebola virus . . . . Within hours, a team of CDC investigators arrived in North Texas to begin working on the first-ever case of this strain of the Ebola virus confirmed in the U.S. The Dallas patient remains in "strict isolation" at Texas Health Presbyterian Hospital Dallas. (http://tinyurl.com/n5wdm3o)

GLOBAL BIOETHICS INTIATIVE UPDATE

In the Summer 2014 Issue of *Dignitas,* we provided a review of the first five years of this initiative, as well as updates from a number of past participants. We continue with an update from another past scholar.

Jennifer M. Nailes, MD, MSPH (2013 Recipient)

In June 2014, our Ethics Review Committee, which I head, just had a joint survey visit by the Philippine Health Research Ethics Board (PHREB) and the Forum for Ethical Review Committees in the Asian and Western Pacific Region (FERCAP). FERCAP implements the Strategic Initiative for Developing Capacity in Ethical Review (SIDCER) recognition program in Asia, which has conferred recognition of over 100 ethics committees in the region. We are now working on implementing the recommendations that these two groups made to our ethics review committees. Based on the findings, I recently stepped down from my Ethics Review Committee chairmanship to avoid potential conflicts of interest with the autonomy of the committee since I also occupy a position in the research institute as the director for education and training. After our joint survey, I also had the chance to be part of this accreditation team when they visited another hospital. It was a very enlightening experience looking at another ethics review committee and helping them in their accreditation process as well.

Currently, I am writing a proposal on the preparedness of Filipino patients on advance directives. Since this is a recent development for us, I am looking forward to working with some physicians whose patients are the ones who are more likely to have a high risk of dying because of their illness. I have teamed up with two cardiologists so far, and I plan to include as many patients as possible.

I am also exploring the possibility of moving into senior administration of research for my institution due to an announced resignation that is set to occur later this year. I will keep you updated if this exciting opportunity comes to pass.

CBHD is seeking applications from rising and established international professionals and scholars who will further advance contextually sensitive Christian bioethical engagement globally. ***APPLICATIONS FOR JUNE 2015 ARE DUE DECEMBER 1, 2015.***
Visit: www.cbhd.org/gbei or contact Jennifer McVey, MDiv, CBHD Event & Education Manager at jmcvey@cbhd.org for more information.

policies that might accomplish these goals.

On the other hand, enhancement proponents Bostrom and Sandberg suggest a complete overhaul in the way that enhancement drugs are developed, tested, and approved.[8] They recognize that the current medical framework for drug approval makes it difficult for pharmaceutical companies to develop and research drugs that could be used for enhancement. Their proposal is to create a different approval path for cognitive-enhancing drugs. Their rationale lies in the fact that there exist precedents in past governmental policy for a focus on enhancing and protecting cognition; these include the prohibition of the use of lead in paint and tap water, helmet laws, age restrictions on alcohol consumption, folic acid fortification of breakfast cereals, and compulsory education. As an extension, if all of these laws protect and enhance cognition, then developing safe and effective pharmaceutical enhancers is merely the next logical step.[9]

Among these discussions of the range of governmental involvement in regulating pharmacological cognitive enhancers, the most common recommendation is for additional research and analysis to assess the pervasiveness of off-label use of these drugs, to elucidate public and healthcare professionals' attitudes toward the use of these drugs for enhancement, to evaluate their true utility in the healthy, and to uncover the gamut of side effects they may cause. For instance, in her 2012 paper, Jayne Lucke calls for more research exploring attitudes about cognitive enhancement, because many academic, popular media and policy discussions are based on questionable assumptions about public attitudes and how those attitudes will shape public behavior.[10] To date, there have been a number of studies that have begun this pursuit of information. These studies are summarized in the remainder of this review in order to create a snapshot of what we currently know about usage patterns and attitudes regarding cognitive enhancement.

Empirical Studies Assessing Usage and Attitudes among College Students

Usage

The answer to the call for more information began about ten years ago when empirical studies assessing the prevalence of off-label use of prescription stimulant medications started to emerge. The bulk of these studies have focused on college campuses. College students often have access to these medications through classmates with prescriptions for ADHD medications and are a readily-available population to survey and interview. As a result there is a solid body of literature examining the illicit usage patterns of cognitive stimulants such as methylphenidate (Ritalin®) and mixed amphetamine salts (Adderall®) among this group of college students.

> ***if all of these laws protect and enhance cognition, then developing safe and effective pharmaceutical enhancers is merely the next logical step.***

McCabe, Teter, and colleagues have published a number of studies conducted in major university settings providing large samples in the midwestern United States. These studies indicate that about 8% of student respondents report using these drugs without a prescription at least once in their lifetime, and about 5-6% report using them in college within the last year.[11] This research group also performed the only large, multi-site university study, involving over 10,000 students from 119 universities in the United States, and found similar results. The life-time use prevalence was about 7%, while the past-year use prevalence was about 4%.[12] DeSantis and colleagues also surveyed usage patterns at a large university in the southeastern United States and found that a much higher 34% of student respondents in their survey reported the illegal use of ADHD stimulants.[13] Other studies have been conducted at small-to-medium sized universities in the United States that report usage prevalence rates in the 15-16% range among the student respondents,[14] while one study reports usage rates as high as 36%.[15] Lastly, several additional studies have examined usage patterns in particular student sub-populations like social fraternities. DeSantis et al. found that 55% of fraternity members surveyed at a large southwestern university reported nonmedical use of ADHD stimulants.[16]

Most of the studies reported above went beyond simply calculating usage statistics. In addition, they asked survey respondents to report motives for off-label stimulant use and means of acquisition of the drugs. In almost every study, the largest percentage of illicit users cited academic motives for off-label use.[17] Specifically, the majority of students reported using prescription stimulants in order to increase concentration and alertness.[18] Other reasons for use included getting high, losing weight, increasing sociability, increased memory and reducing fatigue.[19] By and large, these studies reveal that users generally took these drugs orally, although some students inhaled the drugs intranasally,[20] and that the most common mode of acquisition of ADHD stimulants was via friends that either gave away or sold excess pills.[21] Finally, these studies have revealed that male gender, Caucasian race, membership in a social fraternity or sorority, Jewish religious affiliation, low academic achievement, easy access to the drug, and weekly party behavior were all factors associated with illicit prescription stimulant use.[22]

Attitudes

A number of other studies, also surveying college students, have focused on exploring attitudes about

the use of cognitive-enhancing drugs rather than simply estimating usage statistics. Most of these studies relied on interview techniques rather than paper or web surveys. As a whole, this body of literature suggests that students tend to believe the use of drugs like Ritalin® and Adderall® are physically safe, morally acceptable, and stigma-free.[23] During extensive interviews with illicit stimulant users, DeSantis and Hane learned that students assume stimulant use is safe because it is prescribed to their friends. Moreover, these students believed that stimulant use was morally acceptable and physically safe if done in moderation, particularly when undertaken "for the right reasons," i.e. performing better academically.[24] Forlini and Racine found that when questioned about the acceptability of using cognitive stimulants in an educational setting, students expressed a conviction that individuals should have the freedom to choose whether or not to use cognitive stimulants, yet highlighted the need for personal integrity in the use of stimulants for study purposes.[25] Interestingly, some of the students interviewed in Forlini and Racine's study expressed a fear of eventual coercion. One student commented, "I think it has the potential to become one of those things that you say, 'I don't really want to, but I feel like I don't have a choice.'"[26] In contrast, two other studies which examined attitudes of students related to cognitive enhancement in Germany and Australia yielded different results. Students in Germany had a favorable disposition about using cognitive enhancers *if* they were deemed safe, but most of the respondents indicated that they were unsure about issues of addiction and fairness and therefore abstained from using these drugs.[27] On the other hand, a small study involving Australian college students revealed a more negative disposition toward the use of cognitive enhancers. The majority of the students interviewed indicated that they found the use of these drugs unacceptable and advocated awareness campaigns and enhancer use monitoring in academic settings.[28]

Medical Professionals

While assessing attitudes about cognitive enhancers in the "user" pool is important, assessing attitudes about these drugs in the "provider" pool is equally so. Fewer studies have addressed this issue with reference to healthcare professionals, but those that have provide some useful pilot data to consider. Hotze and colleagues surveyed 1500 physicians across the United States about the use of medical interventions for the purpose of enhancement. Many different types of enhancements were included in the survey questions, but 58% of the physicians surveyed indicated that drugs that help students learn faster in school should be allowed. 15% of these physicians indicated that they would prescribe such a drug to "normal" individuals without reservation, and 50% indicated that they would prescribe these drugs with reservations. Therefore, 65% of the surveyed physicians indicated that they would prescribe cognitive enhancing drugs to normal students if legally available.[29] However, the majority of these physicians expressed disdain for drugs that would enhance physical fitness or increase aggression in soldiers, indicating that the end results of the mode of enhancement seem to matter to the provider. Cognitive enhancements such as increased memory and improved school performance were rated as more acceptable than any improvement in physical performance.[30] The authors of this study summarize the overall responses from physicians as showing "considerable ambivalence around the issue of enhancement."[31]

Cognitive enhancements such as increased memory and improved school performance were rated as more acceptable than any improvement in physical performance.

Forlini and Racine also interviewed healthcare providers in their study. The healthcare providers expressed concerns over the health consequences of the use of cognitive enhancing drugs. The sum of their responses indicated that they believed cognitive enhancer use is an issue of personal choice, but would be concerned for the mental health of students who felt pressured enough to turn to pharmacological enhancers to get their work done. However, they concluded that cognitive enhancement is unacceptable and could not formulate any scenario where it would be acceptable.[32]

In response to these studies, Forlini and Racine analyzed potential causes and implications of healthcare professionals' ambivalence on this issue. Their commentary suggests that the ambivalence identified by Hotze et al. may be a function of confusing semantics. Forlini and Racine take issue with the wording of multiple survey items in the Hotze et al. study and find "enhancement" a misleading and ambiguous term in this context. They suggest that using the phrase "nonmedical use of medicine for enhancement" would have been less ambiguous and may have led physicians to answer more decisively in either the positive or negative direction.[33] They also believe the physicians may have been inclined to generate positive attitudes toward enhancement goals that had short term clinical significance (like enhancing memory or helping students succeed), but would likely have been more hesitant regarding more "distal social goals" (like increasing factory worker productivity or increasing aggression in soldiers).[34] This commentary ends with an optimistic view of the ambivalence and ambiguity: fodder for additional consideration.

General Public

Lastly, getting a sense of the use statistics, awareness and attitudes of the

more general public is admittedly more difficult than doing so for the previous two populations, and to date very few studies have embarked on such a mission. Kroutil and colleagues analyzed data from the 2004 National Survey on Drug Use and Health, specifically related to questions addressing the misuse of prescription ADHD stimulants. Past year off-label use of these drugs was most common in individuals between the ages of 18 and 25. However, that prevalence rate was only 1.3%. Only 0.1% of surveyed persons over 26 years old reported taking ADHD medications without a prescription. Whites and those in rural areas were more likely to have used cognitive enhancers than other groups.[35] A later study employed an internet survey involving over 4000 adults (18-49) in the United States and found that past year off-label stimulant use prevalence was about 2% overall and about 4% among participants that were 18-25 years old. Consistent with the college-based studies discussed above, most stimulant users report obtaining them from friends with prescriptions and state that productivity was their main motivation for off-label use.[36]

A couple of surveys have also focused on usage patterns and attitudes in the scientific community specifically. Two neuroscientists in the United Kingdom surveyed their colleagues and revealed that some of them have used the sleep-inhibitor modafinil (Provigil®) to combat the effects of jet lag.[37] Though their article is characterized by thought-provoking questions with few answers, it did prompt the editors of the journal *Nature* to conduct an internet poll of their readers. This poll received 1400 responses from individuals in six countries and revealed that roughly 20% of respondents had used drugs non-medically to enhance cognitive performance in some way. The most commonly used drug was methylphenidate and the most prevalent reason for use was to increase attention. Users procured these drugs primarily through prescription (it is unclear whether this includes diverted prescriptions) and the internet. Interestingly, 80% of respondents thought that healthy adults should be able to take these drugs for enhancement, and almost 70% claimed that they would risk mild side effects to take cognitive enhancing drugs. In contrast, 86% of the same population of respondents indicated that healthy children under 16 should not be allowed to take these drugs. About one-third of participants said that they might feel pressured to give cognitive enhancers to their children if their children's peers were taking them.[38]

Whereas official government contribution to the discussion of cognitive enhancement in the United States is currently sparse, the UK Government Office for Science Foresight Mental Capital and Wellbeing Project addressed this topic. Four UK neuroscientists and psychologists wrote the project's report calling for increased public education on the moderate effects and the risk of addiction and side effects of these drugs. The report is mostly informational regarding the mechanism of action of the drugs as well as a review of what is known about current usage rates, but the existence of this document highlights the importance of the discussion on a national level.[39]

Conclusion

It is clear that the last decade has ushered in much thought, discussion, and research on the use of cognitive enhancing drugs. Yet, there is much that we still do not know. Safety and efficacy are perhaps the primary questions, but answering those questions falls within the purview of medical science. Usage patterns and attitudes in the general public have not been fully examined, and the attitudes of medical professionals toward cognitive enhancement and their role in prescribing the drugs are still somewhat unclear. All of these areas merit further research.

In addition, while the general college population has been surveyed in several studies, little is known about the usage patterns and attitudes of particular sub-populations of students. The fact that usage seems to be much higher in fraternities and sororities than in the general college population indicates that a student's community context plays a role in their attitudes about cognitive enhancement and their tendency to use enhancing drugs.

The fact that usage seems to be much higher in fraternities and sororities than in the general college population indicates that a student's community context plays a role in their attitudes about cognitive enhancement and their tendency to use enhancing drugs.

One particularly quiet voice in this discussion has been that of the Christian church. While a few Christian bioethicists and physicians such as C. Ben Mitchell and William Cheshire have commented on this subject, there is not a substantial body of literature that addresses the issue from a Christian perspective. Moreover, there are no studies that examine cognitive enhancer usage or attitudes toward use among Christian individuals specifically. One obvious venue in which to explore usage and attitudes among Christians would be that of explicitly Christian colleges. Surveys of Christian student populations would begin to elucidate whether there is any notable difference between usage and attitudes in Christian college students as compared to students at non-Christian colleges. Such data could help to spark an interesting and fruitful conversation about the relationship between the principles of the Christian faith and the issues

surrounding pharmacological cognitive enhancement.

It is for precisely these reasons that I initiated a 2013 pilot study in partnership with CBHD to examine the attitudes and usage of cognitive enhancing drugs among Christian college students at several institutions. It is our hope that this will serve as the basis of further studies that can assist student development personnel in their work with students, as well as provide important data for additional consideration. Results of this preliminary study will be forthcoming within the next year.

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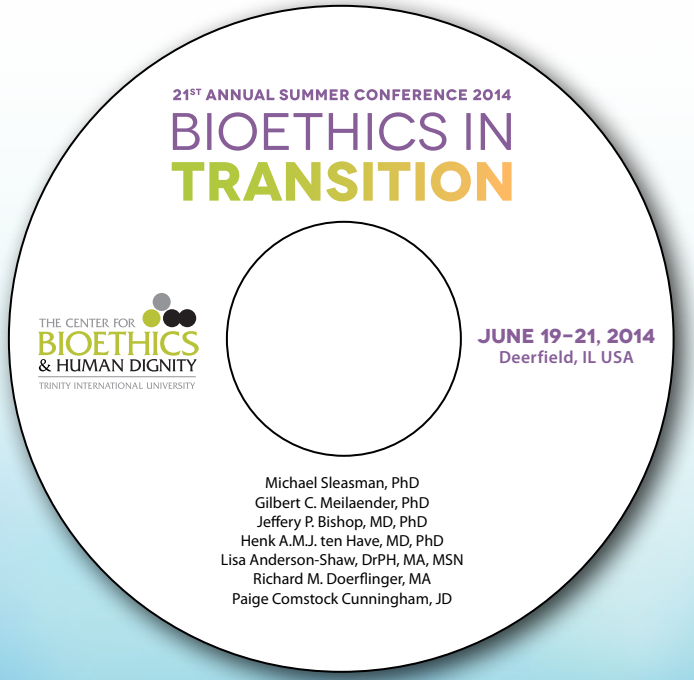

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TOP BIOETHICS STORIES: JUNE – AUGUST 2014

BY HEATHER ZEIGER, MS, MA
RESEARCH ANALYST

"Air Thick with Self-Congratulation as Quebec Votes to Legalize Euthanasia" by Graeme Hamilton, *National Post,* June *5, 2014*

> As Quebec's National Assembly voted Thursday to become the first North American jurisdiction to legalize euthanasia, the air was thick with self-congratulation. 'I want to congratulate ourselves as parliamentarians,' PQ MNA Carole Poirier said before the vote. 'Quebec is a beautiful society, and again today Quebec has just shown that we are really, really a different society.' (http://tinyurl.com/qhpcqbt)

"Three European Courts Grapple with End-of-Life Dilemmas" by Tom Henehan, *Reuters*, June 25, 2014

> Three European courts stepped carefully around delicate end-of-life issues on Wednesday, with one rejecting assisted suicide, another delaying it and a third acquitting a doctor from charges he murdered dying patients. The varied rulings by Britain's Supreme Court, the European Court of Human Rights and a regional French court reflected the difficulty of drawing a clear legal line between aiding terminal patients to die in peace and committing murder. (http://tinyurl.com/qd6bnbw)

Physician-assisted suicide has been heavily covered in the media this past summer as several countries voted on laws permitting some form of assisted suicide. In response to Great Britain's discussion on whether to legalize physician-assisted suicide, the *British Medical Journal* surprisingly called for legalizing assisted suicide, citing that respect for autonomy rather than the ideas espoused in the Hippocratic Oath are now more important in medical ethics. Additionally, a paper in the journal *Law, Ethics, and Medicine* provided statistics on suicide tourism to Switzerland, which has been on the rise over the past ten years. Tourists come from countries that do not allow physician-assisted suicide to take advantage of Switzerland's hazy laws on the issue.

"Paralyzed Man in Robotic Body Suit Will Kick Off World Cup" by Noah Rayman, *Time*, June 12, 2014

> A paraplegic man in a state of the art brain-controlled body suit will make the first kick of the World Cup on Thursday in front of 1 billion people. Miguel Nicolelis, a Brazilian neuroscientist at Duke University, led a team of 156 researchers to create an exoskeleton that could enable people who are paralyzed to walk, and the technology will be displayed in action during the World Cup's opening ceremonies ahead of the first match, Brazil vs. Croatia, in Sao Paulo. (http://tinyurl.com/n96hqpg)

Several networks were criticized for not covering the traditional first kick of the World Cup in favor of more entertaining acts. However, that first kick is of interest to bioethicists because it was performed by Juliano Pinto, a 29-year-old man who is paralyzed from the waist down. Juliano was wearing a robotic exoskeleton that is part of research being conducted for the Walk Again Project. Other World Cup bioethics news included Angel Di Maria, winger for Argentina, undergoing stem cell treatment for a torn right hamstring.

"Supreme Court Rejects Contraceptive Mandate for Some Corporations" by Adam Liptak, *The New York Times*, June 30, 2014

> The Supreme Court ruled on Monday that requiring family-owned corporations to pay for insurance coverage for contraception under the Affordable Care Act violated a federal law protecting religious freedom. It was, the dissent said, "a decision of startling breadth." The 5-to-4 ruling, which applied to two companies owned by Christian families, opened the door to challenges from other corporations over laws that they claim violate their religious liberty. (http://tinyurl.com/n2ytrau)

A preventive care regulation developed as part of the implementation of the Affordable Care Act specifies that employers cover contraceptives in their health insurance, including some contraceptives that may act as an abortifacient. The Supreme Court ruled in favor of tightly held corporations like Hobby Lobby and Conestoga Wood that have a religious objection to such coverage. The Obama administration has since revised an opt-out clause to the contraceptive mandate that would allow tightly held corporations such as Hobby Lobby to exclude coverage of certain contraceptives on the ground of religious objections. In August, the administration drafted a new policy allowing employees of such companies to receive coverage for contraceptives directly through the insurance company.

"Papers on 'Stress-Induced' Stem Cells Are Retracted" by David Cyranoski, *Nature*, July 2, 2014

> *Nature* today retracted two controversial papers on stem cells that it published in January. The retractions — agreed to by all of the co-authors — come at the end of a whirlwind five months during which various errors were spotted in the papers, attempts to replicate the experiments failed, the lead author was found guilty of misconduct, and the centre where she is employed was threatened with dismantlement. The retraction notice includes a handful of problems with the papers that had not been previously considered by institutional investigation teams. (http://tinyurl.com/ngwdflz)

The STAP stem cell saga, which began

with the publication of two papers in January, concluded in July with the retraction of those papers after lead author Haruko Obokata and co-author Charles Vacanti finally consented to retraction. Investigators found several problems with the papers, including doctored and duplicated images. Obokata was charged with misconduct by her institution, but still stands by her work. Vacanti has since stepped down as chair of the anesthesiology department at Brigham and Women's Hospital. In August, one of the paper co-authors, Yoshiki Sasai, committed suicide. In his suicide note, he tragically blamed the media attention from the retracted papers for his distress.

"Vials of Smallpox Virus Found in Unapproved Maryland Lab" by Sydney Lupkin, *ABC News*, July 8, 2014

> Vials of the virus that causes smallpox were found in a National Institutes of Health research building that was unequipped and unapproved to handle the deadly pathogen, according to the Centers for Disease Control and Prevention. Because it's so infectious, the smallpox virus is considered a bioterrorism threat and is only permitted in two labs in the world: One at the CDC's Atlanta headquarters and another at the VECTOR Institute in Russia. (http://tinyurl.com/n77vnxn)

Vials containing the smallpox virus were found in a cold storage room in an unapproved NIH laboratory. This sparked an investigation into government labs. Investigators eventually found six more vials of dangerous pathogens that were improperly stored and reported in other NIH and FDA labs. Furthermore, investigations into the CDC's bioterrorism labs found improper storage and handling of anthrax, leading to a government investigation and the eventual resignation of the head of the CDC's Bioterrorism Rapid Response and Advanced Technology lab.

"Europe Moves to Outlaw Organ Trafficking Worldwide" by Matthew Robertson, *Epoch Times*, July 17, 2014

> An official European representative body has promulgated a new convention outlawing the trafficking in human organs, calling on all countries to become signatories to it and criminalize the practice and punish offenders. The convention, called the 'Council of Europe Convention against Trafficking in Human Organs' was adopted by the Council of Europe's Committee of Ministers on July 9. The Council of Europe is composed of 47 member states; it does not make binding laws, but provides policy guidelines and promotes good governance. (http://tinyurl.com/md3ots3)

While it is difficult to determine how many illegal organ trafficking rings there are, news headlines this summer have reported illegal organ trafficking in Nepal, India, Kosovo, and China. China, especially, is a difficult dilemma because it is the most populous country in the world, and therefore, in need of organs for donation, but has few rules governing the practice. For years there have been several reports of Chinese authorities obtaining organs from prisoners and favoring rich foreigners in distributing those organs.

"More than 100 Genetic Locations Found to Be Linked to Schizophrenia" by Sara Reardon, *Scientific American*, July 22, 2014

> Researchers seeking to unpick the complex genetic basis of mental disorders such as schizophrenia have taken a huge step towards their goal. A paper published in *Nature* this week ties 108 genetic locations to schizophrenia — most for the first time. The encouraging results come on the same day as a US$650-million donation to expand research into psychiatric conditions. (http://tinyurl.com/mpwoe3z)

A report on the genetic markers for schizophrenia and another report on the genetic markers for autism were produced by the Psychiatric Genomics Consortium. They examined large genetic samples to find patterns in people with a psychiatric disease to compare with those who do not have the disease. For the schizophrenia study, samples were pooled from 150,000 people, in which 36,989 were diagnosed with this psychiatric condition. Researchers found 108 genetic locations that seem to coincide with people with schizophrenia. Bioethics issues from this research include among other considerations privacy issues regarding genetic data along with potential discrimination or eugenic practices from finding genetic markers for a mental illness.

"IVF Technique that Tests Embryos for Genetic Disorders Has First Success" by Ian Sample, *The Guardian*, July 27, 2014

> Doctors in London have reported the first pregnancy in Europe from a new IVF procedure that checks embryos for genetic disorders before they are implanted. The technique allows doctors to select embryos that are free of dangerous mutations carried by one or both parents even if the precise nature of the genetic defect is unknown. (http://tinyurl.com/ovuobd5)

In both the U.K. and the U.S., embryos created by IVF were successfully screened using genetic sequencing techniques. In the U.K. case, the doctors looked at a gene from one of the parents that codes for a type of muscular dystrophy that they did not want to pass on to their child. The doctors were able to remove a cell from an early embryo and screen it before implantation. Similarly, doctors in the U.S. sequenced the genome of several early embryos before implantation in an effort to select the "healthiest" looking embryo, ensuring a higher chance of a successful pregnancy. This technology has the potential to be used for eugenic purposes and has already been used to select embryos that do not have chromosomal abnormalities, such as Down syndrome.

NETWORKING

CBHD hosted the summer meeting for the Christian Medical and Dental Associations' Ethics Committee led by CBHD Senior Fellow, William P. Cheshire, Jr., MD, in the days leading up to the Center's 21st annual summer conference in June.

CBHD welcomed Cheyn Onarecker, MD, MA, as a new co-chair for the Healthcare Ethics Council (HEC). Dr. Onarecker joins Drs. Ferdinand D. Yates and Robert D. Orr in leading this important community of influence. A forum for all healthcare professionals, the HEC offers networking, sharing of resources such as case studies and recent publications, and a venue for discussing ethical issues in clinical practice and healthcare delivery. The HEC hopes to begin providing educational webinars within the next year.

MEDIA RESOURCES

CBHD.org on Twitter: @bioethicscenter

Bioethics.com on Twitter: @bioethicsdotcom

The Bioethics Podcast at thebioethicspodcast.com

Facebook Page at facebook.com/bioethicscenter

Linked-In Group at linkd.in/thecbhd

YouTube at youtube.com/bioethicscenter

The Christian BioWiki christianbiowiki.org

STAFF

PAIGE CUNNINGHAM, JD

- Interviewed in June by *Christianity Today* for a story on the U.S. Supreme Court's decision in the Hobby Lobby case.
- In June taught the Intensive Bioethics Institute.
- Delivered the closing address, "Reframing the Discussion of Bioethics in Transition" at the Center's 21st annual summer conference in June.
- Interviewed on "Karl and June Mornings" (Moody Radio Chicago) in August on Thai surrogate and contracting parents' rejection of a twin born with Down syndrome.
- Contributed "BioSurveillance: Your DNA, Art & Privacy" to the Fall 2014 Biohazards column for *Salvo* magazine.

MICHAEL SLEASMAN, PHD

- In June taught the Advanced Bioethics Institute and was a guest lecturer in several of the Center's summer Institute courses.
- Delivered the opening address, "Bioethics in Transition: Framing the Discussion" at the Center's 21st annual summer conference in June.
- Completed the entry on "Bioethics" for the forthcoming third edition of the *Evangelical Dictionary of Theology* edited by Walter Elwell and Daniel Treier.

HEATHER ZEIGER, MS, MA

- In early June submitted an article to *By Faith Magazine* on gestational surrogacy that included an interview with Paige Cunningham.
- Presented a parallel paper on opiate drug addiction and chronic pain at CBHD's 2014 summer conference in June.

ON THE CBHD BOOKSHELF

For those interested in knowing what books and articles the Center staff have been reading and thought worth highlighting. **Note that the resource includes material by members of the Center's Academy of Fellows.

On the Bookshelf:

Kampowski, Stephan. *A Greater Freedom: Biotechnology, Love, and Human Destiny* (in Dialogue with Hans Jonas and Jürgen Habermas). (Pickwick, 2013).

Kelsey, David. *Eccentric Existence: A Theological Anthropology.* (Westminster John Knox, 2009).

**MacKellar, Calum, and David Jones, eds. *Chimera's Children: Ethical, Philosophical, and Religious Perspectives on Human-Nonhuman Experimentation.* (Continuum, 2012).

Mehlman, Maxwell. *Transhumanist Dreams and Dystopian Nightmares: The Promise and Peril of Genetic Engineering.* (Johns Hopkins University Press, 2012).

**Meilaender, Gilbert. *Should We Live Forever? The Ethical Ambiguities of Aging.* (Eerdmans, 2013).

Miller, Mark. *The Quest for God and the Good Life: Lonergan's Theological Anthropology.* (Catholic University of America Press, 2013).

Articles of Note:

Accad, Michel. "Heterologous Embryo Transfer: Magisterial Answers and Metaphysical Questions." *The Linacre Quarterly* 81, no. 1 (2014): 38-46.

Appelbaum, Paul, Erik Parens, Cameron Waldman, Robert Klitzman, Abby Fyer, Josue Martinez, W. Nicholson Price II, and Wendy Chung. "Models of Consent to Return of Incidental Findings in Genomic Research." *Hastings Center Report* 44, no. 4 (2014): 22-32.

Bierer, Barbara, and Mark Barnes. "Research Misconduct Involving Noncompliance in Human Subjects Research Supported by the Public Health Service: Reconciling Separate Regulatory Systems." *The Intersection of Research Fraud and Human Subjects Research: A Regulatory Review,* special report, *Hastings Center Report* 44, no. 4 (2014): S2-S26.

COMING SOON: DISCUSSION OF POLST