

Center for Ethics in Science and Technology

ETHICS CENTER UPDATE

FALL-WINTER 2008

Message from the Co-Directors

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Our most recent Exploring Ethics program at the Fleet Science Center underlined the importance of the discussions sponsored by the Ethics Center. We were reminded that despite many significant changes over this past year, one thing that remains true is that our hopes and fears continue to be inextricably linked to science and technology. We necessarily turn to new technologies in nearly every dimension of our lives, including healthcare, energy, environment, water and food supply, defense, and security. And because so much depends on science and technology, we can't afford to ignore the difficult task of identifying, anticipating, and addressing the ethical challenges. In our December Exploring Ethics program, these issues were illustrated through a variety of wide-ranging examples including stem cells, clinical trials, vaccination, and genetic testing.

For this month's interview, we are delighted to hear from Nancy Vaughan, an attorney and a member of the Ethics Center Board of Advisors since 2005.

Although every member of our Board has been generous with his and her time and wisdom, Nancy deserves particular credit for challenging us to create the series of programs that have become our Exploring Ethics series.

By now, it is unlikely that anyone in San Diego having an interest in science could have missed hearing about the upcoming San Diego Science Festival. The Festival will occur over approximately one month from March 1 – April 4, 2009. The Ethics Center is participating in several ways. One of us (Mike) will be participating in the Nifty Fifty program to talk about science and ethics at Bernardo Heights Middle School on March 18th. Two of our Exploring Ethics Programs will be held during the Science Festival on March 4th (Our Robots, Our Selves) and April 1st (Science, Objectivity, and Ethics). Finally, a special program will be presented by the Ethics Center at the Fleet Science Center on Saturday, April 4th.

The second annual Ethics in Science Award program is just now being announced. As with

last year's program, we will be working closely with the Greater San Diego Science and Engineering Fair (<http://gsdsef.org>) to invite senior division students in the 2009 Science Fair to submit essays on an ethical issue related to the subject of their project. Five awards will be made to winners of the competition, with the winning essay receiving a check for \$500.

This month, we are devoting the back page of our newsletter to a brief essay on the subject of ethics and robotics. The rapid developments now occurring in robotics are not widely recognized, even though this technology is likely to profoundly change our lives. This essay is only the beginning of a series of activities and programs that the Ethics Center is contemplating to help our community think about these new developments.

Lawrence M Hinman
and
Michael Kalichman
Co-Directors

The Ethics Center and its activities have enjoyed generous support from:

Legler Benbough Foundation ~ The Parker Foundation
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EXPLORING ETHICS: *the science and ethics forum*

Exploring Ethics is an ongoing series of free, public events scheduled for the first Wednesday of each month, 5:30-7 pm, jointly sponsored by the Ethics Center and the Reuben H. Fleet Science Center. To be sure that we will have space for you, please RSVP in advance at <http://ethicscenter.net> and arrive by no later than 5:15 pm. Also, please note that program titles and schedules are subject to change depending on speaker availability and new developments in science and ethics.

RECENT EVENTS

Nov. 5, 2008, *Electronic Health Records: the Good, the Bad, and the Future*

The focus of this program was on the introduction of systems for electronic health records. To help guide us through the meaning and nature of these very important developments, we were fortunate to have two outstanding panelists: Pam Dixon, Executive Director, World Privacy Forum and John Macaulay, VP of Healthcare & LifeSciences, Anakam. Participants in this discussion learned about the variety of different kinds of electronic health records, reviewed some of the advantages of conversion to these systems, and identified some significant risks and challenges to be addressed. The audience and the speakers identified a number of things that we should be doing as individuals and that we might look for in our healthcare providers that will increase the chance that we gain the benefits of electronic record systems without also suffering some of the risks.



Pam Dixon

Dec. 3, 2008, *Retrospective: Science and ethics news stories of 2008*



For our final program of the year, we took the opportunity to look back at some of the most interesting science news stories of 2008. To do this, we turned to three well-known San Diego journalists who have a responsibility for reporting on new scientific developments and challenges: Bradley Fikes of the North County Times, Kenny Goldberg with KPBS, and Terri Somers from the San Diego Union-Tribune. Each of the panelists related one or more particularly interesting news stories that prompted considerable audience discussion. Some of the topics discussed included the conduct of clinical trials, the decision of whether or not to vaccinate our children, and stem cells.

UPCOMING EVENTS

Programs are already lined up for the first four months of 2009. The programs for March and April are being included as part of San Diego's Science Festival. We look forward to seeing you at all of these programs. You can RSVP at: <http://ethicscenter.net/Events/FleetProgram>

January 7, 2009, *Race and Culture in Medicine*

This panel will explore the complexities of race and culture in the practice of medicine. How do the concepts of race and culture alter the practice of medicine?

February 4, 2009, *Evolution: Whose responsibility is it?*

Scientific consensus about evolutionary theory remains as robust as for nearly any scientific theory, but the debate about including evolution in science education continues. Whose responsibility is it to bridge the gap between science and science policy?

March 4, 2009, *Our robots, our selves*

Will our robots be best friends forever—BFF? or best *enemies* forever—BEF? What would it mean to have a good life together with robots?

April 1, 2009, *Science, Objectivity, and Ethics: What is "Truth"?*

Does science provide us with "Truth" or only with interpretations that may be rooted in bias? How do we decide which interpretations of research findings are "correct"?

ETHICS IN SAN DIEGO

Nancy L. Vaughan, Partner, Lewis Brisbois Bisgaard & Smith

Ms. Vaughan has been practicing law in the healthcare field for many years, representing doctors, hospitals, dentists, veterinarians, and other practitioners. She teaches Bioethics at California Western School of Law where she is an Adjunct Professor. She is a founding member of the American Inns of Court in San Diego, an organization dedicated to the preservation of civility, ethics, and

professionalism in the legal community.

Ms. Vaughan served for 23 years on the Board of Trustees of the San Diego Humane Society. She is currently on the Board of the Senior Community Centers in San Diego and the Women’s Philanthropy Council of Sharp Mary Birch Hospital. She is a member of the Downtown Breakfast Rotary club.



Interview

How and why did you become involved in the Ethics Center?

I was very fortunate to be invited to be an Advisor to the Ethics Center by the (then) acting president of the San Diego County Bar Association. My reasons for saying "yes" must be obvious; this is a most interesting group of people with contacts throughout the scientific and biotech communities, and the ideas and issues discussed are fascinating. The more programs I attend, including debates about stem cell research, end-of-life decision making, and performance-enhancing drugs, the more committed I am to getting the word out about the resources the Ethics Center has to offer.

How would you describe the public reaction to the Center so far?

There is no doubt that people who have already attended a program or two are fascinated by the issues presented. I am personally very enthusiastic about the quality of the Center's programs to date, and as I see attendance growing, I am convinced that these discussions will continue to be a vital part of our San Diego community. Our efforts to reach high school students are just starting, and that will continue. I don't think it will be long before those students incorporate ethics into their own scientific research, businesses, parenting and teaching, and when that happens, we will truly see a snowball effect from our efforts.

What do you think is the Center’s most important achievement to date?

There are so many that it’s hard to single out one. Last year’s Neuroethics Week was wonderful. Our new partnership with the Reuben H. Fleet Science Center in Balboa Park gives us a central location for our Exploring Ethics series and a fixed date and time as well, so we can plan programs months in advance, allowing the public the ability to choose to attend specific programs that interest them. Additionally, the KPBS Exploring Ethics interviews that air before the programs have helped us spread the word about what the Ethics Center has to offer.

How can the Center do a better job of outreach to the legal community here in San Diego?

The key to attracting the legal community is to present programs that relate to the law and offer Continuing Legal Education Credits for attendance. There can be no doubt about the relevance of these programs to the legal profession. The legal implications of ethics in science and technology are astounding, and discussion of these issues has frequently been included in our programs. Again, having a central location and a fixed date and time will help attract not only members of the legal profession, but the clergy, the scientific community, and the lay public as well.

Is there any topic you would like to see addressed at a future Ethics Center forum?

The Ethics Center is 5 years old, and in that short time span, the focus of scientific research has continued to evolve and change, and so has the focus of ethics in science. We spent a lot of time discussing stem cells and end-of-life decision making when those issues were in the news several years ago. Now the focus is shifting to issues involving privacy, brain scans, and genetic testing. As science continues to change, I hope the Ethics Center will continue to engage the public in a dialogue about the important ethical topics that accompany those changes.

ETHICS AND SCIENCE: SPECIAL TOPIC

Why Robots Matter

Several years ago Mike Kalichman and I made a presentation on ethics and science for a San Diego site visit of the Council of Foundations. The group drove by various scientific institutions and stopped for presentations at the Neurosciences Institute. The presentation that Mike and I did went fine, but the true hit of the day was a soccer game. We watched two teams on Segways battle it out. Each team consisted of one human being and one robot. I remember standing there, thinking that even I could beat these teams, but I realized an inexorable truth: the robots would continue to get better, and I wouldn't.

That afternoon we saw the future. As the robot member of each team zipped around the playing field, the camera on the top of its head would swivel around until it saw the ball, then it zoomed in on it. Each team and its corresponding goal were color-coded so that the robots could easily recognize their team-mates and know where they were trying to score. The robots acquired data in real time, assessed their own position on the field along with those of their human team-mate and opponents, and oriented themselves to move the ball toward the goal while protecting their own goal from the opponents—all of this was done without human intervention.

The intriguing part of these robots is not their skill at soccer. It is the inevitable truth that they will get better coupled with another truth: once one robot figures out a better way to pivot and block, it's trivial to transmit the newly acquired information from one robot to all of them. The power of networking. Think about the amount of time and energy and money that humans spend on education; for robots, Enlightenment is only a daily download away.

There is yet another stunning element in this picture. Moore's Law, sketched out initially in 1965 by Intel's founder Gordon Moore, predicts the doubling of computer power every eighteen months. (Well, it's more complicated and precise than that, but this is a way of stating the implications of the law.) The laptop you can buy today for \$1000 should be twice as powerful as the one you bought in June 2007. Futurists such as Ray Kurzweil and Bill Joy have observed that while computing power continues to increase exponentially, human "thought power" remains comparatively flat, existing in isolated segments (human beings) rather than tightly-networked autonomous systems (robots).

The stuff of science fiction, but also the stuff of the coming decade. Robots currently care for the elderly in Japan, work for American soldiers in the Middle East, and assemble automobiles in Detroit without complaint or requests for health care or retirement benefits. One even vacuums my family room floor every morning at home. I don't think these robots will take over human civilization (or what claims to substitute for it), but I do think the question of the coming decade will be how can we live well with robots? Finding the answer to this question is an altogether fascinating and exciting challenge. Meeting this challenge will allow us to develop and expand, rather than lose, our humanity.

Lawrence M. Hinman, Ethics Center Co-Director



ABOUT THE ETHICS CENTER

The Center for Ethics in Science & Technology is an independent center that has a close working relationship with UC San Diego, the University of San Diego, and San Diego State University.

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