

June 26, 2008

Alexandra Hesse
Exhibitions Manager
The Leonardo, c/o SLCPL
210 East 400 South, Suite 14
Salt Lake City, UT 84111

RE: *Body Worlds 3* Exhibition

Dear Alexandra:

It is with great pleasure and pride that I submit, on behalf of the Utah Community Advisory Panel (the Panel), the Summary Report on ethics issues and educational value of the upcoming ***Body Worlds 3*** exhibition.

The overall opinion of the Panel was that the plastinated, real bodies are displayed in the context of science, medical, and health education, in an atmosphere of respect. The exhibition has clear and important educational value, and is appropriate for The Leonardo. More specifically, the Panel was unanimous in opinion that the most important ethics issue is proper body donation. The Panel went to great length to verify, to the Panel's satisfaction, that the exhibition adheres to high standards of ethical conduct. All Panel members reviewed the Body Donor Form and felt it was clearly written, thorough, and explicit. The informed consent form provides several use options open to the body donors. The informed consent form also encourages potential donors to discuss body donation with family members. Based on the effort of the Panel, two conclusions were reached.

- (1) High standards of informed consent guide the activity of *Body Worlds*. Foremost in the operating plan for *Body Worlds* is adherence to high standards of full and open disclosure of intended use of donated bodies so that potential donors may make informed decision.
- (2) The primary value of the exhibition is education of the lay public about human anatomy. Viewers of all ages, backgrounds, and levels of education will benefit from the exhibition.

We hope that our Summary Report is helpful to The Leonardo, as it prepares for the ***Body Worlds 3*** exhibition. The Panel members look forward to seeing the exhibition.

Sincerely yours,



Kurt H. Albertine, Ph.D.
Chair, Utah Community Advisory Panel
Professor of Pediatrics, Medicine (Adjunct), and Neurobiology & Anatomy (Adjunct)
Assistant Dean for Faculty Administration, School of Medicine
University of Utah
Editor-in-Chief, *The Anatomical Record*

Body Worlds 3: The Original Exhibition of Real Human Bodies & The Story of the Heart

Summary of Review by the Utah Community Advisory Panel June 19, 2008

Background

In May 2008, the The Leonardo in Salt Lake City established a Utah Community Advisory Panel (the Panel) to consider potential ethics issues related to and the educational value of the exhibition *Body Worlds 3: The Original Exhibition of Real Human Bodies & The Story of the Heart* (*Body Worlds 3*). The exhibition will debut in Salt Lake City, at The Leonardo, on September 19, 2008. Bringing such an international science exhibition to Utah and the Intermountain West states is an important step for promotion of biomedical science education in this region of the country. How fitting that *Body Worlds 3* arrives in Salt Lake City the same year that Dr. Mario Capecchi at the University of Utah, School of Medicine shared the Nobel Prize in Medicine and Physiology! Equally fitting is bringing the “Story of the Heart” to Salt Lake City, where decades ago the JARVIK-7 heart was implanted in Mr. Barney Clark.

Education about human anatomy, accompanied by examples of consequences of disease, sometimes related to unhealthy lifestyle choices, on anatomy, is presented in more than 200 real, preserved human specimens. The anatomic displays include entire bodies, as well as thin, transparent body slices, isolated body parts, and individual organs. Educational value is increased by providing descriptions of anatomy and physiology related to human health and disease. Those educational tools are complimented by animated video clips shown on neighboring flat screen monitors and informative narrative panels throughout the exhibition.

Body Worlds exhibitions have toured throughout Europe and Asia since 1995. The first exhibition in the United States was in Los Angeles, in 2004. Over 25 million people world-wide have viewed the exhibition. Several of the Panel members have seen the exhibitions and described them as having tremendous educational value. While *Body Worlds* has been and continues to be extremely successful with the viewing public, controversy has also accompanied the exhibition. Due to the nature of the exhibition, The Leonardo established a review process to assess *Body Worlds* as a special exhibition for Utah and the Intermountain West states. Central to this review process was convening a local Community Advisory Panel that was asked to assess and comment on the ethics issues related to and educational value of hosting the *Body Worlds 3* exhibition.

Overall Opinion of the Utah Community Advisory Panel

1. The plastinated, real bodies are displayed in the context of science, medical, and health education, in an atmosphere of respect.
2. The display of real bodies in everyday poses makes the exhibition compelling, but is also what makes it controversial. Without those very features, the exhibition would not be as powerful as an educational experience.
3. The exhibition has clear and important educational value, and is appropriate for The Leonardo.

4. The principal goal of the exhibition is aptly worded in the *Body Worlds*' catalog and web site: "For the medical enlightenment and appreciation of lay people".

Science Educational Value

Some people may consider controversial the *Body Worlds 3* exhibition that will visit The Leonardo in Salt Lake City this fall. This potential for controversy begs each potential visitor to ask two questions:

- Are the bodies in the exhibition obtained, processed, and displayed in an ethical manner?
- Should I see the *Body Worlds 3* exhibition?

The Utah Community Advisory Panel met to address both questions, as they apply to Utah and the Intermountain West states. A number of specific ethics and educational questions were asked and addressed, which should help people answer the first question. However, an affirmative answer to the first question may not answer the second. The purpose of this document is to address potential concerns that the viewing public might have from ethics perspectives, and to discuss why someone might wish to view the exhibition and identify who might benefit from such a viewing. *Body Worlds* has already provided a useful document on frequently asked questions and The Leonardo has prepared a special document, "Family Guide" that can be found on The Leonardo website at www.theleonardo.org. Nonetheless, the Panel's report expands on these topics to help answer the two questions posed above.

Are the bodies in the exhibition obtained, processed, and displayed in an ethical manner?

1. All the bodies need to be properly donated, meaning adequate information provided to potential donors for them to make a decision to donate.
 - The Panel was unanimous in opinion that this is the most important ethics issue. Proper body donation was verified to the Panel's satisfaction, as follows.
 - All Panel members reviewed the Body Donor Form and felt it was clearly written, thorough, and explicit. Descriptions of potential benefit, freedom to withdraw a donation at any time without explanation, and use for public display for education are presented in easy-to-understand language. Documents provided to potential donors include (1) Guide for Donors, (2) Guide for Survivors, (3) Body Donation Program, (4) Information Sheet: Body Donation for Plastination, (5) Embalming Information Sheet, (6) Medical History Release Authorization Form, and (7) Body Donor ID Card.
 - The informed consent form provides several use options open to the body donors, such as anonymity, understanding the plastinated body or organ is an 'anatomical work of art' or not, allowing it to be understood that the plastinated body may be exhibited as a work of art, agreeing or not to allow audiences 'to touch my plastinated body', and placing the donor's option to be an organ donor before preparation for plastination.
 - The informed consent form encourages potential donors to discuss body donation with family members.

2. The source of donated bodies was assessed through reading the public report from an independent audit of the donor forms at the Institute for Plastination, Heidelberg, Germany.
 - The report of the independent audit, submitted by an ethicist of international renown in 2004 to the California Science Center in Los Angeles (for the first *Body Worlds* exhibition in the United States), verified that all bodies donated to *Body Worlds* had a signed consent form, that the consent forms matched with death certificates, that the body specimens were properly donated for the purpose of public exhibition, and that the donor forms met established informed consent standards for Germany (which exceed the legal requirements for informed consent in clinical research and the customary forms for body donation for education to university-based Departments of Anatomy). Specific inquiry by the Panel was made regarding the source of fetal specimens. The displayed fetal specimens in the *Body Worlds 3* exhibition, which show normal fetal developmental stages in humans, were donated to *Body Worlds* for educational use by universities and/or museums that had collected the specimens decades ago but no longer wanted them. The fetal specimens were donated by those institutions, instead of destroying them.
3. Dr. Albertine traveled to the California Science Center in Los Angeles on June 7, 2008 to attend the first body donation program sponsored in the United States by *Body Worlds*.
 - Approximately 100 participants attended the program, most of whom are body donors to *Body Worlds*. The program was low-key and enticements were not used. Formal presentations were made by Dr. Angelina Whalley (President and CEO, Institute for Plastination), Dr. Gunther von Hagens (Founder, Institute for Plastination), and Mr. Jeffrey Rudolph (President and CEO, California Science Center). Principal among the presentation points was adherence to the highest standards of ethical conduct, with special emphasis on full, transparent, clear informed consent for use for plastination and public display of donated bodies. Open question periods followed each presentation. Dr. Albertine talked to about two dozen potential or committed body donors, each of whom demonstrated full knowledge of the intended use of donated bodies and their willingness for public display of plastinates for lay public education.

Should I see the *Body Worlds* exhibition?

Who should see *Body Worlds*?

The short answer is that anyone who has an interest in the human body or wants to learn about the human body should see this exhibition. We all have a body, have some rudimentary idea of how it is put together, and may at some time experience a problem with our body that will require medical treatment. What *Body Worlds 3* provides is an opportunity to see, in great detail, the construction of the human body. Many of the displays will also highlight health concerns, such as heart disease, cancer, and obesity.

The *Body Worlds 3* exhibition will provide something for each visitor, whether student or teacher, medical professional or patient, adult or child. The 3-dimensional nature of the displays and the close proximity of the observer to them will allow visitors to see what a medical student might see in a gross anatomy class, including parts that are typically difficult to see in undergraduate-level anatomy courses that some of the visitors may have taken. Furthermore, the real bodies that will be seen in this exhibition illustrate how variation among humans is more than skin deep, something that models often used to present human anatomy cannot do.

What will I see?

The *Body Worlds 3* exhibition presents the viewer with real human specimens shown both in whole and in part. The dissections provide many different ways of viewing the body that involve whole-body or partial plastinates. Plastination is a process by which fluids and soluble fats are replaced with resins and elastomers that preserve the dissections in a rigid manner. Many dissections are posed during plastination to create a model suitable for illustrating a particular everyday action or to provide a particular view of the body's systems or parts. Other cadavers are cut into thin sheets before plastination to provide views similar to those taken by computer imaging techniques, such as CT (computed tomography) scans. The displays in the *Body Worlds 3* exhibition are viewable from many angles, and offer the chance to see the body in many ways, including: superficial or deep; intact or in thin slices; and as individual organs, organ systems, or interacting organ systems within the whole body. While the entirety of the exhibition will be of general interest to all people, certain displays will be of greater interest to particular people. Some members of the Panel have seen this particular exhibition and have an idea of its educational value, which they believe is great.

The *Body Worlds 3* exhibition that will be visiting Salt Lake City will present “The Story of the Heart.” Those who view *Body Worlds 3* at The Leonardo will view the heart, including internal views that show the valves that allow our contracting heart to produce one-way flow of blood, and spectacular views of the vessels that carry our blood. Those views are made by filling the complex network of blood vessels with liquid resin that hardens, and is visible. Furthermore, the heart portion of the exhibition presents health issues pertinent to our community. An obesity epidemic has inflicted, you might say self-inflicted, our nation. Obesity can result in cardiovascular disease that can be seen in the damage done to a heart by a heart attack or in the comparison of a healthy artery to the heart to one with severe hardening by plaque formation (atherosclerosis). People should have the opportunity to view the differences between a healthy cardiovascular system and an unhealthy one. Ideally, seeing the consequences of unhealthy lifestyles first-hand may motivate viewers to make better lifestyle choices.

Although the *Body Worlds 3* exhibition that will visit The Leonardo will include “The Story of the Heart”, it will present far more than the cardiovascular system. Visitors will be able to see the relationship of the body's systems and parts to each other. Muscles and bones will be shown to illustrate how our body moves. The nervous system will be exhibited to illustrate how we control those muscles and receive sensory input, in addition to using language, processing information, and storing memories. The respiratory system displays will offer not just an understanding of how we bring the outside air into our lungs where it enters our bloodstream, but also a lesson in the consequences of smoking through examples of healthy lungs and those with cancer. The digestive system displays will show how food travels through the body. Those who have diabetes mellitus will also have an opportunity to view the pancreas, the amazing organ that produces digestive enzymes and normally produces insulin but fails to do so in those with that disease. The reproductive system displays may offer an opportunity for viewers to investigate topics such as enlarged prostates or breast cancer. Finally, the developmental display will allow viewers to see what they looked like, and how they changed, as they formed in the uterus.

What about children?

Body Worlds suggests that children 8 and up will “find the exhibits fascinating”. This should not, however, be viewed as a firm age-level recommendation. Only parents can determine if the displays will be appropriate for their children. The exhibition does contain full-body plastinates that include genitalia,

a section on the reproductive system, and a separate enclosed area that showcases prenatal development. In all cases, the focus is on education about the anatomy and physiology of the human body, and presents the material in a respectable yet artistic and informative manner. Many children below the age of 8 will find the displays fascinating and educational, too. The child of one Panel member viewed a similar exhibition at the age of 6, termed it “the best thing ever”, and still talks about the exhibition over 6 months later. Children, having not yet been taught that viewing the anatomy of the body is inappropriate, tend to react to the displays from a perspective of pure interest and amazement. Parents who choose to take their children should, however, be prepared to answer questions because the displays will get young minds thinking. Audio tours, available for an additional fee, may help parents answer questions about the displays.

How do I determine if my young child is ready to view *Body Worlds*?

Ask. Children are wonderfully honest when asked simple questions. Parents can best determine how to ask their child about this exhibition. One approach would be to ask if they are interested in seeing an exhibition about the human body. Follow-up by adding that the exhibition is preserved displays of real people, or the body parts of real people, who decided to donate their body for the education of others, after they died. Ask if the child would be ok with seeing such displays and if they would like to know what to expect. The Leonardo provides a family guide that may be of assistance. The family guide includes several photos that you may wish to show to your child to determine her/his reaction prior to deciding to attend the exhibit. Additional photos can be found on the *Body Worlds* website at www.bodyworlds.com.

Your child’s reaction should provide you with an estimate of their interest in and comfort with the exhibition. We encourage parents who are uncertain if the exhibition is appropriate for their child to view the exhibition without their child prior to making a decision, just as you might screen a movie or television program.

Conclusions of the Utah Community Advisory Panel

- High standards of informed consent guide the activity of *Body Worlds*. Foremost in the operating plan for *Body Worlds* is adherence to high standards of full and open disclosure of intended use of donated bodies so that potential donors may make informed decision.
- The primary value of the exhibition is education of the lay public about human anatomy. Viewers of all ages, backgrounds, and levels of education will benefit from the exhibition.



Kurt H. Albertine, Ph.D.

Chairman

Utah Community Advisory Panel for The Leonardo

Utah Community Advisory Panel

The Utah Community Advisory Panel for the *Body Worlds 3* exhibition was composed of the following educational, medical, and bioethics leaders in the state of Utah:

Kurt H. Albertine, Ph.D. (Chairman)

Professor of Pediatrics, Medicine (Adjunct), and Neurobiology and Anatomy (Adjunct)
Training Director, Children's Health Research Center
Director, Research Microscopy Facility
Assistant Dean for Faculty Administration, School of Medicine
Editor-in-Chief, The Anatomical Record
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Margaret P. Battin, Ph.D.

Distinguished Professor
Univeristy of Utah

Barry C. Beutler, M.D.

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Jeffrey R. Botkin, M.D., M.P.H.

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Daryll B. DeWald, Ph.D.

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Professor and Head
Utah State University

Catherine Earl, D.P.A., M.S.N., R.N.

Chair and Professor, Nursing Department
Undergraduate & Graduate Nursing Programs
Weber State University

Elaine Englehart, Ph.D.

Distinguished Professor of Ethics
Special Assistant to the President
Utah Valley University

Robert L. Eves, Interim Dean

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Michael A. Popich, Ph.D.

*Professor of Philosophy
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Westminster College*

Curt Walker, Ph.D.

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Liz Zentner, R.N.

Utah PTA Health Commissioner