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Dear Readers,

An all-new Gunther von Hagens’ BODY WORLDS is coming to Portland. BODY WORLDS & The Brain makes its Pacific Northwest debut at OMSI starting October 20, for a limited engagement.

For the next several months, visitors to the Oregon Museum of Science and Industry will experience a pioneering anatomical exhibition that will change the way you think about the human body. Attendance records have been shattered everywhere this exhibit has been showcased. We’re confident Oregon will be no exception.

Thank you for taking a few minutes to read this special section and learn more about BODY WORLDS and Plastination, the scientific breakthrough Dr. von Hagens invented that offers us insight into anatomy, health and what it really means to be human.

Once again, OMSI is proudly delivering on its mission to inspire wonder and improve the public’s understanding of science and technology. See you at OMSI!
Gunther von Hagens' BODY WORLDS & the brain

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The Benson
BODY WORLDS gives visitors a penetrating look at the form and function of the human body, merging anatomy, neuroscience, and philosophical musings with a special feature on the brain.

In the striking fetal development area, embryos ranging from four to eight weeks show the vital organ taking shape: the neural plate folding in on itself, thickening its width, and developing three bulges—the forebrain, the midbrain, and the hindbrain. By the sixth week, the three bulges become five, differentiating more areas of the brain; the cerebral hemispheres develop from the forebrain. The visitor is able to see swellings on either side of the embryo’s forebrain that bloom into retinas of the eyes. The display featuring infant brain development is introduced by neuroscientist, Daniel Levitin’s memorable quote: “All infants are born in a state of psychedelic splendor ...”

The adolescent’s penchant for risky behavior is summed up in an installation about the prefrontal cortex accompanied by a display called Smells Like Teen Spirit in which teenagers from Jane Austen to Bill Gates to The Beatles are celebrated. Visitors can also see the fully developed adult brain, plastinated vertical and horizontal slices of real human brain that show the interior of the brain. There are interpretive narratives about memory, creativity, and intelligence, differences in gender and personality, emotions from stress to love, and addictions and dreams. The aging brain as well as ways to keep the brain fine-tuned are presented in multimedia displays that include BODY WORLDS whole body plastinates, such as The Ponderer.

This special review of the brain interjects encyclopedic and clinical information with compelling views of the actual physical brain from conception to old age, new insights from MRI and Plastination technology, and the developing canon of findings in neuroscience.

In BODY WORLDS, the functioning brain is also viewed through the lens of literature. Writers, poets, and scientists, both famous and obscure, articulate their wisdom, fascination, and awe of the brain in banners interspersed throughout the galleries. “What seems astonishing is that a mere three-pound object, made of the same atoms that constitute everything else under the sun, is capable of directing virtually everything that humans have done: flying to the moon and hitting seventy home runs, writing Hamlet and building the Taj Mahal -- even unlocking the secrets of the brain itself,” declares editor Joel Havemann, who was diagnosed with Parkinson’s Disease at the age of 45.

And UC San Diego neuroscientist, Dr. William Mobley states: “We’re now at the beginning of an era where it’s possible for the first time to understand the brain and by so doing to understand ourselves ... What we learn by studying the brain will change fundamentally every aspect of our existence. We will change who we are, as a society, as a result of our science.”

The multidimensional exhibit strikes a celebratory chord about the brain. “The brain is the one organ in the body about which new discoveries are made every day, and about which our knowledge is constantly evolving,” said Dr. Angelina Whalley, designer of the exhibition. “Rather than giving only anatomical information, I wanted to present a holistic meditation on this most complex organ in an elegant way, that would be accessible to the general public,” she said.
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Visitor Information

**LOCATION AND PARKING:** OMSI • 1945 SE Water Ave. • Portland, Ore. 97214
Parking at OMSI is $3 and free for OMSI members. Please carpool or use public transportation whenever possible.

**EXHIBITION OPENING:** October 20, 2011
**EXHIBIT HOURS:** 9:30 a.m. to 5:30 p.m. Sunday—Thursday
9:30 a.m. to 9:00 p.m. Friday and Saturday
_Last available tickets are sold at 4:30 p.m. Sunday-Thursday and 8:00 p.m. Friday-Saturday._

**Please read before visiting**

**PHOTOGRAPHY AND VIDEOTAPEING ARE STRICTLY PROHIBITED IN THE EXHIBITION.**

**IMPORTANT INFORMATION:**
- _Gunther von Hagens’ BODY WORLDS & The Brain_ is open to visitors of all ages; however, OMSI recommends it for children ages 10+. OMSI asks children under 12 be accompanied by an adult. Youth visitation is at the discretion of the parent/guardian.
- The specimens come from voluntary body donors who agreed that, upon their deaths, their bodies could be used for public display in a BODY WORLDS exhibition.
- All specimens are preserved by a process called Plastination, invented by Dr. Gunther von Hagens. The plastinates are odorless and completely dry, and each is accompanied by a description in English.
- The exhibition is wheelchair accessible.

**CAUTION FOR SENSITIVE VIEWERS:**
- Eyes and genitals of the bodies remain, and there are areas that explore reproduction.

**VISITING BODY WORLDS & The Brain WITH A CHILD:**
- Relate elements of the exhibition to experiences in your child’s life: “Did you know you use so many muscles when you play soccer?”
- Answer your child’s questions honestly. It’s okay not to know all the answers. Please ask staff and, when you get home, visit www.OMSI.edu for additional information.

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**Gunther von Hagens’ BODY WORLDS & The Brain Tickets**

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- Timed ticketing is used for the exhibit. Advance reservations are recommended. Re-entry is not permitted once you have exited the exhibit hall.
- Ticket prices also include general admission to the other OMSI exhibits.
- For student field trips or group reservations, please call 503-797-4661.

WWW.OMSI.EDU • WWW.BODYWORLDS.COM
In addition to stress that can increase a person’s vulnerability to heart disease and high blood pressure, there are several types of thoughts that affect physical health.

Organizers of BODY WORLDS & The Brain follow the work of neuroscientists and brain researchers as a matter of course, in order to integrate their findings into the anatomical exhibition. “It’s the one field in science where the boundaries of what is known keeps expanding further and further,” said Dr. Angelina Whalley, designer of the exhibit. “I try to advance compelling information about the brain by updating the exhibition whenever I can, but there are some types of knowledge that cannot be rendered in an exhibition, such as findings about cognition’s relationship to physical health,” she said.

She finds new research about thoughts that are bad for one’s health essential to share with the public. In addition to stress that can increase a person’s vulnerability to heart disease and high blood pressure, there are several types of thoughts that affect physical health. Pessimism, the tendency to believe in the worst, can exacerbate stress as well as affect the immune system. The buildup of plaque in the arteries leading to heart disease have been found to be more prevalent in those with a disposition for gloom and doom.

Anxiety and worry are another source of illness. In one longitudinal study, seniors who were outgoing, mellow, and happy go lucky were found to have a 50 percent lower risk of dementia than those who were

People who are prone to worry tend to smoke or drink more and exercise less. Becoming a participant in a sport rather than just a spectator is a healthy change for both your mind and body.

**The Soccer Player >**

This specimen shows the superficial and intermediate layers in action. Contrary to the classical study of muscles in a reclined position, this plastinate shows that muscles in action have different lengths, according to their contraction degree. The stronger a muscle contracts, the shorter it becomes.
anxious and worried in their outlook. People who were prone to worry tended to smoke or drink more and exercise less, and were susceptible to a host of ailments.

In more than 20 studies, people who are disorganized, impulsive, and lacking a sense of self-control fared poorly when compared to those who were self-disciplined and organized. Those who led chaotic lives tended to smoke and drink more and lived shorter lives compared to conscientious individuals who were in control of themselves and their surroundings.

A study of 1200 elders found that those who lacked meaning in their lives had poorer health, more levels of stress hormones, weaker immune systems, and suffered from dementia at a pronounced rate. Those who had a sense of purpose and derived meaning in their lives lived longer and in better health.

Anger and cynicism were found to be dangerous to one’s health. Angry people and those who were suspicious of the motives and actions of others were found to be 25 percent more likely to develop heart disease. Hostile people, one researcher says, experience more stress which increases the level of an immune system protein called C3, which exacerbates diseases including diabetes.

“The old adage, ‘you are what you think’ appears to hold more than a grain of truth,” said Dr. Whalley. “To live a long and healthy life, cognitive science is telling us that we must change the channel and the quality of our thoughts,” she said.
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Gunther von Hagens’ life reads like an archetypal scientist’s resume - distinguished by early precocity, scholarship, discovery, experimentation, and invention. It is also the profile of a man shaped by extraordinary events, and marked by defiance and daring.

Von Hagens’ two year imprisonment by East German authorities for political reasons, his release after a $20,000 payment by the West German government, his pioneering invention that halts decomposition of the body after death and preserves it for didactic eternity, his collaboration with donors including his best friend, who willed and entrusted their bodies to him for dissection and public display, and his role as a teacher carrying on the tradition of Renaissance anatomists, make his a remarkable life in science.

Anatomist, inventor of Plastination, and creator of BODY WORLDS—the anatomical exhibitions of real human bodies—von Hagens (christened Gunther Gerhard Liebchen) was born in 1945, in Alt-Skalden, Posen, Poland—then part of Germany. To escape the imminent and eventual Russian occupation of their homeland, his parents placed the five-day-old infant in a laundry basket and began a six-month trek west by horse wagon. The family lived briefly in Berlin and its vicinity, before finally settling in Greiz, a small town where von Hagens remained until the age of 19.

As a child, he was diagnosed with a rare bleeding disorder that restricted his activities and required long bouts of hospitalization that he says, fostered in him a sense of alienation and nonconformity. At age 6, von Hagens nearly died and was in intensive care for many months. His daily encounters there with
doctors and nurses left an indelible impression on him, and ignited in him a desire to become a physician. He also showed an interest in science from an early age, reportedly “freaking out” at the age of twelve during the Russian launch of Sputnik into space. “I was the school authority and archivist on Sputnik,” he said.

In 1965, von Hagens entered medical school at the University of Jena, south of Leipzig, and the birthplace of writers Schiller and Goethe. His unorthodox methods and flamboyant personality were remarkable enough to be noted on academic reports from the university. “Gunther Liebchen is a personality who does not approach tasks systematically. This characteristic and his imaginativeness, that sometimes let him forget about reality, occasionally led to the development of very willful and unusual ways of working—but never in a manner that would have harmed the collective of his seminary group. On the contrary, his ways often encouraged his fellow students to critically review their own work.”

While at the university, von Hagens began to question Communism and Socialism, and widened his knowledge of politics by gathering information from Western news sources. He later participated in student protests against the invasion of Czechoslovakia by Warsaw Pact troops. In January, 1969, in the guise of a vacationing student, von Hagens made his way across Bulgaria and Hungary, and on January 7th, attempted to cross the Czechoslovakian border into Austria and freedom. He failed, but made a second attempt the very next day, at another location along the border. This time the authorities detained him. “While I was in detention, a sympathetic guard left a window open for me so that I could escape. I hesitated and couldn’t make up my mind, and that decision cost me a great deal,” he says.

Gunther von Hagens was arrested, extradited to East Germany, and imprisoned for two years. Only 23 years old at the time, the iconoclastic von Hagens was viewed as a threat to the socialist way of life, and therefore in need of rehabilitation and citizenship education. According to the prison records for Gunther Liebchen, “The prisoner is to be trained to develop an appropriate class consciousness so that in his future life, he will follow the standards and regulations of our society. The prisoner is to be made aware of the dangerousness of his way of behaving, and in doing so, the prisoner’s conclusions of his future behavior as a citizen of the social state need to be established.”

Thirty-six years after his incarceration, Gunther von Hagens finds meaning and even redemption in his lost years. “The deep friendships I formed there with other prisoners, and the terrible aspects of captivity that I was forced to overcome through my fantasy life, helped shape my sense of solidarity with others, my reliance on my own mind and body when denied freedom, and my capacity for endurance. All that I learned in prison helped me later in my life as a scientist.”

In 1970, after West Germany’s purchase of his freedom, von Hagens enrolled at the University of Lubeck to complete his medical studies. Upon graduation in 1973, he took up residency at a hospital on Heligoland—a duty free island where the access to cheap liquor resulted in a substantial population of alcoholics. A year later, after obtaining his medical degree, he joined the Department of Anesthesiology and Emergency Medicine at Heidelberg University, where he came to a realization that his pensive mind was unsuitable for the tedious routines demanded of an anesthesiologist. In June 1975, he married Dr. Cornelia von Hagens, a former classmate, and adopted her last name. The couple had three children, Rurik, Bera, and Tona.

In 1977, while serving as a resident and lecturer—the start of a nearly twenty year career at the university’s Institute of Pathology and Anatomy—von Hagens invented Plastination, his ground breaking technology for preserving anatomical specimens with the use of reactive polymers.

“I was looking at a collection of specimens embalmed in plastic. It was the most advanced preservation technique then, where the specimens rested deep inside a transparent plastic block. I wondered why the plastic was poured and then cured around the specimens rather than pushed into the cells, which would stabilize the specimens from within and literally allow you to grasp it.”

He patented the method and over the next six years, von Hagens spent all his energies refining his invention. In Plastination, the first step is to halt decomposition. “The deceased body is embalmed with a formalin injection to the arteries, while smaller specimens are immersed in formalin. After dissection, all bodily fluids and soluble fat in the specimens are then extracted and replaced through vacuum-forced impregnation with reactive resins and elastomers such as silicon rubber and epoxy,” he says. After posing of the specimens for optimal teaching value, they are cured with light, heat, or certain gases. The resulting specimens or plastinates assume rigidity and permanence. “I am still developing my invention further, even today, as it is not yet perfect,” he says.

During this time, von Hagens started his own company, BIODUR Products, to distribute the special polymers, equipment, and technology used for Plastination to medical institutions around the globe. Currently, more than 400 institutions in 40 countries worldwide use Gunther von Hagens’ invention to preserve anatomical specimens for medical instruction. In 1983, Catholic Church figures asked Dr. von Hagens to plastinate the heel bone of St. Hildegard of Bingen, (1090-1179), a beatified mystic, theologian, and writer revered in Germany. His later offer to perform Plastination on Pope John Paul II foundered before serious discussions.

In 1992, von Hagens married Dr. Angelina Whalley, a physician who serves as his Business Manager as well as the designer of the BODY WORLDS exhibitions. A year later, Dr. von Hagens founded the Heidelberg-based Institute for Plastination, which offers plastinated specimens for educational use and for BODY WORLDS, which premiered in Japan in 1995. To date, the exhibitions have been viewed by more than 33 million people, in more than 60 cities across Europe, Asia, and North America. His continued efforts to present the exhibitions, even in the face of opposition and often blistering attacks are, he says, the burden he must bear as a public anatomist and teacher. “The anatomist alone is assigned a specific role—he is forced in his daily work to reject the taboos and convictions that people have about death and the dead. I myself am not controversial, but my exhibitions are, because I am asking viewers to transcend their fundamental beliefs and convictions about our joint and inescapable fate.”
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In her formative years, Angelina Whalley -- creative designer and conceptual planner of Gunther von Hagens’ BODY WORLDS exhibitions -- wanted to be a surgeon. “I knew very early in life that I wanted to help sick people, one person at a time, and that medicine was the sphere in which I would be able to do that,” she said.

In 1986, with her medical degree from the University of Heidelberg in hand and a promising surgical career ahead of her, Dr. Whalley signed up for an intensive course in dissection to hone her skills for the operating room. Fortuitously, the course was taught by anatomist, Dr. Gunther von Hagens, with whom she would forge a bond, both professional and personal (the couple were married in 1992), that has lasted for more than two decades.

During the early years of Dr. von Hagens’ explorations in plastination, Whalley expected to defer her career and her commitment to help the sick only temporarily. “I wanted to help his efforts which I felt were a monumental achievement in the field of anatomy, but I was certain that I did not wish to have my professional fate tied to the success or failure of his work,” she said.

In 1995, after she assumed her role in the BODY WORLDS exhibitions as its creative and conceptual designer, Whalley expected to defer her career and her commitment to help the sick only temporarily. “I wanted to help his efforts which I felt were a monumental achievement in the field of anatomy, but I was certain that I did not wish to have my professional fate tied to the success or failure of his work,” she said.

In 1998, after she assumed her role in the BODY WORLDS exhibitions as its creative and conceptual designer, she strove to present the specimens, organs, and plastinates in ways that would engage visitors. “I wanted to further our mission of health education, by ennobling the post-mortem body and without sacrificing aesthetics. I try to present the body in a dramatic, memorable, beautiful way so that people can learn about anatomy, disease, and health,” Whalley said.

In an effort to go beyond literal health education, as conventional anatomy has elucidated since the Renaissance, and as the BODY WORLDS exhibitions were doing until 2004, Whalley introduced philosophy as an organizing ethos in the exhibit. The juxtaposition of the plastinates with ruminations about life and death by the likes of Shakespeare, Nietzsche and Goethe helped create an atmosphere of awe and reverence in the exhibition halls, that many visitors liken to a spiritual awakening.

Whalley also introduced the principle of comparative anatomy to the exhibitions, where diseased organs were placed next to healthy organs to striking effect. “The body is so fragile and vulnerable, and yet so resilient and forgiving,” she says. “It has a memory so that what we do to it matters, but it also has a dynamic consciousness so that giving up unhealthy lifestyles or taking up exercise, even small changes, can make a difference.” The arresting sight of the blackened lung of a cigarette smoker next to a healthy lung has prompted countless visitors to swear off smoking, while the diseased shrunken liver next to its healthy counterpart has prompted many to surrender alcohol.

Now that 33 million visitors in more than 60 cities across Europe, Asia, and North America have seen the BODY WORLDS exhibitions, many of them inspired to change their lifestyles and make a commitment to health, Dr. Whalley rarely regrets abandoning her career as a surgeon. “It is profoundly moving for me to see women of childbearing age linger at the fetal development section and encounter prenatal life for the first time, or see teenagers in leather jackets and blue jeans ditch their cigarette packs because some part of them finally acknowledged that smoking was no longer cool,” she said.

She has also embraced her unexpected career as an influential public health advocate. “I have been able to educate far more people about health than I ever would have if I had been a surgeon,” she says.
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Lessons In Life

A BODY WORLDS donor leaves behind an enduring legacy

Autopsy Body After Plastination or “Muscle Man Plastinate” looks like he stepped out of the pages of Leonardo da Vinci’s Notebooks. His muscles have high definition, his calves and thighs look strong and chiseled, his face is set in determination.

It is a testament to the power of Plastination -- anatomist and physician, Dr. Gunther von Hagens’ groundbreaking anatomical preservation method – that the figure in question, 77 years old at the time of his death from heart failure, looks to be a man in the prime of his life.

During his lifetime, the man smoked, ate and drank alcohol to excess. He lived alone and was diagnosed with psychological problems. But he managed to prolong his life because of his physical activity as a laborer. “We can draw important lessons about pursuing health lifestyles from this donor,” says Dr. von Hagens.

When the man donated his body to the Institution for Plastination, he had given his consent for his post mortal body to be used for public education through autopsy and anatomical display. In 2002, Dr. von Hagens carried out the autopsy, after securing additional permission from the donor’s family.

The images of the donor during his autopsy show the tragedy of death. But as a plastinate, he looks like a splendid Renaissance sculpture. “Under our skin and below the fat tissues, the muscles remain lean and strong even as we turn old. The only way, one can determine age in plastinated specimens, according to Dr. von Hagens, is by looking at the condition of fingernails. “We need to inspire ourselves to match our outer selves to that self which is already beneath our skin,” he says.

After the donor’s body went through the process of Plastination, Dr. von Hagens invited the man’s family to view their father’s body in its post-mortal state. “They were deeply moved, for in death their father seemed to be embody the vitality and health that eluded him all his life.”

Although the Institute for Plastination’s Body donation program retains a strict policy of anonymity the family of this donor knew that reveling some details about his life would be beneficial to the public. They have said they are proud that their father’s life, death, and post-mortal state offer valuable lessons to the living.
OMSI and OHSU are hosting a number of interactive \textit{BODY WORLDS & The Brain} activities designed to inform and entertain exhibit visitors. Activities include:

\textbf{OHSU Exhibits}

Hallway exhibits will feature OHSU medical professionals to talk about weekly topics and provide posters and pamphlets. OHSU Ask-the-Expert will be available in the OHSU display area on Saturdays.

\textbf{Reserved Labs}

\textit{Brainpower:} Learn how to become a memory champion, master of optical illusions, and rotate objects using the power of your mind. We’ll peer inside a sheep’s brain, and compare structures we find there to our own brains. What will YOU discover inside your own head? \textit{Grades 3-8}

\textit{Sense-Sational Science:} Explore a range of human senses and uncover why and how we use them. We’ll take a look at the usual 5 senses – touch, taste, sight, smell and sound – and delve into some other senses such as balance, temperature, and pain. Activities will test your balance, find your blind spot, and trick your taste buds. \textit{Grades 3-8.}

\textbf{OHSU Brain Awareness Lecture Series at the Newmark Theater, January-March 2012}

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October 2011

20 Body Worlds & The Brain

22 OHSU Brain Institute “Saturday Brain Experts” 1pm at OMSI: Pain and the Brain: Where do you feel pain? - Mary Heinriche, PhD

24 & 25 Heart saver First Aid with CPR and AED 6pm-10pm at OMSI

24 Brain Storm: Exploring the Genesis of Innovation - 7pm at McMenamin’s Bagdad Theater. Onstage conversations with: Mia Birk - Co-founder of Alta Planning + Design, Innovator of bicycling policies, Jean Auel – Novelist, Author of Clan of the Cave Bear and the “Earth’s Children” series, Larry Sherman - Head of the Sherman Lab at the Oregon National Primate Research Center at OHSU, Pioneering researcher in MS and the aging process

25 Body Worlds & The Brain Teacher Open House at OMSI. Teacher ID required. Visit omsi.edu/open-house for more information.

26 OMSI After Dark: Shaken & Stirred. Discover the science of mixology with local OMSI After Dark: Shaken & Stirred.

29 OHSU Brain Institute “Saturday Brain Experts” 1pm at OMSI: Birdsong and the Brain: Can you learn about learning from the birds? - Claudio Mello, PhD

November 2011

2 Body Worlds & The Brain First Wednesday Artists Night 6pm-9pm at OMSI: Special pricing for artists to create, draw and sketch inside the exhibition

5 OHSU Brain Institute “Saturday Brain Experts” 1pm at OMSI: Images of the Brain - Can we unlock the secrets inside the brain by looking? - Bill Rooney, PhD

9 & 10 Heart saver First Aid with CPR and AED at 6pm-10pm OMSI

12 OHSU Brain Institute “Saturday Brain Experts” 1pm at OMSI: Balance and the Brain: How do you stay upright? - Fay Horak, PhD

17 Great American Smoke Out

18 Heart saver First Aid with CPR and AED at 6pm-10pm OMSI

19 OHSU Brain Institute “Saturday Brain Experts” 1pm at OMSI: Seizures and the Brain: How do you control an electrical storm in the brain? - Martin Salinsky, MD

24 Thanksgiving – OMSI Closed

25-30 American Red Cross Body Worlds blood drives. All presenting donors will receive one pass to Body Worlds. Only valid at blood drives held at the Portland, Salem and Clark County, WA Donor Centers. To make an appointment call 1-800-RED-CROSS or visit redcrossblood.org. Some restrictions may apply.

26 OHSU Brain Institute “Saturday Brain Experts” 1pm at OMSI: Global Health and the Brain: Who cares for brains around the world? - Peter Spencer, PhD

30 OMSI After Dark: Create to Innovate. It’s all homegrown! From bikes to brew and arts to science, 6-10pm at OMSI

December 2011

1-3 American Red Cross Body Worlds blood drives. All presenting donors will receive one pass to BODY WORLDS. Only valid at blood drives held at the Portland, Salem and Clark County, WA Donor Centers. To make an appointment call 1-800-RED-CROSS or visit redcrossblood.org. Some restrictions may apply.

3 OHSU Brain Institute “Saturday Brain Experts” 1pm at OMSI: Healthy Aging and the Brain: What is the Oregon model for aging in place? - Tamara Hayes, PhD

9 & 10 Heart saver First Aid with CPR and AED at 9am - 5pm OMSI

7 Body Worlds & The Brain First Wednesday Artists Night 6pm-9pm at OMSI: Special pricing for artists to create, draw and sketch inside the exhibition – all ages welcome, young artists encouraged to attend

10 OHSU Brain Institute “Saturday Brain Experts” 1pm at OMSI: Safety and the Brain: How can you keep your brain safe? - Nicole Skala

17 OHSU Brain Institute “Saturday Brain Experts” 1pm at OMSI: Distraction and the Brain: Look over here! Wait, look over there! Why? - Andrew McCollough

19 & 20 Heart saver First Aid with CPR and AED at 6-10pm OMSI

25 Christmas – OMSI Closed

January 2012

4 Body Worlds & The Brain First Wednesday Artists Night 6pm-9pm at OMSI: Special pricing for artists to create, draw and sketch inside the exhibition

7 OHSU Brain Institute “Saturday Brain Experts” 1pm at OMSI: Phantom Limbs and the Brain - Can you fool the brain and end the pain? - Beth Darnall, PhD

9 OMSI Science Pub 7pm-9pm at the Bagdad Theater: Lust, Chocolate and Prairie Voles: The Neuroscience of Pleasure and Love with Larry Sherman PhD, a senior scientist at the OHSU Brain Institute

9 “What’s Your Type?” Singles Mixer 6pm-9pm at OMSI: Are you compatible? American Red Cross Blood type testing

14 OHSU Brain Institute “Saturday Brain Experts” 1pm at OMSI: Communication and the Brain - Speaking your mind — Is there a brain wave voice for the voiceless? - Melanie Fried Oken, PhD

19 Alzheimer’s Event at OMSI

21 OHSU Brain Institute “Saturday Brain Experts” 1pm at OMSI: Hearing and the Brain - How does the brain create meaning from noise? - Lina Reiss, PhD

25 OMSI After Dark: Nerds and Curds – Science Uncorked. Savor the wine, sample the cheese, and taste why they make a good pair. 6-10pm at OMSI

26 Autism Event at OMSI

28 OHSU Brain Institute “Saturday Brain Experts” 1pm at OMSI: Nutrition and the Brain - Are you eating the best food for a healthy brain? - Dan Marks, MD, PhD

February 2012

1 Body Worlds & The Brain First Wednesday Artists Night 6pm-9pm at OMSI: Special pricing for artists to create, draw and sketch inside the exhibition – all ages welcome, young artists encouraged to attend

3 Wear Red Day – Show up in your red to support the American Heart Association and receive a special discount for Body Worlds & The Brain 9:30am – 9pm at OMSI

4 OHSU Brain Institute “Saturday Brain Experts” 1pm at OMSI: The Heart and the Brain - Do you keep them both healthy the same way? - Kent Thornburg, PhD

6 OMSI Science Pub 7pm-9pm at the Bagdad Theater: Lust, Chocolate and Prairie Voles: The Neuroscience of Pleasure and Love with Larry Sherman PhD, a senior scientist at the OHSU Brain Institute

9 OHSU Brain Institute “Saturday Brain Experts” 1pm at OMSI: Communication and the Brain - How does the brain organize learning? - Jackie Wirz, PhD

11 OHSU Brain Institute “Saturday Brain Experts” 1pm at OMSI: Knowledge and the Brain - How does the brain organize learning? - Jackie Wirz, PhD

18 OHSU Brain Institute “Saturday Brain Experts” 1pm at OMSI: Music and the Brain - Why does it have such an effect on you? - Larry Sherman, PhD

25 OHSU Brain Institute “Saturday Brain Experts” 1pm at OMSI: Poison and the Brain - How do toxins hurt the brain? - Lisbeth Ward-Fowler, RN

29 OMSI After Dark: Bridgetown BaconFest. Portland is obsessed with two things—bridges and bacon! Explore the engineering behind Portland’s newest bridge while enjoying the candy of meat. 6-10pm at OMSI

March 2011

3 OHSU Brain Fair: A Cerebral Celebration of Oregon Brains! at OMSI.

4 Body Worlds & The Brain closes

Please check OMSI.edu for updates and information about additional features to enhance your visit to Body Worlds & The Brain.

Body Worlds offers hands-on educational experiences including several brain/biology demonstrations (touch plastinates, DNA extraction, Three Pounds of Flubber, LEGO DNA, inheritable traits, neuron catch-game, optical illusions, reaction time, AND MORE). All day on weekends and mornings on Tuesdays and Wednesdays at OMSI. Please check daily schedules at OMSI’s front desk.

< The Ring Man  This plastinate reveals the strength of the muscular system in the entire body.
The Five Steps of The Plastination Technique

Plastination is a process that unites extremely subtle forms of anatomy and advanced polymer chemistry. It permits isolated tissue organs and even whole bodies to be preserved in an extraordinarily durable and realistic way.

Plastination is a unique method of preserving tissue in a life-like state. It is a vacuum process in which biological specimens are impregnated with reactive polymers like silicone rubber, epoxy or polyester resin.

1. **To stop the decomposition of the specimen**, several liters of a preservation fluid are injected into the arteries. The body then is anatomically dissected. Depending on the type of dissection, this step can take several weeks or even months.

2. **Water and lipids (fats) must be removed from the body** before polymers can be introduced. The body is immersed in acetone, a solvent that dissolves body fluids and fats. Ice cold acetone is used to remove fluids, while a room-temperature bath removes fats.

3. **In a vacuum chamber**, the acetone-saturated body is immersed in a bath of low-viscosity silicone. Acetone has a low boiling point, and when the vacuum is applied, it boils off and evaporates from the body. The silicone permeates the body, filling the vacuum formed when the acetone vacates the tissues.

4. **After vacuum impregnation**, the body is positioned as desired. Every single anatomical structure is properly aligned and fixed with the help of wires, needles, clamps, and foam blocks.

5. **In the final step**, the specimen is hardened. Depending on the polymer used, this is done with gas, light, or heat. Dissection and Plastination of an entire body requires about 1,500 working hours and normally takes about one year to complete.

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  Clackamas, OR 97222
- 12119 SE Stevens Ct.
  Happy Valley, OR 97086
- 6327 SE Milwaukie Ave
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We’ve got knowledge on the brain.

As human beings, we experience and interact with the world through our brains. Advancing our understanding of how the brain functions and how genes and the environment influence the brain in health and disease, is central to the lives of all people. OHSU Brain Institute is a national leader in neurosciences clinical care and research. There are more than 1,000 experts who care for people afflicted with diseases of the brain, educate the next generation of neurosciences clinicians and researchers, and conduct the full gamut of bench-to-bedside research.

The knowledge of all for the care of one.