



PHOTOGRAPHY AVAILABLE

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## A Rat's Eye is a Vision of Beauty:

### Scientific Image Takes First Place in Olympus BioScapes™ Photo Competition; Photos Start National Tour at San Francisco Gallery

Melville, NY, December 12, 2005 - If the key to the inner self is visible by looking deeply into someone's eyes, rats must be among nature's most glorious creatures – for a stunning, brilliantly hued and richly patterned photograph showing the inside of an aging rat's eye has been chosen as the first prize winner in the 2005 Olympus BioScapes™ International Digital Imaging Competition. Olympus sponsors the annual competition to honor the finest life science still images and movies in the world, as captured through light microscopes.

Winners of this year's competition were recognized last night at San Francisco's elegant Diablo Grande Wine Gallery, where selected images will remain on display to the public for another week. After leaving San Francisco, 21 of the photographs will tour museums throughout the U.S. as part of a program developed in tandem with *Natural History Magazine*. *Natural History* is also featuring selected images in this month's issue.

The winning photo by Hussein Mansour, a doctoral candidate at the University of Sydney in Australia, shows how aging can affect the eye and brain. Blood vessels look blue, and astrocytes (so-called "helper" cells of the nervous system) are mostly red, creating a graceful branching pattern. But the beauty belies a darker truth. As rats (and people) age, their astrocytes change; some scientists believe that understanding astrocyte changes is part of the core of understanding age-related brain disease and degeneration.

"These pictures combine aesthetic beauty, technical expertise and scientific knowledge to tell stories of great meaning," said George Steares, Group Vice President of Olympus America's Scientific Equipment Group.

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## **2005 BioScapes Winners Named / 2-2-2**

“The winning photos and movies record scientists’ findings, demonstrate the extraordinary capabilities of today’s research microscope systems and most important, reveal the always-surprising splendor of the natural world through these moments of discovery,” Steares continued.

Other top-five winners in the BioScapes competition were Ruben Sandoval of Indiana University, Indianapolis, for a vivid 3D image of a glomerulus in a kidney; Viktor Sykora from the Czech Republic, for a superb photograph of a plant seed with the tuft that carries it on the wind; Rudolf Oldenbourg of the Marine Biological Laboratory, Woods Hole, MA, and James LaFountain of SUNY Buffalo for their masterful image of meiosis, the type of cell division that results in the production of sperm cells, in a fly; and Thomas Deerinck of the University of California, San Diego, for a nanotechnology image of a mouse kidney.

In addition to the top 10 winners, 68 honorable mention awards were named, including nine movies. The judges also gave Ruben Sandoval, Rudolf Oldenbourg and James LaFountain Special Recognition for Technical Merit for their winning images, and awarded Honorable Mention winner Tora Bardal of Norway the Judges’ Special Recognition for Artistic Merit for her striking image of a Japanese eel embryo.

BioScapes recognizes images, image series, and movies of life science-related subjects, and is open to people using any brand of light microscope. An impartial panel of judges selects the winners each year. This year’s BioScapes judges included Dr. Doug Murphy, Professor of Cell Biology and Director of the School of Medicine Microscope Facility at Johns Hopkins Medical School in Baltimore; George Patterson, of the National Institutes of Health in Bethesda, MD; Dr. Alison North, Director of The Rockefeller University’s Bio-Imaging Resource Center in New York City; and Dr. Kenneth N. Fish, Assistant Professor in the Department of Psychiatry, University of Pittsburgh.

### **THE HONOREES IN THE 2005 OLYMPUS BIOSCAPES COMPETITION:**

A gallery of winners and honorable mentions is available at [www.olympusbioscapes.com](http://www.olympusbioscapes.com).

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## 2005 BioScapes Winners Named / 3-3-3

### TOP TEN WINNERS

First Prize. Blood vessels and astrocytes in aging rat retina, confocal imaging, 40x. Captured by Hussein Mansour, University of Sydney, Australia.

Second Prize. Living rat glomerulus, showing part of the process of urine formation in the kidney. Intravital, 2-photon 3D volume image. Captured by Ruben Sandoval, Indiana University School of Medicine, Indianapolis, IN, USA. Also earned Judges' Special Recognition for Technical Merit.

Third Prize. Flowering plant (family Asteraceae) seed and pappus (tuft on fruit). Captured by Victor Sykora, Charles University, Prague, Czech Republic.

Fourth Prize Crane fly testis cells in testicular fluid, showing chromosomes and spindle fibers during meiosis. Captured by Dr. Rudolf Oldenbourg, Marine Biological Laboratory, Woods Hole, MA, USA and James LaFountain, State University of New York at Buffalo, USA. Also earned Judges' Special Recognition for Technical Merit.

Fifth Prize. Mouse Kidney. Quantum dot (nanotechnology) fluorescence image, 200x. Captured by Thomas Deerinck, University of California, San Diego, USA.

Sixth Prize. Gloeotrichia, a colonial cyanobacterium. Captured by Spike Walker, Penkridge, Staffs, UK.

Seventh Prize. Iridescent wing scales of sunset moth. Combined image stack, reflected light, 25x. Captured by Charles Krebs, Issaquah, Washington, USA.

Eighth Prize. *Thunbergia* (flowering plant). Captured by Dr. Shirley Owens, Michigan State University, East Lansing, Michigan, USA.

Ninth Prize. Obelia hydroids. Captured by Harry Taylor, Dunstable, Bedfordshire, UK.

Tenth Prize. Green alga (*Penium margaritaceum*) immunolabeled, composite confocal image. Captured by Dr. David Domozych, Skidmore College, Saratoga Springs, NY, USA.

### HONORABLE MENTIONS (STILL IMAGES), LISTED ALPHABETICALLY

Xenopus XLK2 kidney cell in mitosis. Captured by Dr Paul Andrews, Wellcome Trust Biocentre, University of Dundee, UK.

3-day-old rat primary neurons, Confocal 3D reconstruction. Captured by Erdrin Azemi-Charley, University of Pittsburgh, PA, USA.

Japanese eel, day 5. Captured by Tora Bardal, Norwegian University of Science and Technology, Trondheim, Norway. Also awarded the Judges' Special Recognition for Artistic Merit.

Human sperm. Captured by Dr. David Becker, University College, London, UK.

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## 2005 BioScapes Winners Named / 4-4-4

Retinal ganglion cell neuron and blood vessel from a ferret eye. Captured by Dr. David Becker, University College, London, UK.

Capillary in Rat Mammary Gland, 40x. Captured by Eric Bischoff, San Diego, CA, USA.

Neuron, regenerating, confocal, 800x. Captured by Mr Dylan Burnette, Yale University, New Haven, CT.

Glia-like cell from *Aplysia californicus* - cytoskeleton of a small accessory cell that contaminates bag cell neuronal cultures. Captured by Mr Dylan Burnette, Yale University, New Haven, CT.

Pitted vessels. Stem of *Fraxinus excelsior* L., 400x. Captured by Dr. Gian Lorenzo Calzoni, University of Bologna, Italy.

Transversal section of xylem, phloem and meristematic tissue. Stem of *Vitis vinifera* L. Brightfield, 100x. Captured by Dr. Gian Lorenzo Calzoni, University of Bologna, Italy.

Myelin sheath and astrocyte glial processes in live spinal tissue. Captured by Dr Ji-Xin Cheng, West Lafayette, Indiana, USA.

Parietal cortex of human brain, volume-rendered, stitched image. Captured by Dr. Robert Clements, Kent State University, Kent, OH, USA.

Fossil, polarized light. Captured by Karl Deckart, Eckental, Germany.

Pine needle, brightfield. Captured by Karl Deckart, Eckental, Germany.

Tree thin section, Rheinberg illumination. Captured by Karl Deckart, Eckental, Germany.

Mouse Small Intestine. Quantum dot (nanotechnology) fluorescence image, 200x. Captured by Thomas Deerinck, University of California, San Diego, USA.

Live image of 4-day-old biofilm from an Adirondack wetland, confocal image. Captured by Dr David Domozych, Skidmore College, Saratoga Springs, NY USA.

Coleus leaf. Captured by Stefan Eberhard, The University of Georgia, Athens, GA, USA.

Chicken retina. Captured by Dr. Andy Fischer, Ohio State University, Columbus, OH, USA.

Longitudinal section of caecum of rabbit, 100x, brightfield. Captured by Christian Gautier, Le Mans, France.

Scaled monarch butterfly wing, composite brightfield image. Captured by Raul Gonzalez, Mexico City, Mexico.

Peafowl feather, composite brightfield image. Captured by Raul Gonzalez, Mexico City, Mexico.

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## 2005 BioScapes Winners Named / 5-5-5

Living paramecium, trying to escape amoeba, 200x. Captured by Ralph Grimm, Jimboomba, QLD, Australia.

The filamentous fungus *Neurospora crassa*. Captured by Dr Patrick Hickey, Lux Biotechnology Ltd, Edinburgh, Scotland, UK.

Yeasts and Bacteria in complex biofilm. Captured by Dr Lydia-Marie Joubert, Mountain View, CA, USA.

Mutant *Drosophila* (fruit fly) germarium and early stage egg chambers stained for germ cells (red), cell membranes (green) and cell nuclei (blue). Captured by Daniel Kirilly, Stowers Institute for Medical Research, Kansas City, KS, USA.

Rabbit retina. Captured by Dr Peter Koulen, University of North Texas, Health Sciences Center, Fort Worth, TX, USA.

Rape plant, transverse section. Captured by Jan Kros, Zuid-Holland, The Netherlands.

*Aspergillus* sp. 20X. Captured by Sulev Kuuse, Tartu, Estonia.

Hook-shaped setae (bristles) of polychaete worm *Marenzelleria* sp. DIC, 40x. Captured by Dr Sara Lindsay, University of Maine.

Armadillo bone cell bodies, 400x. Captured by Hernan Javier Aldana Marcos, Buenos Aires, Argentina.

Infected vero cell. Captured by Dr Renato Mortara, Escola Paulista de Medicina, Sao Paulo, Brazil.

Part of head and tentacle of *Magelona mirabilis*. Captured by Dr Monika C. M. Mueller, University of Osnabruck, Germany.

Dorsal view of a zebrafish embryo, confocal. Captured by Dr Tohru Murakami, Gunma University Graduate School of Medical Sciences, Japan.

Fossil marine diatom from Oamaru, New Zealand, 1200x. Captured by Dr Stephen Nagy, Clancy, Montana, USA.

Montage, manipulated images of a leaf of sphagnum moss. Captured by Ron Oldfield, Macquarie University, Sydney, Australia.

Rat hair follicle, brightfield, 40x. Captured by Alan Opsahl, East Lyme, CT, USA.

Spirogyra. Captured by Dr Shirley Owens, Michigan State University, East Lansing, MI, USA.

Chickory. Captured by Dr. Shirley Owens, Michigan State University, East Lansing, Michigan, USA.

Fruit fly (*drosophila*) embryos. Captured by Dr Stephen Paddock, University of Wisconsin, Madison, WI, USA.

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## 2005 BioScapes Winners Named / 6-6-6

*C.elegans* dissected gonad showing DNA in blue and actin in yellow, 200x. Captured by Costanza Panbianco, Wellcome Trust/Cancer Research UK Gurdon Institute, Cambridge, UK.

Young plant of *Arabidopsis thaliana*. Captured by Dr Jaromir Plasek and Dr. Josef Reischig, Charles University, Prague, Czech Republic

Fungal plant pathogen *Colletotrichum lindemuthianum*, which has formed chains of fused conidia. Captured by Dr M. Gabriela Roca M., University of Edinburgh, Scotland, UK.

Pig epithelial cells, confocal and deconvolution microscopy. Captured by Nasser Rusan, University of North Carolina, Chapel Hill, NC, USA.

8-cell plant embryo. Captured by Dr John Runions, Oxford Brookes University, Oxford, UK.

Rat gut, confocal image. Captured by Stuart Shand, University of Pittsburgh, PA, USA.

Rat liver, 40x. Captured by Stuart Shand, University of Pittsburgh, PA, USA.

*Sonchus oleraceus* – seed with pappus. Darkfield, 10x. Captured by Viktor Sykora, Charles University, Prague, Czech Republic.

LLCPK cell, stained for microtubules and DNA, image stack. Captured by Ustun Serdar Tulu, University of Massachusetts, Amherst, MA, USA.

*Stentor amethystinus*, with symbiotic algae inside. A small protist, *Trachelomonas* is trapped in the *Stentor's* peristome (mouth region). Captured by Wim van Egmond.

Radula of pond snail (*Limnea stagnalis*). Captured by Mr. Ian Walker, West Yorkshire, UK.

Vitamin C crystals. Captured by Spike Walker, Penkridge, Staffordshire, UK.

Dandelion flower bud, brightfield. Captured by Spike Walker, Penkridge, Staffordshire, UK.

Human spinal cord derived neurosphere (5x). Captured by Michael Weible, University of Sydney, Australia.

Human spinal cord derived neurosphere (second image of same subject). Captured by Mr. Michael Weible, University of Sydney, Australia.

Tunicate from Key Largo, Florida, 20x. Captured by Dr Jim Wetzel, Presbyterian College, Clinton, SC, USA.

Crystals of the blood thinner warfarin, polarized light, 625x. Captured by Dr Peter Whittaker, University of Massachusetts Medical School, Worcester, MA, USA.

Cluster of growth factor-stimulated breast cancer cells. Captured by Dr Torsten Wittmann, The Scripps Research Institute, La Jolla, CA, USA.

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## **2005 BioScapes Winners Named / 7-7-7**

Straight filaments of bloom forming cyanobacterium *Anabaena planctonica*. Captured by Dr Petr Znachor, Laboratory of Phytoplankton Ecology, Ceske Budejovice, Czech Republic.

### **VIDEO HONORABLE MENTIONS, LISTED ALPHABETICALLY**

MOVIE: Mitotic PtK1 cell, showing metaphase and anaphase A and B. Captured by Dr Daniela Cimini, University of North Carolina, Chapel Hill, NC, USA.

MOVIE: Proteus engulfing a paramecium, DIC. Captured by Mr Donald Ferry, Denver, CO.

MOVIE: Fluorescent time-lapse sequence - deep cells migrating in vivo in an intact killifish embryo-- crawling within the normal cell matrices and environment. Fluorescent actin is visible at the leading edge of the cell. Captured by Dr Rachel Fink, Mt. Holyoke College, South Hadley, MA, USA.

MOVIE: The filamentous fungus *Neurospora crassa*. Time lapse movie, 200x. Captured by Dr Patrick Hickey, Lux Biotechnology Ltd, Edinburgh, Scotland, UK.

MOVIE: The filamentous fungus *Aspergillus fumigatus*. Time lapse movie showing hyphal growth, 500x. Captured by Dr Patrick Hickey, Lux Biotechnology Ltd, Edinburgh, Scotland, UK.

MOVIE: 8 day old Zebrafish embryo with GFP expression in the heart muscle. Captured by Dr Jan Huisken, University of California, San Francisco, CA, USA.

MOVIE: Fruit fly (*Drosophila*) egg chamber calculated from 90 individual confocal sections. Intravital 2 Photon confocal microscopy. Captured by Daniel Kirilly, Stowers Institute for Medical Research, Kansas City, KS, USA.

MOVIE: Cultured veliger larvae of the nudibranch *Melibe leonina*, racing around in their egg ribbon. Captured by Jason Pitt, Seattle, WA, USA.

MOVIE: Living rat glomerulus, showing part of the process of urine formation in the kidney. Captured by Ruben Sandoval, Indiana University School of Medicine, Indianapolis, IN, USA.

## **About The Olympus BioScapes International Digital Imaging Competition**

The Olympus BioScapes Digital Imaging Competition recognizes the finest images of life science specimens captured through light microscopes, using any magnification and any brand of equipment. Each entrant can submit up to five movies, images, or image sequences. Entries must include information on the importance or “story” behind the images. First prize is Olympus products and equipment valued at \$5,000; nine additional winners also receive valuable prizes and numerous honorable mentions are named. Images for the 2006 competition are being accepted now. They can be uploaded at [www.olympusbioscapes.com](http://www.olympusbioscapes.com). More information on the competition and winners’ galleries are also on display at that website. For information or help with entering the competition, please email: [contest@olympusbioscapes.com](mailto:contest@olympusbioscapes.com).

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## **2005 BioScapes Winners Named / 8-8-8**

**Members of the press only:** For thumbnail images, publication-quality photographs, interviews, a museum tour schedule, or more information, please contact:

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