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4th SNSF SCIENTIFIC IMAGE COMPETITION – WINNERS

Category 1: Object of study

Foot pad of an Asian elephant
Paulin Wendler (PhD student, University of Zurich)

As part of a study on influencing factors on elephant foot health, I took pictures of the feet of more than 150 Asian elephants living in European zoos. This picture shows a right front foot of a ten-year-old male from below. In the middle of the picture is the foot pad with its natural grooves working like the treads of our shoes. The brighter areas on the lateral and upper edges are the soles of the five-foot nails. When lifted (as for this picture), this foot has a circumference of 117 cm, and it expands when bearing weight. (Paulin Wendler)

Bio
Paulin Wendler (Germany, born in 1992) is a veterinarian based in Germany. During her studies of Veterinary Medicine at Leipzig University, she pursued her interest in zoo and wild animal medicine. During her doctoral studies at the Clinic for Zoo Animals, Exotic Pets and Wildlife of the University of Zurich, she conducted a project on foot health of Asian elephants in European zoos. She is currently working in a veterinary practice for small animals and horses in Brunswick (GER).

Jury
This stunning picture forces viewers to slow down, immersing them in a dazzling view of organic structures of unknown scale from something they have never seen before: the underside of an elephant foot. These intricate lines form a landscape sculpted by evolution. Their sophisticated subtlety contrasts with the image usually associated with the lumbering, heavy and almost archaic mammal they belong to. These physiological structures contradict contemporary assumptions that evolution's efficiency consists of making organisms faster.

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Category 2: Women and men of science

Fisherwoman in the lab
Kaan Mika (PhD student, University of Lausanne)

Norine and her lovely zebrafish. Her project is a great example of how model organisms could help us to fight diseases. Zebrafish is a great model for studying developmental diseases since it develops externally, very fast and its organs are transparent! This allows scientist to observe morphological defects at early stages in the development. In order to overexpress a gene, one can inject messenger RNA directly into zebrafish eggs, or use morpholinos in order to knock down a specific gene. Moreover, with the CRISPR/Cas9 system it is possible to delete a region, induce a specific mutation or even insert a gene cassette in a desired location in the genome. Therefore, using model organisms like zebrafish allows scientists to elucidate the molecular mechanisms involved in some human diseases. (Kaan Mika)

Bio
Kaan Mika (Turkey, born in 1989) is a molecular biologist pursuing a PhD at University of Lausanne. He works with a famous model organism called Drosophila melanogaster and he investigates the olfactory system of these flies. He is a self-taught photographer and he uses Instagram to promote science, collaborating with scientists around Lausanne.

Jury
A lively portrait which makes the researcher seem very approachable and relatable, a clear challenge to the usual representation of scientists in their lab. Instead of stereotypical white lab coats, vivid colours interact at all levels, while the scientist's strong self-expression contrasts with the standardisation inherent in the research carried out with model animals such as zebrafish.

Category 3: Locations and instruments

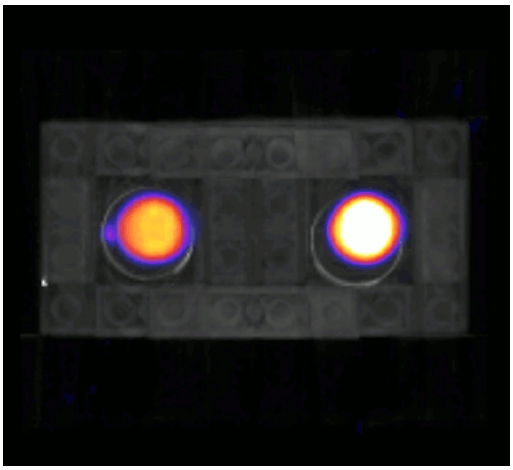
A Surrogate Mother's Room in Kiev
Anika König (lecturer, University of Lucerne)

The photo shows the room of a surrogate mother in Kiev, Ukraine. In the last few years, surrogacy – carrying a child for others – has become an important industry in the country. Especially poor women see it as an opportunity to earn within nine months a sum equalling a ten-year income. But at the same time, surrogacy is stigmatised and many women hide their pregnancies from their families and friends. Once the pregnancy becomes visible, they move to flats in the city provided by surrogacy agencies. These flats are very impersonal and look as if the surrogates were constantly on the go: they keep all their belongings in plastic bags.
The photo shows all the belongings of a surrogate whom I interviewed for my anthropological research on transnational surrogacy. The towel which was hung up to dry on a laundry rack was the most personal item in the room. During one of my visits, she was transferred to the hospital and vacated the room within minutes, leaving no trace. (Anika König)

Bio
Anika König (Germany) is a senior lecturer at the Department of Ethnology at the University of Luzern. She obtained an MA in Social and Cultural Anthropology from Freie Universität Berlin and Sociology from Technische Universität Berlin, and a PhD in Anthropology from the Australian National University. Her current research focuses on transnational gestational surrogacy commissioned by Swiss and German intended parents. For this project, she has conducted fieldwork in Switzerland, Germany, the United States, and Ukraine.

Jury
The strength of the picture lies in the obvious absence of its object. It reveals the invisibility of surrogate mothers in society by not showing them, the bags emphasising their precarious and ephemeral status. The composition shows a deep understanding of what photography can achieve, both carrying a strong sense of respect and empathy for its subject while maintaining a distance, similarly to quality works known from photojournalism.

Category 4: Video loop



Transparency in science
Peter von Niederhäusern (PhD student, University of Basel)

A rotating Lego model, which was made transparent by x-ray computed tomography. The coloured structures are traces of the emission activity of a radioactive substance. These were not visualised with x-rays, but with SPECT, another medical imaging technique. By combining the two different signals, the exact position of a contrast medium can be determined. This is important for observing the effects of medical treatments. The film was created for the calibration of a novel 3D reconstruction algorithm. Lego bricks are well suited to this purpose because they are cost-effective and their dimensions are well known. Innovative and low-cost solutions like this can help to achieve scientific goals, too. (Peter von Niederhäusern)

Bio
Peter von Niederhäusern (born and raised in Schwarzenburg, Switzerland) studied Biomedical Engineering (MSc) at the universities of Bern and Basel and finished his master's thesis in the domain of eye diseases. His current Ph.D. studies involve the development of novel visualization methods for nuclear medicine specialists. Apart from applied research, he is interested in sports, the marvels of the universe and all things involving technology and research and their implication for society.

Jury
A mesmerising loop which puzzles the viewers, challenging their sense of orientation until they finally recognise the familiar shape of a popular toy. A vivid illustration that state-of-the-art research can proceed through a joyful bricolage of serendipity and simplicity, here revealing a behind-the-scenes moment, when an apparatus is merely calibrated before its actual use.