

$\Sigma$  UMs

Science in  
University Museums  
An international initiative

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@museumsmithery



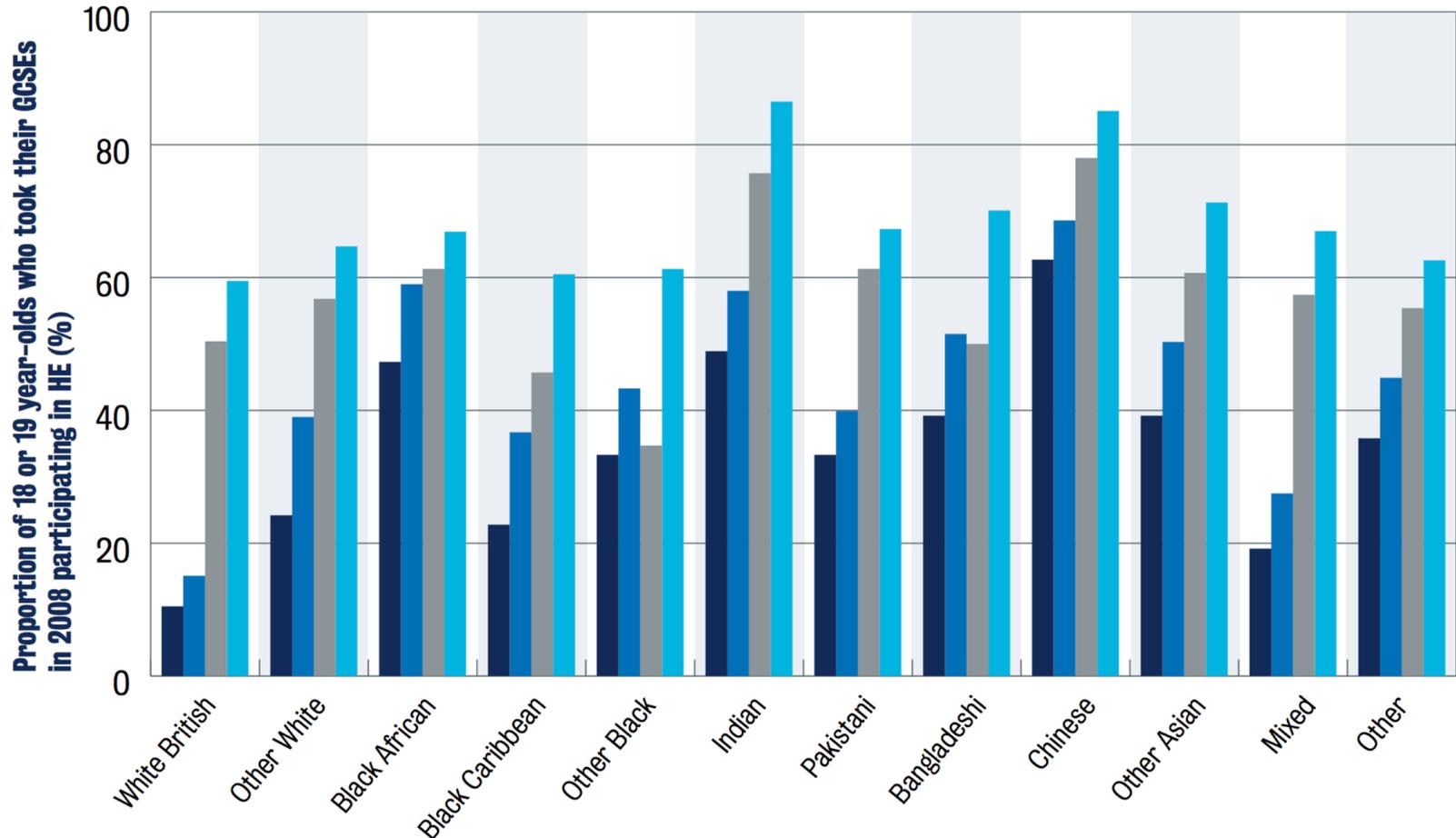
Museum of  
Natural  
History



UNIVERSITY OF  
OXFORD

# Socioeconomic barriers in higher education

## HE participation by gender, ethnicity and socioeconomic status



**'high SES' and 'low SES' refer to top and bottom SES quintiles**

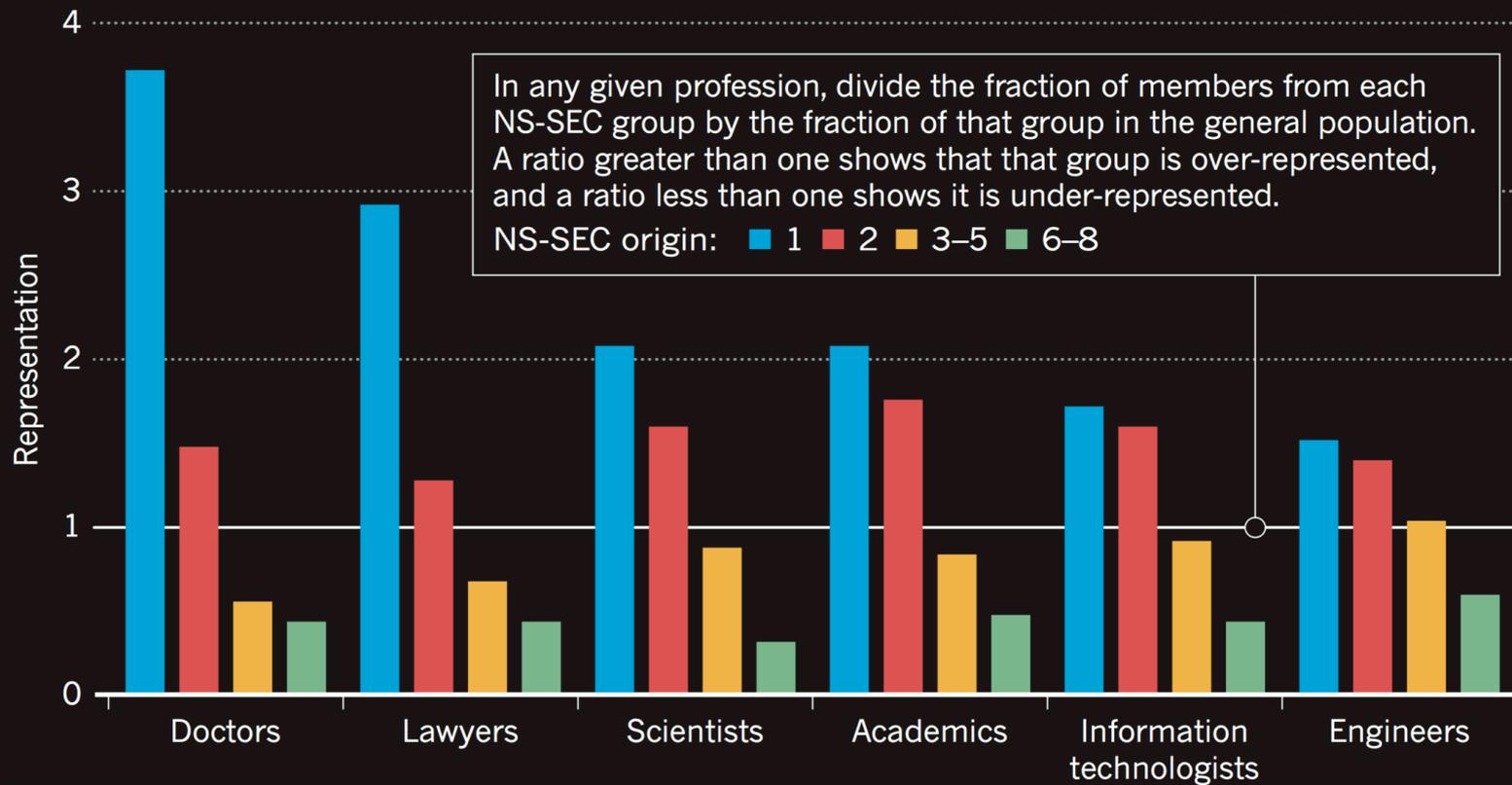
Source: Crawford, C. and Greaves, E. (2015) Socio-economic, ethnic and gender differences in HE participation. London: Department for Business, Innovation and Skills

- Males – low SES
- Females – low SES
- Males – high SES
- Females – high SES

# Inequality in science

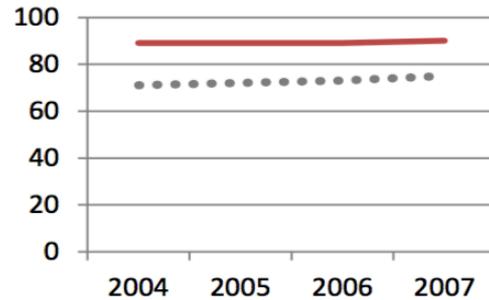
## ELITE CAREERS

The United Kingdom's National Statistics Socioeconomic Classification (NS-SEC) uses occupation to place people in ranks from 1 (higher managers and professionals) to 8 (unemployed). Science is one of many professions dominated by people of high socioeconomic status.



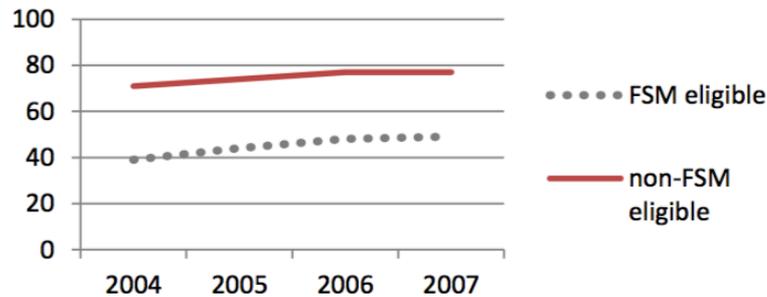
# Socioeconomic barriers in STEM

Percentage of pupils achieving the expected level in science varies by FSM eligibility<sup>196</sup>



KS 2

The science attainment gap widens between Key Stage 2 (7–11) and Key Stage 3 (11–14)



KS 3

# Project IMAGOS



Museum of  
Natural  
History



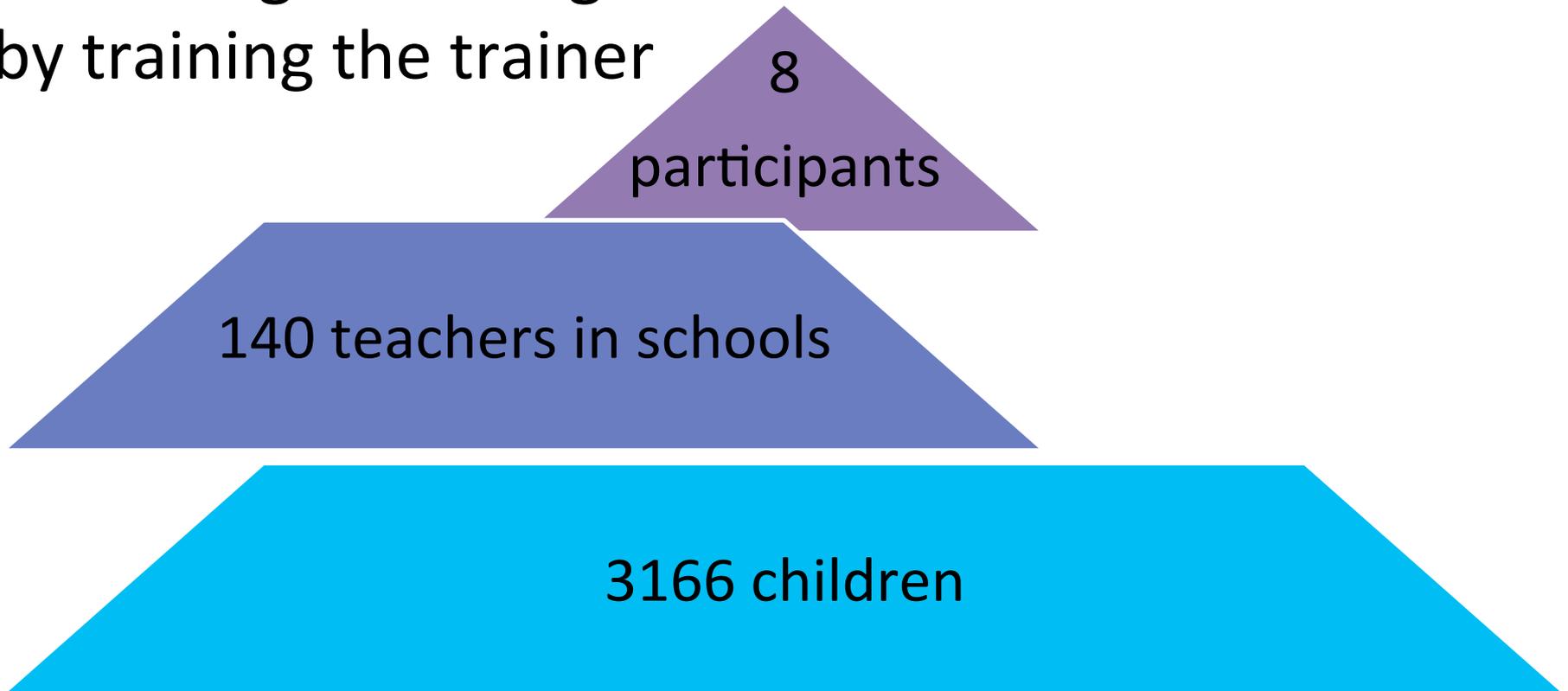
Engaging young people with science through out-of-school-hours learning



Manchester Museum – The Genetics of the Two Brothers



Cascading knowledge  
by training the trainer



Transforming Learning in Science  
Through Collaboration With Museums

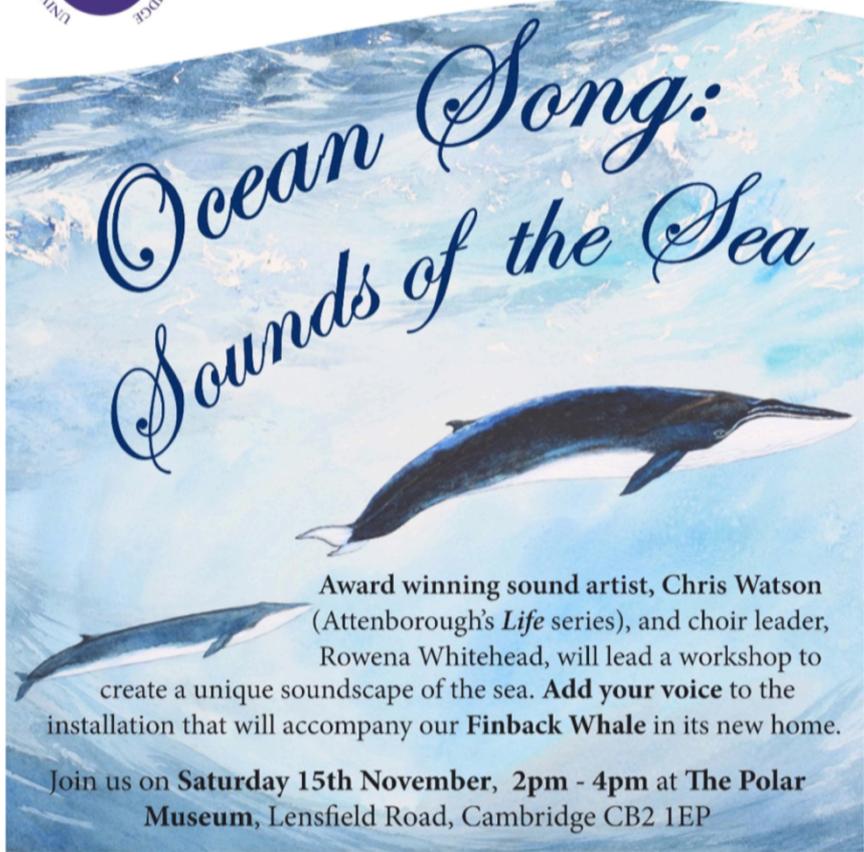
# Ocean Song: Sounds of the Sea

Creative Science Engagement with  
Natural History Collections: Arts  
and Science at the  
Museum of Zoology

Community engagement project combining  
arts and science to create a piece of sound  
art inspired by the Museum of Zoology's  
iconic Fin Whale skeleton.



**We want YOUR voice!**

A poster for the 'Ocean Song: Sounds of the Sea' project. The background is a blue, textured surface representing water. Two whales are depicted swimming: a larger one in the foreground and a smaller one behind it. The title 'Ocean Song: Sounds of the Sea' is written in a large, elegant, blue cursive font across the top. Below the whales, there is text about the project, including the names of the sound artist and choir leader, and details about the workshop and installation.

*Ocean Song:  
Sounds of the Sea*

Award winning sound artist, Chris Watson (Attenborough's *Life* series), and choir leader, Rowena Whitehead, will lead a workshop to create a unique soundscape of the sea. Add your voice to the installation that will accompany our **Finback Whale** in its new home.

Join us on **Saturday 15th November, 2pm - 4pm** at **The Polar Museum**, Lensfield Road, Cambridge CB2 1EP

**Booking is essential. Contact us on [umzc@zoo.cam.ac.uk](mailto:umzc@zoo.cam.ac.uk)**



Supported using public funding by  
**ARTS COUNCIL  
ENGLAND**





## Study: Students Really Do Learn Stuff on Field Trips

New research shows that class trips offer educational value--and that they are in danger of disappearing from American schools.

JULIA RYAN | SEP 16, 2013 | EDUCATION

The Washington Post Democracy Dies in Darkness Sign In

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On Parenting

## Children learn much from field trips that they can't get from lectures or textbooks

LOCAL

## Schools can't spare time or dimes for field trips

By SEEMA MEHTA | LOS ANGELES TIMES STAFF WRITER | MAY 19, 2008 | 12:00 AM

BROOKINGS The Brookings Institution CITIES & REGIONS GLOBAL DEVELOPMENT INTERNATIONAL AFFAIRS U.S. ECONOMY U.S. POLITICS & GOVERNMENT MORE

SOCIAL MOBILITY MEMOS

## Fewer field trips mean some students miss more than a day at the museum

Richard V. Reeves and Edward Rodrigue - Wednesday, June 8, 2016

Posted March 10, 2013

INCREASE I

## Amid shrinking budgets, program brings museum to schools

Fourth-grade students at Bloomfield Elementary School in Skowhegan got a visit from the L.C. Bates Museum in lieu of funding for educational field trips.



## Education

### Mountain View students take cyber trip to Harvard

Mike Parks  
editor@thefranklinpress.com

Students learning about ancient cultures at Mountain View Intermediate School got a unique treat last week, getting an inside and personal tour of the Peabody Museum of Archaeology & Ethnology at Harvard University.

The students, gathered in the school's media center, got to meet Andy Majewski, education specialist for the museum, through Skype – an online video chat program that allowed the kids to see and hear Majewski as he led them through specific exhibits in the museum near Boston that tied in with their current lessons in Franklin.

"One of the goals we have is we realized how far away the people who are traveling to our museum live, and the field trips usually are limited by the age-old problem of time and money," Majewski said following his presentation Friday, May 1.

Schools pay a small fee to take part in the presentations, and MVI received a discount and grants to help pay for the program.

"It's worth the money," Majewski said of the different educational offerings at the museum. "It's pretty much the bus money that limits field trips. Secondly, administrators view it as time well spent they otherwise would be out of school."

Improving technology and Internet connectivity allows students to see clear video of the exhibits and speak with Majewski in real time with no lag or buffering delays – making for an almost-there feeling for participants who otherwise would likely never visit the museum. Many school systems have limited their field trips due to budget issues in past years.

And having an energetic,

friendly presenter such as Majewski makes sure kids stay on their toes despite sitting in a classroom. He frequently interacted with students through questions and materials teachers printed out beforehand, even at one point donning a recreation of an ancient headdress to get his point across.

"We recognize the potential draw

ing in a medium like this is it's very similar to a passive-type of experience students are more familiar with having, i.e. staring at a screen watching a movie," Majewski said. "They can't interact like that. If the presenter is conscious about engaging them, it changes

carved into ancient statues and tablets to piece together information about the culture at the time, showing how difficult it can be to understand all that happened in a bygone age. Students chimed in with their guesses about what each carved symbol meant, with Majewski helping them along

"We're not all that different from these people living 1,000 years ago in the middle of the jungle," he said to students while showing how one Maya community was built much like towns today are, with shopping, government, entertainment and worship districts.

provided a great introduction to the Aztec and Maya civilizations which will be greatly beneficial to my students when we begin our studies of those cultures. Programs like this give my students the background knowledge that they need in order to make connections to the curriculum in the



(Above) Andy Majewski and Ethnology at Mountain View Intermediate School

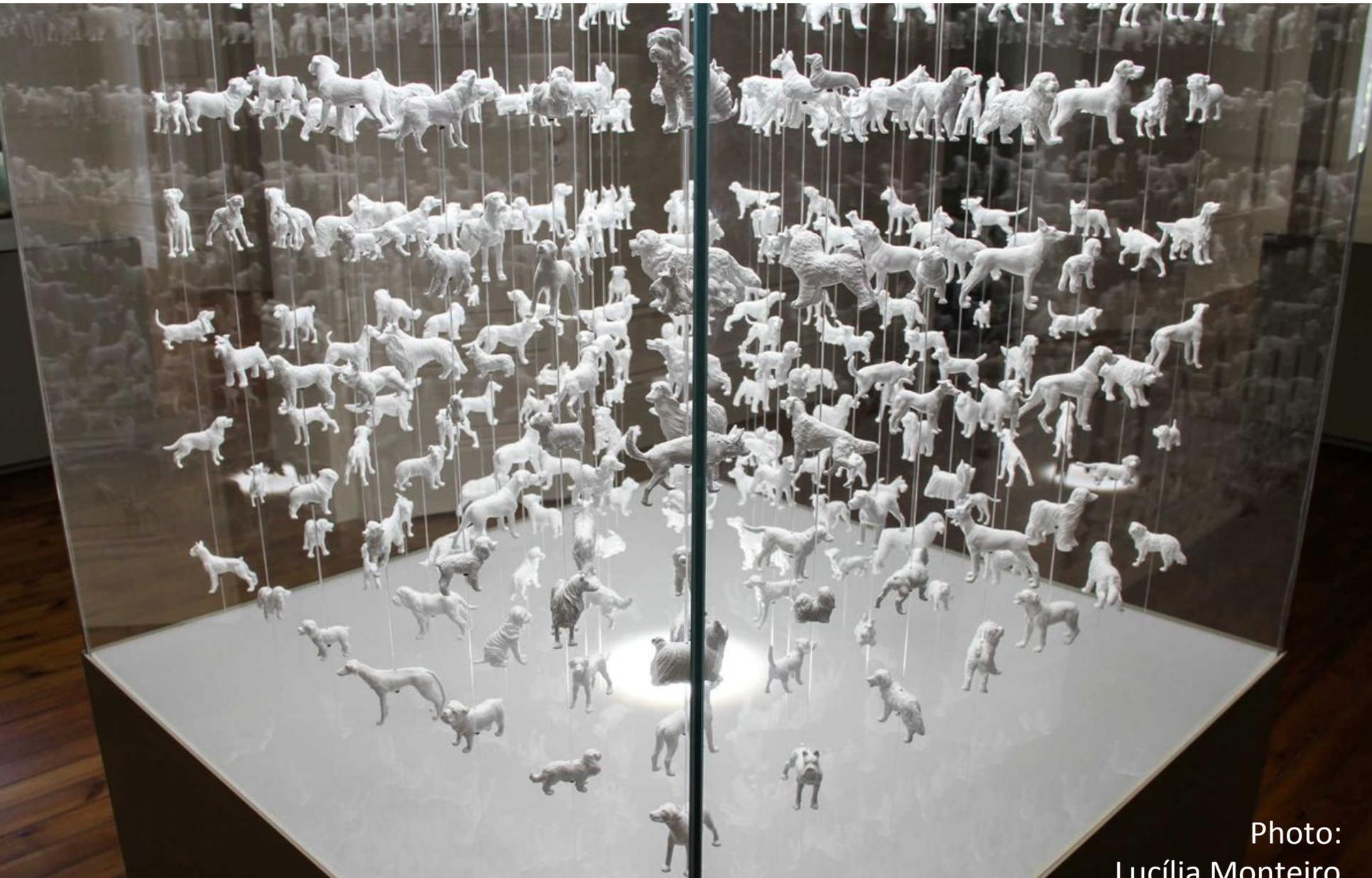


**Schedule a Virtual Field Trip! Mesopotamian Monuments**











# PUCRS

Pontifícia Universidade Católica  
do Rio Grande do Sul

# Museu de Ciências e Tecnologia



ProMUSIT: 3 million people reached to date in 180 towns and cities



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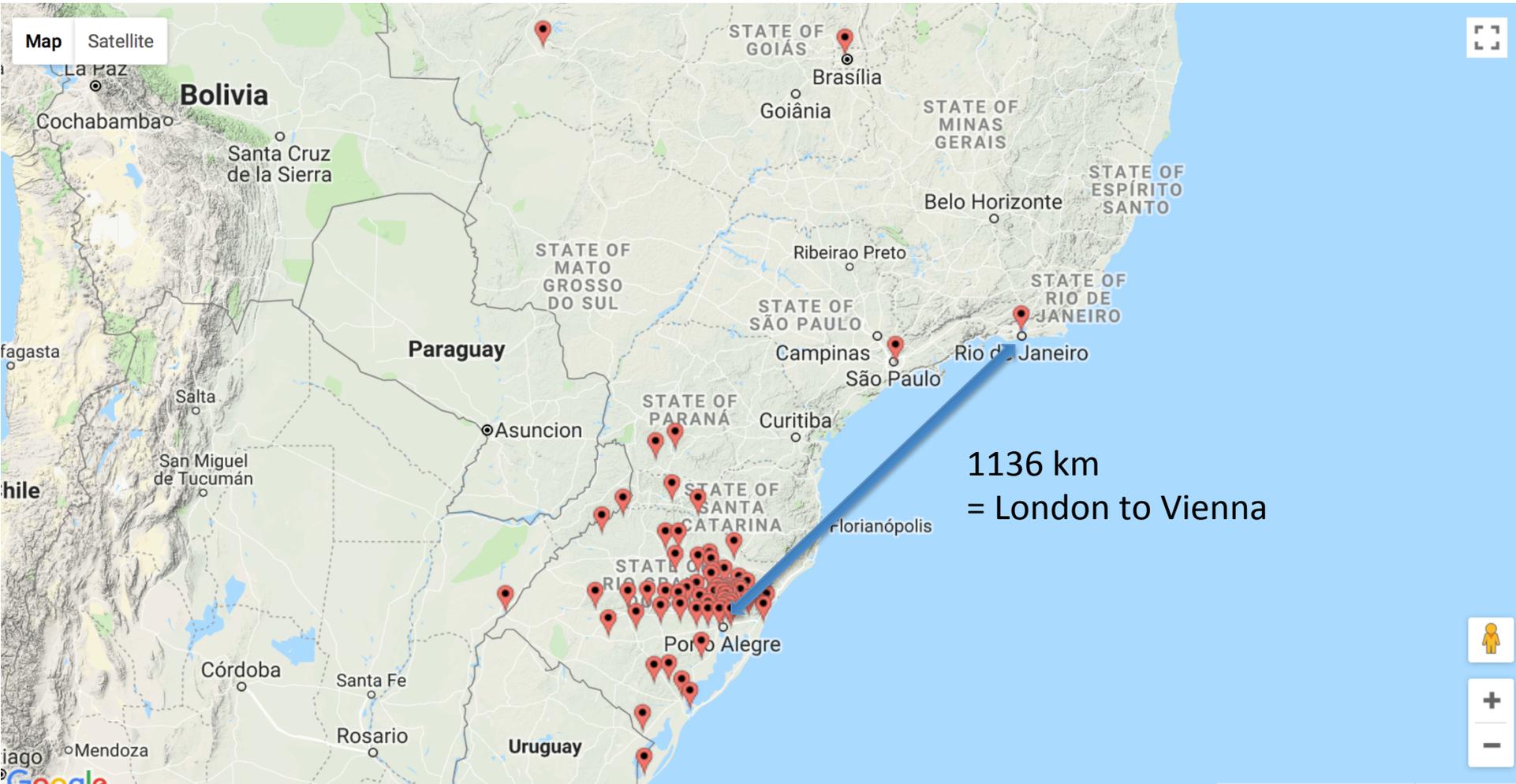




**PUCRS**

Pontifícia Universidade Católica  
do Rio Grande do Sul

# Museu de Ciências e Tecnologia



Area of Rio Grande do Sul  
292,000 km<sup>2</sup>

Area of UK  
242,000 km<sup>2</sup>



PUCRS

Pontifícia Universidade Católica  
do Rio Grande do Sul

# Museu de Ciências e Tecnologia



3,000 schools benefitted since programme started



Museu do Amanhã  
Rio de Janeiro



MÚTIPLAS  
ESPÉCIES  
COOPERAM  
E COMPETEM  
ENTRE SI

VIVEMOS EM  
ECOSSISTEMAS  
WE LIVE IN  
ECOSYSTEMS  
VIVIMOS EN  
ECOSISTEMAS



Anthropoceno

Museu do Amanhã

Photo: César Barreto



Museu da Maré  
Rio de Janeiro



Museu da Maré  
Rio de Janeiro