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Jardim Porcelânico

British artist Rob Kessler's residency at IGC

by Ana Godinho

Inspired by International Year of Biodiversity 2010, the Gulbenkian Foundation set up a cross-cultural, interdisciplinary project, involving science research, arts and crafts

Rob Kessler, a British artist who has extensive experience working with botanical scientists in the United Kingdom, was invited to work with scientists at the Instituto Gulbenkian de Ciência (IGC) to explore the living world at a cellular and molecular level. In exchange, Gabriela Albergaria, a Portuguese artist, undertook a residency at the Oxford Botanic Garden, creating an artist's book of the Garden trees and an installation at the Arboretum.

Floral excursions

Rob Kessler is an English artist based in London where he is professor of Ceramics at Central Saint Martins College of Art & Design. The plant world has been a life long source of inspiration and celebration throughout his work; the plants themselves and the way we experience them in our daily lives. For the past ten years he has collaborated with botanical scientists at the Royal Botanic Gardens, Kew, exploring the creative potential of the plant world at a microscopic level, revealing complex patterns and structures normally hidden to the naked eye.



Working at a microscopic level he creates images and objects that celebrate the hidden beauty of plants.

Morphogenesis

Beneath the fragile arrangements of petals and leaves of wild flowers there is a further hidden world of pattern and form, unseen to the naked eye. One which can only be revealed by high powered microscopes, zooming in hundreds and thousands of times to show complex cellular structures and other details. In 2010, using a variety of microscopy techniques available at the IGC, and working with the scientists, Rob Kessler examined the cellular structures and patterns of Portuguese wild flora including a number of rare orchids, revealing a dazzling variety of colourful patterns and shapes. His process began in springtime, walking in the Alentejo region of Portugal, where he made drawings and took close (continues on page 2)

(continued from page 1) up photographs of the flowers. Small specimens from the plants were collected and taken back to the lab where micro-fine sections of the flower stems were stained with dyes to expose functional characteristics, such as the chloroplasts in the cells around the outer wall. Working at a high magnification on a brightfield light microscope he constructed detailed large format images from up to 500 individual frames such as in the stem of the orchid *Gennaria diphylla*, found in the Parque Florestal de Monsanto on the outskirts of Lisbon

“Jardim Porcelânico”

Rob Kessler has used his broad knowledge and experience of working within the fields of applied

art and design to draw upon Portugal’s unique ceramic heritage by working in collaboration with the renowned porcelain manufacturer Vista Alegre Atlantis. Using his micro-botanic images, he has created a unique collection of designs that he has applied to a new range of irregularly shaped porcelain plates. This piece, titled *Jardim Porcelânico* was on exhibition at the Calouste Gulbenkian Foundation, during the colloquium Image in Science and Art

A movie made by Rob Kessler during his stay at the IGC can be seen on [YouTube](#)

More examples of his work can be found on his website www.robkessler.co.uk

“Morphogenesis”, by Rob Kessler, until Summer 2011

At an informal gathering, IGC scientists and staff joined with Gulbenkian Foundation trustees and directors for the opening of Rob Kessler’s IGC exhibition “Morphogenesis”, on 16th February. Siân Ede, deputy director of the UK branch of the Gulbenkian Foundation who spearheaded the artists’ exchange programme, expressed how pleased she was that Rob’s time at the IGC had been so productive and rewarding, both for him and for the scientists. Rob confirmed that he had worked hard to follow IGC director António Coutinho’s advice: to enjoy himself.

Besides “Morphogenesis”, two other pieces came out of Rob’s residency: *Jardim Porcelânico*, that was on show at the FCG in Lisbon, and a gastronomic science buffet at the British Council in March, served on a unique collection of porcelain plates developed in collaboration with Vista Alegre Atlantis.

“Morphogenesis” will be on exhibition at the IGC until July 2011



© Roberto A. Keller (IGC scientists)



Dates for your Diary

21-23 February

MDA11 - Massive Data Analysis (using Babelomics)
([Gulbenkian Training Programme in Bioinformatics Course](#))

24 - 25 February

AFADM11 - Automatic Annotation and Data Mining
([Gulbenkian Training Programme in Bioinformatics Course](#))

30 March, 5pm

C2 talks - Science and Art exchanges between the IGC and the Modern Art Centre, FCG:

A scientist at CAM: walk-and-talk visit to Didier Faustino's exhibition "Don't Trust Architects", by Élio Sucena (group leader [Evolution and Development](#))

February & March

IGC Seminars (available [here](#))

IGC scientists receive 2011 Oeiras City Council research grants

by Sílvia Castro

Oeiras City Council awarded two young IGC scientists with "*Bolsas de Instalação para Jovens Cientistas - Começar em Oeiras grants*".

The grants, each worth 15.000 euro, will allow Patrícia Beldade and Diogo Castro to set up their laboratories in Oeiras and provide valuable start-up funds for their research projects at IGC. Both researchers consider the city council's support to be <<fundamental, especially when returning from long periods abroad>>.

Patrícia and Diogo began their academic careers within the Gulbenkian Doctoral programme in Biology and Medicine, and went on to pursue successful careers at renowned international institutes. Now both have decided it is time to return 'home'.

After a PhD at the Karolinska Institute in Sweden, and post-doctoral work in Strasbourg and London, Diogo Castro will head the [Molecular Neurobiology](#) group which aims to study the mechanisms underlying the formation of different neuronal cell types, an essential process for the adult brain to perform its diverse and complex functions.

Patrícia Beldade is exchanging Leiden University, in the Netherlands, for the IGC, after time spent at the University of California at Irvine. Her laboratory, [Variation: Development and Selection](#), will strengthen the field of Evo-Devo in Oeiras, which is still under-represented in Portugal. This discipline, as the name suggests, focuses on Evolution and Developmental Biology. Patrícia and her team will explore the mechanisms that generate diversity in living organisms during embryonic development and that select for the characteristics that ensure diversity within a population and therefore underlie adaptation to new environments.

This is not the first time that IGC scientists' work is supported by Oeiras City Council. Recent awardees include Mónica Dias and José P. Leal, in 2007; and, in 2009, Maria Luísa Vasconcelos was also the recipient of the 15.000 euro award to set up her [Innate Behaviour](#) group at IGC.

These grants are part of the City Council's "*Bolsas Científicas de Oeiras - Professor Doutor António Xavier*" programme, open to all scientists at research centres in Oeiras. Besides the above mentioned starting grants ("*Bolsas de Instalação para Jovens Cientistas - Começar em Oeiras*") this programme awards grants to more senior visiting scientists, who take sabbatical leave at one of the research institutes.



Patrícia Beldade and her research team "Variation: Development and Selection"

News in Brief

Tribute to Michael Parkhouse at meeting in Mexico

The Mexican Society for Parasitology held a special meeting in December 2010, to pay tribute to twelve "Masters of Parasitology". Michael Parkhouse, head of the [Infections and Immunity](#) group at the IGC was one of the twelve, and the only non-mexican Maestro. In this way the Society, and the research community in Mexico, acknowledge the commitment and real contribution Mike has made to combating the spread of infectious diseases, in Mexico and in other Latin American countries.

Biodiversity Day: A look beyond 2010

In order to understand the impact of the International Year of Biodiversity 2010 and to better understand what actually needs to change in the future, the IGC and the French Embassy in Portugal, are holding a public meeting at the Fundação Calouste Gulbenkian, on 20 May. Biodiversity Day aims to be a space where conservation biologists, students, teachers and the general public may discuss some of the issues of greatest concern to biodiversity on the planet: the rapid loss of species, destruction of natural ecosystems, and the beauty of natural environments. [Pre-registrations](#) for the meeting are now open.



EMBO Workshop on "Biophysical Mechanisms of Development" - Applications Open

From 24-27 May the IGC will host the second edition of the EMBO Workshop on "Biophysical Mechanisms of Development". The workshop will discuss recent advances and new mechanisms arising in the field of developmental biophysics, as a result of new imaging techniques, genetics and computational biology approaches. Topics to be presented and discussed include: ion dynamics in development, regeneration and disease; cellular mechanosensing and mechanotransduction; tissue mechanics and tension in morphogenesis; morphogen gradients and pattern formation. [Registration](#) and abstract submission are now open, until 11 March.

The Physics of Life - SciArt competition and exhibition

A science and art photo competition is being run within the EMBO Workshop on "Biophysical Mechanisms of Development". Physics of Life aims to explore the aesthetics of scientific research, from the point of view of scientists and artists. Both are thus invited to [apply](#), by submitting their images by 31 March. All images will be voted on by the public, through social networks, and will be on show during the workshop. The winner will receive an Apple TV and an invitation to the workshop Gala dinner.



The "Science Collection" is a partnership between the IGC and Vista Alegre. The original images of the "Science Collection" were obtained by young scientists during the course of their work at the IGC.

Support Vista Alegre and Instituto Gulbenkian de Ciência in promoting scientific research and culture.

The "Science Collection" is available at Fundação Calouste Gulbenkian, Instituto Gulbenkian de Ciência and will be available soon at Vista Alegre stores. For more information please contact Maria João Leão by e-mail: colabore@igc.gulbenkian.pt

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Coordinator: Ana Godinho

Editor: Sílvia Castro

Contributors: Ana Godinho; Maria João Leão; Sílvia Castro

Address: Rua da Quinta Grande, 6

2780-156 Oeiras, Portugal

Telephone: +351 214 464 537; Fax.: +351 214 407 970

www.igc.gulbenkian.pt

Have your say

'Quinta Grande' is a forum to communicate events and any news which may be of interest to those who work either at or with the IGC. If you have any suggestions of topics to be discussed here, please e-mail them to:

✉ quintagrande@igc.gulbenkian.pt