沖縄科学技術大学院大学紹介

~前例のない真に国際的な大学の広報戦略とは~

OIST-JACST 国際科学広報ワークショップ 2015年3月20日

> OIST広報ディビジョン 名取 薫



新時代の教育研究を切り拓く







境界線のないサイエンス

OISTは世界に先駆けて教育研究の在り方に変革をもたらしている。

世界最高水準 世界トップクラスの教員が約50名在籍し、各々が独立した研究ユニットを主導。

学際性 学部を設けず(単一の研究科・専攻)、研究機器を広く共用化・共用研究エリアに集約配置することで異分野の研究者による協働を促進。

国際性 教育研究は英語で行われ、教員と学 生の半数以上が外国人。

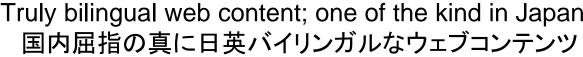
世界的連携 連携協定の締結や教員がもたら す<u>ネットワーク</u>、国際ワークショップなどの開催により、一流の研究者との交流を通じて、世界に開 かれた中核的な教育研究機関に成長。

産学連携 企業との共同研究や技術移転、ベンチャーの設立などを通じて知的・産業クラスター の形成をめざし、沖縄の発展の原動力となる。

OISTの広報活動



OIST is proud of its website's design, content and functionality 世界に誇るデザイン・内容・機能 Truly bilingual web content; one of the kind in Japan



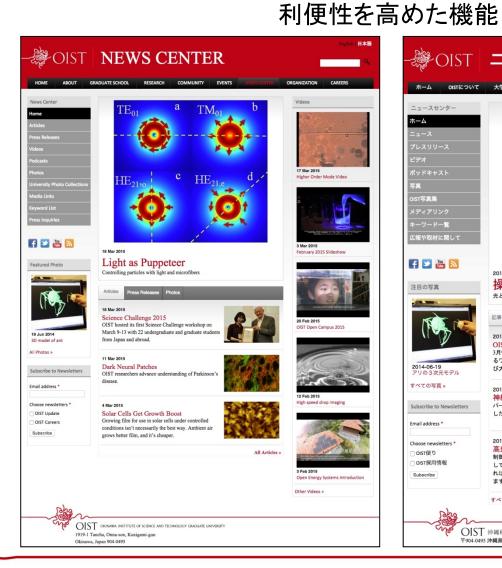






News Center

A section of the website aimed at making the university's articles, photos, videos, and other content more visible, accessible, and searchable ニュースセンター: OISTの記事、写真、動画等を閲覧及び検索しやすくし、

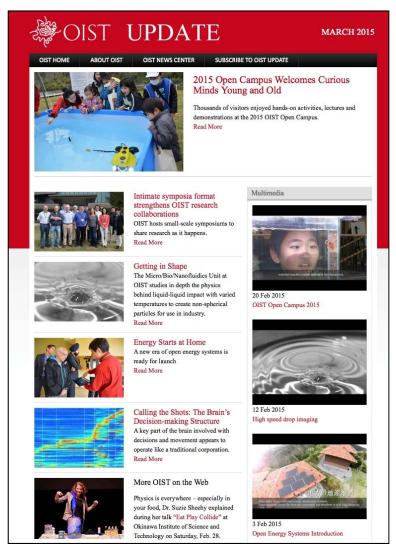




OIST Update / OIST便り

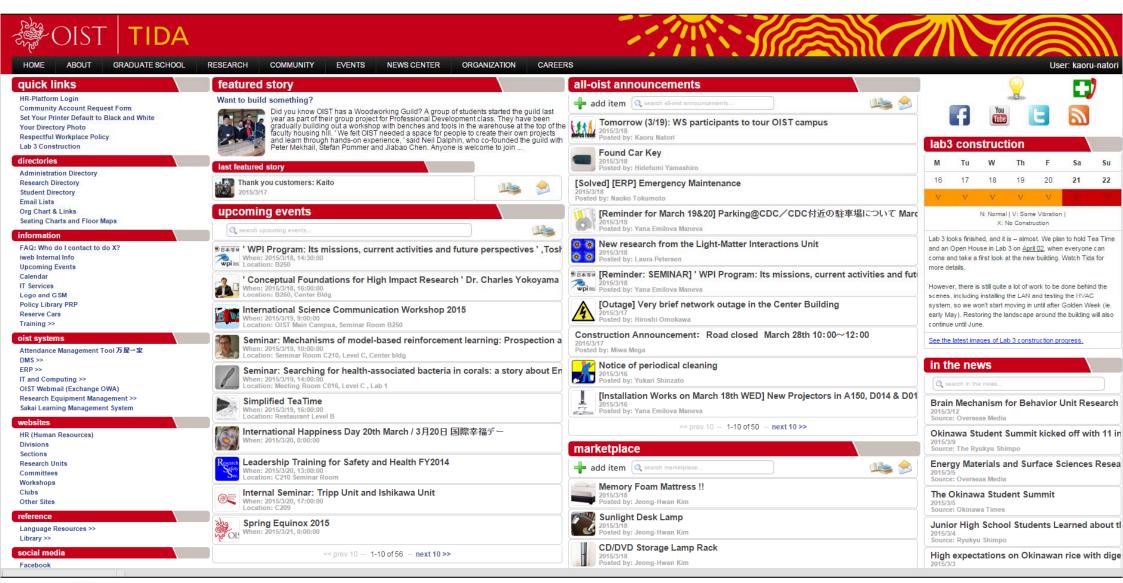
An email newsletter that keeps subscribers informed about the latest in OIST news, job posts, upcoming events and other information.

OISTの最新ニュース、採用情報、今後のイベント等を電子メールで知らせるニュースレター





Community Building コミュニティ構築









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24 Dec 2014

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Latest News and Media

About one tenth of the world's ants are close relatives; they all belong to just

The Ants That Conquered the World

one genus out of 323, called Pheidole. "If you go into any tropical forest and take a stroll, you will step on one of these ants," says Okinawa Institute of Science and Technology Graduate University's Professor Evan Economo. Pheidole fill niches in ecosystems ranging from rainforests to deserts. Yet until now, researchers have never had a global perspective of how the many species of *Pheidole* evolved and spread across the Earth. Economo, researchers in the Biodiversity and Biocomplexity Unit, and colleagues at the University of Michigan compared gene sequences from 300 species of Pheidole from around the world. They used these sequences to construct a tree that shows when and where each species evolved into new species. At the same time, in a parallel effort, they scoured the academic literature, museums around the world, and large databases to aggregate data on where all 1200 or so Pheidole species live on Earth, creating a range map for each species. Their results, published in the *Proceedings of the Royal Society* Series B, suggest that Pheidole evolved the same way twice, once to take over the New World, and then again to take over the Old World.

Related Photo(s):



Professor Evan Economo and researchers in the Biodiversity and Biocomplexity Unit compared genetic sequences from hundreds species of Pheidole, a group of ants with mysteriously high diversity. They used these sequences to construct a Pheidole evolutionary tree that suggests Pheidole evolved the same way twice, to take over the New World and then the Old World





Economo Unit research picked up by overseas media

Overseas Media 2014/12/25

The Economo Units new research has been picked up by the following overseas news outlets:

Science Codex

Science Daily

SciGuru

International Business Times

Zee News

Before It's News

Nature World News

Machines Like Us

Science 2.0

The Cutting Edge News

Red Orbit

Bio scholar

AZoCleantech

Paper Blog (French)

Money.pl (Polish)

Die Welt (German)

Berliner Morgenpost (German)

Nauka W Polsce (Polish)

Sante log (French)

Christian Today

You can read about this research here.



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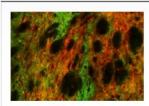








Latest News and Media



11 Mar 2015
Dark Neural Patches

Surviving Typhoons

8 Jan 2015

It is no secret that typhoons are capable of churning the seas and wreaking destruction. But it is tough to examine what exactly happens during a typhoon, particularly in the ocean. The Okinawa Institute of Science and Technology Graduate University has launched an underwater observatory to monitor what happens in the ocean over long periods of time. Researcher Mary Grossmann, in the Marine Biophysics Unit, used the observatory to determine what happens to plankton during a typhoon. Her study, published online on December 30, 2014 in *The Journal of Oceanography*, offers a rare glimpse at what happens underwater during a typhoon.

"We know what happens before typhoons, and after, as soon as it's safe, you can get a boat out," said Grossmann. "But we don't know what happens during typhoons." It's difficult to select equipment that is sensitive enough to detect the fine morphology of plankton, but that can also withstand the force of a typhoon. The Marine Biophysics Unit has established a station off the Motobu peninsula in Okinawa that they call OCTOPUS, which stands for the OIST Cabled Teleoperational Observatory Platform for Undersea Surveillance. OCTOPUS contains a dozen ocean monitoring tools, including cameras, wave monitors, and temperature sensors. The station lies near the ocean floor, about 20 meters below the surface, and uses power from Churaumi Aquarium. "We had problems during the first typhoon with the cables," Grossmann explained. "Some of the cables pulled out, cutting the power supply to some sensors." In another typhoon, the aquarium lost power,

Related Photo(s):



Mary Grossmann looks at a jar of plankton she collected on a recent cruise.



Grossman found an amphipod (pictured at left), and then found one inside of a translucent chaetognath (pictured at right) during a feeding frenzy in one of the typhoons. The chaetognath runs from top left to bottom right and the amphipod has unrolled to fit inside the chaetognath's gut.

Mary Grossman's typhoon plankton research picked up by overseas media

Science Daily, Engineering and Technology Magazine, Phys.org, etc.

2015/1/9

Mary Grossman's research in the Marine Biophysics Unit about how plankton survives typhoons has been picked up by the following overseas media:

Science Daily

Engineering and Technology Magazine

Phys.org

Science Newsline

Terra Daily

New Scientist

Gizmodo, Gizmodo India, Gizmodo Australia

Ameba News (Japanese)

Excite News (Japanese)

You can read the full story here.





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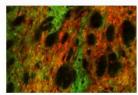








Latest News and Media



11 Mar 2015 **Dark Neural Patches**

Pinholes are Pitfalls for High Performance Solar Cells

30 Jan 2015

The most popular next-generation solar cells under development may have a problem – the top layer is full of tiny pinholes, researchers at the Okinawa Institute of Science and Technology Graduate University in Japan have found.

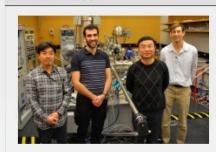
The majority of high-performance solar cells under development use a combination of materials including perovskite and spiro-MeOTAD. These cells are far cheaper than traditional silicon-based solar cells, and their efficiency has been increasing significantly in the past few years. But perovskite, which is the layer that converts sunlight to electricity, degrades quickly.

OIST researchers believe they have identified a key culprit for this problem.

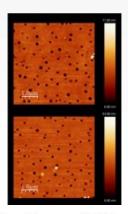
Miniscule pinholes in the spiro-MeOTAD layer -- most so small they cannot be seen even with a light microscope -- may be creating easy pathways for water and other gas molecules in air to diffuse through the thin film and degrade the perovskite.

"These pinholes may play a major role in the degradation of the lifetime of the solar cells," said Zafer Hawash, a PhD student at OIST who discovered the pinholes. His findings were recently published in the journal Chemistry of Materials.

Related Photo(s):



(From left) Dr. Luis Ono, OIST PhD student Zafer Hawash, Professor Yabing Qi and Dr. Michael Lee aim to improve the efficiency and lifetime of perovskite solar cells.



Atomic Force Microscopy (AFM) images

Energy Materials and Surface Sciences Research covered in Overseas Media

Overseas Media 2015/3/5

New research from the Energy Materials and Surface Sciences Unit published in Chemistry of Materials has been picked up by the following overseas news outlets:

Science Daily

Science Newsline

Phys.org

Compound Semiconductor

EE Times Europe

Bright Surf

Solar Daily

Bits & Chips (Netherlands)

Optics & Photonics News

Asian Scientist

Solar-International

Read the full story here.









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Latest News and Media

Calling the Shots: The Brain's Decision-making Structure

27 Feb 2015

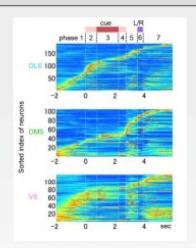
A key part of the brain involved with decision making, the striatum, appears to operate hierarchically – much like a traditional corporation with executives, middle managers and employees, according to researchers at the Okinawa Institute of Science and Technology (OIST) Graduate University in Japan.

The striatum is part of the basal ganglia, the inner core of the brain that processes decisions and movements. Neuroscientists have thought the three regions of the striatum – ventral, dorsomedial and dorsolateral – have very distinct roles in motivation, adaptive decisions and routine actions, respectively.

However, OIST researchers found these parts do not operate in isolation, but work together in a coordinated hierarchy – like a traditional company with executives making decisions, delegating to middle managers and employees carrying out specific tasks.

"The three parts have not been investigated simultaneously in the same task

Related Photo(s):



Neurons in the dorsolateral, dorsomedial and ventral striatum were activated during different phases of the task. The vertical axes are numbered neurons, and the activity of each neuron is indicated by the yellow and red colors.



Doya Unit Research Covered by Overseas Media

Overseas Media 2015/3/2

The story about the Doya Unit's research about the striatum was picked up by overseas media, including:

Science Newsline

ScienceDaily

Scicasts

Medical Press

NeuroScientistNews

Neuroscience Hub

PsyPost

Biocompare

Bioengineer.org

Health Medicine Network

Health Canal

BIGLOBE News (Japanese)

BrightSurf.com

Sciences et Avenir (French)

Medical News Today

newKerala.com

Zee News

Med India

The Hans India

Read the full story here.





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Interesting paper on the role of ventral, dorsomedial and dorsolateral regions of the striatum shar.es/1WyDc5

6:31 AM - 28 Feb 2015



Rohaan Solare @EmergentCulture

" A key part of the brain involved with decision making, the striatum, appears to operate hierarchically - much... fb.me/1Vyg9XhzR

7:52 AM - 1 Mar 2015

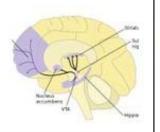
Calling the shots: The brain's decision-making structure - PsyPost

A key part of the brain involved with decision making, the striatum, appears to operate hierarchically - much like a traditional corporation with executive ...



PsyPost.org @PsyPost

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Calling the shots: Brain's decision-making structure -- ScienceDaily ow.ly/JO49e #neuroscience #striatum

12:50 PM - 7 Mar 2015

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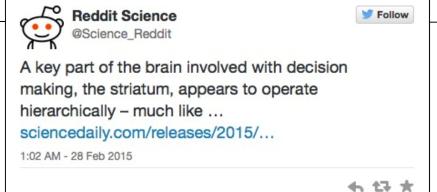


BSB

@BSB_Bipolar

A key part of the brain involved with decision making, the striatum, appears to operate hierarchically - much... fb.me/7fJ6L7xEl

12:22 AM - 28 Feb 2015





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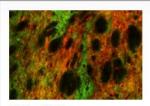
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11 Mar 2015 Dark Neural Patches

Solar Cells Get Growth Boost

4 Mar 2015

Researchers at the Okinawa Institute of Science and Technology Graduate University's (OIST) Energy Materials and Surface Sciences Unit have found that growing a type of film used to manufacture solar cells in ambient air gives it a growth boost. The finding, which could make manufacturing solar cells significantly cheaper, was published in *Chemistry of Materials*.

The type of material is called Perovskite. Since the discovery of its application in harvesting light for electricity in 2009, research on solar cell application has skyrocketed. Fabrication techniques are being developed around the world to improve their power conversion efficiencies. The OIST study gives perovskite solar cells another shot in the arm by making the materials easier to mass produce.

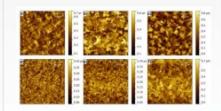
Earlier studies had concluded that exposing perovskite films to ambient air was detrimental because moisture reacted with perovskite, which degraded over time. It was therefore believed the material had to be prepared using a heat treatment called annealing in a water-free environment.

OIST researchers set out to investigate the effects of moisture on perovskite formation during 45 minutes of annealing, at temperatures between 105 and 125 degrees centigrade. They grew a type of perovskite that has been shown to work better for solar cells.—Then, they compared the Perovskite film's formation in a nitrogen atmosphere with its formation in humid air and found

Related Photo(s):



From left to right: Dr. Michael Lee, Dr. Min-cherl Jung, Dr. Sonia Ruiz-Raga, Professor Yabing Qi and Dr. Matthew. R. Layden



a) 105°C in air b) 115°C in air, c) 125°C in air, d) 105°C in Nitrogen, e) 115°C in Nitrogen, and f) 125°C in Nitrogen. Grain sizes on perovskite films are larger when prepared in air between 105 to 125 degrees centigrade than in a nitrogen atmosphere.

Energy Materials and Surface Sciences Unit Research Covered in Overseas Media

Overseas Media 2015/2/2

Research from the Energy Materials and Surface Sciences Unit was covered by overseas media, including:

Nanotechnology Now

Science Daily

Phys.org

Science Newsline

Research & Development

EE Times Europe

EE Times India

AZoM (The A to Z of Materials)

New Materials News

Democratic Underground

One News Page

Компьютерное Обозрение (Computer Review)

Solar Novus Today

Asian Scientist Magazine

You can read the full story here.





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Look Who's Evolving Now: Using Robots to Study Evolution

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11 Apr 2014

A new paper by OIST's Neural Computation Unit has demonstrated the usefulness of robots in studying evolution. Published in PLOS ONE, Stefan Elfwing, a researcher in Professor Kenji Doya's Unit, has successfully used a colony of rodent-like robots to watch different mating strategies evolve. The work not only generated interesting and unexpected results, but it has also helped validate the use of robots in the study of evolution.

COMMUNITY

Males and females of different species have different strategies of attracting and selecting mating partners. Evolutionary theory suggests that only one distinct phenotype, in this case referring to mating strategy, should exist within a population. This is because natural selection dictates only the best strategy will survive. However, in nature, we see polymorphic mating strategies, meaning there are multiple ways of mating within one population. How these different mating strategies evolved is debated among evolutionary biologists. Studying the evolution of such behaviors in living populations of complex animals is exceedingly difficult. By using robots and computer simulation, Dr. Elfwing is able to watch evolution happen over 1,000 generations in a short period of time, something that is impossible to do in live animals. This is why some scientists have turned to robots to study evolution and see if they can understand how different behavioral strategies develop within a population.

Related Photo(s):

ORGANIZATION





Dr. Stefan Elfwing with a Cyber Rodent robot.

国外の24媒体にとりあげられる

