

PNAS

National Academy
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Getting Started

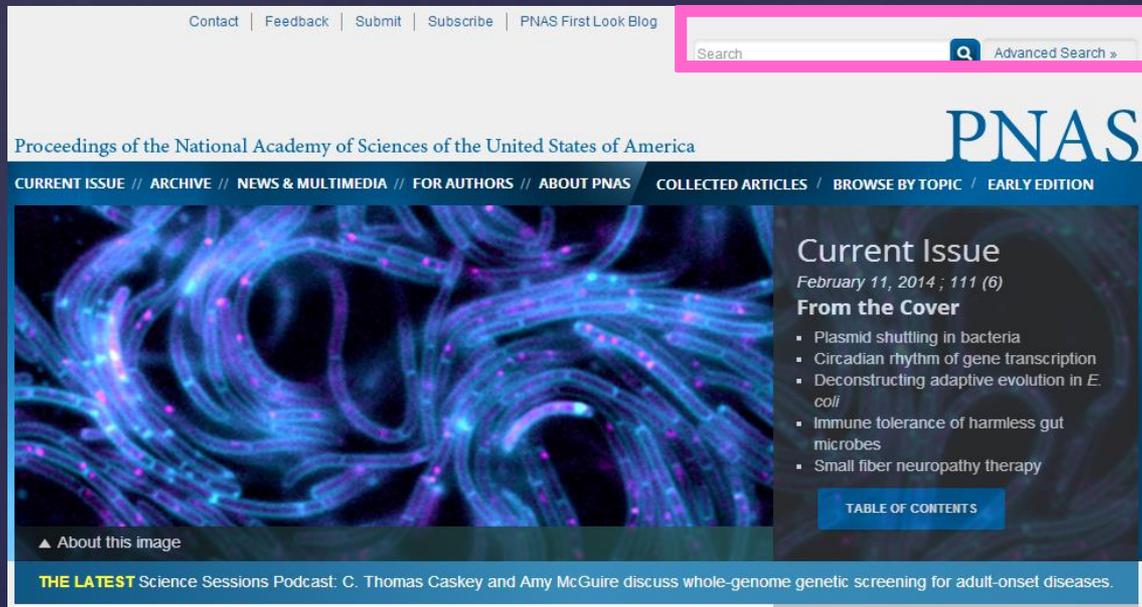
Los suscriptores de PNAS tienen acceso completo a todo el contenido en PNAS en línea, incluyendo la investigación de reciente publicación, los artículos front matter, y otras publicaciones especiales.

Si una institución tiene una suscripción activa a PNAS en línea, cualquier usuario de una dirección IP aprobados puede acceder a los contenidos completos de la revista en la página de inicio PNAS: www.pnas.org o <http://www.conricyt.mx/>

Desde la página principal de PNAS, los usuarios pueden buscar artículos específicos, examinar los artículos recién publicados en PNAS Early Edition o la tabla de contenido, inscribace para recibir alertas de correo electrónico, escuchar podcasts y leer acerca de PNAS en las noticias.

Searching for PNAS Articles

Para llevar a cabo una búsqueda básica de PNAS artículos desde 1915 hasta la actualidad, escriba un título completo o parcial del artículo, palabras clave relevantes, o nombres de los autores en el campo en blanco "Buscar" en la esquina superior derecha, haga clic en la lupa (o pulse la tecla Intro key) para mostrar los resultados.



The screenshot shows the PNAS website's search interface. At the top, there are navigation links: Contact, Feedback, Submit, Subscribe, and PNAS First Look Blog. A search bar is highlighted with a pink border, containing the text "Search" and a magnifying glass icon, with a link to "Advanced Search" to its right. Below the search bar, the text "Proceedings of the National Academy of Sciences of the United States of America" is displayed. The PNAS logo is on the right. A dark blue navigation bar contains the following links: CURRENT ISSUE // ARCHIVE // NEWS & MULTIMEDIA // FOR AUTHORS // ABOUT PNAS // COLLECTED ARTICLES / BROWSE BY TOPIC / EARLY EDITION. The main content area features a large image of glowing blue and purple bacterial filaments. To the right of the image, the text "Current Issue" is followed by "February 11, 2014 ; 111 (6)". Below this, the section "From the Cover" lists four articles: "Plasmid shuttling in bacteria", "Circadian rhythm of gene transcription", "Deconstructing adaptive evolution in *E. coli*", and "Immune tolerance of harmless gut microbes". A fifth article, "Small fiber neuropathy therapy", is listed below. A blue button labeled "TABLE OF CONTENTS" is positioned below the list. At the bottom left of the image area, there is a link "▲ About this image". At the bottom of the page, a banner reads "THE LATEST Science Sessions Podcast: C. Thomas Caskey and Amy McGuire discuss whole-genome genetic screening for adult-onset diseases."

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Searching journal content for **elephant** (all words) in full text.

Displaying results 1-10 of 382

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Physical Sciences - Environmental Sciences - Biological Sciences - Population Biology

B. L. Hall, A. R. Hoelzel, C. Baroni, G. H. Denton, B. J. Le Boeuf, B. Overturf, and A. L. Töpfer

Holocene **elephant** seal distribution implies warmer-than-present climate in the Ross Sea

PNAS 2006 103 (27) 10213-10217; published ahead of print June 26, 2006,

doi:10.1073/pnas.0604002103

Holocene **elephant** seal distribution implies warmer-than-present...Cruz, CA 95064 We show that southern **elephant** seal (*Mirounga leonina*) colonies existed...from our discovery of abandoned southern **elephant** seal colonies along the Victoria Land...

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Biological Sciences - Psychological and Cognitive Sciences

Joshua M. Plotnik, Richard Lair, Wirot Suphachoksakun, and Frans B. M. de Waal

Elephants know when they need a helping trunk in a cooperative task

PNAS 2011 108 (12) 5116-5121; published ahead of print March 7, 2011,

doi:10.1073/pnas.1101765108

Elephants know when they need a helping trunk in...University, Atlanta, GA 30322; and b Thai **Elephant** Conservation Center, Forest Industry...Environment, Lamphang 52000, Thailand **Elephants** are widely assumed to be among the most...

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Biological Sciences - Physiology

Lei Ren, Charlotte E. Miller, Richard Lair, and John R. Hutchinson

Integration of biomechanical compliance, leverage, and power in **elephant** limbs

PNAS 2010 107 (15) 7078-7082; published ahead of print March 29, 2010,

doi:10.1073/pnas.0911396107

...biomechanical compliance, leverage, and power in **elephant** limbs 10.1073/pnas.0911396107 Lei Ren Charlotte...Manchester M60 1QD, United Kingdom; and c National **Elephant** Institute, Thai **Elephant** Conservation Center, Lamphang 52000, Thailand...

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Biological Sciences - Evolution

Vyodianathan Ravi, Kevin Lam, Boon-Hui Tay, Alice Tay, Sydney Brenner, and Byrappa Venkatesh

Elephant shark (*Callorhynchus milii*) provides insights into the evolution of Hox gene clusters in gnathostomes

PNAS 2009 106 (38) 16327-16332; published ahead of print September 3, 2009,

La búsqueda de "elefante" en cualquier parte de un artículo produce 382 resultados; aparece el término de búsqueda en rojo a lo largo de la lista de resultados.

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Reading a PNAS Article

Current Issue > vol. 108 no. 12 > Joshua M. Plotnik, 5116–5121, doi: 10.1073/pnas.1101765108

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Elephants know when they need a helping trunk in a cooperative task

Joshua M. Plotnik^{a,1,2}, Richard Lair^b, Wirot Supachoksahakun^b, and Frans B. M. de Waal^{a,2}

Author Affiliations

Contributed by Frans B. M. de Waal, February 3, 2011 (sent for review November 20, 2010)

Abstract Full Text Authors & Info Figures SI Metrics Related Content   +SI

Abstract

Elephants are widely assumed to be among the most cognitively advanced animals, even though systematic evidence is lacking. This void in knowledge is mainly due to the danger and difficulty of submitting the largest land animal to behavioral experiments. In an attempt to change this situation, a classical 1930s cooperation paradigm commonly tested on monkeys and apes was modified by using a procedure originally designed for chimpanzees (*Pan troglodytes*) to measure the reactions of Asian elephants (*Elephas maximus*). This paradigm explores the cognition underlying coordination toward a shared goal. What do animals know or learn about the benefits of cooperation? Can they learn critical elements of a partner's role in cooperation? Whereas observations in nature suggest such understanding in nonhuman primates, experimental results have been mixed, and little evidence exists with regards to nonprimates. Here, we show that elephants can learn to coordinate with a partner in a task requiring two individuals to simultaneously pull two ends of the same rope to obtain a reward. Not only did the elephants act together, they inhibited the pulling response for up to 45 s if the arrival of a partner was delayed. They also grasped that there was no point to pulling if the partner lacked access to the rope. Such results have been interpreted as demonstrating an understanding of cooperation. Through convergent evolution, elephants may have reached a cooperative skill level on a par with that of chimpanzees.

animal behavior | comparative cognition | problem solving

This Issue

 March 22, 2011
vol. 108 no. 12
Masthead (PDF)
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Para ver un archivo PDF en lugar del texto completo, haga clic en el símbolo rojo de Adobe en el menú de la ficha.

Si hay SI disponibles, también se puede ver un PDF que combina el artículo principal con su SI.

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Current Issue
February 11, 2014 ; 111 (6)
From the Cover

- Plasmid shuttling in bacteria
- Circadian rhythm of gene transcription
- Deconstructing adaptive evolution in *E. coli*
- Immune tolerance of harmless gut microbes
- Small fiber neuropathy therapy

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THE LATEST Science Sessions Podcast: C. Thomas Caskey and Amy McGuire discuss whole-genome genetic screening for adult-onset diseases.

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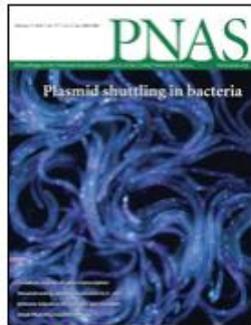
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January 1915 - Present

Collected Papers: [List of Inaugural Articles](#) | [List of Commentaries](#) | [List of Reviews](#) | [List of Perspectives](#) | [List of Colloquium Papers](#) | [From the Academy](#)

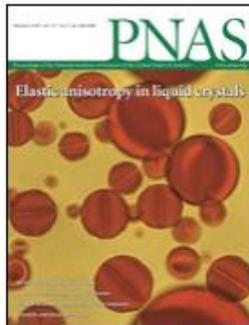
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Current Issue:



February 11, 2014
vol. 111, no. 6

Recent Issues:



February 4, 2014
vol. 111, no. 5



January 28, 2014
vol. 111, no. 4



January 21, 2014
vol. 111, no. 3

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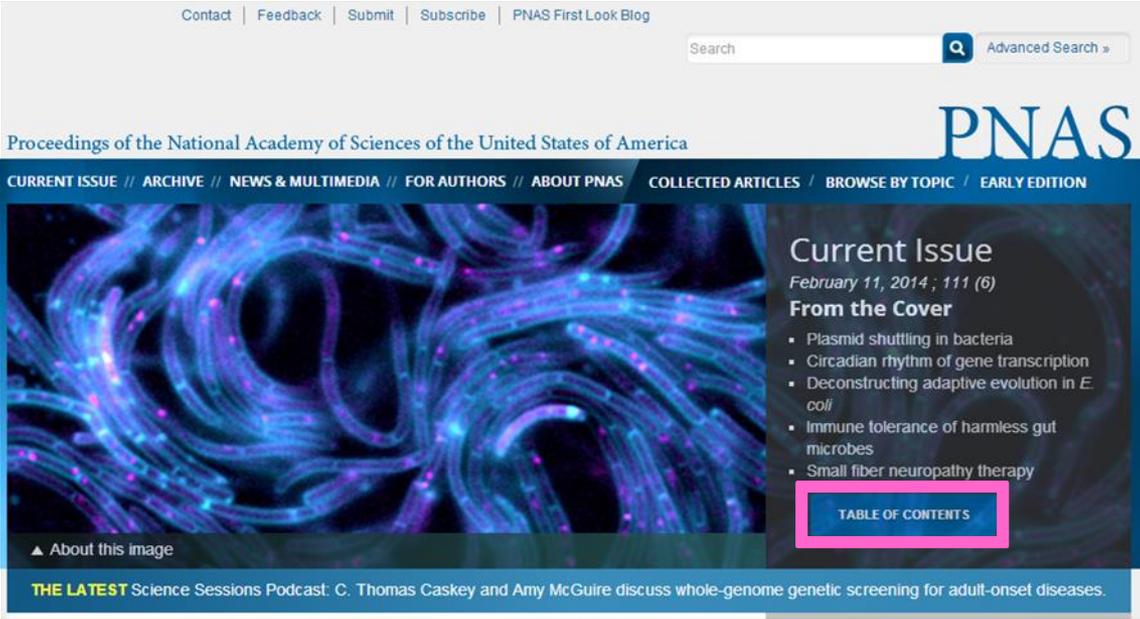
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Todos los artículos de PNAS están disponibles para leer en línea en la sección de archivos .

Desde aquí , los usuarios pueden ver todos los artículos publicados desde un año específico haciendo clic en ese año .

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THE LATEST Science Sessions Podcast: C. Thomas Caskey and Amy McGuire discuss whole-genome genetic screening for adult-onset diseases.

Los usuarios pueden acceder a la tabla de contenido para la edición de la semana en curso desde la página principal .

Al hacer clic en la " Tabla de Contenidos" llevará a los usuarios a una nueva página con la lista de todos los artículos de la actual edición , organizado por la clasificación.

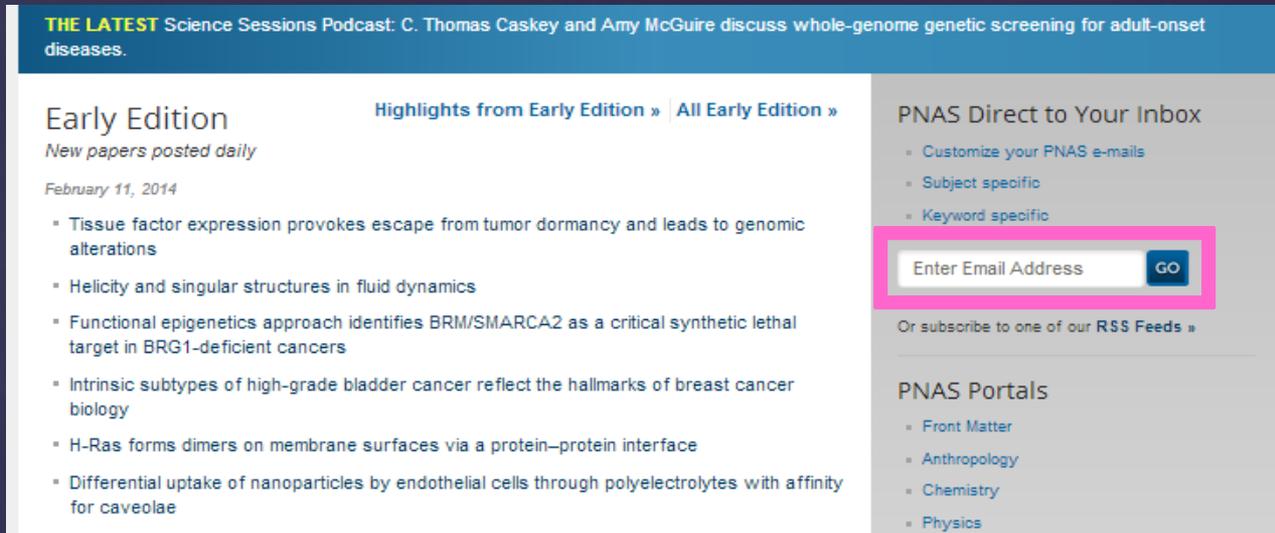
PNAS Early Edition

The screenshot shows the PNAS Early Edition website. At the top, a blue banner reads "THE LATEST Science Sessions Podcast: C. Thomas Caskey and Amy McGuire discuss whole-genome genetic screening for adult-onset diseases." Below this, a pink-bordered box highlights the "Early Edition" section, which includes the text "New papers posted daily" and two navigation links: "Highlights from Early Edition »" and "All Early Edition »". The date "February 11, 2014" is displayed. A list of article titles is shown, including "Tissue factor expression provokes escape from tumor dormancy and leads to genomic alterations", "Helicity and singular structures in fluid dynamics", "Functional epigenetics approach identifies BRM/SMARCA2 as a critical synthetic lethal target in BRG1-deficient cancers", "Intrinsic subtypes of high-grade bladder cancer reflect the hallmarks of breast cancer biology", "H-Ras forms dimers on membrane surfaces via a protein-protein interface", and "Differential uptake of nanoparticles by endothelial cells through polyelectrolytes with affinity for caveolae". To the right, there is a "PNAS Direct to Your Inbox" section with options to "Customize your PNAS e-mails", "Subject specific", and "Keyword specific", along with an "Enter Email Address" field and a "GO" button. Below that, it says "Or subscribe to one of our RSS Feeds »". At the bottom right, the "PNAS Portals" section lists "Front Matter", "Anthropology", "Chemistry", and "Physics".

Los Artículos Early Edition son artículos que no han publicado aún en una edición impresa . Los usuarios pueden navegar por los puntos destacables o ver todos los artículos Early Edition utilizando los enlaces en el cuadro resaltado.

Los enlaces directos a algunos de los artículos seleccionados se enumeran en esta sección.

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THE LATEST Science Sessions Podcast: C. Thomas Caskey and Amy McGuire discuss whole-genome genetic screening for adult-onset diseases.

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- Tissue factor expression provokes escape from tumor dormancy and leads to genomic alterations
- Helicity and singular structures in fluid dynamics
- Functional epigenetics approach identifies BRM/SMARCA2 as a critical synthetic lethal target in BRG1-deficient cancers
- Intrinsic subtypes of high-grade bladder cancer reflect the hallmarks of breast cancer biology
- H-Ras forms dimers on membrane surfaces via a protein–protein interface
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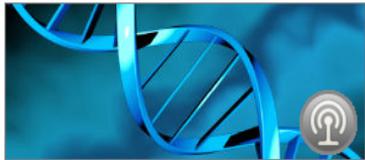
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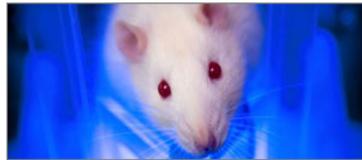


Genetic screening for adults

February 3, 2014

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▶ Featured Image



Sensory whiskers

Rat whiskers sense vibrations.

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Outsourced manufacturing in China and air pollution over the western United States

An assessment of the impacts of trade-related Chinese air pollutant emissions on the global atmospheric environment attributes more than 20% of the pollution to the production of China-to-United States exports.



Mistimed sleep disrupts rhythms of gene expression in humans

A study finds that disruption of sleep timing can affect the circadian transcription of many genes in humans.



Mathematical model helps estimate optimal timing of cyber attack

A simple mathematical model can help decision-makers estimate how high the stakes need to be before launching a cyber attack, a study finds.



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- Physics
- Sustainability Science

NEW! PNAS Magazine Section and Blog

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Plus, in the PNAS First Look blog, science journalists discuss a selection of new papers from PNAS with new content appearing every business day.

Top Articles

1. The bioinorganic chemistry of iron in oxygenases and supramolecular assemblies
2. Evidence on the impact of sustained exposure to air pollution on life expectancy from China's Huai River policy
3. Small-molecule agonists for the thyrotropin receptor stimulate thyroid function in human thyrocytes and mice
4. Sex differences in the structural connectome of the human brain
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"PNAS en las Noticias" ofrece enlaces a medios externos de información sobre investigación reciente PNAS