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## **Contents**

<b>Sl. No.</b>	<b>Journal Name</b>
1.	American Journal of Epidemiology
2.	Annals of Work Exposures and Health
3.	Bulletin of Environmental Contamination and Toxicology
4.	Bulletin of the World Health Organization
5.	Current Science
6.	Human & Experimental Toxicology
7.	Indian Journal of Experimental Biology
8.	Journal of Analytical Toxicology
9.	Journal of Occupational and Environmental Medicine
10.	Lancet
11.	Nature
12.	Occupational & Environmental Medicine
13.	Science
14.	Science Reporter
15.	The New England Journal of Medicine
16.	Toxicology and Industrial Health



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# American Journal of Epidemiology

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## EDITORIALS

- 1197** Change in Leadership of the *American Journal of Epidemiology*. *David D. Celentano*
- 1198** A Time of Change. *Moyses Szklo*
- 1200** *American Journal of Epidemiology*—Some Changes, Same Commitment to Excellence. *Enrique F. Schisterman*

## POINT-COUNTERPOINT

- 1201** Point: Risk Ratio Equations for Natural Direct and Indirect Effects in Causal Mediation Analysis of a Binary Mediator and a Binary Outcome—A Fresh Look at the Formulas. *Mariia Samoilenko and Geneviève Lefebvre*
- 1204** Counterpoint: Mediation Formulas With Binary Mediators and Outcomes and the “Rare Outcome Assumption”. *Tyler J. Vanderweele, Linda Valeri, and Cande V. Ananth*

## SPECIAL ARTICLE

- 1206** Genomic Research and American Indian Tribal Communities in Oklahoma: Learning From Past Research Misconduct and Building Future Trusting Partnerships. *Jennifer Q. Chadwick, Kenneth C. Copeland, Dannielle E. Branam, Julie A. Erb-Alvarez, Sohail I. Khan, Michael T. Peercy, Mark E. Rogers, Bobby R. Saunkeah, Jeanie B. Tryggestad, and David F. Wharton*

## ORIGINAL CONTRIBUTIONS

### COGNITIVE FUNCTION

- 1213** To What Extent Does Age at Death Account for Sex Differences in Rates of Mortality from Alzheimer Disease? *Rachel F. Buckley, Michael Waller, Colin L. Masters, and Annette Dobson*
- 1224** Invited Commentary: Examining Sex/Gender Differences in Risk of Alzheimer Disease and Related Dementias—Challenges and Future Directions. *Elizabeth Rose Mayeda*

Continued on Inside Front Cover

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## Contents Continued From Front Cover

- 1228 History of Benzodiazepine Prescriptions and Risk of Dementia: Possible Bias Due to Prevalent Users and Covariate Measurement Timing in a Nested Case-Control Study.** *Kathryn Richardson, Katharina Mattishent, Yoon K. Loke, Nicholas Steel, Chris Fox, Carlota M. Grossi, Kathleen Bennett, Ian Maidment, Malaz Boustani, Fiona E. Matthews, Phyo K. Myint, Noll L. Campbell, Carol Brayne, Louise Robinson, and George M. Savva*

### SOCIAL EPIDEMIOLOGY

- 1237 Age at Immigration, Generational Status, and Death Among Children of Immigrant Mothers: a Longitudinal Analysis of Siblings.** *Neil K. Mehta, Pekka Martikainen, and Agneta Cederström*
- 1245 Opioid Use and Misuse and Suicidal Behaviors in a Nationally Representative Sample of US Adults.** *Hillary Samples, Elizabeth A. Stuart, and Mark Olfson*
- 1254 Associations Between Gun Laws and Suicides.** *Marco Ghiani, Summer Sherburne Hawkins, and Christopher F. Baum*

### REPRODUCTION

- 1262 Associations of Maternal Gestational Weight Gain and Obesity With the Timing of Pubertal Onset in Daughters.** *Sara Aghaee, Cecile A. Laurent, Julianna Deardorff, Assiamira Ferrara, Louise C. Greenspan, Charles P. Quesenberry, Jr., Lawrence H. Kushi, and Ai Kubo*
- 1270 Associations of Maternal Cell-Phone Use During Pregnancy With Pregnancy Duration and Fetal Growth in 4 Birth Cohorts.** *Ermioni Tsarna, Marije Reedijk, Laura Ellen Birks, Mònica Guxens, Ferran Ballester, Mina Ha, Ana Jiménez-Zabala, Leeka Kheifets, Aitana Lertxundi, Hyung-Ryul Lim, Jorn Olsen, Lúcia González Safont, Madhuri Sudan, Elisabeth Cardis, Martine Vrijheid, Tanja Vrijkotte, Anke Huss, and Roel Vermeulen*

### ENVIRONMENT

- 1281 Relationships of Cadmium, Lead, and Mercury Levels With Albuminuria in US Adults: Results From the National Health and Nutrition Examination Survey Database, 2009–2012.** *Xiu-Juan Zhu, Jing-Jing Wang, Jian-Hua Mao, Qiang Shu, and Li-Zhong Du*
- 1288 Time-Varying Exposure to Ozone and Risk of Stillbirth in a Nonattainment Urban Region.** *Amal Rammah, Kristina W. Whitworth, Inkyu Han, Wenyaw Chan, and Elaine Symanski*

### CARDIOVASCULAR DISEASE

- 1296 Cesarean Delivery and Hypertension in Early Adulthood.** *Alexandre Archanjo Ferraro, Marco Antônio Barbieri, Antonio Augusto Moura Da Silva, Marcelo Zubaran Goldani, Maria Teresa Bechere Fernandes, Viviane Cunha Cardoso, Aryeh David Stein, and Heloisa Bettiol*

### DIET

- 1304 Does Season of Reported Dietary Intake Influence Diet Quality? Analysis From the Women's Health Initiative.** *Tracy E. Crane, Yasmin Abdel Latif, Betsy C. Wertheim, Lindsay N. Kohler, David O. Garcia, Jinnie J. Rhee, Rebecca Seguin, Rasa Kazlauskaitė, James M. Shikany, and Cynthia A. Thomson*

### INFECTIOUS DISEASE

- 1311 Association of Scrub Typhus With the Risk of Autoimmune Diseases: A Population-Based Cohort Study.** *Kuo-An Chu, Weishan Chen, Chung Y. Hsu, Yao-Min Hung, and James Cheng-Chung Wei*
- 1319 Determinants of Transmission Risk During the Late Stage of the West African Ebola Epidemic.** *Alexis Robert, W. John Edmunds, Conall H. Watson, Ana Maria Henao-Restrepo, Pierre-Stéphane Gsell, Elizabeth Williamson, Ira M. Longini, Jr., Keita Sakoba, Adam J. Kucharski, Alhassane Touré, Séverine Danmadji Nadlaou, Boubacar Diallo, Mamamdou Saidou Barry, Thierno Oumar Fofana, Louceny Camara, Ibrahima Lansana Kaba, Lansana Sylla, Mohamed Lamine Diaby, Ousmane Soumah, Abdourahime Diallo, Amadou Niare, Abdourahmane Diallo, and Rosalind M. Eggo*

### PRACTICE OF EPIDEMIOLOGY

- 1328 Comparison of Parametric and Nonparametric Estimators for the Association Between Incident Prepregnancy Obesity and Stillbirth in a Population-Based Cohort Study.** *Ya-Hui Yu, Lisa M. Bodnar, Maria M. Brooks, Katherine P. Himes, and Ashley I. Naimi*
- 1337 Invited Commentary: The Causal Association Between Obesity and Stillbirth—Strengths and Limitations of the Consecutive-Pregnancies Approach.** *Jonathan M. Snowden and Stephanie A. Leonard*

**1343** The Authors Respond to “Issues With the Consecutive-Pregnancies Approach”. *Ya-Hui Yu, Lisa M. Bodnar, Maria M. Brooks, Katherine P. Himes, and Ashley I. Naimi*

**1345** Performance of Matching Methods as Compared With Unmatched Ordinary Least Squares Regression Under Constant Effects. *Anusha M. Vable, Mathew V. Kiang, M. Maria Glymour, Joseph Rigdon, Emmanuel F. Drabo, and Sanjay Basu*

**1355** Using Bounds to Compare the Strength of Exchangeability Assumptions for Internal and External Validity. *Alexander Breskin, Daniel Westreich, Stephen R. Cole, and Jessie K. Edwards*

**1361** Cp\*Trends: An Online Tool for Comparing Cohort and Period Trends Across Cancer Sites. *Theodore R. Holford, Huann-Sheng Chen, David Annett, Martin Krapcho, Asya Dorogaeva, and Eric J. Feuer*

**1371** Restriction of Pharmacoepidemiologic Cohorts to Initiators of Medications in Unrelated Preventive Drug Classes to Reduce Confounding by Frailty in Older Adults. *Henry T. Zhang, Leah J. McGrath, Alan R. Ellis, Richard Wyss, Jennifer L. Lund, and Til Stürmer*

**1383** Using the Self-Controlled Tree-Temporal Scan Statistic to Assess the Safety of Live Attenuated Herpes Zoster Vaccine. *W. Katherine Yih, Martin Kuldorff, Inna Dashevsky, and Judith C. Maro*

**1389** Assessing Zika Virus Transmission Within Households During an Outbreak in Martinique, 2015–2016. *Anthony Cousien, Sylvie Abel, Alice Monthieux, Alessio Andronico, Isabelle Calmont, Minerva Cervantes, Raymond Césaire, Pierre Gallian, Xavier De Lamballerie, Cédric Laouénan, Fatiha Najjoulah, Sandrine Pierre-François, Mathilde Pircher, Henrik Salje, Quirine A. ten Bosch, André Cabié, and Simon Cauchemez*

#### RESEARCH LETTERS

**1397** A Look at the Unique Identifiability of Propensity Score Calibration. *Dane R. Van Domelen and Robert H. Lyles*

**1400** Associations of Occupant Motor Vehicle Crash with Future Heart Failure and Ischemic Stroke in Older Adults. *Bindu Kalesan, Charlotte Andersson, Christian Torp-Pedersen, Gunnar H. Gislason, and Ramachandran S. Vasani*

#### LETTERS TO THE EDITOR

**1404** Re: “Reassessing the Global Mortality Burden of the 1918 Influenza Pandemic”. *Siddharth Chandra and Julia Christensen*

**1405** The Authors Reply. *Peter Spreeuwenberg, Madelon Kroneman, and John Paget*

Instructions to Authors can be found on the following website: <https://academic.oup.com/aje>

Online collections of our Primers on -Omic Technologies and Study Design articles are available on our website.

# ANNALS OF WORK EXPOSURES AND HEALTH

Volume 63 Number 6 2019

## SPECIAL ISSUE FOR X2018, THE 9TH INTERNATIONAL CONFERENCE ON THE SCIENCE OF EXPOSURE ASSESSMENT

### Guest Editors:

Kate Jones and Martie Van Tongeren

### EDITORIALS

- 605 **KATE JONES, MARTIE VAN TONGEREN**  
X2018—The 9th International Conference on the Science of Exposure Assessment
- 608 **JOHN W. CHERRIE**  
Shedding Light on the Association between Night Work and Breast Cancer
- 612 **MELISSA C. FRIESEN**  
What Should We Do with Short-Term Jobs in Studies of Chronic Diseases?

### COMMENTARIES

- 614 **SALOSHNI NAIDOO**  
Challenges for Exposure Science in Developing Countries
- 619 **CHRISTOPHE VANROELEN**  
Employment Quality: An Overlooked Determinant of Workers' Health and Well-being?

### ORIGINAL ARTICLES

- 624 **HENK A. GOEDE, KEVIN MCNALLY, JEAN-PHILIPPE GORCE, HANS MARQUART, NICK D. WARREN, WOUTER FRANSMAN, MARTIN TISCHER, JODY SCHINKEL**  
Dermal Advanced REACH Tool (dART)—Development of a Dermal Exposure Model for Low-Volatile Liquids
- 637 **KEVIN MCNALLY, JEAN-PHILIPPE GORCE, HENK A. GOEDE, JODY SCHINKEL, NICK WARREN**  
Calibration of the Dermal Advanced REACH Tool (dART) Mechanistic Model
- 651 **STINE DAUGAARD, JAKOB MARKVART, JENS PETER BONDE, JENS CHRISTOFFERSEN, ANNE HELENE GARDE, ÅSE MARIE HANSEN, VIVI SCHLÜNSSEN, JESPER MEDOM VESTERGAARD, HELENE TILMA VISTISEN, HENRIK ALBERT KOLSTAD**  
Light Exposure during Days with Night, Outdoor, and Indoor Work
- 666 **ANNE VESTED, VIVI SCHLÜNSSEN, ALEX BURDORF, JOHAN H. ANDERSEN, JENS CHRISTOFFERSEN, STINE DAUGAARD, ESSEN M. FLACHS, ANNE HELENE GARDE, ÅSE MARIE HANSEN, JAKOB MARKVART, SUSAN PETERS, ZARA STOKHOLM, JESPER M. VESTERGAARD, HELENE T. VISTISEN, HENRIK ALBERT KOLSTAD**  
A Quantitative General Population Job Exposure Matrix for Occupational Daytime Light Exposure
- 679 **CHERYL E. PETERS, ELENA PASKO, PETER STRAHLENDORF, DOROTHY LINN HOLNESS, THOMAS TENKATE**  
Solar Ultraviolet Radiation Exposure among Outdoor Workers in Three Canadian Provinces
- 689 **NITT HANPRATHET, SOMRAT LERTMAHARIT, VITTOOL LOHSOONTHORN, THANAPOOM RATTANANUPONG, PALANEE AMMARANOND, WIROJ JIAMJARASRANGSI**  
Shift Work and Leukocyte Count Changes among Workers in Bangkok

### SHORT COMMUNICATION

- 701 **MARIE-ÉLISE PARENT, HUGUES RICHARD, JEAN-FRANÇOIS SAUVÉ**  
Characterizing Short-Term Jobs in a Population-Based Study

Cover image: Image courtesy of Earth Science and Remote Sensing Unit, NASA Johnson Space Center, <https://eol.jsc.nasa.gov>



# Bulletin of Environmental Contamination and Toxicology

Volume 103, Issue 1, July 2019

Editorial

## **Current Research Advancements in Basic and Applied Soil Remediation in China**

Wang Yujun, ZhongHuan, Gu Cheng...Pages 1-2

OriginalPaper

## **Chromium Speciation in the Size-Fractions of a Soil Polluted by Weathered Chromate Ore Process Residue Using Synchrotron X-ray Analysis**

Haibo Zhang, Bianying Zhou, Jingfen Ren...Pages 3-9

OriginalPaper

## **Lead Pollution and Isotope Tracing of Surface Sediments in the Huainan Panji Coal Mining Subsidence Area, Anhui, China**

Liugen Zheng, Xu Liu, Quan Tang, Jinping Ou....Pages 10-15

OriginalPaper

## **Soil Mercury Accumulation and Emissions in a Bamboo Forest in a Compact Fluorescent Lamp Manufacturing Area**

Chan Zhang, Shengchun Wu, Jin Zhang...Pages 16-22

OriginalPaper

## **Optimization of Sample Pretreatment based on Graphene Oxide Dispersed Acid Silica Gel for Determination of Polybrominated Diphenyl Ethers in Vegetables near an E-waste Recycling Plant**

Leilei Xiang, Hongjie Sheng, YongrongBian...Pages 23-27

OriginalPaper

## **Pollution and Risk of PAHs in Surface Sediments from the Tributaries and Their Relation to Anthropogenic Activities, in the Main Urban Districts of Chongqing City, Southwest China**

Pei Lei, Ke Pan, Hong Zhang, Jianlin Bi....Pages 28-33

OriginalPaper

## **Identifying the Pollution Characteristics of Atmospheric Polycyclic Aromatic Hydrocarbons Associated with Functional Districts in Ningbo, China**

Lei Tong, Cheng-Hui Peng, Zhong-Wen Huang...Pages 34-40

OriginalPaper

## **PolyhalogenatedCarbazoles in Surface Sediment from Sanmen Bay, East China Sea: Spatial Distribution and Congener Profile**

Yong Qiu, Kunyan Liu, Shanshan Zhou, Da Chen...Pages 41-47

Focused Review

## **Measurements and Distribution of Atmospheric Particulate-Bound Mercury: A Review**

Hui Zhang, Xuewu Fu, Xun Wang, Xinbin Feng....Pages 48-54

Correction

**Correction to: Measurements and Distribution of Atmospheric Particulate-Bound Mercury: A Review**

Hui Zhang, Xuewu Fu, Xun Wang, Xinbin Feng...Page 55

OriginalPaper

**Analysis of the microRNA Profile of Coal-Burning Endemic Fluorosis Using Deep Sequencing and Bioinformatic Approaches**

Fei Wang, Chen Li, Yu Qin, Xue Han...Pages 56-63

OriginalPaper

**Surface Sorption Site and Complexation Structure of Ca<sup>2+</sup> at the Goethite–Water Interface: A Molecular Dynamics Simulation and Quantitative XANES Analysis**

YongfengJia, Yang Zheng, Jinru Lin...Pages 64-68

OriginalPaper

**Modelling Environmental Impacts of Cesium-137 Under a Hypothetical Release of Radioactive Waste**

Yan Lin, Raoul-Marie Couture, Heiko Klein...Pages 69-74

OriginalPaper

**Batch Adsorption and Column Transport Studies of 2,4,6-Trinitrotoluene in Chinese Loess**

Bo Zhou, Yaoguo Wu, Jiangwei Chan...Pages 75-81

OriginalPaper

**The Kinetics of Aging and Reducing Processes of Cr(VI) in Two Soils**

Yang Yang, Yemian Peng, Zesheng Yang...Pages 82-89

OriginalPaper

**Effects of Soil Properties on Cadmium Toxicity to *Folsomia candida*(Collembola)**

Hailong Liu, Liang Xuan, Jing Zhou...Pages 90-97

OriginalPaper

**Effects of Passivating Agents on the Availability of Cd and Pb and Microbial Community Function in a Contaminated Acidic Soil**

Di Zhang, AiFang Ding...Pages 98-105

OriginalPaper

**Genome Analysis of Cytochrome in Dinotefuran-Treated *Apolygus lucorum*(Meyer-Dür)**

Shaoying Wu, Denghui Deng, Wayne Jiang...Pages 106-113

OriginalPaper

**Arsenic Bioaccumulation and Biotransformation in Clams (*Asaphisviolascens*) Exposed to Inorganic Arsenic: Effects of Species and Concentrations**

Wei Zhang, ZhiqiangGuo, Yun Wu...Pages 114-119

OriginalPaper

**Acute Toxicity and Hazardous Concentrations of Zinc to Native Freshwater Organisms Under Different pH Values in China**

X. F. Li, P. F. Wang, C. L. Feng, D. Q. Liu...Pages 120-126

OriginalPaper



**Selenium (Se) Does Not Reduce Cadmium (Cd) Uptake and Translocation in Rice (*Oryza sativa* L.) in Naturally Occurred Se-Rich Paddy Fields with a High Geological Background of Cd**

Bei-Bei Yang, Cheng Yang, Zong-Yuan Shao...Pages 127-132

OriginalPaper

**Effects of Silicon Application on Uptake of Arsenic and Phosphorus and Formation of Iron Plaque in Rice Seedlings Grown in an Arsenic-Contaminated Soil**

Renying Li, Zhigao Zhou, Xianghua Xu...Pages 133-139

OriginalPaper

**Zero-valent iron (ZVI) Activation of Persulfate (PS) for Degradation of Para-Chloronitrobenzene in Soil**

Jia Kang, Wencheng Wu, Wuxing Liu...Pages 140-146

OriginalPaper

**Enhanced Phytoextraction for Co-contaminated Soil with Cd and Pb by Ryegrass (*Lolium perenne* L.)**

Yaping Zhang, Fangzhou Li, Weiwei Xu...Pages 147-154

Focused Review

**A Review on Adsorption Technologies for Mercury Emission Control**

Guoliang Li, Qingru Wu, Liwen Xu...Pages 155-162

OriginalPaper

**Biochar Addition Enhances Phenanthrene Fixation in Sediment**

Ying-hengFei, Yuxiao Chen, Chengshuai Liu...Pages 163-168

OriginalPaper

**Pyrolysis Temperature-Dependent Changes in the Characteristics of Biochar-Borne Dissolved Organic Matter and Its Copper Binding Properties**

Jing Wei, Chen Tu, Guodong Yuan, Dongxue Bi...Pages 169-174

OriginalPaper

**Mercury Complexation with Dissolved Organic Matter Released from Thirty-Six Types of Biochar**

Peng Liu, Carol J. Ptacek, David W. Blowes...Pages 175-180

OriginalPaper

**Silver Nanoparticles Induced Cell Apoptosis, Membrane Damage of *Azotobacter vinelandii* and *Nitrosomonas europaea* via Generation of Reactive Oxygen Species**

Li Zhang, Lingli Wu, YazhuMi, Youbin Si ....Pages 181-186

OriginalPaper

**Growth Inhibiting Effects of Four Antibiotics on Cucumber, Rape and Chinese Cabbage**

Rui Wang, Jun Wang, Jinhua Wang, Lusheng Zhu...Pages 187-192

OriginalPaper

**New Insights into Dose- and Time-Dependent Response of Five Typical PPCPs on Soil Microbial Respiration**

Wenjie Zhang, Jun Wang, Jinhua Wang...Pages 193-198

OriginalPaper

**Different Uptake of Metal Dioxide Nanoparticles (Ceria Nanoparticles, Zirconia Nanoparticles and Silica Nanoparticles) by Wheat**

Wanying Zhang, Yingnan Huang, Hua Gong...Pages 199-205

OriginalPaper

**Effect of Nano-Carbon Black Surface Modification on Toxicity to Earthworm (*Eiseniafetida*) Using Filter Paper Contact and Avoidance Test**

Kun Xu, Ya-xin Liu, Xiao-feng Wang...Pages 206-211

# Bulletin of the World Health Organization

Volume 97, Number 7, July 2019, 441-512

## IN THIS MONTH'S BULLETIN

In this month's Bulletin

<http://dx.doi.org/10.2471/BLT.19.000719>

## EDITORIALS

Policy options for tackling diet-related noncommunicable diseases

— David Watkins

<http://dx.doi.org/10.2471/BLT.19.236356>

Health workers' strikes: a plea for multisectoral action

— Peter Salama, Michelle McIsaac & James Campbell

<http://dx.doi.org/10.2471/BLT.19.238279>

## NEWS

Public health round-up

<http://dx.doi.org/10.2471/BLT.19.010719>

Sharing knowledge on the treatment of childhood cancer

<http://dx.doi.org/10.2471/BLT.19.020719>

Sandro Galea: the epidemiology of consequence

<http://dx.doi.org/10.2471/BLT.19.030719>

## RESEARCH

Modelling impacts of food industry co-regulation on noncommunicable disease mortality, Portugal

— Francisco Goiana-da-Silva, David Cruz-e-Silva, Luke Allen, Maria João Gregório, Milton Severo, Paulo Jorge Nogueira, Alexandre Morais Nunes, Pedro Graça, Carla Lopes, Marisa Miraldo, João Breda, Kremlin Wickramasinghe, Ara Darzi, Fernando Araújo & Bente Mikkelsen

<http://dx.doi.org/10.2471/BLT.18.220566>

Health workers' strikes in low-income countries: the available evidence

— Giuliano Russo, Lihui Xu, Michelle McIsaac, Marcelle Diane Matsika-Claquin, Ibadat Dhillon, Barbara McPake & James Campbell

<http://dx.doi.org/10.2471/BLT.18.225755>

Estimating completeness of birth registration in South Africa, 1996 – 2011

— Nadine Nannan, Robert Dorrington & Debbie Bradshaw

<http://dx.doi.org/10.2471/BLT.18.222620>

Gender balance in WHO panels for guidelines published from 2008 to 2018

— Meghan A Bohren, Dena Javadi & Joshua P Vogel

<http://dx.doi.org/10.2471/BLT.18.226894>

## **SYSTEMATIC REVIEWS**

Available evidence of antibiotic resistance from extended-spectrum  $\beta$ -lactamase-producing Enterobacteriaceae in paediatric patients in 20 countries: a systematic review and meta-analysis

— Yanhong Jessika Hu, Anju Ogyu, Benjamin J Cowling, Keiji Fukuda & Herbert H Pang

<http://dx.doi.org/10.2471/BLT.18.225698>

## **POLICY & PRACTICE**

Trends of caesarean delivery from 2008 to 2017, Mexico

— Tarsicio Uribe-Leitz, Alejandra Barrero-Castillero, Arturo Cervantes-Trejo, Jose Manuel Santos, Alberto de la Rosa-Rabago, Stuart R Lipsitz, Maria Antonia Basavilvazo-Rodriguez, Neel Shah & Rose L Molina

<http://dx.doi.org/10.2471/BLT.18.224303>

# CURRENT SCIENCE

Volume 117 Number 2

25 July 2019

---

**170 In this issue**

**GUEST EDITORIAL**

- 171 Tradition versus modernity in biomedical research: the choices for India**  
Anand Kumar Bachhawat

**CORRESPONDENCE**

- 173 Indian scientific research and Indian research journals**  
Ashok K. Tiwari
- 173 Urban waste recycling in developing countries should be improved**  
Alexander Gorobets

**NEWS**

- 175 Science Last Fortnight**
- 179 CSIR-NPL establishes an apex-level calibration facility for defibrillator analyzer and defibrillator machine**  
Rajesh, V. K. Tanwar, G. Sumana, V. V. Agarwal, V. N. Ojha and D. K. Aswal
- 180 Understanding the universe through mega science projects**  
Parul R. Sheth

**COMMENTARY**

- 181 India needs long-term biodiversity monitoring in urban landscapes**  
Ashish N. Nerlekar, Snehangshu Das, Akshay A. Onkar, Mayur Bhagwat, Pranav Mhaisalkar, Sairandhri A. Lapalikar, Vinayak D. Chavan and Minakshi C. Mahajan
- 182 Addressing poverty in India's Revised National Tuberculosis Control Programme: are we failing to harness the opportunities?**  
Kumaravel Ilangovan and Sharath Burugina Nagaraja

**SCIENTIFIC CORRESPONDENCE**

- 186 When nature decides who stays and who goes: Priority effects extirpating the non-native brown trout *Salmo trutta fario* L. population from a Himalayan river**  
Aashna Sharma, Vineet Kumar Dubey, Prakash Nautiyal, Jeyaraj Antony Johnson, Yogesh Kumar Rawal and Kuppasamy Sivakumar
- 188 Science educational and recreational benefits of the Bioresources Nature Park at Nilambur, Kerala, India**  
U. M. Chandrashekara and P. K. Reshma

**GENERAL ARTICLE**

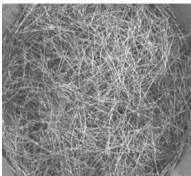
- 190 Scientometric analysis of *Current Science***  
Marisha

**REVIEW ARTICLES**


- 198 Encystment and excystment in ciliated protists: multidimensional approach**  
Harpreet Kaur, Sara Iqbal, Evelyn Inga and Dorcas Yawe
- 204 On the recent floods in India**  
Kamaljit Ray, P. Pandey, C. Pandey, A. P. Dimri and K. Kishore
- 



## RESEARCH ARTICLES

- 219 **Doubling farmers' income through *Populus deltoides*-based agroforestry systems in northwestern India: an economic analysis**  
S. B. Chavan and R. S. Dhillon
- 227 **Individual borrowing and default behaviour in surplus and constrained credit environments: evidence from India**  
Padmavathi Koride and Anjula Gurtoo
- 235 **Slump test: laboratory and numerical simulation-based approach for consistency of mill tailings paste**  
S. K. Behera, Prashant, C. N. Ghosh, D. P. Mishra, P. K. Mandal, Aniket Verma, Sumeet Mohanty, Kanhaiya Mishra and P. K. Singh
- 242 **Bleaching stress on Indian coral reef regions during mass coral bleaching years using NOAA OISST data**  
Mohit Arora, Nandini Ray Chaudhury, Ashwin Gujrati and Ramesh Chandra Patel
- 251 **Mineral magnetic characterization of archeological potsherds: an example from the Deccan Province, western Maharashtra, India**  
Jyotibala Singh, S. J. Sangode and P. D. Sabale
- 
- ◀ 260 **Shear resistance behaviour of geogrid-confined RC elements under static and cyclic loading**  
R. Siva Chidambaram and Pankaj Agarwal
- 

## RESEARCH COMMUNICATIONS

- 
- 272 **Pencil trace on cellulose compounds: a heat source**  
Amit R. Morarka and Aditee C. Joshi
- ◀ 275 **Control of substrates on pothole geometry**  
Balai Chandra Das
- 282 **Agriculture development-based mapping of agro-ecological sub-regions and its implications for doubling farmers' income in India**  
S. K. Srivastava, N. P. Singh, Jaspal Singh, K. V. Rao and S. J. Balaji
- 288 **An efficient method for acclimatization: *in vitro* hardening of tissue culture-raised tea plants (*Camellia sinensis* (L.) O. Kuntze)**  
Niladri Bag, Lok Man S. Palni and Shyamal Kumar Nandi
- 293 **Molecular phylogeography of *Ficus benghalensis* Linnaeus using nrDNA ITS 1, cpDNA trnL and cpDNA rps16 from the Indian subcontinent**  
Sheetal Sharma, Richa Mehra and Felix Bast
- 298 **Magmatic epidote in the Grenvillian granitoids of North Purulia Shear Zone, Chhotanagpur Gneissic Complex, India and its significance**  
Ankita Basak, Bapi Goswami, Ananya Singha, Somshubhra Das and Chitta Bhattacharyya
- 304 **Analysis of accidents due to slope failure in Indian opencast coal mines**  
A. K. Dash
- 

## BOOK REVIEWS

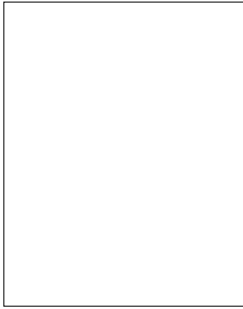
- 309 **The Mathematics of India: Concepts, Methods, Connections**, P. P. Divakaran; reviewed by M. S. Narasimhan
- 311 **Annual Review of Medicine, 2018**. C. Thomas Caskey, Mary E. Klotman and Peter Scardino (eds); reviewed by C. C. Kartha
- 314 **Terrestrial Depositional Systems: Deciphering Complexities through Multiple Stratigraphic Methods**. Kate E. Zeigler and William G. Parker (eds); reviewed by Dilip Saha
-

**PERSONAL NEWS**

- 317 **N. C. Subrahmanyam (1943–2019)**  
Sailaja V. Elchuri, Nagesh Chirumamilla and George Thomas
- 319 **N. Anand (1947–2018)**  
S. Nagaraj
- 

**HISTORICAL NOTES**

- 321 **Inception of Entomological Society of India and inaugural issue of the *Indian Journal of Entomology***  
Anantanarayanan Raman and Chitra Narayanasamy
- 



- ◀ COVER. Bioresources Nature Park, Kerala Forest Research Institute, Nilambur. See page 188.

Indexed in CURRENT CONTENTS/GEODATA/CHEMICAL ABSTRACTS/IndMED/SCOPUS/  
WEB OF SCIENCE

## Contents

### Articles

- Lauric acid induce cell death in colon cancer cells mediated by the epidermal growth factor receptor downregulation: An in silico and in vitro study 753  
*DL Sheela, A Narayanankutty, PA Nazeem, AC Raghavamenon and SR Muthangaparambil*
- Long-term treatment with finasteride induces apoptosis and pathological changes in female mice 762  
*AA Alkahtane, G Albasher, NK Al-Sultan, WS Alqahtani, S Alarifi, RS Almeer, J Alghamdi, D Ali, A Alahmari and S Alkahtani*
- Behavioral and molecular effects of intrahippocampal infusion of auraptene, resveratrol, and curcumin on H-89-induced deficits on spatial memory acquisition and retention in Morris water maze 775  
*K Tabrizian, SS Musavi, M Rigi, F Hosseindadi, S Kordi, F Shamshirgaran, A Bazi, J Shahraki, R Rezaee and M Hashemzaei*
- Ursolic acid modulates MMPs, collagen-I,  $\alpha$ -SMA, and TGF- $\beta$  expression in isoproterenol-induced myocardial infarction in rats 785  
*T Radhiga, S Senthil, A Sundaresan and KV Pugalendi*
- Beclin 1, LC3, and p62 expression in paraquat-induced pulmonary fibrosis 794  
*G Xu, X Wang, H Yu, C Wang, Y Liu, R Zhao and G Zhang*
- The protective and therapeutic effects of linalool against doxorubicin-induced cardiotoxicity in Wistar albino rats 803  
*Z Oner, E Altinoz, H Elbe and N Ekinici*
- Evaluation of amalgam-related retinal neurotoxicity with optical coherence tomography findings 814  
*Ş Bilak, M Önderci and A Şimşek*
- Aromatic aldehyde compound cuminaldehyde protects nonalcoholic fatty liver disease in rats feeding high fat diet 823  
*MR Haque and SH Ansari*
- Effect of fluoride on PERK-Nrf2 signaling pathway in mouse ameloblasts 833  
*X Zhou, Z Chen, W Zhong, R Yu and L He*
- Abnormal methylation of spermatozoa induced by benzo(a)pyrene in rats 846  
*CM Zhang, ZX Sun, ZL Wang, JS Chen, Z Chang, Z Wang, L Zhu, ZH Ma, YJ Peng, ZA Xu and SQ Wang*
- Mesenchymal stem cells pretreated with platelet-rich plasma modulate doxorubicin-induced cardiotoxicity 857  
*SM Zaki, WA Abd Algaleel, RA Imam and MM Abdelmoaty*



# Indian Journal of Experimental Biology

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## CONTENTS

### Papers

- Cytotoxicity based screening for radioprotective properties of methanolic extracts of *Tragia involucrata* L. on cultured human peripheral lymphocytes exposed to gamma radiation 469  
M Thimmaiah Nivya, Rajashekhar K Patil, Gopal M Advi Rao, Ajay S Khandagale, HM Somashekrapa, Ananda D, Manjunath HM & Chandrashekhar G Joshi
- Bauhinia variegata* as a new approach for reducing free radicals activity, renal apoptotic damage and dietary induced obesity in Wister male rats 478  
Azza M. El-Wakf, Hanaa M. Serag, Rehab Elmougy & Awat Omar
- Modulating effect of luteolin on ethanol and cerulein induced inflammation—*In silico* and *in vivo* studies using rat model of pancreatitis 486  
Sadanandan Rajapriya, Arumugam Geetha & Kavasseri Ganesan Kripa
- Bacillus licheniformis* strain UKCH17 from northwestern Indian Himalayas: Characterization of chitinolytic enzyme and determination of its antifungal potential 497  
Subbanna ARNS, Khan MS, Stanley J & Pattanayak A
- Salicylic acid priming enhances low temperature stress tolerance in Egyptian clover (*Trifolium alexandrinum* L.) by influencing antioxidant system 507  
Harpreet Kaur & Meenakshi Goyal
- Reproductive biology and pollinators in a steno endemic and critically endangered tree, *Monoon tirunelveliense* (Annonaceae), from Kalakkad-Mundanthurai Tiger Reserve (KMTR) in India 516  
MB Viswanathan, C Rajasekar & P Sathish Kumar
- 18S rDNA PCR based detection of hymenopteran parasitoids in the Indian Lac insect, *Kerria lacca* [Kerr] 526  
Thamilarasi Kandasamy, Tamoshree Roy, A Mohanasundaram, KK Sharma & R Ramani
- Biodegradation of textile dye Direct Blue 71 using root nodulating *Rhizobium* sp. 532  
Renitta Jobby, Pamela Jha, Subhash Kudale, Abhilasha Kale & Neetin Desai
- NOTES**
- Development of lipoxygenase-3 free Indian soybean using gene-mutation based molecular markers 540  
Vineet Kumar & Anita Rani
- Spatio-temporal genetic diversity in Indian barley (*Hordeum vulgare* L.) varieties based on SSR markers 545  
Lalit Arya, Manjusha Verma, SK Singh & RPS Verma

Cont.

Bandla Srinivas & OH Chaturvedi

### Author Index

Ananda D	469	Kandasamy T	526	Rajapriya S	486
Arya L	545	Kaur H	507	Rajasekar C	516
		Khan MS	497	Ramani R	526
Chaturvedi OH	553	Khandagale AS	469	Rani A	540
		Kripa KG	486	Rao GMA	469
Desai N	532	Kudale S	532	Roy T	526
		Kumar PS	516		
Elmougy R	478	Kumar V	540	Serag HM	478
El-Wakf AM	478			Sharma KK	526
		Manjunath HM	469	Singh SK	545
Geetha A	486	Mohanasundaram A	526	Somashekrappa HM	469
Goyal M	507			Srinivas B	553
		Nivya MT	469	Stanley J	497
Jha P	532			Subbanna ARNS	497
Jobby R	532	Omar A	478		
Joshi CG	469			Verma M	545
		Patil RK	469	Verma RPS	545
Kale A	532	Pattanayak	497	Viswanathan MB	516

### Keyword Index

Abiotic stress	507	Fermentation	553	Pancreas	486
Anaemia	478			Parasitoids	526
Anti-nutritional factors	553	Glycine max	540	Pollution	532
Antioxidants	469			Polymorphism	545
Antioxidative enzymes	507	<i>Helicoverpa armigera</i>	497	Procaspace-1	486
Aphids	516	Humus-free soil	516		
Apoptosis	469			Reactive oxygen species	469,507
<i>Aprostocetus purpureus</i>	526	Indian Himalayas	497	Renal apoptosis	478
ASC-CARD	486	Indian stinging nettle	469	Root nodulating bacteria	532
ASC-PYD	486	Inflammasomes	486	Ruminants	553
Ayurvedic	469	Ionizing radiation	469		
				Seed bacterization	497
Beetles	516	Kachnar	478	Seed priming	507
Berseem	507	Kidney disease	478	Sequence tagged sites	540
Biocontrol agent	497			Single nucleotide polymorphism	540
Biofertilizer	532	Lac resin	526	Soil restoration	532
Bioremediation	532			Spatial diversity	545
Black ants	516	Mealy bugs	516		
		Mesquite	553	<i>Tachardiaephagus tachardiae</i>	526
Camel's foot tree	478	Micronuclei	469		
Chitinase	497	Mountain ebony	478	<i>Vilayati babool</i>	553
Comet assay	469	Mycelial degradation	497	Weevils	516
Conservation	516				
		Nei's gene diversity	545		
Desert date	553	Orchid tree	478		
Diet	478				

## Contents

### Review Article

- Oral Fluid Drug Testing: Analytical Approaches, Issues and Interpretation of Results  
*Nathalie A. Desrosiers and Marilyn A. Huestis* . . . . . 415

### Articles

- Oral Cavity Fluid as an Investigative Approach for Qualitative and Quantitative Evaluations of Drugs in Postmortem Subjects  
*Amy J. Reisinger, Autumn C. Miller, Lacey A. Shaw, Jana L. Champion and Marc A. Neiswonger* . . . . . 444
- Development and Interlaboratory Validation of Two Fast UPLC–MS–MS Methods Determining Urinary Bisphenols, Parabens and Phthalates  
*Thomas P. van der Meer, Martijn van Faassen, Hanne Frederiksen, André P. van Beek, Bruce H. R. Wolffenbuttel, Ido P. Kema and Jana V. van Vliet-Ostaptchouk* . . . . . 452
- Determination of Selected Opiates in Hair Samples Using Microextraction by Packed Sorbent: A New Approach for Sample Clean-up  
*Tiago Rosado, Mário Barroso<sup>3</sup>, Duarte Nuno Vieira and Eugenia Gallardo* . . . . . 465
- Development and Validation of an Analytical Method for Quantitation of Sulfolane in Rat and Mouse Plasma by GC–MS  
*Melanie A. Rehder Silinski, Teruyo Uenoyama, Stephen D. Cooper, Reshan A. Fernando, Veronica G. Robinson and Suramya Waidyanatha* . . . . . 477
- Ascorbic Acid Improves the Stability of Buprenorphine in Frozen Whole Blood Samples  
*Lambert K. Sørensen and Jørgen B. Hasselstrøm* . . . . . 482
- Fully Automated Determination of Phosphatidylethanol 16:0/18:1 and 16:0/18:2 in Dried Blood Spots  
*Marc Luginbühl, Stefan Gaugler<sup>2</sup> and Wolfgang Weinmann* . . . . . 489

### Short Communications

- Detectability of Dissociative Psychoactive Substances in Urine by Five Commercial Phencyclidine Immunoassays  
*Isabel Gomila, Maria Ángeles Leciñena, Miguel Ángel Elorza, Yolanda Pastor, Laura Sahuquillo, Miguel Servera, Jordi Puiguriquer and Bernardino Barcelo* . . . . . 497

## Online Only Papers

### Letter to the Editor

- Stability of  $\Delta^9$ -THC, 11-OH-THC and THC-COOH in Whole Blood in Presence of Formalin Solution  
*Aude Eibel, Alice Ameline, Jean-Sébastien Raul and Pascal Kintz* . . . . . e1

### Case Report

- A Case of Surreptitious Glargine Overdose Confirmed by Insulin Pharmacokinetic Time Curves  
*Rahul Barmanray, Cherie Ying Chiang, Kim Yeoh and Christopher James Yates* . . . . . e4

### Corrigendum

- Corrigendum to "HighResNPS.com: An Online Crowd-Sourced HR-MS Database for Suspect and Non-targeted Screening of New Psychoactive Substances"  
*Marie Mardal, Mette Findal Andreasen, Christian Brinch Schubring, Peter Stockham, Rasmus Telving, Nikolaos S. Thomaidis, Konstantina S. Diamanti, Kristian Linnet and Petur Weihe Dalsgaard* . . . . . e7

# Journal of Occupational and Environmental Medicine

July 2019 - Volume 61 - Issue 7

## Editor's Picks for July

---

***A Comparison of Job Stress Models Associations With Employee Well-Being, Absenteeism, Presenteeism, and Resulting Costs***

Schmidt, Burkhard; Schneider, Michael; Seeger, Philipp; More

Journal of Occupational and Environmental Medicine. 61(7):535-544, July 2019.

***Agricultural Exposures and Breast Cancer Among Latina in the San Joaquin Valley of California***

Mills, Paul K.; Dodge, Jennifer L.; Bush, Jason; More

Journal of Occupational and Environmental Medicine. 61(7):552-558, July 2019.

***Workplace Interventions can Reduce Sickness Absence for Persons With Work-Related Neck and Upper Extremity Disorders A One-Year Prospective Cohort Study***

Oliv, Stefan; Gustafsson, Ewa; Baloch, Adnan Noor; More

Journal of Occupational and Environmental Medicine. 61(7):559-564, July 2019.

## Current Issue Highlights

---

### ORIGINAL ARTICLES

***A Comparison of Job Stress Models Associations With Employee Well-Being, Absenteeism, Presenteeism, and Resulting Costs***

Schmidt, Burkhard; Schneider, Michael; Seeger, Philipp; More

Journal of Occupational and Environmental Medicine. 61(7):535-544, July 2019.

***A Cluster Randomized Controlled Trial to Evaluate HeadCoach An Online Mental Health Training Program for Workplace Managers***

Gayed, Aimée; Bryan, Bridget T.; LaMontagne, Anthony D.; More

Journal of Occupational and Environmental Medicine. 61(7):545-551, July 2019.

## FAST TRACK ARTICLE

### ***Preventing Diabetes in the Workplace Effects of Coaching and Monetary Incentives***

Raymond, Lawrence W.; Roy, Deborah M.; Mullinax, Shannon L.; More

*Journal of Occupational and Environmental Medicine*. 61(7):e308-e311, July 2019.

## ORIGINAL ARTICLE

### ***Tobacco Evidence-Based Practice Implementation and Employee Tobacco-Related Outcomes at Small Low-Wage Worksites***

Kava, Christine M.; Harris, Jeffrey R.; Gary Chan, Kwun C.; More

*Journal of Occupational and Environmental Medicine*. 61(7):e312-e316, July 2019.

## OCCUPATIONAL MEDICINE FORUM

### ***“How Can Climate Change Impact the Workplace and Worker Health?” Part 6 Operational Support-Related Responsibilities of Occupational and Environmental Medicine Experts to the Employer in the Context of Climate Change***

*Journal of Occupational and Environmental Medicine*. 61(7):e317-e319, July 2019.

## LETTER TO THE EDITOR

### ***JEMINI (Job Exposure Matrix InterNational) Initiative a Utopian Possibility for Helping Occupational Exposure Assessment All Around the World?***

Descatha, Alexis; Evanoff, Bradley A.; Andersen, Johan H.; More

*Journal of Occupational and Environmental Medicine*. 61(7):e320-e321, July 2019.

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## Editor's Choice

---

### EDITORIAL

[G20 Osaka: when will global health commitments be realised?](#)

[Transforming cancer control in the USA](#)

[Creating respectful health care for trans patients](#)

### COMMENT

[Registering a CD38 antibody upfront for multiple myeloma](#)

[Which to choose, an oral or an injectable glucagon-like peptide-1 receptor agonist?](#)

[Robotic-assisted training after stroke: RATULS advances science](#)

[Open Access](#)

[Reducing maternal mortality: can elabela help in this fight?](#)

[WHO and ITU establish benchmarking process for artificial intelligence in health](#)

[The Wakley–Wu Lien Teh Prize Essay 2019: telling](#)

[the stories of Chinese doctors](#)

[Offline: Who should lead UNAIDS?](#)

## WORLD REPORT

[Kazakhstan: health after the Nazarbayev era](#)

[Apply to trial Ebola vaccines in DR Congo, says ministry](#)

## PERSPECTIVES

[The rise of the virtualist](#)

[How to grow a human](#)

[Takeshi Kasai: the health security thinker from Japan](#)

[Physician narratives of illness](#)

## OBITUARY

[Henry T Lynch](#)

## CORRESPONDENCE

[Five national academies call for global compact on air pollution and health](#)

[Global epidemiology of use of and disparities in caesarean sections](#)

[Global epidemiology of use of and disparities in caesarean sections](#)

[Global epidemiology of use of and disparities in](#)

[caesarean sections – Authors' reply](#)

[Is high use of caesarean section sometimes justified?](#)

[How should the health-care community respond to human rights violations?](#)

[Another blow to credibility in published data sources](#)

[Another blow to credibility in published data sources – Author's reply](#)

[Plan S: the final cut—response from cOAlition S](#)

## DEPARTMENT OF ERROR

[Department of Error](#)

[Department of Error](#)  
[Open Access](#)

[Department of Error](#)

## ARTICLES

[Bortezomib, thalidomide, and dexamethasone with or without daratumumab before and after autologous stem-cell transplantation for newly diagnosed multiple myeloma \(CASSIOPEIA\): a randomised, open-label, phase 3 study](#)

[Oral semaglutide versus subcutaneous liraglutide and placebo in type 2 diabetes \(PIONEER 4\): a randomised, double-blind, phase 3a trial](#)

[Robot assisted training for the upper limb after stroke \(RATULS\): a multicentre randomised controlled trial](#)  
[Open Access](#)

## CLINICAL PICTURE



[Gallstone causing gastric outlet obstruction 50 years after cholecystectomy](#)

 SEMINAR

---

[Nasopharyngeal carcinoma](#)

 REVIEW

---

[The public health control of scabies: priorities for research and action](#)

## EDITORIAL

- p93

[Physician burnout: a global crisis](#)

- The Lancet

- p94

[Regulators must work on indoor air pollution](#)

- The Lancet

- p94

[Research integrity: recognising the responsibilities of authors](#)

- The Lancet

## COMMENT

- p95

[Is it time to REWIND the cardiorenal clock in diabetes?](#)

- SubodhVerma, C David Mazer, VladoPerkovic

- p97

[Late thrombolysis for stroke works, but how do we do it?](#)

- Shelagh B Coutts, Bijoy K Menon

- p99

[Polio endgame options: will we have the vaccines needed?](#)

- Kimberly M Thompson

- p100

[International failure in northwest Syria: humanitarian health catastrophe demands action](#)

- Miriam Orcutt, Diana Rayes, Ahmad Tarakji, Mohamad Katoub, Paul Spiegel, Leonard Rubenstein, SamerJabbour, MunzerAlkhalil, Mohammad Alabbas, AulaAbbara

- p103

[UK consultation on pulse oximetry screening for critical congenital heart defects in newborns](#)

- Sam Oddie, Ben Stenson, Jonathan Wyllie, Andrew K Ewer

- p105

[Offline: Medicine and the Holocaust—it's time to teach](#)

- Richard Horton

## WORLD REPORT

- p106

[Migrants left in lurch without Safe Release programme](#)

- Bryant Furlow

- p108

[Africa's first biobank start-up receives seed funding](#)

- Paul Adepoju

## PERSPECTIVES

- p109

### Exhibition

[Misbehaving bodies](#)

- Petra Boynton

- p111

The Notes

### Words

- Sam Guglani

- p112

The art of medicine

### Escaping the scarcity loop

- Rupal Shah, John Launer

### **OBITUARY**

- p114

### LaSalle D Leffall Jr

- Andrew Green

### **CORRESPONDENCE**

- p115

### Poliopolis

- Pierre Van Damme, Ilse De Coster, Hilde Revets, Ananda S Bandyopadhyay

- p115

### Schizophrenia: a neglected problem in Pakistan

- Shahzain Hasan, MunsifAdil

- p116

### Rising suicide rates among adolescents in England and Wales

- Helen Bould, Becky Mars, Paul Moran, Lucy Biddle, David Gunnell

- p117

### [Global mental health](#)

- Lisa Cosgrove, China Mills, Jay Amsterdam, Iona Heath, Akriti Mehta, JayasreeKalathil, Allen Shaughnessy

- p118

### [Global mental health](#)

- Anna R Walder, Roxanne Keynejad, Stania Kamara, Helen Hopwood

- p118

### [Global mental health](#)

- Richard M Duffy, Brendan D Kelly

- p119

### [Global mental health – Authors' reply](#)

- Vikram Patel, ShekharSaxena, Charlene Sunkel, Crick Lund, Graham Thornicroft

- p119

### [Using entertainment to improve lifestyles and health](#)

- Hamza Yousuf, JagatNarula, Peter-Paul Zwetsloot, MartijnHofstra, Alain de Levita, Erik Scherder, Bert van Rossum, Leonard Hofstra

### **DEPARTMENT OF ERROR**

- p120

### [Department of Error](#)

- p120

### [Department of Error](#)

### **ARTICLES**

- p121

### [Dulaglutide and cardiovascular outcomes in type 2 diabetes \(REWIND\): a double-blind, randomised placebo-controlled trial](#)

Hertzel C Gerstein, Helen M Colhoun, Gilles R Dagenais, Rafael Diaz, Mark Lakshmanan, Prem Pais, Jeffrey Probstfield, Jeffrey S Riesmeyer, Matthew C Riddle, Lars Rydén, Denis Xavier, Charles MessanAtisso, Leanne Dyal, Purnima Stephanie Hall, Rao-Melacini, Gloria Wong, Alvaro Avezum, Jan Basile, Namsik Chung, Ignacio Conget, William C Cushman, Edward Franek, NicolaeHancu, MarkolfHanefeld, Shaun Holt, Petr Jansky, MatyasKeltai, Fernando Lanas, bLawrence A Leiter, Patricio Lopez-Jaramillo, Ernesto German Cardona Munoz, Valdis Pirags, Nana Pogosova, Peter J Raubenheimer, Jonathan E Shaw, Wayne H-H Sheu, Theodora Temelkova-Kurktschiev for the REWIND Investigators

- p131

[Dulaglutide and renal outcomes in type 2 diabetes: an exploratory analysis of the REWIND randomised, placebo-controlled trial](#)

- Hertzel C Gerstein, Helen M Colhoun, Gilles R Dagenais, Rafael Diaz, Mark Lakshmanan, Prem Pais, Jeffrey Probstfield, Fady T Botros, Matthew C Riddle, Lars Rydén, Denis Xavier, Charles MessanAtisso, Leanne Dyal, Stephanie Hall, Purnima Rao-Melacini, Gloria Wong, Alvaro Avezum, Jan Basile, Namsik Chung, Ignacio Conget, William C Cushman, Edward Franek, NicolaeHancu, MarkolfHanefeld, Shaun Holt, Petr Jansky, MatyasKeltai, Fernando Lanas, Lawrence A Leiter, Patricio Lopez-Jaramillo, Ernesto German Cardona Munoz, Valdis Pirags, Nana Pogosova, Peter J Raubenheimer, Jonathan E Shaw, Wayne H-H Sheu, Theodora Temelkova-Kurktschiev for the REWIND Investigators

- p139

[Extending thrombolysis to 4.5–9 h and wake-up stroke using perfusion imaging: a systematic review and meta-analysis of individual patient data](#)

- Bruce C V Campbell, Henry Ma, Peter A Ringleb, Mark W Parsons, Leonid Churilov, Martin Bendszus, Christopher R Levi, Chung Hsu, Timothy J Kleinig, Marc Fatar, Didier Leys, Carlos Molina, Tissa Wijeratne, Sami Curtze, Helen M Dewey, P Alan Barber, Kenneth S Butcher, Deidre A De Silva, Christopher F Bladin, Nawaf Yassi, Johannes A R Pfaff, Gagan Sharma, Andrew Bivard, Patricia M Desmond, Stefan Schwab, Peter D Schellinger, Bernard Yan, Peter J Mitchell, Joaquín Serena, Danilo Toni, Vincent Thijs, Werner Hacke, Stephen M Davis, Geoffrey A Donnan on behalf of the EXTEND, ECASS-4, and EPITHET Investigators

- p148

[The safety and immunogenicity of two novel live attenuated monovalent \(serotype 2\) oral poliovirus vaccines in healthy adults: a double-blind, single-centre phase 1 study](#)

- Pierre Van Damme, Ilse De Coster, Ananda S Bandyopadhyay, Hilde Revets, Kanchanamala Withanage, Philippe De Smedt, Leen Suykens, M Steven Oberste, William C Weldon, Sue Ann Costa-Clemens, Ralf Clemens, John Modlin, Amy J Weiner, Andrew J Macadam, Raul Andino, Olen M Kew, Jennifer L Konopka-Anstadt, Cara C Burns, John Konz, Rahnuma Wahid, Christopher Gast

## CLINICAL PICTURE

- p159

### [Multiple cases of umbilical hernias in children in rural Ghana](#)

- AnkoorTalwar,AbhinavTalwar,ArunabhTalwar

## SEMINAR

- p160

### [Adult spinal deformity](#)

- Bassel G Diebo,Neil V Shah,OhenebaBoachie-Adjei,Feng Zhu,Dominique A Rothenfluh,Carl B Paulino,Frank J Schwab,VirginieLafage

## HEALTH POLICY

- p173

### [The G20 and development assistance for health: historical trends and crucial questions to inform a new era](#)

- Joseph L Dieleman,Krycia Cowling,Irene A Agyepong,Sarah Alkenbrack,Thomas J Bollyky,Jesse B Bump,Catherine S Chen,Karen A Grépin,Annie Haakenstad,Anton C Harle,Jennifer Kates,Rouselle F Lavado,Angela E Micah,TrygveOttersen,Ajay Tandon,GolsumTsakalos,Junjie Wu,Yingxi Zhao,Bianca S Zlavog,Christopher J L Murray

## VIEWPOINT

- p184

### [When ethics and politics collide in donor-funded global health research](#)

- Katerini T Storeng,Jennifer Palmer



## EDITORIAL

[Oral health at a tipping point](#)

[A wake up call for the Ebola outbreak response](#)



## COMMENT

[Drug-coated balloons for patients with increased risk of bleeding](#)

[Guiding policy and practice to address mental disorders in conflict settings](#)

[Open Access](#)

[Conflicts of interest between the sugary food and beverage industry and dental research organisations: time for reform](#)

[Promoting radical action for global oral health: integration or independence?](#)

[Understanding masculinities to improve men's health](#)

[Offline: The ethical darkness of global health](#)



## WORLD REPORT

[Hysterectomies in Beed district raise questions for India](#)



[The yellow fever vaccination certificate loophole in Nigeria](#)

## PERSPECTIVES

[Moon landing: space medicine and the legacy of Project Apollo](#)

[Taxidermy and the clinic](#)

[Richard Watt: time to tackle oral diseases](#)

[Polished smiles and porcelain teeth](#)

## OBITUARY

[Teruko Ishizaka](#)

## CORRESPONDENCE

[EAT-Lancet score and major health outcomes: the EPIC-Oxford study](#)

[Healthy diets and sustainable food systems](#)

[Healthy diets and sustainable food systems](#)

[Healthy diets and sustainable food systems](#)

[Healthy diets and sustainable food systems – Authors' reply](#)

[When can heart failure treatment be stopped safely?](#)

[When can heart failure treatment be stopped safely?](#)

[When can heart failure treatment be stopped safely? –  
Authors' reply](#)

[Closing the Aboriginal health gap](#)



## DEPARTMENT OF ERROR

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## ARTICLES

[An injectable implant to stimulate the sphenopalatine ganglion for treatment of acute ischaemic stroke up to 24 h from onset \(ImpACT-24B\): an international, randomised, double-blind, sham-controlled, pivotal trial](#)

[Drug-coated balloon for treatment of de-novo coronary artery lesions in patients with high bleeding risk \(DEBUT\): a single-blind, randomised, non-inferiority trial](#)

[New WHO prevalence estimates of mental disorders in conflict settings: a systematic review and meta-analysis](#)

[Open Access](#)



## CLINICAL PICTURE

[Avoid making a mountain out of an invasive hydatidiform mole: do a pregnancy test!](#)



SERIES

[Oral diseases: a global public health challenge](#)

[Ending the neglect of global oral health: time for radical action](#)

# The Lancet

**Vol.394**

Number 10195 | Jul 27, 2019

p 273-358



EDITORIAL

---

[Prioritising primary care in the USA](#)

[Hopes for health from new European Commission leader](#)

[The slowdown in eradicating hunger](#)



COMMENT

[How should we listen to ECHO?](#)

[Open Access](#)

[Septoplasty—a surgical or political challenge?](#)

[New malaria maps](#)

[Open Access](#)

[Rethinking management of neonates at risk of sepsis](#)

[Surrogate endpoints in randomised controlled trials: a reality check](#)

[Improving medication safety: focus on prescribers and systems](#)

[Offline: Global health's indifference to poverty must end](#)



## WORLD REPORT

[Ebola outbreak declared a PHEIC, world waits for next steps](#)

[US Planned Parenthood leadership shake-up](#)

[Northern Ireland likely to legalise abortion](#)



## PERSPECTIVES

[The public health and industry partnership conundrum](#)

[Eleanor Crook: master of morbid sculpture](#)

[Trailblazing women in medicine: laurels at last for Edinburgh Seven](#)



OBITUARY

[Kenneth Forde](#)



CORRESPONDENCE

---

[Preparing for emerging infections means expecting new syndemics](#)

[Multidrug-resistant tuberculosis](#)

[Multidrug-resistant tuberculosis](#)

[Multidrug-resistant tuberculosis](#)

[Multidrug-resistant tuberculosis – Authors' reply](#)

[Tuberculosis elimination in Canada](#)

[The guidelines on infection control in prisons need revising](#)



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## ARTICLES

[HIV incidence among women using intramuscular depot medroxyprogesterone acetate, a copper intrauterine device, or a levonorgestrel implant for contraception: a randomised, multicentre, open-label trial](#)

[Open Access](#)

[Septoplasty with or without concurrent turbinate surgery versus non-surgical management for nasal obstruction in adults with a deviated septum: a pragmatic, randomised controlled trial](#)

[Mapping the global prevalence, incidence, and mortality of \*Plasmodium falciparum\*, 2000–17: a spatial and temporal modelling study](#)

[Open Access](#)

[Mapping the global endemicity and clinical burden of \*Plasmodium vivax\*, 2000–17: a spatial and temporal modelling study](#)

[Open Access](#)

## CLINICAL PICTURE

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[A recurrent lump in the groin poses a diagnostic problem](#)

## HEALTH POLICY

[Brazil's unified health system: the first 30 years and prospects for the future](#)



VIEWPOINT

[Sexual and reproductive health and rights and population policies: from “either/or” to “both/and”](#)

# Nature

Volume 571 Issue 7763, 4 July 2019

## This Week

### Editorial

- Editorial | 02 July 2019

#### [Nature is proud to support Pride in STEM](#)

This year's International Day of LGBTQ+ People in Science, Technology, Engineering and Maths has our fullest backing.

World View

- World View | 02 July 2019

#### [Why India is striking back against predatory journals](#)

Our foe is determined and adaptable, says BhushanPatwardhan. A list of credible titles is the latest salvo in the fight against shoddy scholarship.

- BhushanPatwardhan

### Research Highlights

- Research Highlight | 24 June 2019

#### [Volcano's magma hit top speed](#)

Volcanologists might need to update their ideas about how molten rock travels from deep within Earth to erupt at the surface.

- Research Highlight | 26 June 2019

#### [Giant bird nearly as heavy as a polar bear lorded it over Pleistocene Europe](#)

Fossil find suggests that enormous birds roamed both northern and southern hemispheres.

- Research Highlight | 01 July 2019

#### [Detecting the softest sounds in the Universe](#)

A quantum object called a qubit helps scientists to pick out a single unit of sound.

- Research Highlight | 28 June 2019

#### [Shape-shifting, colour-switching 'octopus' emerges from a 3D printer](#)

Recipe includes specialized polymer and pigments that change colour when temperature rises or falls.

- Research Highlight | 26 June 2019



### [Hidden brain activity revealed in people with coma](#)

Hospital patients who appear unresponsive after commands show evidence of brain activity.

- Research Highlight | 26 June 2019

### [Australia's feral cats kill more than 800 million mammals every year](#)

Pet cats tend to kill non-native species, but feral felines slay more than 400 million native mammals annually.

- Research Highlight | 27 June 2019

### [How DNA 'hotspots' snarl the search for cancer genes](#)

Clusters of mutations can mislead researchers.

## Research

### News & Views

- News & Views | 03 July 2019

### [An exciting boost for solar cells](#)

A process called singlet fission has the potential to enhance the efficiency of solar cells. The mechanism has been difficult to implement in such devices, but experiments demonstrate a way forward.

- Joseph M. Luther & Justin C. Johnson
- News & Views | 26 June 2019

### [Metabolic signal curbs cancer-cell migration](#)

Metastasis, the migration of tumour cells from their primary site, is associated with poor prognosis. A molecule made during cell metabolism limits metastasis, revealing that this metabolite restrains cancer progression.

- Lydia W. S. Finley
- News & Views | 03 July 2019

### [Neural networks mapped in both sexes of the worm](#)

Understanding how the brain's functions emerge from the workings of neural circuits is a central pursuit of neuroscience. New wiring diagrams of the nervous system in both sexes of a worm mark important progress.

- Douglas S. Portman
- News & Views | 03 July 2019

### [Text mining facilitates materials discovery](#)

Computer algorithms can be used to analyse text to find semantic relationships between words without human input. This method has now

been adopted to identify unreported properties of materials in scientific papers.

- Olexandrlsayev
- News & Views | 24 June 2019

**[Star-like cells spark behavioural hyperactivity in mice](#)**

A molecular dialogue between neurons and star-shaped cells called astrocytes in the striatum of the mouse brain leads to behavioural hyperactivity and inattentiveness that are reminiscent of attention-deficit hyperactivity disorder.

- Zihua Gao & Hailan Hu

**Articles**

- Article | 03 July 2019

**[Hyperbolic lattices in circuit quantum electrodynamics](#)**

An interconnected network made of superconducting microwave resonators is created as a step towards quantum simulations of interacting particles in hyperbolic space.

- Alicia J. Kollár, Mattias Fitzpatrick & Andrew A. Houck
- Article | 19 June 2019

**[Electrolytic vascular systems for energy-dense robots](#)**

An energy-dense hydraulic fluid is used to construct a synthetic circulatory system in a lionfish-like soft robot, enabling untethered movement for up to 36 hours.

- Cameron A. Aubin, Snehashis Choudhury & Robert F. Shepherd
- Article | 03 July 2019

**[Insect egg size and shape evolve with ecology but not developmental rate](#)**

Analyses of insect eggs as well as genetic and life-history traits of insects show that where eggs are laid, rather than universal allometric constants, developmental rate or adult body size, underlies size and shape evolution.

- Samuel H. Church, Seth Donoughe & Cassandra G. Extavour
- Article | 03 July 2019

**[Whole-animal connectomes of both \*Caenorhabditiselegans\* sexes](#)**

Quantitative connectivity matrices (or connectomes) for both adult sexes of the nematode *Caenorhabditiselegans* are presented that encompass all connections from sensory input to end-organ output across the entire animal.

- Steven J. Cook, Travis A. Jarrell & Scott W. Emmons

- Article | 19 June 2019

**[Large-scale chemical–genetics yields new \*M. tuberculosis\* inhibitor classes](#)**

A high-throughput chemical–genetic screening approach for the discovery of targets and chemicals to treat *Mycobacterium tuberculosis* yields tenfold more hit compounds than conventional whole-cell screening methods.

- Eachan O. Johnson, Emily LaVerriere & Deborah T. Hung
- Article | 29 May 2019

**[DNA damage detection in nucleosomes involves DNA register shifting](#)**

Cryo-electron microscopy structures reveal that the DNA-repair factor UV-DDB exposes inaccessible nucleosome lesions for binding by inducing a translational shift in the nucleosome position.

- Syota Matsumoto, Simone Cavadini & Nicolas H. Thomä

**Letters**

- Letter | 12 June 2019

**[Spin–orbit-driven band inversion in bilayer graphene by the van der Waals proximity effect](#)**

By enhancing the spin–orbit coupling in bilayer graphene using the proximity effect in a van der Waals heterostructure, band inversion occurs and an incompressible, gapped phase is produced.

- J. O. Island, X. Cui & A. F. Young
- Letter | 03 July 2019

**[Sensitization of silicon by singlet exciton fission in tetracene](#)**

A silicon and tetracene solar cell employing singlet fission uses an eight-angstrom-thick hafnium oxynitride interlayer to promote efficient triplet transfer, increasing the efficiency of the cell.

- Markus Einzinger, Tony Wu & Marc A. Baldo
- Letter | 03 July 2019

**[Unsupervised word embeddings capture latent knowledge from materials science literature](#)**

Natural language processing algorithms applied to three million materials science abstracts uncover relationships between words, material compositions and properties, and predict potential new thermoelectric materials.

- VaheTshitoyan, John Dagdelen & Anubhav Jain
- Letter | 03 July 2019

### **Neogene cooling driven by land surface reactivity rather than increased weathering fluxes**

A carbon cycle model constrained by weathering-sensitive isotopic tracers reveals that long-term cooling in the Neogene period reflects a change in how surface denudation is partitioned into weathering and erosion.

- Jeremy K. Caves Rügenstein, Daniel E. Ibarra & Friedhelm von Blanckenburg
- Letter | 19 June 2019

### **Location-level processes drive the establishment of alien bird populations worldwide**

Bayesian hierarchical regression analysis of a global database of bird introduction events reveals the environmental, climatic and biotic factors that are the primary determinants of the successful establishment of populations of alien species.

- David W. Redding, Alex L. Pigot & Tim M. Blackburn
- Letter | 19 June 2019

### **Noncoding deletions reveal a gene that is critical for intestinal function**

An intestine-critical region on human chromosome 16, and its regulation of *PERCCI*, a newly identified gene, is shown to underlie the genetic basis of a severe, inherited form of diarrhoea.

- Danit Oz-Levi, Tsviya Olender & Len A. Pennacchio
- Letter | 12 June 2019

### **Hydraulic control of mammalian embryo size and cell fate**

A mouse blastocyst model reveals how luminal pressure, cell cortical tension and tissue stiffness act at the tissue scale to regulate embryo size, which in turn influences the division pattern of trophectoderm cells and their fate specification.

- ChiiJou Chan, Maria Costanzo & Takashi Hiragi
- Letter | 29 May 2019

### **Long-term ex vivo haematopoietic-stem-cell expansion allows nonconditioned transplantation**

An albumin-free culture system for the long-term ex vivo expansion of mouse haematopoietic stem cells produces 236- to 899-fold expansion, and generates cultures that robustly engraft in recipient mice without toxic pre-conditioning.

- Adam C. Wilkinson, Reiko Ishida & Satoshi Yamazaki
- Letter | 12 June 2019

### [Migrant memory B cells secrete luminal antibody in the vagina](#)

In a mouse model of herpes simplex 2 virus infection, circulating memory B cells—rather than plasma cells—are shown to be the source of antibody secretion in the vaginal lumen following secondary infection.

- Ji Eun Oh, Norifumilijima & Akiko Iwasaki
- Letter | 26 June 2019

### [UDP-glucose accelerates \*SNAIL\* mRNA decay and impairs lung cancer metastasis](#)

UDP-glucose has a tumour-suppressive role by inhibiting the association between HuR and *SNAIL* mRNA, whereas UGDH-mediated metabolism of UDP-glucose leads to increased *SNAIL* mRNA stability and expression, thereby promoting tumour cell migration and lung cancer metastasis.

- Xiongjun Wang, Ruilong Liu & Weiwei Yang

## **Volume 571 Issue 7764, 11 July 2019**

### **This Week**

#### **Editorial**

- Editorial | 10 July 2019

#### [Cancer, climate, plastics: why ‘earthshots’ are harder than moonshots](#)

Apollo was a triumph, but 50 years on, moonshots to solve more-complex global challenges face a different set of hurdles.

Collection:

- [50 years since the Apollo Moon landing](#)
- Editorial | 09 July 2019

#### [To contain Ebola, the United States must fulfil its promise to the World Health Organization](#)

WHO responders are braving bullets to end the outbreak in the Democratic Republic of the Congo, but the virus could cross borders without the pledged funding.

#### **Research Highlights**

- Research Highlight | 01 July 2019

### **Biased data undermine an iconic weather record**

Flaws are revealed in a highly cited database that dates back more than two centuries.

- Research Highlight | 04 July 2019

### **Huge algal mat spanning an ocean is visible from space**

Deforestation in the Amazon has helped to fuel the growth of a seaweed blanket that exceeded 20 million tonnes in 2018.

- Research Highlight | 04 July 2019

### **CRISPR helps to rid mice of HIV**

Gene-editing tool joins forces with antiretroviral drugs to drive HIV from its sanctuaries.

- Research Highlight | 03 July 2019

### **A 'molecular thumb drive' stores big files in small droplets**

Information is encoded in spots made of assorted substances.

- Research Highlight | 04 July 2019

### **Ancient DNA reveals the roots of the Biblical Philistines**

Bones found in the Philistine city of Ashkelon and dating to the twelfth century BC hint at European heritage.

- Research Highlight | 08 July 2019

### **Glowing crystals help to measure temperatures from afar**

New crystalline materials aid in the detection of tiny temperature shifts in a target object.

- Research Highlight | 04 July 2019

### **Three zombie stars on the run**

Stars moving at high velocity seem to have managed to live on after cataclysm.

## **Research**

### **News & Views**

- News & Views | 26 June 2019

### **Walking on your sensitive sole**

Thick foot calluses develop naturally when walking barefoot. It emerges that they preserve foot sensitivity while offering protection, thus avoiding the trade-off between the two that occurs with cushioned shoes.

- KristiaanD'Août
- News & Views | 10 July 2019

### **Low retention of impact material by the Moon**

Simulations demonstrate that the Moon's ability to retain material from striking impactors is lower than was previously assumed. This finding helps to explain the scarcity of precious metals in the Moon relative to Earth.

- James M. D. Day
- News & Views | 03 July 2019

### **Infiltration of old brains by T cells causes dysfunction of neural stem cells**

Age-dependent changes in their environment can impair stem cells' function. The finding that T cells infiltrate the brains of aged mice and cause dysfunction of neural stem cells reveals a potential therapeutic target.

- Allison M. Bond & Hongjun Song
- News & Views | 12 June 2019

### **Hijack of CRISPR defences by selfish genes holds clinical promise**

Parasitic genetic elements called transposons carry CRISPR machinery that is normally used against them by bacterial cells. This paradox has now been explained, with implications for gene-therapy research.

- Fyodor D. Urnov
- News & Views | 09 July 2019

### **From the archive**

How *Nature* reported a resource of animal sounds in 1969, and an analysis of psychiatric disorders in 1919.

- News & Views | 01 July 2019

### **Fishing out a feeding paradox**

If an animal's body shape is specialized in a way that aids feeding on specific organisms, does this restrict what the animal can prey on? An observation of fishes feeding in the wild might now help to settle this question.

- Sebastian Kruppert & Adam P. Summers

### **Reviews**

- Review Article | 10 July 2019

### **From discoveries in ageing research to therapeutics for healthy ageing**

The milestones that mark the advances in ageing research, the medical, commercial and societal implications of ageing and the different ageing pathways and processes that are associated with ageing are discussed.

- Judith Campisi, Pankaj Kapahi & Eric Verdin

## Analysis

- Analysis | 12 June 2019

### [Climate as a risk factor for armed conflict](#)

Climate has affected organized armed conflict within countries, and intensifying climate change is estimated to increase future risks of conflict, although other drivers are substantially more influential and the mechanisms of climate–conflict linkages remain uncertain.

- Katharine J. Mach, Caroline M. Kraan & Nina von Uexkull

## Articles

- Article | 10 July 2019

### [Neural signatures of sleep in zebrafish](#)

Fluorescence-based polysomnography in zebrafish reveals two major sleep signatures that share features with those of amniotes, which suggests that common neural sleep signatures emerged in the vertebrate brain over 450 million years ago.

- Louis C. Leung, Gordon X. Wang & Philippe Murrain

- Article | 03 July 2019

### [Single-cell analysis reveals T cell infiltration in old neurogenic niches](#)

Single-cell transcriptomic analysis of neurogenic niches in young and old mice reveals that T cells infiltrate the neurogenic niches of old mice and inhibit the proliferation of neural stem cells, in part through expression of interferon- $\gamma$ .

- Ben W. Dulken, Matthew T. Buckley & Anne Brunet

- Article | 17 June 2019

### [TOX transcriptionally and epigenetically programs CD8<sup>+</sup> T cell exhaustion](#)

The transcription factor TOX is a central regulator of the transcriptional and epigenetic development of exhausted T cells.

- Omar Khan, Josephine R. Giles & E. John Wherry

- Article | 12 June 2019

### [Transposon-encoded CRISPR–Cas systems direct RNA-guided DNA integration](#)

A programmable transposase integrates donor DNA at user-defined genomic target sites with high fidelity, revealing a new approach for genetic engineering that obviates the need for DNA double-strand breaks and homologous recombination.

- Sanne E. Klompe, Phuc L. H. Vo & Samuel H. Sternberg



## Letters

- Letter | 10 July 2019

### [Reconstructing the late-accretion history of the Moon](#)

Lunar impact simulations find an impactor-retention ratio three times lower than previously thought and indicate that highly siderophile element retention began 4.35 billion years ago, resolving accretion mass discrepancies between Earth and the Moon.

- Meng-Hua Zhu, Natalia Artemieva & Kai Wünnemann
- Letter | 24 June 2019

### [Tracking the precession of single nuclear spins by weak measurements](#)

Periodic weak measurements of just a few carbon-13 nuclear spins in diamond demonstrate sensitive, high-resolution nuclear magnetic resonance spectroscopy at the molecular level.

- K. S. Cujia, J. M. Boss & C. L. Degen
- Letter | 03 July 2019

### [Magnetic monopole noise](#)

Magnetic-flux noise measurements with a SQUID-based spectrometer demonstrate the presence of a magnetic monopole plasma in  $\text{Dy}_2\text{Ti}_2\text{O}_7$ .

- RitikaDusad, Franziska K. K. Kirschner & J. C. Séamus Davis
- Letter | 26 June 2019

### [Light-wave dynamic control of magnetism](#)

The magnetic properties of a ferromagnetic layer stack are controlled on attosecond timescales through optically induced spin and orbital momentum transfer, demonstrating a coherent regime of ultrafast magnetism.

- Florian Siegrist, Julia A. Gessner & Martin Schultze
- Letter | 10 July 2019

### [Planar perovskite solar cells with long-term stability using ionic liquid additives](#)

Addition of an ionic liquid, BMIMBF<sub>4</sub>, to metal halide perovskite solar cells improves their efficiency and long-term operation under accelerated aging conditions of high temperature and full-spectrum sunlight.

- Sai Bai, Peimei Da & Henry J. Snaith
- Letter | 10 July 2019

### [Controlling protein assembly on inorganic crystals through designed protein interfaces](#)

The controlled design of arrays of carboxylates geometrically matched to a potassium ion sublattice leads to the formation of extended self-assembled protein structures on mica.

- Harley Pyles, Shuai Zhang & David Baker
- Letter | 19 June 2019

### [National food production stabilized by crop diversity](#)

A greater diversity of crops at the national level increases the temporal stability of total national harvest, reflecting markedly lower frequencies of years with sharp harvest losses.

- Delphine Renard & David Tilman
- Letter | 26 June 2019

### [Foot callus thickness does not trade off protection for tactile sensitivity during walking](#)

People who frequently walk barefoot have thicker and harder calluses than those who typically use footwear; however, in contrast to shoes, callus thickness does not trade-off protection for the ability to perceive tactile stimuli during walking.

- Nicholas B. Holowka, Bert Wynands & Daniel E. Lieberman
- Letter | 17 June 2019

### [TOX reinforces the phenotype and longevity of exhausted T cells in chronic viral infection](#)

TOX is a critical factor for the normal progression of T cell dysfunction and the maintenance of exhausted T cells during chronic infections.

- Francesca Alfei, Kristiyan Kanev & Dietmar Zehn
- Letter | 17 June 2019

### [TOX is a critical regulator of tumour-specific T cell differentiation](#)

The nuclear factor TOX is highly expressed in antigen-specific dysfunctional T cells in tumours and exhausted T cells during chronic viral infection and is a crucial regulator of the differentiation of tumour-specific T cells.

- Andrew C. Scott, Friederike Dündar & Andrea Schietinger
- Letter | 10 June 2019

**[Off-target RNA mutation induced by DNA base editing and its elimination by mutagenesis](#)**

Cytosine and adenine base editors have undesired off-target effects on RNA, but this activity can be reduced in deaminase-engineered variants while preserving on-target DNA editing.

- Changyang Zhou, Yidi Sun & Hui Yang
- Letter | 05 June 2019

**[Cryo-EM structure of oxysterol-bound human Smoothed coupled to a heterotrimeric G<sub>i</sub>](#)**

Cryo-electron microscopy structure of the human Smoothed protein bound to 24(S),25-epoxycholesterol and a heterotrimeric G<sub>i</sub> protein provides insights into the activation of a Frizzled-class G-protein-coupled receptor and Hedgehog signal transduction.

- Xiaofeng Qi, Heng Liu & Xiaochun Li
- Letter | 01 July 2019

**[Smoothed stimulation by membrane sterols drives Hedgehog pathway activity](#)**

The crystal structure of active mouse SMO in complex with the SAG21k agonist and a stabilizing intracellular binding nanobody reveals the structural basis of SMO regulation by PTCH1.

- Ishan Deshpande, Jiahao Liang & Aashish Manglik

**Volume 571 Issue 7765, 18 July 2019**

**This Week**

**Editorial**

- Editorial | 16 July 2019

**[Diversity and international collaboration should not become casualties of anti-espionage policies](#)**

US universities have a responsibility to defuse the climate of suspicion hanging over their Chinese and Chinese American communities.  
World View

**Research Highlights**

- Research Highlight | 08 July 2019

### [How a minty fresh flavouring could control useful genes](#)

The cooling compound menthol sets a human protein to work, triggering a cellular cascade.

- Research Highlight | 12 July 2019

### [Versatile virus hops between three primate species — including humans](#)

No other emerging pathogen is known to have jumped so frequently from species to species.

- Research Highlight | 11 July 2019

### [The explosive birth of a celestial ‘Cow’](#)

Evidence points to a supernova as the source of a dazzling object that telescopes spotted in 2018.

- Research Highlight | 10 July 2019

### [A caterpillar’s acidic weapon against plant gunge](#)

Clever strategy stops larvae being engulfed by a flood of sticky latex.

- Research Highlight | 12 July 2019

### [Microscopic sensors reveal the brain’s chemical chatter](#)

Devices detect dopamine as it ripples from one neuron to others nearby.

- Research Highlight | 10 July 2019

### [Polar ice chronicles a toxic metal’s surging production](#)

Samples from the Arctic track rising and falling levels of lead over two millennia.

- Research Highlight | 08 July 2019

### [A ‘skin’ of movable solar panels helps buildings keep their cool](#)

Swivelling panels balance solar-energy generation and interior temperatures. Seven Days

- Seven Days | 17 July 2019

### [Ebola spread, Turing honour and mosquito-eradication trial](#)

The week in science: 12–18 July 2019.

## Research

### News & Views

- News & Views | 17 July 2019

### [Corrections to ocean-temperature record resolve puzzling regional differences](#)

An analysis of the record of sea surface temperature reveals that some climate variations that are thought to have occurred in the North Atlantic and the North Pacific oceans are an artefact of changes in measurement approaches.

- Zeke Hausfather
- News & Views | 03 July 2019

#### **[How mutations express themselves in blood-cell production](#)**

A method for detecting mutations and measuring gene-expression levels in the same cell has enabled an investigation into the effects of mutations in a specific gene on the emergence of a form of blood cancer.

- Siddharth Raju & Chun Jimmie Ye
- News & Views | 16 July 2019

#### **[From the archive](#)**

How *Nature* reported the barring of UK women from engineering in 1919, and a celebration of key advances from the industrial revolution.

- News & Views | 03 July 2019

#### **[Holograms from electrons scattered by light](#)**

The quantum interference of electrons that have been scattered by light has been used to produce holograms of the underlying electromagnetic fields — and might open up methods for studying materials at high temporal and spatial resolution.

- Claus Ropers
- News & Views | 17 July 2019

#### **[Holistic models of reaction selectivity](#)**

Computational models that predict the selectivity of reactions are typically accurate for only a specific reaction type and a narrow range of reaction components. A more general model has now been reported.

- Per-Ola Norrby
- News & Views | 10 July 2019

#### **[A deep dive into the development of sea squirts](#)**

An analysis of gene expression in sea-squirt embryos at different stages of development deepens our understanding of how the body plans of vertebrates might have evolved from those of less complex animals.

- Noriyuki Satoh

#### **Perspectives**

- Perspective | 17 July 2019

#### **[Estimating and tracking the remaining carbon budget for stringent climate targets](#)**

A method of tracking changes in estimates of the remaining carbon budget over time should help to reconcile differences between these estimates and clarify their usefulness for setting emission reduction targets.

- Joeri Rogelj, Piers M. Forster & Roland Séférian

### Articles

- Article | 17 July 2019

#### [Holistic prediction of enantioselectivity in asymmetric catalysis](#)

A workflow for deriving statistical models of one set of reactions that can be used to predict related reactions is presented, facilitating catalyst and enantioselective reaction development.

- Jolene P. Reid & Matthew S. Sigman

- Article | 10 July 2019

#### [Comprehensive single-cell transcriptome lineages of a proto-vertebrate](#)

Comprehensive single-cell transcriptomes in the proto-vertebrate *Cionaintestinalis* identified provisional gene networks for 41 different neural subtypes, providing insights into the swimming circuit of tadpoles and the evolution of the vertebrate telencephalon.

- Chen Cao, Laurence A. Lemaire & Kai Chen

- Article | 03 July 2019

#### [Somatic mutations and cell identity linked by Genotyping of Transcriptomes](#)

Profiling of over 38,000 CD34<sup>+</sup> cells from patients with *CALR*-mutated myeloproliferative neoplasms, using the ‘Genotyping of Transcriptomes’ procedure, reveals that the transcriptional output of these mutations depends upon native cell identity.

- Anna S. Nam, Kyu-Tae Kim & Dan A. Landau

- Article | 26 June 2019

#### [High-dimensional geometry of population responses in visual cortex](#)

Analysis of the encoding of natural images by very large populations of neurons in the visual cortex of awake mice characterizes the high dimensional geometry of the neural responses.

- Carsen Stringer, Marius Pachitariu & Kenneth D. Harris

- Article | 26 June 2019

#### [Structure and autoregulation of a P4-ATPase lipid flippase](#)

Cryo-EM structures of the yeast P4-ATPase Drs2p–Cdc50p in three different states of activation provide insights into the function of this lipid flippase, including mechanisms of autoinhibition and PI4P-dependent activation.

- Milena Timcenko, Joseph A. Lyons & Poul Nissen

## Letters

- Letter | 17 July 2019

### [A two-qubit gate between phosphorus donor electrons in silicon](#)

A fast, high-fidelity two-qubit exchange gate between phosphorus donor electron spin qubits in silicon is demonstrated by creating a tunable exchange interaction between two electrons bound to phosphorus atom qubits.

- Y. He, S. K. Gorman & M. Y. Simmons
- Letter | 17 July 2019

### [Giant thermal Hall conductivity in the pseudogap phase of cuprate superconductors](#)

The so-called pseudogap phase in hole-doped cuprate superconductors is associated with an unusually large thermal Hall effect that attains unprecedented levels as the parent Mott insulator is approached.

- G. Grissonnanche, A. Legros & L. Taillefer
- Letter | 10 July 2019

### [Designing minimal and scalable insect-inspired multi-locomotion millirobots](#)

A ten-gram insect-inspired robot capable of crawling, walking, jumping, somersaulting and performing collective tasks is built from low-cost, assembly-free components, demonstrating its scalability for collective applications with expanded mobility.

- ZhenishbekZhakypov, Kazuaki Mori & Jamie Paik
- Letter | 26 June 2019

### [Living annulative \$\pi\$ -extension polymerization for graphene nanoribbon synthesis](#)

A solution-based living annulative  $\pi$ -extension polymerization technique produces graphene nanoribbons with simultaneous control over their length, width and edges, resulting in the synthesis of graphene nanoribbon block copolymers.

- Yuuta Yano, Nobuhiko Mitoma & KenichiroItami
- Letter | 17 July 2019

### [Correcting datasets leads to more homogeneous early-twentieth-century sea surface warming](#)

Correction of oddities in the historical record of sea surface temperatures reveals that some basin-wide climate variations were an artefact of systematic biases that stem, in part, from Japanese records being truncated to whole numbers when the records were digitized.

- Duo Chan, Elizabeth C. Kent & Peter Huybers

- Letter | 10 July 2019

**[Notum produced by Paneth cells attenuates regeneration of aged intestinal epithelium](#)**

Ageing-associated decline in intestinal stem cell function is mediated by increased Notum, a protein inhibitor of stemness-maintaining Wnt signalling, which is secreted by Paneth cells.

- NallePentinmikko, Sharif Iqbal & PekkaKatajisto
- Letter | 19 June 2019

**[Distinct modes of mitochondrial metabolism uncouple T cell differentiation and function](#)**

Genetic, pharmacological and metabolomics experiments reveal that the malate–aspartate shuttle and mitochondrial citrate export support the differentiation of mouse T helper 1 cells, whereas succinate dehydrogenase enforces their terminal effector function.

- Will Bailis, Justin A. Shyer & Richard A. Flavell
- Letter | 26 June 2019

**[FOXA1 mutations alter pioneering activity, differentiation and prostate cancer phenotypes](#)**

Mutations in the transcription factor FOXA1 that are common in prostate cancer result in gain-of-function effects that promote changes in the differentiation of tumour cells.

- Elizabeth J. Adams, Wouter R. Karthaus & Charles L. Sawyers
- Letter | 26 June 2019

**[Distinct structural classes of activating FOXA1 alterations in advanced prostate cancer](#)**

Comprehensive genomic analyses and mechanistic studies uncover three structural, functional and clinical classes of activating *FOXA1* mutations and locus rearrangements in prostate cancer.

- AbhijitParolia, Marcin Cieslik & Arul M. Chinnaiyan
- Letter | 10 July 2019

**[scSLAM-seq reveals core features of transcription dynamics in single cells](#)**

A technique known as scSLAM-seq that combines single-cell RNA sequencing with metabolic RNA labelling and nucleoside conversion is used to study the onset of cytomegalovirus infection in single mouse fibroblasts.

- Florian Erhard, Marisa A. P. Baptista & Lars Dölken
- Letter | 10 July 2019



### [m<sup>6</sup>A enhances the phase separation potential of mRNA](#)

The cytosolic *N*<sup>6</sup>-methyladenosine (m<sup>6</sup>A)-binding proteins YTHDF1, YTHDF2 and YTHDF3 undergo liquid–liquid phase separation in vitro and in cells; this is enhanced by polymethylated mRNAs to form complexes that partition into different cellular phase-separated compartments.

- Ryan J. Ries, Sara Zaccara & Samie R. Jaffrey
- Letter | 10 July 2019

### [Structure and assembly of the mitochondrial membrane remodelling GTPase Mgm1](#)

Crystal and electron cryo-tomography structures of Mgm1 from *Chaetomium thermophilum* reveal that Mgm1 forms bent tetramers, which further assemble into helical filaments on both positively and negatively curved membranes.

- Katja Faelber, Lea Dietrich & Oliver Daumke

## **Volume 571 Issue 7766, 25 July 2019**

### **Editorial**

- Editorial | 23 July 2019

#### **[An innovative way to publish](#)**

The research community needs to find ways to reward study design and methodology as much as the final result. A publishing format called Registered Reports offers a means of addressing this challenge.

- Editorial | 24 July 2019

#### **[Write rules for deep-sea mining before it's too late](#)**

The International Seabed Authority must commit the mining industry to a sustainable future.

Research Highlights

- **Research Highlight** | 16 July 2019

#### **[AI solves the Rubik's cube](#)**

An algorithm unerringly finds solutions for a mind-bending puzzle.

- Research Highlight | 19 July 2019

### **Deadly parasites succumb to a drug mash-up**

A one-two punch knocks out treatment-resistant strains of malaria.

- Research Highlight | 17 July 2019

### **Archaic TB test for cows could finally be put out to pasture**

An updated method could enable tuberculosis vaccination in low-income nations.

- Research Highlight | 16 July 2019

### **The coded message sent by orangutan mums' noisy scratching**

Scratches signal to youngsters that they need to get a move on.

- Research Highlight | 17 July 2019

### **Death as a human sacrifice awaited some travellers to a Mayan city**

People whose remains were consigned to a sinkhole in Mexico might have journeyed more than 1,000 kilometres to the site.

- Research Highlight | 17 July 2019

### **Vaping might help cigarette smokers cut back — but there's a hitch**

Smokers who used e-cigarettes consumed fewer of the traditional version than those who did not.

- Research Highlight | 16 July 2019

### **Going organic for a better camera**

A digital-camera sensor made from organic semiconductors could prove useful in outer space.

## **Research**

### **News & Views**

- News & Views | 24 July 2019

### **Counting grains of sound**

Sound and vibration come in discrete units called phonons, in the same way that light exists as photons. A superconducting device that can count phonons could lead to advances in quantum-information processing.

- Albert Schliesser
- News & Views | 17 July 2019

### **Infection triggers symptoms similar to those of Parkinson's disease in mice lacking PINK1 protein**

In mice lacking a protein genetically linked to Parkinson's disease, an autoimmune response to gut infection compromises the function of dopamine-producing neurons and leads to transient movement impairments.

- Mary K. Herrick & Malú G. Tansey

- News & Views | 24 July 2019

**[The aberrant global synchrony of present-day warming](#)**

Were extended warm or cold periods in the past worldwide, or only regional? Efforts to reconstruct Earth's climate history suggest that the near-global extent of ongoing warming is unparalleled over the past 2,000 years.

- Scott St. George
- News & Views | 10 July 2019

**[Cell communication in the blink of an eye](#)**

The bodies of unicellular organisms called protists can contract extremely fast. Analysis reveals that the flow of surrounding fluid during contraction triggers a chain reaction of contraction of neighbouring protists.

- Pavel Tomancak
- News & Views | 22 July 2019

**[Marine heatwaves in a changing climate](#)**

Heatwaves in the ocean can rapidly disrupt marine ecosystems and the economies that depend on them. A global analysis of these events casts light on their causes and sets the stage for revealing how they might change in the future.

- Michael G. Jacox
- News & Views | 23 July 2019

**[From the archive](#)**

How *Nature* reported early findings from Apollo 11, and Irish attempts to farm New Zealand flax in 1919.

- News & Views | 10 July 2019

**[An early dispersal of modern humans from Africa to Greece](#)**

Analysis of two fossils from a Greek cave has shed light on early hominins in Eurasia. One fossil is the earliest known specimen of *Homo sapiens* found outside Africa; the other is a Neanderthal who lived 40,000 years later.

- Eric Delson

**Reviews**

- Review Article | 24 July 2019

**[Advances in epigenetics link genetics to the environment and disease](#)**

The authors review recent advances and current debates in epigenetics, including how epigenetic mechanisms interact with genetic variation, ageing, disease and the environment.

- Giacomo Cavalli & Edith Heard

## Articles

- Article | 10 July 2019

### [\*\*Apidima Cave fossils provide earliest evidence of \*Homo sapiens\* in Eurasia\*\*](#)

Detailed comparative analyses of two fossil crania from Apidima Cave, Greece, indicate that two late Middle Pleistocene human groups were present at this site; first an early *Homo sapiens* population followed by a Neanderthal population.

- Katerina Harvati, Carolin Röding & Mirsini Kouloukousa
- Article | 26 June 2019

### [\*\*Gene expression across mammalian organ development\*\*](#)

The transcriptomes of seven major organs across developmental stages from several mammalian species are used for comparative analyses of gene expression and evolution across organ development.

- Margarida Cardoso-Moreira, Jean Halbert & Henrik Kaessmann
- Article | 26 June 2019

### [\*\*Developmental dynamics of lncRNAs across mammalian organs and species\*\*](#)

A transcriptome dataset from seven organs and seven mammalian species throughout development is used to analyse the expression of long noncoding RNAs in tissues within and between species, and at different stages of organ development.

- Ioannis Sarropoulos, Ray Marin & Henrik Kaessmann
- Article | 24 July 2019

### [\*\*H<sup>+</sup> transport is an integral function of the mitochondrial ADP/ATP carrier\*\*](#)

The mitochondrial ADP/ATP carrier mediates the proton leak in mitochondria from all tissues that lack UCP1, thereby linking coupled (ATP production) and uncoupled (thermogenesis) energy conversion.

- Ambre M. Bertholet, Edward T. Chouchani & Yuriy Kirichok
- Article | 03 July 2019

### [\*\*Isomerization of BRCA1–BARD1 promotes replication fork protection\*\*](#)

BRCA1–BARD1 has a role in replication fork protection that is mediated by a mechanism of phosphorylation-targeted isomerization of BRCA1 and is independent of the canonical interaction between BRCA1 and PALB2.

- Manuel Daza-Martin, Katarzyna Starowicz & Joanna R. Morris

## Letters

- Letter | 24 July 2019

### **General relativistic orbital decay in a seven-minute-orbital-period eclipsing binary system**

Observations of an eclipsing double-white-dwarf binary with an orbital period of 6.91 minutes that is decaying as predicted by general relativity are reported; once launched, the Laser Interferometer Space Antenna (LISA) should swiftly detect this binary.

- Kevin B. Burdge, Michael W. Coughlin & Thomas A. Prince
- Letter | 03 July 2019

### **Interacting Floquetpolaritons**

Frequency modulation is used to create ‘Floquetpolaritons’—strongly interacting quasi-particles that exist in a customizable set of modes.

- Logan W. Clark, NingyuanJia & Jonathan Simon
- Letter | 24 July 2019

### **Resolving the energy levels of a nanomechanical oscillator**

A hybrid platform comprising a microwave superconducting qubit and a nanomechanical piezoelectric oscillator is used to resolve the phonon number states of the oscillator.

- PatricioArrangoiz-Arriola, E. Alex Wollack & Amir H. Safavi-Naeini
- Letter | 24 July 2019

### **A strongly inhomogeneous superfluid in an iron-based superconductor**

Atomic-resolution imaging of a strongly inhomogeneous superfluid in an iron-based superconductor shows spatial correlation between superfluid density variations and the strength of quasiparticle character.

- D. Cho, K. M. Bastiaans & M. P. Allan
- Letter | 10 July 2019

### **Peptide ligation by chemoselectiveaminonitrile coupling in water**

Prebiotic peptide formation is achieved through chemoselective, high-yielding ligation of  $\alpha$ -aminonitriles in water, showing selectivity for  $\alpha$ -peptide coupling and tolerance of all proteinogenic amino acid residues.

- Pierre Canavelli, Saidul Islam & Matthew W. Powner
- Letter | 24 July 2019

### **No evidence for globally coherent warm and cold periods over the preindustrial Common Era**

Warm and cold periods over the past 2,000 years have not occurred at the same time in all geographical locations, with the exception of the twentieth century, during which warming has occurred almost everywhere.

- Raphael Neukom, Nathan Steiger & Johannes P. Werner

- Letter | 15 July 2019

**[Deep hydrous mantle reservoir provides evidence for crustal recycling before 3.3 billion years ago](#)**

Hydrogen isotopes and compositions of melt inclusions in olivine in komatiites indicate a hydrous source produced by recycling of seawater-altered crust into the deep mantle over 3.3 billion years ago.

- Alexander V. Sobolev, Evgeny V. Asafov & Gary R. Byerly
- Letter | 10 July 2019

**[Collective intercellular communication through ultra-fast hydrodynamic trigger waves](#)**

Ultra-fast hydrodynamic communication between cells emerges in colonies of *Spirostomum ambiguum* through the generation of long-ranged vortex flows that are sensed by neighbouring cells, leading to propagating trigger waves that coordinate the release of toxins.

- Arnold J. T. M. Mathijssen, Joshua Culver & Manu Prakash
- Letter | 17 July 2019

**[Intestinal infection triggers Parkinson's disease-like symptoms in \*Pink1\*<sup>-/-</sup> mice](#)**

In mice lacking PINK1, bacterial infection in the intestine results in mitochondrial antigen presentation and generation of CD8<sup>+</sup> T cells, and infected mice develop motor impairments, suggesting that PINK1 suppresses autoimmunity.

- Diana Matheoud, Tyler Cannon & Michel Desjardins
- Letter | 26 June 2019

**[Immune evasion before tumour invasion in early lung squamous carcinogenesis](#)**

The immune response is modulated at a early stage of carcinogenesis, such that both immune activation and evasion precede tumour invasion.

- Céline Mascaux, Mihaela Angelova & Jérôme Galon
- Letter | 10 July 2019

**[Tumour lineage shapes BRCA-mediated phenotypes](#)**

Analysis of more than 17,000 tumours suggests that the contribution of germline and somatic mutations in the *BRCA1* and *BRCA2* genes to oncogenesis depends on tumour lineage.

- Philip Jonsson, Chaitanya Bandlamudi & Barry S. Taylor
- Letter | 17 July 2019

### **Conformation space of a heterodimeric ABC exporter under turnover conditions**

Eight cryo-electron microscopy structures of the ATP-binding cassette exporter TmrAB under turnover conditions characterize the entire transport cycle in a lipid environment.

- Susanne Hofmann, DovileJanuliene & Arne Moeller

# Occupational and Environmental Medicine



## Contents

### Original articles

#### Workplace

- 433** Case-control investigation of occupational lead exposure and kidney cancer  
*C L Callahan, M C Friesen, S J Locke, P J Dopart, P A Stewart, K Schwartz, J J Ruterbusch, B I Graubard, W-H Chow, N Rothman, J N Hofmann, M P Purdue*

- 441** Chronic conditions as predictors of later life disability employment exit: a gendered analysis  
*D Holman*

- 448** Home care aides' experiences of verbal abuse: a survey of characteristics and risk factors  
*N D Karlsson, P K Markkanen, D Kriebel, R J Gore, C J Galligan, S R Sama, M M Quinn*

- 455** Are there bidirectional relationships between psychosocial work characteristics and depressive symptoms? A fixed effects analysis of Swedish national panel survey data  
*J K Åhlin, A D LaMontagne, L L Magnusson Hanson*

- 462** Melanoma incidence in Australian commercial pilots, 2011–2016  
*C M Olsen, K Miura, J C Dusingize, I Hosegood, R Brown, M Drane, P Clem, J Marsden, R Tinker, K Karipidis, M Coroneo, A C Green*

- 467** Longitudinal investigation of haematological alterations among permethrin-exposed pesticide applicators in the Biomarkers of Exposure and Effect in Agriculture study  
*J J Shearer, L E Beane Freeman, D Liu, G Andreotti, J Hamilton, J Happel, C F Lynch, M C Alavanja, J N Hofmann*

- 471** Assault predicts time away from work after claims for work-related mild traumatic brain injury  
*R Shafi, P M Smith, A Colantonio*

## July 2019 Volume 76 Issue 7

- 479** Continued increase in prevalence of r-type opacities among underground coal miners in the USA  
*N B Hall, D J Blackley, C N Halldin, A S Laney*

#### Exposure assessment

- 482** Down-regulation of the inflammatory response after short-term exposure to low levels of chemical vapours  
*L Ernstgård, M Bottai, G Johanson, B Sjögren*

#### Environment

- 488** Long-term exposure to ambient fine particulate matter and liver enzymes in adults: a cross-sectional study in Taiwan  
*Z Zhang, C Guo, L Chang, Y Bo, C Lin, T Tam, G Hoek, M CS Wong, T-C Chan, A KH Lau, X Q Lao*

#### Practice


- 495** Novel clinical scores for occupational asthma due to exposure to high-molecular-weight agents  
*M Taghiakbari, J-A Pralong, C Lemièrre, G Moullec, P Saha-Chaudhuri, A Cartier, R Castano, E Suarhana*


### Review

- 502** Associations of screen work with neck and upper extremity symptoms: a systematic review with meta-analysis  
*P Coenen, H F van der Molen, A Burdorf, M A Huysmans, L Straker, M HW Frings-Dresen, A J van der Beek*

### Miscellaneous

- 510** Correction: *Work-unit social capital and long-term sickness absence: a prospective cohort study of 32 053 hospital employees*

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# CONTENTS

5 JULY 2019 • VOLUME 365 • ISSUE 6448



94

Committees  
expecting coffee



## NEWS

### IN BRIEF

**10** News at a glance

### IN DEPTH

#### **12 FDA ENFORCEMENT ACTIONS PLUMMET UNDER TRUMP**

Agency is sending many fewer warning letters *By C. Piller*

#### **14 DETAILS REVEALED ON NIH PROBE OF FOREIGN TIES**

Official overseeing inquiry reveals undisclosed firings and returned funds from universities *By J. Mervis*

#### **15 NASA TO FLY DRONE ON TITAN**

Dragonfly quadcopter will scout saturnian moon for life *By P. Voosen*

#### **15 CRISPR PATENT FIGHT REVIVED**

U.S. patent office issues new interference declaration *By J. Cohen*

#### **16 EPIGENETICS COMES TO RNA**

Chemical tags on RNA drive cancer or enhance memory *By K. Garber*

#### **17 DNA REVEALS EUROPEAN ROOTS OF THE ANCIENT PHILISTINES**

3000-year-old burials identify the enemies of the biblical Israelites and shore up legends of Bronze Age migration *By A. Gibbons*

► SCIENCE ADVANCES RESEARCH ARTICLE BY M. FELDMAN ET AL. 10.1126/sciadv.aax0061

### FEATURES

#### **18 QUEST FOR FIRE**

Rob McGinnis aims to use renewable energy to turn carbon dioxide and water into gasoline *By R. F. Service*

► PODCAST

## INSIGHTS

### LETTERS

#### **22 NEXTGEN VOICES: PITHY BURNOUT PREVENTION**

### PERSPECTIVES

#### **24 RESTORING FORESTS AS A MEANS TO MANY ENDS**

An urgent need to replenish tree canopy cover calls for holistic approaches

*By R. Chazdon and P. Brancalion*

► REPORT P. 76

#### **25 INSERTING DNA WITH CRISPR**

Inserting large DNA segments with CRISPR holds great promise for genetic engineering

*By Z. Hou and Y. Zhang*

► RESEARCH ARTICLE P. 48

#### **27 SEAWEED, SEAWEED EVERYWHERE**

Floating *Sargassum* seaweed species are spreading in the Atlantic Ocean

*By J. Gower and S. King*

► REPORT P. 83

#### **28 INTEGRATING STRESS RESPONSES AND IMMUNITY**

Stress is required to assemble immune signaling complexes during infection *By P. Pierre*

► RESEARCH ARTICLE P. 47

#### **29 FINANCIAL TEMPTATION INCREASES CIVIC HONESTY**

Altruism and self-image, not selfishness, drive surprising findings *By S. Shalvi*

► REPORT P. 70

#### **30 PROCESSING MAGNESIUM AT ROOM TEMPERATURE**

In situ microscopy experiments show how pyramidal slip increases magnesium's ductility *By G. Proust*

► REPORT P. 73

#### **32 TARGETING MICROGLIA IN BRAIN DISORDERS**

The heterogeneity of brain immune cells could be exploited therapeutically *By J. Priller and M. Prinz*



## POLICY FORUM

**34 REGULATING GENETIC BIOHACKING**

Emphasize community engagement, not perfect compliance *By P. J. Zettler et al.*

## BOOKS ET AL.

**37 THE GRAND STORY OF CARBON**

A geologist offers a melodic meditation on one of Earth's most abundant elements *By N. Pohl*

**38 UNSETTLING ROBOTS AND THE FUTURE OF ART**

An AI-driven artist's exhibition hints at, but never fully explores, the ethics of algorithms *By C. Ambrosio*

## RESEARCH

## IN BRIEF

**40** From *Science* and other journals

## RESEARCH ARTICLES

**43 METASURFACES**

Matrix Fourier optics enables a compact full-Stokes polarization camera *N. A. Rubin et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT: [dx.doi.org/10.1126/science.aax1839](https://doi.org/10.1126/science.aax1839)

**44 AFRICAN GENETICS**

Ancient DNA reveals a multistep spread of the first herders into sub-Saharan Africa *M. E. Prendergast et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT: [dx.doi.org/10.1126/science.aaw6275](https://doi.org/10.1126/science.aaw6275)

**45 PROTEIN STABILITY**

A glycine-specific N-degron pathway mediates the quality control of protein N-myristoylation *R. T. Timms et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT: [dx.doi.org/10.1126/science.aaw4912](https://doi.org/10.1126/science.aaw4912)

**46 NEURODEVELOPMENT**

Structured spike series specify gene expression patterns for olfactory circuit formation *A. Nakashima et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT: [dx.doi.org/10.1126/science.aaw5030](https://doi.org/10.1126/science.aaw5030)

**47 CELL BIOLOGY**

The heme-regulated inhibitor is a cytosolic sensor of protein misfolding that controls innate immune signaling *M. Abdel-Nour et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT: [dx.doi.org/10.1126/science.aaw4144](https://doi.org/10.1126/science.aaw4144)

► PERSPECTIVE P. 28

**48 CRISPR BIOLOGY**

RNA-guided DNA insertion with CRISPR-associated transposases *J. Strecker et al.*

► PERSPECTIVE P. 25

**53 CELL BIOLOGY**

A COPII subunit acts with an autophagy receptor to target endoplasmic reticulum for degradation *Y. Cui et al.*

**61 PROTEIN DYNAMICS**

Proton uptake mechanism in bacteriorhodopsin captured by serial synchrotron crystallography *T. Weinert et al.*

## REPORTS

**65 BIOCHEMISTRY**

Conserved N-terminal cysteine dioxygenases transduce responses to hypoxia in animals and plants *N. Masson et al.*

**70 BEHAVIORAL ECONOMICS**

Civic honesty around the globe *A. Cohn et al.*  
► PERSPECTIVE P. 29

**73 LIGHT METALS**

Large plasticity in magnesium mediated by pyramidal dislocations *B.-Y. Liu et al.*  
► PERSPECTIVE P. 30

**76 RESTORATION ECOLOGY**

The global tree restoration potential *J.-F. Bastin et al.*  
► PERSPECTIVE P. 24

**79 CHEMICAL PHYSICS**

Direct mapping of curve-crossing dynamics in 1Br by attosecond transient absorption spectroscopy *Y. Kobayashi et al.*

**83 MARINE ECOLOGY**

The great Atlantic *Sargassum* belt *M. Wang et al.*  
► PERSPECTIVE P. 27

## DEPARTMENTS

**9 EDITORIAL**

Chinese scientists and security  
*By Elias Zerhouni*

**94 WORKING LIFE**

One Ph.D., hold the pastries  
*By Kate Bredbenner*

## ON THE COVER



The bacterial CRISPR system is an adaptive immune defense mechanism. A new subtype of CRISPR is now shown to be co-opted by transposons to achieve their insertion into the targeted regions of the genome. This powerful CRISPR-Cas12k system can be programmed to achieve precise and efficient targeted gene insertion, which holds great potential in genome editing applications. See pages 25 and 48.  
*Image: Stephan Schmitz/Folio Art*

Science Staff ..... 6  
New Products.....88  
Science Careers .....89

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# CONTENTS

12 JULY 2019 • VOLUME 365 • ISSUE 6449



112

The palm oil boom has consumed orangutan habitat. But some ecologists think better farming practices could help preserve biodiversity.

## NEWS

### IN BRIEF

**104** News at a glance

### IN DEPTH

#### **106** POLIO ERADICATION CAMPAIGN LOSES GROUND

Surging cases in Pakistan and Africa have dashed hopes of defeating the virus this year *By L. Roberts*

#### **107** CALIFORNIA'S STEM CELL RESEARCH FUND DRIES UP

Researchers hope a planned ballot initiative will renew funding in 2020 *By J. Kaiser*

#### **108** SOLAR PLUS BATTERIES IS NOW CHEAPER THAN FOSSIL POWER

Falling prices help utilities start to decarbonize *By R. F. Service*

#### **109** GUT MICROBES MAY HELP MALNOURISHED CHILDREN

Commonplace foods restore bacteria that can improve health *By E. Pennisi*  
► RESEARCH ARTICLES PP. 139 & 140

#### **110** PSYCHOLOGIST AIMS TO STUDY DIVERSE MINDS, NOT WEIRDOS

Daniel Haun wants his fellow psychologists to study people outside of rich, Western societies *By K. Kupferschmidt*

#### **111** WAS OUR SPECIES IN EUROPE 210,000 YEARS AGO?

Skepticism greets startling conclusion from skull fragment found in Greek cave *By L. Wade*

### FEATURES

#### **112** MAKING PEACE WITH OIL PALM

Some scientists are helping make palm plantations greener. Others say that doing so legitimizes a destructive industry *By D. Rochmyaningsih*

## INSIGHTS

### PERSPECTIVES

#### **116** SEABIRD CLUES TO ECOSYSTEM HEALTH

Seabird monitoring provides essential information on the state of marine ecosystems *By E. Velarde et al.*  
► PODCAST

#### **118** PROTECTING FETAL DEVELOPMENT

Control of cell fusion in the placenta affects the balance between health and harm *By P. Kellam and R. A. Weiss*  
► REPORT P. 176

#### **119** BOOSTING ENGINEERED T CELLS

Vaccines augment the antitumor activity of cellular therapy *By N. Singh and C. H. June*  
► REPORT P. 162

#### **120** MAPPING GLOBAL PROTEIN CONTACTS

Genome-scale coevolution experiments expand bacterial protein interactomes *By S. Vajda and A. Emili*  
► REPORT P. 185

#### **122** STROMAL DIRECTIVES CAN CONTROL CANCER

Could reprogramming the pretumor microenvironment transform cancer care? *By T. D. Tlsty and P. Gascard*

#### **124** SUPRAMOLECULAR CAGES TRAP PESKY ANIONS

Carbon-hydrogen bonds in a cryptand cage boost chloride entrapment to ultrahigh affinity *By K. Bowman-James*  
► REPORT P. 159

#### **125** STRONGER ARTIFICIAL MUSCLES, WITH A TWIST

Tailored fiber-shaped actuators with twisted and coiled designs have high energy densities *By S. Tawfik and Y. Tang*  
► REPORTS PP. 145, 150, & 155

### POLICY FORUM

#### **127** CERTIFY REPRODUCIBILITY WITH CONFIDENTIAL DATA

A trusted third party certifies that results reproduce *By C. Pérignon et al.*

### BOOKS ET AL.

#### **129** THWARTING AND EXPLOITING NAZI SCIENCE

A thrilling tale of wartime derring-do meets a richly researched story of postwar intellectual exploitation *By C. Hall*



109, 139, & 140

**130 AMERICAN ADVENTURE AND AUTONOMOUS CARS**

What will become of U.S. car culture in the age of self-driving vehicles?  
By *L. Vinsel*

**LETTERS**

**133 CONSERVATION: BEYOND POPULATION GROWTH**

By *T. Weldemichel et al.*

**133 RESPONSE**

By *J. O. Ogutu et al.*

**134 POLAND'S CONFLICTING ENVIRONMENTAL LAWS**

By *G. Grzywaczewski and I. Kitowski*

**134 TECHNICAL COMMENT ABSTRACTS**

**RESEARCH**

**IN BRIEF**

**135** From *Science* and other journals

**REVIEW**

**138 ANTHROPOLOGY**

Late Pleistocene exploration and settlement of the Americas by modern humans *M. R. Waters*

REVIEW SUMMARY; FOR FULL TEXT:

dx.doi.org/10.1126/science.aat5447

**RESEARCH ARTICLES**

**MICROBIOTA**

**139** Effects of microbiota-directed foods in gnotobiotic animals and undernourished children  
*J. L. Gehrig et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT: dx.doi.org/10.1126/science.aau4732

**140** A sparse covarying unit that describes healthy and impaired human gut microbiota development  
*A. S. Raman et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT: dx.doi.org/10.1126/science.aau4735

► NEWS STORY P. 109

**141 NEUROSCIENCE**

A sense of space in postrhinal cortex  
*P. A. LaChance et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT: dx.doi.org/10.1126/science.aax4192

**REPORTS**

**142 SURFACE CHEMISTRY**

Molecular structure elucidation with charge-state control *S. Fatayer et al.*

**ARTIFICIAL MUSCLES**

**145** Strain-programmable fiber-based artificial muscle *M. Kanik et al.*

**150** Sheath-run artificial muscles  
*J. Mu et al.*

**155** Shape memory nanocomposite fibers for untethered high-energy microengines *J. Yuan et al.*

► PERSPECTIVE P. 125

**159 HOST-GUEST CHEMISTRY**

Chloride capture using a C–H hydrogen-bonding cage *Y. Liu et al.*

► PERSPECTIVE P. 124

**162 IMMUNOTHERAPY**

Enhanced CAR–T cell activity against solid tumors by vaccine boosting through the chimeric receptor *L. Ma et al.*

► PERSPECTIVE P. 119

**168 INORGANIC CHEMISTRY**

Characterization of hydrogen-substituted silylium ions in the condensed phase  
*Q. Wu et al.*

**173 CATTLE DOMESTICATION**

Ancient cattle genomics, origins, and rapid turnover in the Fertile Crescent  
*M. P. Verdugo et al.*

**176 REPRODUCTION**

IFITM proteins inhibit placental syncytiotrophoblast formation and promote fetal demise *J. Buchrieser et al.*  
► PERSPECTIVE P. 118

**180 NEUROSCIENCE**

Posterior parietal cortex plays a causal role in perceptual and categorical decisions *Y. Zhou and D. J. Freedman*

**185 PROTEIN NETWORKS**

Protein interaction networks revealed by proteome coevolution *Q. Cong et al.*  
► PERSPECTIVE P. 120

**DEPARTMENTS**

**101 EDITORIAL**

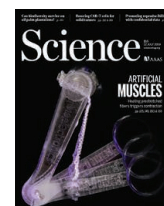
Balancing science and security  
By *Mary Sue Coleman*

**194 WORKING LIFE**

A father's odyssey By *Kazumasa Z. Tanaka*



**ON THE COVER**



Upon heating, a strain-programmable fiber-based artificial muscle composed of thermoplastic and elastomer layers actuates a miniature printed arm and lifts a dumbbell 650 times its own weight.

These fiber-based muscles, fabricated at lengths of hundreds of meters, are highly tunable in terms of power and lateral dimensions and thus may offer opportunities in robotics and prosthetics. See pages 125, 145, 150, and 155.

Photo: *Ken Richardson*

New Products.....190  
Science Careers.....191

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# Science

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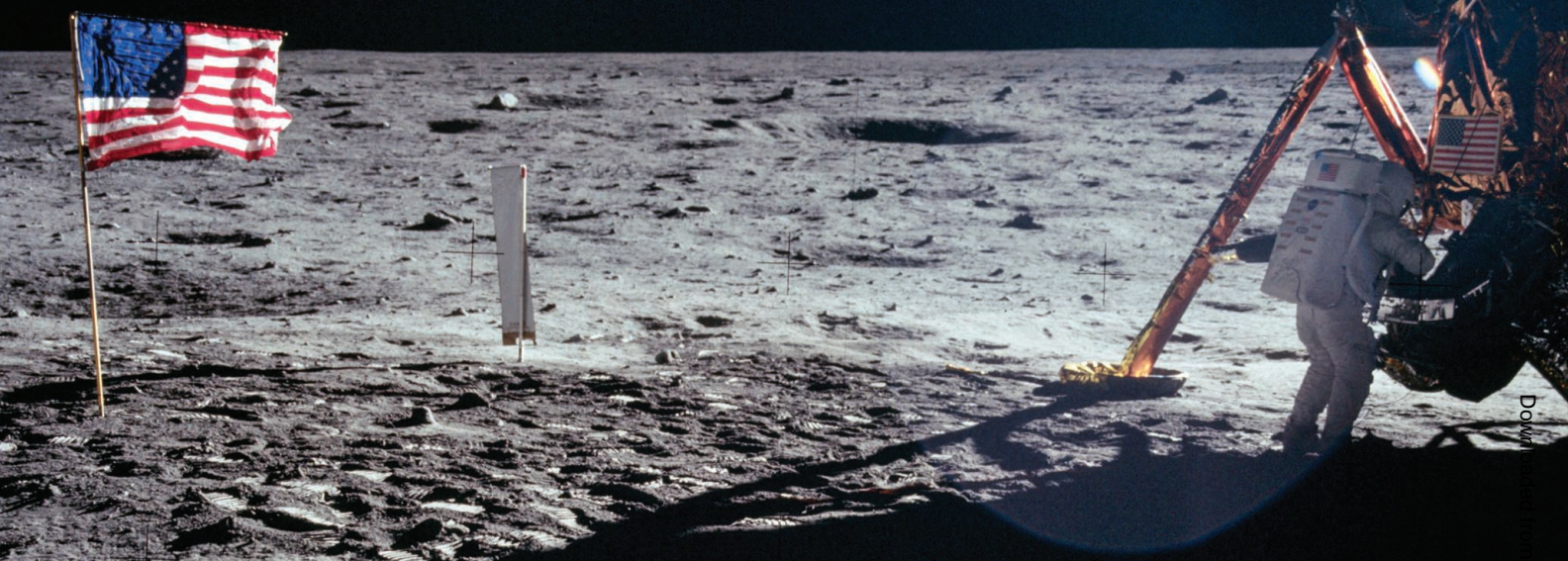
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# CONTENTS

19 JULY 2019 • VOLUME 365 • ISSUE 6450



## SPECIAL SECTION

# MOON LANDING AT 50

### INTRODUCTION

**232** Shooting for the Moon

### NEWS

**234** Moon gazing: Nearly 50 years ago, NASA put a telescope on the Moon. Astronomers have been trying to return ever since *D. Clery* ▶ VIDEO

### POLICY FORUM

**238** China's present and future lunar exploration program *C. Li et al.*

### REVIEW

**240** Analysis of lunar samples: Implications for planet formation and evolution *R. W. Carlson*

### ON THE COVER



Neil Armstrong's shadow cast on the surface of the Moon. This image was taken by Armstrong on 21 July 1969, as part of a panorama of the Apollo 11 landing site, while Buzz Aldrin deployed scientific instruments. The Sun was directly behind Armstrong, producing

the appearance of a bright halo around his helmet. Black crosses were introduced by the camera optics for distortion calibration. See page 232. *Credit: NASA*

SEE ALSO ▶ EDITORIAL P. 203; BOOKS ET AL. P. 226

## NEWS

### IN BRIEF

**204** News at a glance

### IN DEPTH

**207 BANANA FUNGUS PUTS LATIN AMERICA ON ALERT**

Apparent detection of a devastating *Fusarium* strain in Colombia threatens exports *By E. Stokstad*

**208 UNIVERSITY OF ALASKA BRACES FOR DRAGONIAN BUDGET CUTS**

Arctic science programs could suffer, faculty fear *By M. Price*

**209 PINPOINT BRAIN STIMULATION PROBES PERCEPTION**

Triggering a handful of neurons in a mouse brain may conjure a visual experience *By K. Servick*

▶ RESEARCH ARTICLE BY MARSH ET AL. 10.1126/SCIENCE.AAW5202

**210 GENOMICS GUIDES HELP FOR DWINDLING SPECIES**

Long-term studies, modeling help clarify how to do genetic rescue *By E. Pennisi*

**211 CENSUS CITIZENSHIP QUESTION IS DROPPED, BUT CHALLENGES LINGER**

Methods for filling in missing data will get major test *By J. Mervis*

### FEATURES

**212 A PAINFUL LEGACY**

Mice hint at how one generation's trauma may affect the biology of their descendants *By A. Curry*

▶ PODCAST

## INSIGHTS

### PERSPECTIVES

**216 HOW TO MAKE INTERLOCKED NANOCARBONS**

Interlocked nanocarbon rings have promising properties for molecular machines *By J. M. Van Raden and R. Jasti*

▶ REPORT P. 272

PHOTO: NASA

<http://science.sciencemag.org/>

**218 POLARONS LEAVE A TRACE**

Spin and charge interplay leads to stringlike excitations in the 2D Hubbard model *By P. Schauss*

► RESEARCH ARTICLE P. 251

**219 AN ATTRACTIVE, RESHAPABLE MATERIAL**

Jamming the nanoparticles of a ferrofluid on droplet surfaces creates a soft ferromagnet *By R. Dreyfus*

► REPORT P. 264

**220 MAKING PRECISION MEDICINE PERSONAL FOR CYSTIC FIBROSIS**

Molecular defects in the cystic fibrosis gene prompt creative approaches to treatment *By C. Manfredi et al.*

**222 TONGUES UNTIED**

Fossil evidence reveals how jaws, ears, and tongues evolved in mammals and their relatives

*By S. Hoffmann and D. W. Krause*

► REPORT P. 276

**223 THE VASCULAR SIDE OF ALZHEIMER'S DISEASE**

Protein aggregates restrict cerebral blood flow, which causes neural injury *By A. Liesz*

► RESEARCH ARTICLE P. 250

**224 STRESS SIGNALING IN PAIN CONTROL**

Endoplasmic reticulum stress can drive chronic pain, revealing a new target

*By T. Avril and E. Chevet*

► RESEARCH ARTICLE P. 248

**BOOKS ET AL.****226 APOLLO, IN CONTEXT**

Two tomes paint vivid historical portraits of Apollo 11 *By A. Siddiqi*

► MOON LANDING AT 50 SECTION P. 232

**228 THE ETHICS OF OPIOIDS**

A bioethicist's harrowing encounter with prescription painkillers highlights systemic health care problems

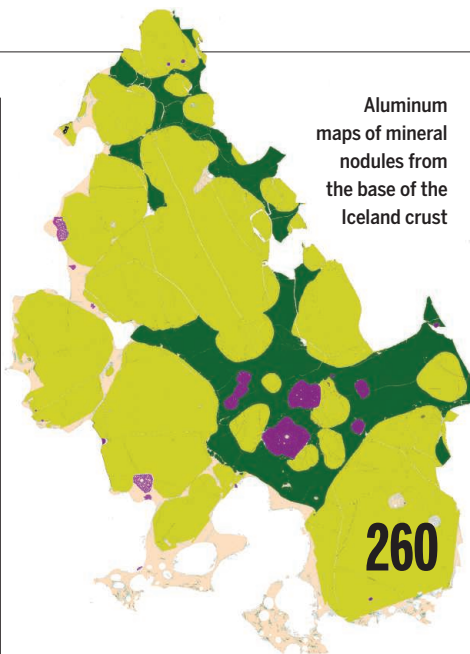
*By D. Z. Buchman*

**LETTERS****229 FIGHTING PLANT PATHOGENS TOGETHER**

*By C. Hong*

**229 STATES LACK ENDANGERED SPECIES REPORTING**

*By C. Bennett and M. W. Schwartz*



Aluminum maps of mineral nodules from the base of the Iceland crust

**230 REPLICABLE DATA FOR DIGIT RATIO DIFFERENCES**

*By S. M. Breedlove*

**230 TECHNICAL COMMENT ABSTRACTS****RESEARCH****IN BRIEF**

**245** From *Science* and other journals

**RESEARCH ARTICLES****248 INFLAMMATORY PAIN**

IRE1 $\alpha$ -XBP1 signaling in leukocytes controls prostaglandin biosynthesis and pain *S. Chopra et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT:

[dx.doi.org/10.1126/science.aau6499](https://doi.org/10.1126/science.aau6499)

► PERSPECTIVE P. 224

**249 COMPARATIVE GENETICS**

Conservation, acquisition, and functional impact of sex-biased gene expression in mammals *S. Naqvi et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT:

[dx.doi.org/10.1126/science.aaw7317](https://doi.org/10.1126/science.aaw7317)

**250 ALZHEIMER'S DISEASE**

Amyloid  $\beta$  oligomers constrict human capillaries in Alzheimer's disease via signaling to pericytes *R. Nortley et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT:

[dx.doi.org/10.1126/science.aav9518](https://doi.org/10.1126/science.aav9518)

► PERSPECTIVE P. 223

**251 QUANTUM SIMULATION**

String patterns in the doped Hubbard model *C. S. Chiu et al.*

► PERSPECTIVE P. 218

**REPORTS****257 METASURFACES**

Temporal color mixing and dynamic beam shaping with silicon metasurfaces *A. L. Holsteen et al.*

**260 VOLCANOLOGY**

Millennial storage of near-Moho magma *E. J. F. Mutch et al.*

**264 MAGNETIC MATERIALS**

Reconfigurable ferromagnetic liquid droplets *X. Liu et al.*

► PERSPECTIVE P. 219; PODCAST

**268 QUANTUM GASES**

Quantum scale anomaly and spatial coherence in a 2D Fermi superfluid *P. A. Murthy et al.*

**272 MOLECULAR KNOTS**

Topological molecular nanocarbons: All-benzene catenane and trefoil knot *Y. Segawa et al.*

► PERSPECTIVE P. 216

**276 PALEONTOLOGY**

New Jurassic mammaliaform sheds light on early evolution of mammal-like hyoid bones *C.-F. Zhou et al.*

► PERSPECTIVE P. 222

**280 NATURAL PRODUCTS**

Use of a scaffold peptide in the biosynthesis of amino acid-derived natural products *C. P. Ting et al.*

**284 MARINE MANAGEMENT**

Seasonal to multiannual marine ecosystem prediction with a global Earth system model *J.-Y. Park et al.*

**DEPARTMENTS****203 EDITORIAL**

A child of Apollo *By Jeremy Berg*

► MOON LANDING AT 50 SECTION P. 232

**294 WORKING LIFE**

Livestreaming science *By S. Hussain Ather*

Science Staff .....	202
New Products .....	290
Science Careers .....	291

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310

The *Varroa destructor* mite, seen in a scanning electron micrograph, is a devastating parasite of honey bees.

## NEWS

### IN BRIEF

302 News at a glance

### IN DEPTH

#### 304 INDONESIA GETS TOUGH ON FOREIGN SCIENTISTS

Strict new rules and prison sentences for biopiracy could stifle international research

By D. Rochmyaningsih

#### 305 CUTS AND DISMISSIVE REMARKS UNNERVE MEXICAN SCIENTISTS

Andrés Manuel López Obrador has slashed support for institutes and suggested some scientists are corrupt

By L. Wade ▶ EDITORIAL P. 301

#### 306 NEW TACTICS CLASH ON SPEED OF EXPANDING UNIVERSE

Hubble constant debate points to “crisis” in physics

By J. Sokol

#### 308 VAUNTED DIVERSITY PROGRAM CATCHES ON

HHMI will fund multiple efforts to reproduce Meyerhoff Scholars Program

By J. Mervis

#### 309 ONCE-A-YEAR IMPLANT SHOWS PROMISE AGAINST HIV

In small trial, long-lasting antiretroviral performs well

By J. Cohen

### FEATURES

#### 310 MITE FIGHT

Honey bee breeders are stepping up efforts to create colonies that can resist the deadly *Varroa* parasite

By E. Stokstad

▶ BOOK REVIEW P. 329; VIDEO; PODCAST

## INSIGHTS

### PERSPECTIVES

#### 314 THE CELLS OF REGENERATION

Single-cell RNA sequencing identifies cell types with central roles in regeneration

By P. W. Reddien

▶ RESEARCH ARTICLE P. 341

#### 316 IMMUNE CONTROL OF THE MICROBIOTA PREVENTS OBESITY

Specialized T cells regulate the composition of the intestinal microbiota, with important consequences for obesity

By Y. Wang and L. V. Hooper

▶ RESEARCH ARTICLE P. 340

#### 318 TALES FROM THE CRYPT(IC)

Neutral mutations can breathe life into evolutionary adaptation

By J. A. Lee and C. J. Marx

▶ RESEARCH ARTICLE P. 347

#### 319 LOWERING CERAMIDES TO OVERCOME DIABETES

Lowering toxic lipid concentrations in mice has a promising impact on obesity-associated metabolic disorder

By C. M. Kusminski and P. E. Scherer

▶ REPORT P. 386

#### 320 A DURABLE SEMICONDUCTOR PHOTOCATALYST

Mesoporous graphitic carbon nitride robustly performs organic photoredox reactions

By E. Swift

▶ RESEARCH ARTICLE P. 360

#### 322 KEEPING AIR POLLUTION POLICIES ON TRACK

Focusing on trends rather than compliance can lead to more effective policies

By G. W. Fuller and A. Font

▶ POLICY FORUM P. 325

#### 324 MAGNETIC MODIFICATION OF ELECTRICAL RESISTANCE

A switching mechanism enables finely tuned magnetoresistance for electronic devices

By E. Hassinger and T. Meng

▶ REPORT P. 377

### POLICY FORUM

#### 325 THE CASE FOR A SUPPLY-SIDE CLIMATE TREATY

The Paris Agreement can be strengthened by a treaty limiting global fossil fuel supply

By G. B. Asheim et al.

▶ PERSPECTIVE P. 322



322  
& 325

## BOOKS ET AL.

**328 DEADLY CATS DOWN UNDER**

Science meets the great cat debate  
By *J. B. Losos*

**329 SMALL WONDERS**

The curious and vital role of insects  
takes center stage in three new tomes  
By *L. Dicks*

► NEWS STORY P. 310

## LETTERS

**332 CHINA'S EARLY WARNING SYSTEM PROGRESS**

By *J. Ji et al.*

**332 UNHELPFUL INFLATION OF THREATENED SPECIES**

By *M. J. Costello*

**333 VIETNAM'S FISH KILL REMAINS UNEXAMINED**

By *K. V. Dinh*

## RESEARCH

## IN BRIEF

**337** From *Science* and other journals

## RESEARCH ARTICLES

**340 IMMUNOMETABOLISM**

T cell-mediated regulation of the  
microbiota protects against obesity  
*C. Petersen et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT:

[dx.doi.org/10.1126/science.aat9351](https://doi.org/10.1126/science.aat9351)

► PERSPECTIVE P. 316

**341 DEVELOPMENTAL BIOLOGY**

Stem cell differentiation trajectories in  
*Hydra* resolved at single-cell resolution  
*S. Siebert et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT:

[dx.doi.org/10.1126/science.aav9314](https://doi.org/10.1126/science.aav9314)

► PERSPECTIVE P. 314

**342 QUALITY CONTROL**

The nucleolus functions as a phase-  
separated protein quality control  
compartment *F. Frottin et al.*

**347 EVOLUTION**

Cryptic genetic variation accelerates  
evolution by opening access to diverse  
adaptive peaks *J. Zheng et al.*

► PERSPECTIVE P. 318

314  
& 341



*Hydra* can regenerate their whole body from only a small piece of tissue.

**353 MOLECULAR BIOLOGY**

Resetting histone modifications  
during human parental-to-zygotic  
transition *W. Xia et al.*

**360 ORGANIC CHEMISTRY**

Organic semiconductor  
photocatalyst can bifunctionalize  
arenes and heteroarenes  
*I. Ghosh et al.*

► PERSPECTIVE P. 320

## REPORTS

**367 ELECTROCHEMISTRY**

Molecular electrocatalysts can  
mediate fast, selective  
CO<sub>2</sub> reduction in a flow cell  
*S. Ren et al.*

**369 GLACIOLOGY**

Direct observations of  
submarine melt and subsurface  
geometry at a tidewater glacier  
*D. A. Sutherland et al.*

**374 METASURFACES**

Spatiotemporal light control with  
frequency-gradient metasurfaces  
*A. M. Shaltout et al.*

**377 MAGNETISM**

Singular angular magnetoresistance  
in a magnetic nodal semimetal  
*T. Suzuki et al.*

► PERSPECTIVE P. 324

**382 BIOTECHNOLOGY**

A cytosine deaminase for  
programmable single-base RNA  
editing *O. O. Abudayyeh et al.*

**386 METABOLIC DISEASE**

Targeting a ceramide double bond  
improves insulin resistance and hepatic  
steatosis *B. Chaurasia et al.*

► PERSPECTIVE P. 319

**393 PLANT SCIENCE**

A rice gene that confers broad-spectrum  
resistance to  $\beta$ -triketone herbicides  
*H. Maeda et al.*

## DEPARTMENTS

**301 EDITORIAL**

Quo vadis, Mexican science?

By *Antonio Lazcano*

► NEWS STORY P. 305

**402 WORKING LIFE**

Take the leap *By Lerys del Moral*

## ON THE COVER



Submarine melting  
of ice at the leading  
edge of glaciers that  
discharge into the ocean  
is happening faster  
than expected. This  
section of an iceberg  
calved from LeConte  
Glacier in southeast

Alaska illustrates one of the consequences  
of this process, which helps drive mass loss,  
destabilizes ice sheets, and leads to faster  
rates of sea level rise. See page 369.

Photo: *Mark Galer*

AAAS News & Notes.....	334
New Products.....	397
Science Careers.....	398

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ARTICLES/SHORT FEATURES

Blockchain – Technology for the Future? Pg 20
Govind Bhattacharjee
WhatsApp Hacking A Wake-up Call for Users Pg 24
Sonalı Nagar
Preparing for the new WiFi! Pg 26
Anand Parthasarathy
SWAYAM MOOC Education on the Go Pg 31
Felix Bast
Sugarcane Juice A Promise of Good Health Pg 36
M.M. Roy & Sharmila Roy
False Memories Pg 38
Shivani
Monitoring Water Level from Space Pg 40
Surajit Ghosh



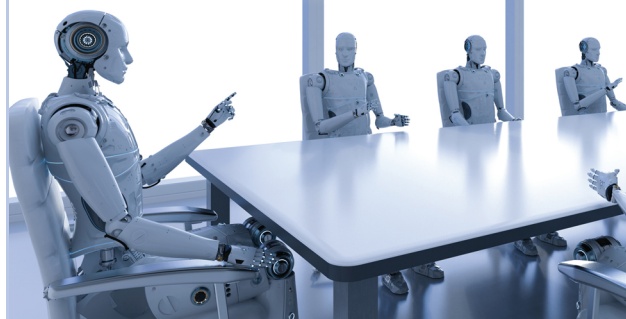
Pg 20

COVER STORY

When will an ‘Intelligent Species’ Arrive?

Pg 14

Shobhna Kunwar



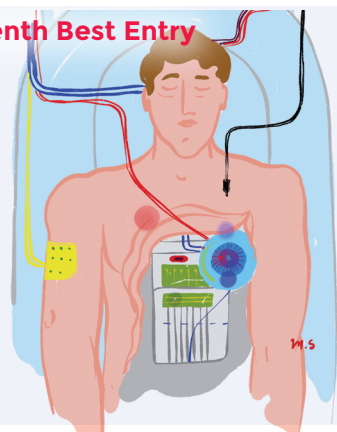
Will Earth get super intelligent robots that are far more intelligent than humans?

Science Fiction – Tenth Best Entry

Genesis of Nemesis

Kaustubh Tyagi

Pg 48



REPORT From micro to macro: Understanding the universe through mega science projects
Vigyan Samagam at Mumbai
A.P. Jayaraman
Pg 43

DEPARTMENTS

REACTIONS 8 READERSHIP SURVEY 51 INNOVATIVE MINDS 58
EDITORIAL 9 PUZZLE CORNER 52 NATURE'S MARVELS 60
SPECTRUM 10 WHAT'S NEW 54 TEST YOUR KNOWLEDGE 62
PHOTO FEATURE 34 CURIOSITY CORNER 56 CROSSWORD 64



The NEW ENGLAND  
JOURNAL of MEDICINE

July 4, 2019

---

**PERSPECTIVE**

---

“Meaningful Use” of Cost-Measurement Systems — Incentives for Health Care Providers

M. Ederhof and P.B. Ginsburg  
N Engl J Med 2019;381:4-6

---

Taking Note

R. Rush  
N Engl J Med 2019;381:9-11

---

**ORIGINAL ARTICLES**

---

Apalutamide for Metastatic, Castration-Sensitive Prostate Cancer

K.N. Chi and Others  
N Engl J Med 2019;381:13-24 | Published Online May 31, 2019

---

C-Type Natriuretic Peptide Analogue Therapy in Children with Achondroplasia

R. Savarirayan and Others  
N Engl J Med 2019;381:25-35 | Published Online June 18, 2019

---

Rituximab or Cyclosporine in the Treatment of Membranous Nephropathy

F.C. Fervenza and Others

---

N Engl J Med 2019;381:36-46

---

**Brief Report: Kelch-like Protein 11 Antibodies in Seminoma-Associated Paraneoplastic Encephalitis**

C. Mandel-Brehm and Others

N Engl J Med 2019;381:47-54

---

**CLINICAL PRACTICE**

---

**Chronic Rhinosinusitis with Nasal Polyps**

C. Hopkins

N Engl J Med 2019;381:55-63

---

**REVIEW ARTICLE**

---

**Frontiers in Medicine: Genetic Variation, Comparative Genomics, and the Diagnosis of Disease**

E.E. Eichler

N Engl J Med 2019;381:64-74

---

**IMAGES IN CLINICAL MEDICINE**

---

**Pneumoperitoneum from a Gastric Perforation**

A. Masson and G. Cheron

N Engl J Med 2019;381:75

---

## Enterobiusvermicularis (Pinworm) Infection

W.-H. Kang and S.-C. Jee  
N Engl J Med 2019;381:e1

---

### CLINICAL PROBLEM-SOLVING

---

## Weak and Winded

I. Lee, J.B. Walker, K. Nozaki, and L.L. Willett  
N Engl J Med 2019;381:76-82

---

### EDITORIALS

---

## Apalutamide for Metastatic, Hormone-Responsive Prostate Cancer

L. Klotz  
N Engl J Med 2019;381:84-86

---

## A First Step toward a New Approach to Treating Membranous Nephropathy

P. Ruggenenti and G. Remuzzi  
N Engl J Med 2019;381:86-88

---

### CLINICAL IMPLICATIONS OF BASIC RESEARCH

---

## Phage Display to Detect and Identify Autoantibodies in Disease

S. Deutscher  
N Engl J Med 2019;381:89-91

---

### CORRESPONDENCE



---

Caplacizumab Therapy without Plasma Exchange for Acquired Thrombotic Thrombocytopenic Purpura

---

Pneumatic Compression in Venous Thromboprophylaxis

---

Anesthesia for Cardiac Surgery

---

Examination of the Hand and Wrist

---

Hepatocellular Carcinoma

---

Mucinous Ovarian Carcinoma

---



The NEW ENGLAND  
JOURNAL of MEDICINE

July 11, 2019

---

**CLINICAL DECISIONS**

Thyroid Function and Conception

A.X. Chen, A.M. Leung, and T.I.M. Korevaar | N Engl J Med 2019;381:178-181

This interactive feature about a woman who has recently had a spontaneous miscarriage and tests positive for thyroid peroxidase antibodies offers a case vignette accompanied by essays that either support or discourage the use of levothyroxine to increase her chances of becoming pregnant.

---

**PERSPECTIVE**

---

**A Most Reckless Proposal — A Plan to Continue Asbestos Use in the United States**

P.J. Landrigan and R.A. Lemen

DOI: 10.1056/NEJMp1906207 | July 10, 2019

---

**Mandatory Measles Vaccination in New York City — Reflections on a Bold Experiment**

J.D. Cantor

N Engl J Med 2019;381:101-103 | Published Online June 5, 2019

---

**Vaccination over Parental Objection — Should Adolescents Be Allowed to Consent to Receiving Vaccines?**

R.D. Silverman, D.J. Opel, and S.B. Omer

N Engl J Med 2019;381:104-106 | Published Online June 5, 2019

---

**Reforming the Orphan Drug Act for the 21st Century**

A. Sarpatwari and A.S. Kesselheim

N Engl J Med 2019;381:106-108

---

**Sister First, Doctor Second**

S. Sediqzadah

N Engl J Med 2019;381:108-109

---

**ORIGINAL ARTICLES**

---

**C-Reactive Protein Testing to Guide Antibiotic Prescribing for COPD Exacerbations**

C.C. Butler and Others

N Engl J Med 2019;381:111-120

---

## Enzalutamide with Standard First-Line Therapy in Metastatic Prostate Cancer

I.D. Davis and Others

N Engl J Med 2019;381:121-131 | Published Online June 2, 2019

---

## Trial of Galcanezumab in Prevention of Episodic Cluster Headache

P.J. Goadsby and Others

N Engl J Med 2019;381:132-141

---

## Rimegepant, an Oral Calcitonin Gene-Related Peptide Receptor Antagonist, for Migraine

R.B. Lipton and Others

N Engl J Med 2019;381:142-149

---

## A Multicenter Trial of Vena Cava Filters in Severely Injured Patients

K.M. Ho and Others

DOI: 10.1056/NEJMoa1806515 | July 7, 2019

---

### **SPECIAL ARTICLE**

---

## Early Effects of an Accountable Care Organization Model for Underserved Areas

M.J. Trombley and Others

DOI: 10.1056/NEJMsa1816660 | July 10, 2019

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### **CLINICAL PRACTICE**

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## Measles

P.M. Strebel and W.A. Orenstein

DOI: 10.1056/NEJMcp1905181 | July 10, 2019

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### **REVIEW ARTICLE**

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## Hemolytic Transfusion Reactions

S.R. Panch, C. Montemayor-Garcia, and H.G. Klein  
N Engl J Med 2019;381:150-162

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### IMAGES IN CLINICAL MEDICINE

---

## “Double Tongue” Appearance in Ludwig’s Angina

I. Mohamad and M.S. Narayanan  
N Engl J Med 2019;381:163

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## Whooping Cough in a Young Infant

D. Hillier  
N Engl J Med 2019;381:e4

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### CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL

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## Case 21-2019: A 31-Year-Old Woman with Vision Loss

M. Matiello, A.F. Juliano, M. Bowley, and A. Karaa  
N Engl J Med 2019;381:164-172

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### EDITORIALS

---

## COPD Exacerbations — A Target for Antibiotic Stewardship

A.S. Brett and M.N. Al-Hasan  
N Engl J Med 2019;381:174-175

---

## Improving Treatment for Advanced Prostate Cancer

I.F. Tannock  
N Engl J Med 2019;381:176-177

---

## CLINICAL DECISIONS

---

### Thyroid Function and Conception

A.X. Chen, A.M. Leung, and T.I.M. Korevaar  
N Engl J Med 2019;381:178-181

---

## MEDICINE AND SOCIETY

---

### Mistrust in Science — A Threat to the Patient–Physician Relationship

R.J. Baron and A.J. Berinsky  
N Engl J Med 2019;381:182-185

---

## CORRESPONDENCE

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### Mass Drug Administration for Scabies — 2 Years of Follow-up

Published Online June 26, 2019

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### Coronary Angiography after Cardiac Arrest without ST-Segment Elevation

### Levothyroxine in Women with Thyroid Peroxidase Antibodies before Conception

### Andexanet Alfa for Bleeding with Factor Xa Inhibitors

### Public–Private Partnerships in Global Health

---

## CORRECTIONS

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### Pharmacologic Research in Pregnant Women — Time to Get It Right

### National Longitudinal Lesbian Family Study — Mental Health of Adult Offspring



The NEW ENGLAND  
JOURNAL of MEDICINE

July 18, 2019

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**PERSPECTIVE**

---

**Primary Care First — Is It a Step Back?**

L.L. Sessums, S. Basu, and B.E. Landon

DOI: 10.1056/NEJMp1906593 | July 17, 2019

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**Case Studies in Social Medicine: The Right and Left Hands of the State — Two Patients at Risk of Deportation**

A. Berlin, V. Koski-Karell, K.R. Page, and S. Polk

N Engl J Med 2019;381:197-201

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**Sodium-Intake Reduction and the Food Industry**

J.E. Henney, J.A. O'Hara III, and C.L. Taylor

N Engl J Med 2019;381:201-203 | Published Online May 29, 2019

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**A “Never Event” That Could Kill Millions**

M. Bivens

N Engl J Med 2019;381:203-205

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**ORIGINAL ARTICLES**

---

**Effect of Universal Testing and Treatment on HIV Incidence — HPTN 071 (PopART)**

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R.J. Hayes and Others  
N Engl J Med 2019;381:207-218

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HIV Testing and Treatment with the Use of a Community Health Approach in Rural Africa

D.V. Havlir and Others  
N Engl J Med 2019;381:219-229

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Universal Testing, Expanded Treatment, and Incidence of HIV Infection in Botswana

J. Makhema and Others  
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Effect of Systolic and Diastolic Blood Pressure on Cardiovascular Outcomes

A.C. Flint and Others  
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---

**SPECIAL ARTICLE**

---

Health Care Spending, Utilization, and Quality 8 Years into Global Payment

Z. Song, Y. Ji, D.G. Safran, and M.E. Chernew  
N Engl J Med 2019;381:252-263

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**REVIEW ARTICLE**

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Drug-Induced Liver Injury — Types and Phenotypes

J.H. Hoofnagle and E.S. Björnsson  
N Engl J Med 2019;381:264-273

---

## Acanthamoeba Keratitis

L. Fu and A. Goma  
N Engl J Med 2019;381:274

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## Mucosal Neuromas

A.R. Scott and R.A. Compton  
N Engl J Med 2019;381:e5

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### **CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL**

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## Case 22-2019: A 65-Year-Old Woman with Weakness, Dark Urine, and Dysphagia

M.W. Freeman and Others  
N Engl J Med 2019;381:275-283

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### **EDITORIALS**

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## New Guidelines for Statistical Reporting in the *Journal*

D. Harrington and Others  
N Engl J Med 2019;381:285-286

---

## HIV-1 Epidemic Control — Insights from Test-and-Treat Trials

S.S. Abdool Karim  
N Engl J Med 2019;381:286-288

---

### **CLINICAL IMPLICATIONS OF BASIC RESEARCH**

---

## Controlling CRISPR-Cas9 Gene Editing



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S.F. Dowdy

N Engl J Med 2019;381:289-290

---

**CORRESPONDENCE**

---

Tofacitinib in Amyopathic Dermatomyositis–Associated Interstitial Lung Disease

---

More on the Record-Breaking Performance in a 70-Year-Old Marathoner

---

Anti-BCMA CAR T-Cell Therapy in Multiple Myeloma

---

Obstructive Sleep Apnea in Adults

---

Phenotype in an Infant with *SOD1* Homozygous Truncating Mutation

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The NEW ENGLAND  
JOURNAL of MEDICINE

July 25, 2019

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**CASE CHALLENGE**

A Woman with Palpitations, Abdominal Pain, and Vomiting

A 39-year-old woman with cyclic vomiting syndrome and polysubstance use disorder presented with abdominal pain and agitation. In the emergency department, she had a sudden episode of tachycardia with a narrow QRS complex, with a heart rate of more than 200 beats per minute. What is the most likely diagnosis?



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**PERSPECTIVE**

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**Health Care Autonomy of Women Living with HIV**

R.R. Redfield and Others

DOI: 10.1056/NEJMp1908843 | July 24, 2019

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**Combating EPA Rollbacks — Health Care’s Response to a Retreat on Climate**

G. McCarthy and A. Bernstein

DOI: 10.1056/NEJMp1909643 | July 24, 2019

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**The Opportunity of CBD — Reforming the Law**

P.A. Cohen and J. Sharfstein

N Engl J Med 2019;381:297-299 | Published Online June 12, 2019

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**Implications of an Aging Rural Physician Workforce**

L. Skinner, D.O. Staiger, D.I. Auerbach, and P.I. Buerhaus

N Engl J Med 2019;381:299-301

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**Postacute Care — The Piggy Bank for Savings in Alternative Payment Models?**

M.L. Barnett, A. Mehrotra, and D.C. Grabowski

N Engl J Med 2019;381:302-303

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**Implementation Science for the Bedside**

E.H. Geng

N Engl J Med 2019;381:304-305

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**ORIGINAL ARTICLES**

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**Maintenance Olaparib for Germline *BRCA*-Mutated Metastatic Pancreatic Cancer**

T. Golan and Others

N Engl J Med 2019;381:317-327 | Published Online June 2, 2019

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## A Multicenter Trial of Vena Cava Filters in Severely Injured Patients

K.M. Ho and Others

N Engl J Med 2019;381:328-337 | Published Online July 7, 2019

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## Erdafitinib in Locally Advanced or Metastatic Urothelial Carcinoma

Y. Loriot and Others

N Engl J Med 2019;381:338-348

---

## Neural-Tube Defects and Antiretroviral Treatment Regimens in Botswana

R. Zash and Others

---

## Dolutegravir plus Two Different Prodrugs of Tenofovir to Treat HIV

W.D.F. Venter and Others

---

## Dolutegravir-Based or Low-Dose Efavirenz–Based Regimen for the Treatment of HIV-1

The NAMSAL ANRS 12313 Study Group

---

## Roxadustat for Anemia in Patients with Kidney Disease Not Receiving Dialysis

N. Chen and Others

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## Roxadustat Treatment for Anemia in Patients Undergoing Long-Term Dialysis

N. Chen and Others

---

### **CLINICAL PRACTICE**

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## Measles

P.M. Strebel and W.A. Orenstein

N Engl J Med 2019;381:349-357 | Published Online July 10, 2019

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## IMAGES IN CLINICAL MEDICINE

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### Respiratory Papillomatosis

N. Dentale and R. Trisolini  
N Engl J Med 2019;381:358

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### Tonsil Cancer

Z. Gooi and N. Agrawal  
N Engl J Med 2019;381:e8

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## INTERACTIVE MEDICAL CASE

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### Bad to the Bone

J.L. Crombie and Others  
N Engl J Med 2019;381:e9

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## CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL

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### Case 23-2019: A 52-Year-Old Man with Fever, Cough, and Hypoxemia

C.C. Hardin and Others  
N Engl J Med 2019;381:359-369

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## EDITORIALS

---

### Achieving Improved Survival Outcomes in Advanced Breast Cancer

H.S. Rugo  
N Engl J Med 2019;381:371-372

---

## Global HIV Treatment — Turning Headwinds to Tailwinds

D.V. Havlir and M.C. Doherty

DOI: 10.1056/NEJMe1909363 | July 24, 2019

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## Roxadustat and Anemia of Chronic Kidney Disease

J. Kaplan

DOI: 10.1056/NEJMe1908978 | July 24, 2019

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### **SPECIAL REPORT**

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### **CORRESPONDENCE**

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## European *Echinococcusmultilocularis* Identified in Patients in Canada

## Early or Delayed Cardioversion in Recent-Onset Atrial Fibrillation

## Verubecestat for Prodromal Alzheimer's Disease

## Valuations of Surgical Procedures in the Medicare Fee Schedule

## Hazardous Chemical Emergencies and Poisonings

## Dolutegravir Use at Conception — Additional Surveillance Data from Botswana

## Contents

### Articles

- Sunscreen-induced expression and identification of photosensitive marker proteins in human keratinocytes under UV radiation  
*SK Amar, AK Srivastav, D Dubey, D Chopra, J Singh and SF Mujtaba* 457
- Protective effect of coenzyme Q10 against bisphenol-A-induced toxicity in the rat testes  
*Ö Güleş, Ş Kum, M Yıldız, M Boyacıoğlu, E Ahmad, Z Naseer and Ü Eren* 466
- Portal vein gas and pneumatosis intestinalis: A case of intestinal necrosis caused by acute organophosphorus pesticide poisoning?  
*L Changsheng, D Heliu, F Zhicheng, Y Xianyi, C Lin and G Hui* 482
- A multibiomarker approach to evaluate the effect of polyaromatic hydrocarbon exposure on oxidative and genotoxic damage in tandoor workers  
*K Miglani, S Kumar, A Yadav, N Aggarwal, I Ahmad and R Gupta* 486
- Single-walled and multiwalled carbon nanotubes induce oxidative stress in isolated rat brain mitochondria  
*S Rasras, H Kalantari, M Rezaei, MA Dehghani, L Zeidooni, K Alikarami, F Dehghani and S Alboghobeish* 497