



1100

NEWS

IN BRIEF

1088 News at a glance

IN DEPTH

1090 WHAT NOW FOR HUMAN GENOME EDITING?

Claimed creation of CRISPR-edited babies triggers calls for international oversight *By J. Cohen*

1091 For China, a CRISPR first goes too far
By D. Normile

1092 UNCERTAINTY BOOSTS BREXIT JITTERS FOR U.K. SCIENTISTS

Political turmoil in Parliament threatens a disastrous crash out of the European Union *By E. Stokstad*

1094 UNIVERSAL FLU VACCINE IS 'AN ALCHEMIST'S DREAM'

The rapidly changing virus and a complex immune response stymie vaccine developers *By J. Cohen*



1122

1095 DEMOTION DISMAYS RESEARCHERS AT STORIED DANISH MUSEUM

Merger with biology department could undermine research *By G. Vogel*

FEATURES

1096 TAKING AIM

After her own violent childhood, emergency physician Rebecca Cunningham is jump-starting research to prevent gun deaths in kids *By M. Wadman*

► PODCAST

1100 AT ARM'S LENGTH

Major private research funders make secretive offshore investments, raising ethical concerns *By C. Piller*

► PODCAST

INSIGHTS

BOOKS ET AL.

1104 BOOKS FOR BUDDING SCIENTISTS

PERSPECTIVES

1111 BARRIER(LESS) ISLANDS

No stopping 1D crystals
By B. Kahr and M. D. Ward
► REPORT P. 1135

1112 TOWARD A CHEMICAL VACCINE FOR MALARIA

A high-throughput screen puts us on the road to protecting populations against malaria
By M. A. Phillips and D. E. Goldberg
► RESEARCH ARTICLE P. 1129

1113 CLIMATE CHANGE AND MARINE MASS EXTINCTION

The end of the Permian Period was catastrophic for life in high-latitude regions *By L. Kump*

► RESEARCH ARTICLE P. 1130

1114 BIOENERGETICS THROUGH THICK AND THIN

Membrane fluidity influences the efficiency of oxidative energy metabolism *By E. A. Schon*

► REPORT P. 1186

1116 ENDOTHELIAL CELL ADAPTATION IN REGENERATION

Tissue-specific endothelial cells maintain organ homeostasis and instruct regeneration

By J. M. Gomez-Salinerio and S. Rafii

1118 MASTERING BOARD GAMES

A single algorithm can learn to play three hard board games *By M. Campbell*

► EDITORIAL P. 1087; REPORT P. 1140

POLICY FORUM

1119 FLAWED ANALYSES OF U.S. AUTO FUEL ECONOMY STANDARDS

A 2018 analysis discarded at least \$112 billion in benefits *By A. M. Bento et al.*

LETTERS

1122 MODEL VS. EXPERIMENT TO PREDICT CROP LOSSES

By C. Parmesan et al.

◻ **1122 Response** *By C. A. Deutsch et al.*

1123 NO CONFLICT OF INTEREST IN DATA MONITORING

By J. L. Halperin

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CONTENTS



1113 & 1130

Warming and hypoxia drove Permian extinction

7 DECEMBER 2018 • VOLUME 362 • ISSUE 6419

RESEARCH

IN BRIEF

1124 From *Science* and other journals

REVIEW

1127 CARBON CYCLE

Animals and the biogeochemistry of the carbon cycle *O. J. Schmitz et al.*

REVIEW SUMMARY; FOR FULL TEXT:

[dx.doi.org/10.1126/science.aar3213](https://doi.org/10.1126/science.aar3213)

RESEARCH ARTICLES

1128 HUMAN GENOMICS

Early human dispersals within the Americas *J. V. Moreno-Mayar et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT:

[dx.doi.org/10.1126/science.aav2621](https://doi.org/10.1126/science.aav2621)

1129 ANTIMALARIALS

Open-source discovery of chemical leads for next-generation chemoprotective antimalarials *Y. Antonova-Koch et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT:

[dx.doi.org/10.1126/science.aat9446](https://doi.org/10.1126/science.aat9446)

► PERSPECTIVE P. 1112

1130 CLIMATE IMPACTS

Temperature-dependent hypoxia explains biogeography and severity of end-Permian marine mass extinction *J. L. Penn et al.*

RESEARCH ARTICLE SUMMARY; FOR FULL TEXT:

[dx.doi.org/10.1126/science.aat1327](https://doi.org/10.1126/science.aat1327)

► PERSPECTIVE P. 1113

REPORTS

1131 POLYMERS

Semiconducting polymer blends that exhibit stable charge transport at high temperatures *A. Gumyusenge et al.*

1135 NANOMATERIALS

Building two-dimensional materials one row at a time: Avoiding the nucleation barrier *J. Chen et al.*

► PERSPECTIVE P. 1111

1140 COMPUTER SCIENCE

A general reinforcement learning algorithm that masters chess, shogi, and Go through self-play *D. Silver et al.*

► EDITORIAL P. 1087; PERSPECTIVE P. 1118

1144 BATTERIES

Room-temperature cycling of metal fluoride electrodes: Liquid electrolytes for high-energy fluoride ion cells *V. K. Davis et al.*

1149 VALLEYTRONICS

A valley valve and electron beam splitter *J. Li et al.*

1153 QUANTUM MATERIALS

Photonic crystals for nano-light in moiré graphene superlattices *S. S. Sunku et al.*

1156 MICROBIOLOGY

Salmonella persists undermine host immune defenses during antibiotic treatment *D. A. C. Stapels et al.*

1161 HUMAN GENETICS

Quantifying the contribution of recessive coding variation to developmental disorders *H. C. Martin et al.*

1165 CANCER

A mechanistic classification of clinical phenotypes in neuroblastoma *S. Ackermann et al.*

SIGNAL TRANSDUCTION

1171 LZTR1 is a regulator of RAS ubiquitination and signaling *J. W. Bigenzahn et al.*

1177 Mutations in LZTR1 drive human disease by dysregulating RAS ubiquitination *M. Steklov et al.*

1182 MOLECULAR BIOLOGY

A DNA methylation reader complex that enhances gene transcription *C. J. Harris et al.*



1186 BIOPHYSICS

Viscous control of cellular respiration by membrane lipid composition *I. Budin et al.*

► PERSPECTIVE P. 1114

DEPARTMENTS

1087 EDITORIAL

Chess, a *Drosophila* of reasoning *By Garry Kasparov*

► PERSPECTIVE P. 1118; REPORT P. 1140

1206 WORKING LIFE

A short guide to working remotely *By Paul N. Frater and Lauren L. Sullivan*

ON THE COVER



Starting from random play and given no domain knowledge except the game rules, the AlphaZero program taught itself to play chess, shogi, and Go, defeating a world champion program in each

game. Blue translucent pieces represent AlphaZero's possible moves; percentages indicate the predicted outcome. A single algorithm that can master several complex problems is an important step toward creating a general-purpose machine learning system to tackle real-world problems. See pages 1087, 1118, and 1140.

Image: DeepMind Technologies Limited

Science Staff	1086
New Products	1193
Science Careers	1194

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