CONTENTS
19 JANUARY 2018 • VOLUME 359 • ISSUE 6373

NEWS

IN BRIEF
256 News at a glance

IN DEPTH
258 NEWBORN EXOPLANET EYED FOR MOONS AND RINGS
Dedicated microsatellite joins telescopes watching for rare transit of β Pictoris b
By D. Clery

259 ‘LIQUID BIOPSY’ FOR CANCER PROMISES EARLY DETECTION
Combining DNA and protein markers brings researchers closer to a universal cancer screening test
By J. Kaiser

REPORT BY J. COHEN ET AL.
10.1126/science.aar3247

260 TAMED IMMUNE REACTION AIDS PREGNANCY
Evolutionary studies show how dialing back inflammation allows embryo implantation
By E. Pennisi

261 TENSIONS FLARE OVER ELECTRIC FISHING IN EUROPEAN WATERS
European Parliament calls for total ban of a technique that saves fuel and reduces damage to marine life
By E. Stokstad

262 ROCHESTER ROILED BY FALLOUT FROM SEXUAL HARASSMENT CASE
Report supports university’s handling of explosive charges involving linguist T. Florian Jaeger, but president bows out
By M. Wadman

263 ARE ALGORITHMS GOOD JUDGES?
People are as good as machines in predicting rearrest
By C. Matacic

SCIENCE ADVANCES RESEARCH ARTICLE BY J. DRESSEL ET AL. 10.1126/sciadv.aao5580

FEATURE

264 THE BELIEVER
How a Mormon lawyer transformed Mesoamerican archaeology—and ended up losing his faith
By L. Wade

VIDEO

267 TAKING DOWN DEFENSES TO IMPROVE VACCINES
A new approach to generating influenza virus vaccines could improve responses
By J. R. Teijaro and D. R. Burton

RESEARCH ARTICLE P. 290

270 ASSESSING NATURE’S CONTRIBUTIONS TO PEOPLE
Recognizing culture, and diverse sources of knowledge, can improve assessments
By S. Díaz et al.

POLICY FORUM

271 REMOTE CONTROL OF NANOSCALE DEVICES
A DNA nanodevice can be manipulated with an applied electric field
By B. Högborg

RESEARCH ARTICLE P. 296

273 THE ART OF MANUFACTURING MOLECULES
Additively manufactured monolithic reactors allow on-demand synthesis of drug molecules
By C. H. Hornung

RESEARCH ARTICLE P. 296

274 QUANTUM LIQUIDS GET THIN
A mix of two bosonic particles develops attractive forces to create a quantum liquid
By I. Ferrier-Barbut and T. Pfau

276 A BACTERIAL COAT THAT IS NOT PURE COTTON
Biofilms formed by E. coli and Salmonella contain a new form of modified cellulose
By M. Y. Galperin and D. N. Shalaeva

PERSPECTIVES

277 TAKING DOWN DEFENSES TO IMPROVE VACCINES
A new approach to generating influenza virus vaccines could improve responses
By J. R. Teijaro and D. R. Burton

RESEARCH ARTICLE P. 290

279 REMOTE CONTROL OF NANOSCALE DEVICES
A DNA nanodevice can be manipulated with an applied electric field
By B. Högborg

RESEARCH ARTICLE P. 296

280 BEN BARRES (1954–2017)
A passionate neuroscientist and advocate of equal opportunity in the sciences
By M. Raff

BOOKS ET AL.

281 QUARKS, CULTURE, COMBOGENESIS
A multidisciplinary tour of cosmic history charts the “grand sequence” of existence
By B. Wood

282 ENRICO FERMI, FLAWS AND ALL
A revealing biography falls short when it comes to the famous physicist’s problematic treatment of women
By M. Formato

LETTERS

283 THE PITFALLS OF TAKING SCIENCE TO THE PUBLIC
By A. Antonelli and A. Perrigo

283 VACCINE MANDATES IN FRANCE WILL SAVE LIVES
By S. A. Plotkin et al.

IN DEPTH

258 NEWBORN EXOPLANET EYED FOR MOONS AND RINGS
Dedicated microsatellite joins telescopes watching for rare transit of β Pictoris b
By D. Clery

RESEARCH ARTICLE P. 290

259 ‘LIQUID BIOPSY’ FOR CANCER PROMISES EARLY DETECTION
Combining DNA and protein markers brings researchers closer to a universal cancer screening test
By J. Kaiser

REPORT BY J. COHEN ET AL.
10.1126/science.aar3247

260 TAMED IMMUNE REACTION AIDS PREGNANCY
Evolutionary studies show how dialing back inflammation allows embryo implantation
By E. Pennisi

261 TENSIONS FLARE OVER ELECTRIC FISHING IN EUROPEAN WATERS
European Parliament calls for total ban of a technique that saves fuel and reduces damage to marine life
By E. Stokstad

262 ROCHESTER ROILED BY FALLOUT FROM SEXUAL HARASSMENT CASE
Report supports university’s handling of explosive charges involving linguist T. Florian Jaeger, but president bows out
By M. Wadman

263 ARE ALGORITHMS GOOD JUDGES?
People are as good as machines in predicting rearrest
By C. Matacic

SCIENCE ADVANCES RESEARCH ARTICLE BY J. DRESSEL ET AL. 10.1126/sciadv.aao5580

FEATURE

264 THE BELIEVER
How a Mormon lawyer transformed Mesoamerican archaeology—and ended up losing his faith
By L. Wade

VIDEO

267 TAKING DOWN DEFENSES TO IMPROVE VACCINES
A new approach to generating influenza virus vaccines could improve responses
By J. R. Teijaro and D. R. Burton

RESEARCH ARTICLE P. 290

270 ASSESSING NATURE’S CONTRIBUTIONS TO PEOPLE
Recognizing culture, and diverse sources of knowledge, can improve assessments
By S. Díaz et al.

POLICY FORUM

271 REMOTE CONTROL OF NANOSCALE DEVICES
A DNA nanodevice can be manipulated with an applied electric field
By B. Högborg

RESEARCH ARTICLE P. 296

273 THE ART OF MANUFACTURING MOLECULES
Additively manufactured monolithic reactors allow on-demand synthesis of drug molecules
By C. H. Hornung

RESEARCH ARTICLE P. 296

274 QUANTUM LIQUIDS GET THIN
A mix of two bosonic particles develops attractive forces to create a quantum liquid
By I. Ferrier-Barbut and T. Pfau

276 A BACTERIAL COAT THAT IS NOT PURE COTTON
Biofilms formed by E. coli and Salmonella contain a new form of modified cellulose
By M. Y. Galperin and D. N. Shalaeva

PERSPECTIVES

277 TAKING DOWN DEFENSES TO IMPROVE VACCINES
A new approach to generating influenza virus vaccines could improve responses
By J. R. Teijaro and D. R. Burton

RESEARCH ARTICLE P. 290

279 REMOTE CONTROL OF NANOSCALE DEVICES
A DNA nanodevice can be manipulated with an applied electric field
By B. Högborg

RESEARCH ARTICLE P. 296

280 BEN BARRES (1954–2017)
A passionate neuroscientist and advocate of equal opportunity in the sciences
By M. Raff

BOOKS ET AL.

281 QUARKS, CULTURE, COMBOGENESIS
A multidisciplinary tour of cosmic history charts the “grand sequence” of existence
By B. Wood

282 ENRICO FERMI, FLAWS AND ALL
A revealing biography falls short when it comes to the famous physicist’s problematic treatment of women
By M. Formato

LETTERS

283 THE PITFALLS OF TAKING SCIENCE TO THE PUBLIC
By A. Antonelli and A. Perrigo

283 VACCINE MANDATES IN FRANCE WILL SAVE LIVES
By S. A. Plotkin et al.

Published by AAAS
284 LIFE IN SCIENCE: HAVE YOUR MOMOS AND EAT THEM, TOO
By L. E. Specker Stullman

RESEARCH

IN BRIEF
285 From Science and other journals

REVIEW
288 BIOPHYSICS
Toward dynamic structural biology: Two decades of single-molecule Förster resonance energy transfer E. Lerner et al.

289 MEMBRANE PROTEINS
Membrane protein insertion through a mitochondrial β-barrel gate A. I. C. Höhr et al.

290 VACCINES
Genome-wide identification of interferon-sensitive mutations enables influenza vaccine design Y. Du et al.

296 NANOROBOTICS
A self-assembled nanoscale robotic arm controlled by electric fields E. Kopperger et al.

REPORTS
301 QUANTUM FLUIDS
Quantum liquid droplets in a mixture of Bose-Einstein condensates C. R. Cabrera et al.

304 INDUCED SEISMICITY
Hydraulic fracturing volume is associated with induced earthquake productivity in the Duvernay play R. Schultz et al.

277 & 290
Genomics for vaccine development

309 MAGNETIC MATERIALS
Chiromagnetic nanoparticles and gels J. Yeom et al.

314 CHEMICAL ENGINEERING
Digitization of multistep organic synthesis in reactionware for on-demand pharmaceuticals P. J. Kitson et al.

320 BIOGEOGRAPHY
A global atlas of the dominant bacteria found in soil M. Delgado-Baquerizo et al.

325 SOCIAL SCIENCE
Improving refugee integration through data-driven algorithmic assignment K. Bansak et al.

329 MOLECULAR BIOLOGY
Dicer uses distinct modules for recognizing dsRNA termini N. K. Sinha et al.

334 CHEMICAL BIOLOGY
Phosphoethanolamine cellulose: A naturally produced chemically modified cellulose W. Thongsomboon et al.

339 STRUCTURAL BIOLOGY
Structural mechanisms of centromeric nucleosome recognition by the kinetochore protein CENP-N S. Chittori et al.

343 SYNTHETIC BIOLOGY
Multiplexed gene synthesis in emulsions for exploring protein functional landscapes C. Plesa et al.

DEPARTMENTS
255 EDITORIAL
The 1918 flu, 100 years later
By Jessica A. Belser and Terrence M. Tumpey

362 WORKING LIFE
From parade ground to PI
By John Tregoning

ON THE COVER
Artistic rendering of a long chain of self-assembled DNA platforms bearing multiple rotor arms. The motion of the arms between docking stations (yellow) defined on the plates can be precisely directed by externally applied electric fields. Such systems could form the basis for computer-controlled nanorobotic assembly lines in which the arms cooperate in the synthesis of nanoscale structures. See pages 279 and 296. Illustration: C. Bickel/Science; Data: E. Kopperger and F. C. Simmel/Technical University of Munich

Science Staff ........................................254
New Products ....................................348
AAAS Meeting Program ..........................349
Science Careers ..................................359
Science 359 (6373), 255-362.