CONTENTS

20 OCTOBER 2017 • VOLUME 358 • ISSUE 6361

NEWS

IN BRIEF
280 News at a glance

IN DEPTH
282 A SPACETIME TREMOR AND A CELESTIAL LIGHT SHOW
Unprecedented view of a neutron-star collision is a scientific gold mine By A. Cho
▶ PERSPECTIVE P. 301; VIDEO

283 ANALYSIS OF CHINA’S ONE-CHILD POLICY SPARKS UPROAR
Colleagues call demographer’s findings flawed and irresponsible
By M. Hvistendahl

285 TRUMP TEAM RAISES PRICE TAG FOR 2020 CENSUS
Funding squeeze has hampered development of cost-saving technologies
By J. Mervis

286 EMAILS REVEAL PRESSURES ON NIH GUN RESEARCH
Agency staff wanted program on firearms violence to continue
By M. Wadman

287 STORMS AWAIT WEATHER EXECUTIVE AT CLIMATE AGENCY
If confirmed as NOAA head, Barry Myers would face a wary staff and the fraught politics of climate change
By P. Voosen

FEATURES

288 UNTANGLING SPIDER BIOLOGY
Genomics begins to unravel the roots of spider diversity and the recipes of their silk and venom
By E. Pennisi
▶ VIDEO

292 A SPINNER’S SECRETS
A living fiber factory
By V. Altounian, E. Pennisi, and R. F. Service

293 SILKEN PROMISES
Spider silk products are finally edging into the market. But mass-produced, superstrong fibers remain out of reach
By R. F. Service

ON THE COVER

Genomics data, including full sequences of the golden orb-weaver (Nephila clavipes) and other species, are revolutionizing our understanding of spider evolution.

These data are also revealing the molecular complexities of spider venom and their silk, which companies have long sought to commercialize—with little success so far.

See pages 288 and 293. Photo: Westend61 GmbH/Alamy Stock Photo

INSIGHTS

POLICY FORUM
298 DIGITAL NATURE: ARE FIELD TRIPS A THING OF THE PAST?
Expand the reach of science education using games and simulations, but choose tools wisely
By D. J. McCauley

PERSPECTIVES

301 A COSMIC MULTIMESSENGER GOLD RUSH
Merging neutron stars provide an electromagnetic counterpart to gravitational waves
By J. S. Bloom and S. Sigurdsson
▶ NEWS STORY P. 282

303 FLICKING THE SWITCH ON A MOLECULAR GATE
Electric fields change the permeability of a metal-organic framework membrane
By J. Gascon
▶ REPORT P. 347

304 CONVERTING MOFS INTO AMINATION CATALYSTS
Pyrolysis of metal-organic frameworks creates graphitic carbon–coated cobalt nanoparticles
By L.-F. Chen and Q. Xu
▶ RESEARCH ARTICLE P. 326

305 NERVES SWITCH ON ANGIogenic METABOLISM
Adrenergized blood vessels contribute to prostate cancer progression
By Y. Hayakawa and T. C. Wang
▶ RESEARCH ARTICLE P. 321

307 A BIOCHEMICAL SULFUR DELIVERY SERVICE
A steady supply of iron-sulfur clusters sustains biosynthesis of the lipoyl cofactor
By A. C. Rosenzweig
▶ REPORT P. 373

308 INTESTINAL INFLAMMATION INDUCED BY ORAL BACTERIA
Colonization of intestine by oral bacteria can induce inflammatory disorders
By X. Cao
▶ REPORT P. 359
Science 358 (6361), 279-414.