

THIS WEEK

EDITORIALS

CITY SCIENCE Urban research gets a second chance to impress **p.276**

WORLD VIEW Scientists must share blame for rise of Trump **p.277**



EUREKA! Buoyant beetles drag their feet to fly **p.279**

Africa's elite

A new forum promises to bring deserved prestige to outstanding African researchers, and demonstrates the continent's untapped potential.

How can architects and town planners help clinicians to tackle tuberculosis? What is space-time? These are among the questions being explored by African scientists who last week joined together to open the world's first truly pan-African scientific gathering.

The Next Einstein Forum (NEF), held in Dakar, Senegal, deserves to become a regular feature of the global science landscape. Its purpose: to publicly celebrate and support some of the most outstanding young researchers active in, or closely tied to, the continent.

There were 15 NEF Fellows in Dakar last week — from Egypt, Morocco, South Africa, Senegal, Ethiopia and places in between (see <http://nef.org/nef-fellows>). All have proved themselves as scientists, and all have deep connections with Africa. Most work on the continent; others are based in prestigious institutions in the United States and in Europe, forming part of the sort of diaspora on which other regions — especially China — have built a thriving research ecosystem.

The launch included a scintillating show by African singers and dancers, and political messages of science-centred ambition by President Macky Sall of Senegal and Rwandan President Paul Kagame. But from the outset, as seasoned conference attendees agreed, it was the young scientists who were the freshest and most compelling feature of the event.

They presented work on a three-wheeled tractor that can negotiate the muddy tracks that make up many of Africa's rural roads, and can thresh maize (corn) and pump water for irrigation; and a theoretical model for the dark energy that drives the Universe's accelerating expansion. They are researching new preventive treatments for cardiovascular diseases that are highly prevalent in black populations, and the fundamentals of semantic data-analysis. They are working towards databases that use artificial intelligence to generate their own hypotheses. And more.

The meeting was not just a showcase of what is excellent. The all-too-familiar challenges faced by Africa's researchers were thoroughly rehearsed, both by the Fellows and by African, European and US policy grandees who sat alongside them on panels.

Neighbouring countries face drastically different challenges and have wildly unequal resources. There is inadequate public and research infrastructure and a lack of intellectual-property protection. A culture that holds that 'science and maths are only for the best' too often hampers teachers who wish to encourage science, and widespread assumptions that these subjects are only for boys dissuade girls from pursuing science, and present discriminatory obstacles to female researchers.

Despite the challenges, it was striking how the meeting was an expression of determination to find the gems among Africa's researchers and support them. Particularly welcome was the sense that fundamental research is as essential as work that has direct societal applications.

A capacity for fundamental science and mathematics is essential if ideas and techniques developed elsewhere are to be adapted and absorbed in African contexts. As Senegal's research minister rightly emphasized, World Health Organization protocols for hepatitis B vaccination in Africa, originally derived in Asian settings, were changed

because of feedback from African biologists. And innovations in handling partial differential equations need to be applied not only to fundamental physics, but also to water management.

How to build on what was undoubtedly a successful exhibition of talent? The prime backers of the meeting are the African Institute for Mathematical Sciences — now spreading its wings in several countries from its roots in South Africa (see go.nature.com/9putdt) — and the

"The meeting was an expression of determination to find the gems among Africa's researchers."

Robert Bosch Foundation, based in Stuttgart, Germany. Both deserve credit, and would do well to ensure that the Fellows grow in number and that alumni keep coming to the forum as active members of a quasi-family. If that happens, the meeting could develop into a prestige event for those inside and outside

Africa who want to understand and support the best of indigenous African research. Credit to Rwanda for hosting the next NEF in 2018.

There is also an opportunity to make the most of the growing number of schemes that support younger scientists in Africa, alongside the NEF — the National Young Academies and Global Young Academy, the Africa Science Leadership Programme at the University of Pretoria (see go.nature.com/fkaq9f) and the DELTAS Africa programme of the Wellcome Trust (see go.nature.com/b23xux).

The drive from the congress centre to the participants' hotels highlighted the disparities between the rich worlds of many attendees' home countries and the streets of Dakar. Poverty and inequality can be reduced only step by step; the step represented by this forum was significant. It showed what powerful commitment there is to be tapped in this emerging generation of young African scientists. The venture and the researchers it represents deserve strong support. ■

Metropolis now

Growing urbanization is heralding a new era of science in the city.

Late last year, Chinese officials reactivated a machine of the state that had lain idle for almost four decades. The government reconvened its Central Urban Work Conference and gave it a crucial task — to report back on how to revamp and revitalize the nation's growing, and choking, cities.

When the expert group issued its recommendations last month, it backtracked on many of the country's previous urban policies that had prized growth above all else. The new plan promises denser streets, to