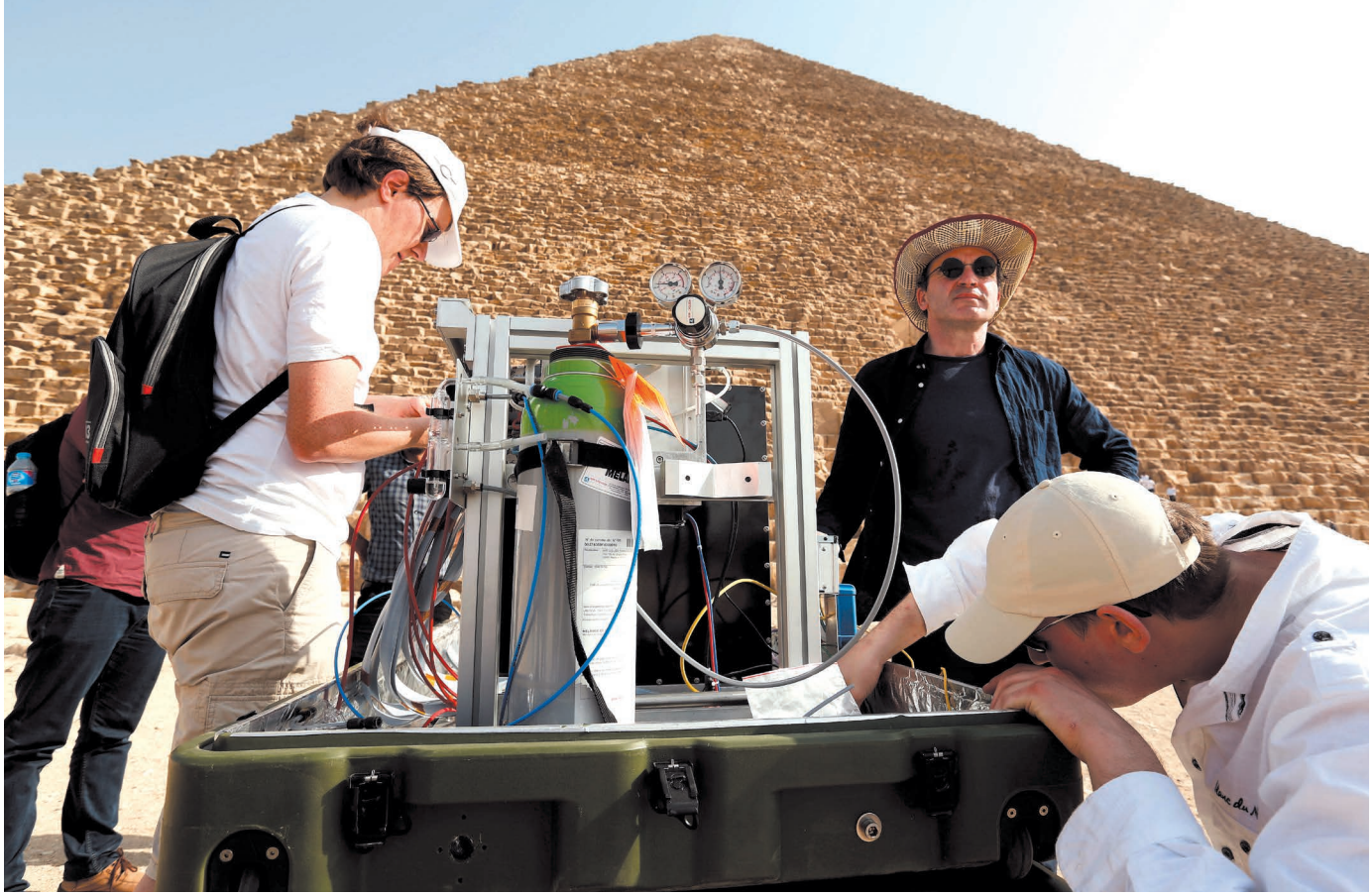
SCAN PYRAMIDS MISSION

Muon detectors are now small enough to take to field sites such at the Great Pyramid of Giza in Egypt.

probed. Engineers can use this method to spot stray fragments of uranium inside containers of nuclear waste, even if it is encapsulated in concrete or steel.

"To get information about what is deep in the centre, muons are pretty much the only thing that can do that," says Mahon. He directs a firm called Lynkeos Technology based in Glasgow, which will start imaging nuclear-waste samples next month at the UK National Nuclear Laboratory at Sellafield.

In the United States, trials at the Los Alamos National Laboratory in New Mexico have found that similar technology can spot where fuel rods have been removed from casks of spent fuel. Just four stolen fuel rods would provide enough plutonium to build a primitive nuclear weapon, Los Alamos physicist Christopher Morris told the conference.

Israeli firm Lingacom, based in Tel Aviv, is also investigating using the technique in security screening, for example at border crossings, to inspect containers for smuggled nuclear material. Other firms plan to use muography to track the wear of oil-industry pipelines and search for minerals in old mines.

But in many academic fields, the technology is still greeted with shrugs and quizzical looks. Despite finds such as the Great Pyramid's hidden chamber, the technology is still relatively unproven. "It's a new, very specialist technique that comes from the high-energy-physics world," says Saracino. "The first time I say to geologists that we have muon technology, they say, 'What are muons?' They are fascinated, but also a little bit wary." ■

DIVERSITY

Fewer African American men going into medicine

Diversity advocates seek strategies to correct alarming decrease.

BY GIORGIA GUGLIELMI

Even as US diversity initiatives try to increase the representation of minority ethnic groups in science and medicine, the proportion of black men pursuing such careers is reaching historic lows. In 1986, 57% of African American medical-school graduates were men — but by 2015 that share had dropped to just 35%, even as the total number of black graduates had increased.

Given the extent of racism and discrimination, "it's difficult for black males to be able to progress", says Cato Laurencin, a surgeon-scientist at the University of Connecticut in Farmington. Laurencin chaired a workshop on the issue that was convened last November by the US National Academies of Sciences, Engineering, and Medicine and the Cobb Institute, a non-profit group in Washington DC that studies health disparities and racism in medicine.

A report from the workshop, released on 18 May, examines factors that contribute to the growing absence of black men in science and medicine, as well as current models and strategies for boosting participation (see go.nature.com/2lo4p3b).

Although more African American students attend medical schools today than 30 years ago, the increase is due to greater numbers of ▶

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black women training to be physicians. The proportion of men among African-American medical students decreased by more than 20% over the same period. Data from the Association of American Medical Colleges show that, in 2015, 41% of black male applicants were accepted into medical school — the lowest rate across all genders and ethnicities. "This is a crisis that affects not only blacks, but also our national ability to have excellence in science and medicine," Laurencin says.

Racial diversity in the medical professions can help to address health inequalities. Studies have shown that people from minority groups receive better care when their physicians have similar backgrounds.

"Having racial diversity leads to not just more doctors, but also better-prepared doctors who go into communities of colour," says Liliana Garces, an education researcher and legal scholar at the University of Texas at Austin. She adds that one promising strategy for increasing diversity in medical schools is reducing the admission procedure's emphasis on standardized tests, which "don't end up capturing the student's potential, and only contribute to more racial inequities in the student body".

Ross University School of Medicine in Portsmouth, Dominica, accepts students from under-represented minorities with lower standardized test scores and grade point averages than white applicants. The university — which has campuses in Dominica and the United States — gives these students educational support during the first semesters of medical school and connects them with a mentor from a similar background.

Environments where black men can build a community help to improve graduation rates, Laurencin says. And programmes that give financial support to undergraduate students of colour and provide early exposure to research increase representation in science, technology, engineering and mathematics PhD programmes.

But Freeman Hrabowski, president of the University of Maryland, Baltimore County, which runs one such programme, notes that universities and medical schools need funding to expand these efforts. "Without funding," he says, "there is no serious commitment." ■

A demonstration power plant run by NET Power in Houston, Texas.

ENERGY

Zero-emissions plant begins key tests

Start-up firm NET Power is developing a new approach to capturing and storing carbon.

BY JEFF TOLLEFSON

A team of engineers in La Porte, Texas, has spent the past several weeks running tests on a prototype power plant that uses a stream of pure carbon dioxide — not air — to drive a turbine. If the zero-emission technology developed by NET Power in Durham, North Carolina, succeeds, it could help to usher in an era of clean power from fossil fuels.

The company broke ground on the roughly 25-megawatt plant in March 2016, after raising US$140 million for the project. It completed construction last year. It is now running a battery of tests on the combustor that powers the plant, a one-of-a-kind device built by the Japanese industrial giant Toshiba. If the tests go as planned, NET Power will hook up the turbine and begin generating electricity later this year.

Officials say everything is running smoothly so far. "We're still smiling," says chemical engineer Rodney Allam, the facility's lead designer.

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