# NEW YORKER

# IN THIS WEEK'S ISSUE

#### How Fast Can We Roll Out a Zika Vaccine?

In the August 22, 2016, issue of *The New Yorker*, in "The Chase" (p. 32), **Siddhartha Mukherjee** explores the race to develop a Zika vaccine, speaking extensively with the scientists who, in less than one year and in the midst of an epidemic, have developed investigational vaccines for the previously little-known virus—one of which is now being tested in humans. Dan Barouch, the director of the Center for Virology and Vaccine Research at Beth Israel Deaconess Medical Center, in Boston, tells Mukherjee, "The most powerful thing about our studies is not that we developed a vaccine, but that we've demonstrated that vaccination is feasible." As the Zika epidemic spreads, and thousands of women infected during early pregnancy have given birth to babies with microcephaly, scientists are testing various kinds of vaccines. Barouch and Anthony Fauci, the director of the National Institute of Allergy and Infectious Diseases in Bethesda, Maryland, were drawn to a newer approach, called "naked DNA" vaccination, an inoculum that consists of a piece of DNA that encodes certain genes from the virus, and pieces of genetic machinery that turn those viral genes "on" in animal cells. If the naked-DNA vaccine works against Zika, "it will have a transformative impact not just on this epidemic but on vaccine technologies in general," Mukherjee writes.

In April, Barouch's lab tested vaccinations on Zika-infected mice, including a naked-DNA inoculum and an inactivated-virus vaccine, which was shipped from Nelson Michael's lab at the Walter Reed Army Institute of Research. Rafael Larocca, a researcher in Barouch's lab, tells Mukherjee, "We had expected a vaccine response, but not *this* kind of vaccine response." Next, a group of macaque monkeys was inoculated with three vaccine candidates, and all three protected against Zika infection. As Barouch and Michael continued their experiments on animal models, Fauci's team at his institute's Vaccine Research Center was experimenting with its own candidate for a naked-DNA vaccine; early this month, a twenty-nine-year-old woman received the first dose of the DNA inoculum at the N.I.H. Clinical Center, in Bethesda. During the Phase I study—which will be completed by December—eighty volunteers will be given the DNA vaccine. Phase II studies—controlled trials to compare vaccinated and unvaccinated populations—will begin next year, and if everything goes exactly as planned, the first Zika vaccines may be ready in early 2018.

Challenges to the successful rollout of a Zika vaccine abound. Vaccines that look promising in lab experiments can fail in the field—the inoculum may not stimulate enough immunity to resist the viral challenge, the virus may mutate to become resistant, or the vaccine can have unexpected side effects. Although President Obama requested \$1.9 billion in February, Congress still hasn't authorized emergency funds for the Zika effort. Fauci tells Mukherjee, "If we don't receive the requested appropriations very soon,

this will slow down the important preparations for the Phase II trial." There is a strange quandary in vaccine development: "Too fast an epidemic, and a vaccine may become untestable (prospective trial subjects are already exposed and therefore immune, obviating the need for a vaccine). Too slow an epidemic, and the vaccine becomes untestable again (prospective trial subjects aren't exposed to the viral infection at a significant rate, so that a vaccine's benefits can't be demonstrated)," Mukherjee writes. Barouch believes containment of the epidemic would be difficult, because some patients may not even know that they are carrying a virus, and combating mosquitoes in endemic zones is challenging. The rapid burnout of the epidemic is also unlikely. Mukherjee writes, "Zika is just beginning to reach parts of the world, including the United States, where there is no natural immunity."

# How Donald Trump Came to Rely on Ivanka Trump and Jared Kushner

In "Family First" (p. 24), **Lizzie Widdicombe** tells the story of Ivanka Trump, the executive vice-president for acquisitions and development at the Trump Organization, and Jared Kushner, a real-estate developer who owns the New York *Observer*, who married in 2009 and have since become two of the most powerful members of Donald Trump's inner circle as he campaigns to be the next President of the United States. "The Trump campaign is not a bad campaign," James Carville, who managed Bill Clinton's 1992 campaign, tells Widdicombe. "It's not a messed-up campaign. It's not a dysfunctional cam-



paign. There *is* no campaign." But the campaign is not without secondary figures: Trump's true inner circle seems to be his family, and Ivanka, who lends a veneer of professionalism to the campaign, is Donald's clear favorite. Meanwhile, Jared Kushner has acted as a liaison with dozens of influential figures, including Henry Kissinger, Paul Ryan, Rupert Murdoch, and, until recently, Roger Ailes. "Ivanka has counselled Trump on his rhetoric and his policy choices, and Jared was instrumental in the Vice-Presidential selection," Widdicombe writes.

Donald Trump rails against the "rigged" political system that keeps people like Hillary Clinton in power. Yet Kushner's parents were the largest donors to Clinton's 2000 Senate campaign, and despite the acrimony of the current campaign, Chelsea Clinton and her husband, Marc Mezvinsky, are close friends of Ivanka and Jared's. Jared's father was convicted in 2005 of "crimes of greed, power, and excess," as Chris Christie put it. At the age of twenty-four, Jared started running Kushner Companies. In 2006, while his father was still in prison, Jared bought the New York *Observer* for ten million dollars. One former editor of the paper tells Widdicombe, "He hates reporters and the press. Viscerally." Soon after buying the paper, Jared had dinner with Rupert Murdoch. The two began speaking on the phone several times a week, and Murdoch passed on books by conservative thinkers. "Readers of the *Observer's* editorial page noticed a shift, from a Clinton-Cuomo-esque, centrist liberalism to a more conservative view, reminiscent of the editorial page of the *Wall Street Journal*," Widdicome writes. A former associate of Murdoch's tells Widdicombe, "I think Jared's been the key in getting Rupert to come around to the idea of a Trump Presidency." "They're believers," Reed Cordish, a friend of Ivanka and Jared's, tells Widdicombe. "They are all in. They have been all in from the get-go, without hesitation."

## The Legacy of Lynching on Death Row

In "Justice Delayed" (p. 38), **Jeffrey Toobin** reports from Montgomery, Alabama, where he profiles the death-row lawyer Bryan Stevenson and his plan to erect the first national memorial to commemorate lynching victims. Alabama imposes death sentences at the highest rate in the nation, but Stevenson's legal team, Equal Justice Initiative (E.J.I.), has limited the number of executions to twenty-two in the past decade, and there has been only one execution in the past three years. Stevenson also handles the appeals of prisoners around the country who were convicted of various crimes as juveniles and given long sentences or life in prison. Barry Scheck, the co-founder of the Innocence Project, calls Stevenson "the most inspirational lawyer of our times." Stevenson tells Toobin, "We were having success in overturning these convictions that are wrongful, but it became clear that race was the big burden . . . we were going to have to get outside the courts and create a different narrative about race, race consciousness, racial bias, and discrimination in history."

Stevenson—who served on President Obama's Task Force on 21st Century Policing and has been an ally of the Black Lives Matter movement—says the recent police shootings of African-American men "are symptoms of a larger disease." He continues, "It's a direct line from slavery to the treatment of black suspects today, and we need to acknowledge the shamefulness of that history." Jordan Steiker, a professor at the University of Texas Law School, in Austin, tells Toobin, "In one sense, the death penalty is clearly a substitute for lynching . . . . there's still incredible overlap between places that had lynching and places that continue to use the death penalty." In addition to their legal duties, E.J.I. staffers attempted to identify every lynching that took place in twelve states, and found records for about four thousand lynchings—roughly eight hundred more than in previous counts. Stevenson became convinced that lynching had a historical and a contemporary relevance that needed to be more visible, and he made plans to construct a memorial and museum.

Toobin travels to E.J.I. headquarters, in downtown Montgomery, where about a hundred volunteers gathered to participate in Stevenson's project. The memorial, to be built on six acres of vacant land nearby, will house eight hundred and one columns hanging in the air, one for each county and state in which a lynching took place. The names of the victims and the dates of the lynchings will be inscribed on each column. Adjacent to the colonnade will be another eight hundred and one columns: each county will be invited to remove its memorial column and display it in its own community, and the columns that remain in Montgomery will stand in mute rebuke to the places that refuse to acknowledge their history of lynching. Stevenson tells Toobin, "We'll know the places that are resisting, and it should build pressure on those communities, and the people in those communities, that are either not doing enough or need to do more." He hopes the twenty-million-dollar undertaking (the first round of fund-raising garnered commitments from the Ford Foundation and the charitable arm of Google) will open in 2017. Montgomery Mayor Todd Strange tells Toobin, "We certainly appreciate the fact that it's going to lead to a big influx of people who want to come and gain some understanding." But not everyone in Alabama supports Stevenson's vision. His initial proposal to put up three markers in downtown Montgomery commemorating the slave trade was rejected by the Alabama Historical Association. And when Toobin asked Dick Brewbaker, a Republican state senator who represents a district in Montgomery, about Stevenson's plans for the memorial, Brewbaker said, "Interjecting even more race talk into Alabama's politics is not productive."

## Scotland Yard Has Assembled a Team of Detectives Who Never Forget a Face

In "Total Recall" (p. 48), Patrick Radden Keefe reports from New Scotland Yard, in London, where a team of detectives known as "super-recognizers" use their remarkable ability to recognize human faces to scan the Metropolitan Police Service's CCTV da-

tabase and identify criminals. Detective Chief Inspector Mick Neville tells Keefe, "This year, we solved twenty-five hundred crimes using imagery, and it's about ten times cheaper" than using fingerprints or DNA. By some estimates, as many as a million CCTV cameras are installed in London, making it the most surveilled metropolis on the planet. But with more than eight million residents in the city, CCTV footage is effectively useless unless somebody can identify the perpetrator. In 2006, Neville set up a dedicated unit to comb through CCTV footage and make identifications, and some officers excelled at the task. Neville attributed their ability to motivation, until he heard about a Harvard paper on super-recognizers, which concluded that there is "a broad distribution" of the facial-recognition capability. While some people are afflicted with prosopagnosia, a rare condition in which patients are unable to recognize human faces, others have preternatural ability to recognize faces. Neville collaborated with Josh Davis, a psychologist whose dissertation focussed on forensic analysis of CCTV footage, and on the risks associated with misidentifications. Davis tells Keefe that he was dubious when Neville spoke of the capabilities of some of his officers. "I knew about prosopagnosia, but I hadn't known that there was anyone at the other end of the scale," he says. Davis and Keefe subjected Met officers who were especially good at making identifications to facial-recognition exams. Those who performed well were asked from time to time to do an identification. The effort proved so successful that, last year, Neville obtained permission to create the dedicated unit of super-recognizers.

"The human brain is often less reliable than digital algorithms, but it remains superior at facial recognition," Keefe writes. Super-recognizers can glance at a pixelated face in a low-resolution screen grab and identify a crook with whom they had a chance encounter years earlier, or whom they recognize from a mug shot. After the 2011 London riots, computer facial-recognition systems identified one rioter in the Met's two hundred thousand hours of CCTV footage, while a super-recognizer identified a hundred and ninety. "From that point on, things got a lot easier," Neville tells Keefe. The super-recognizers use a "centaur" strategy, working in tandem with computers to navigate the Met's CCTV database. Each time a CCTV image is entered into the system, the super-recognizers tag it with metadata, noting the criminal's race, accessories, hair style, and other physical designations. While seventy-three per cent of their identifications have led to criminal charges, thirteen per cent of the unit's identifications have been wrong. They have instituted a peer-review process as a safeguard, in which a second super-recognizer renders an independent judgment. "It's never our word alone that puts someone away," Eliot Porritt, a detective sergeant in the unit, tells Keefe. "What we do, by identifying suspects, is help direct the investigation." Despite the limitations of facial recognition, it seems likely that super-recognizers will find applications for their gifts that extend far beyond London's Met. Counterterrorism and airport security are two fields in which powers of facial recognition could make a significant difference. With CCTV imagery and super-recognizers, Neville believes we are on the cusp of "the third revolution in forensics."

Plus: In Comment, Amy Davidson reflects on Donald Trump's recent comments about "Second Amendment people," and considers the Republican Party's waning support for the candidate (p. 19); in Shouts & Murmurs, Cora Frazier imagines a letter of protest to a publication that decided not to publish her nude photographs (p. 31); Kathryn Schulz examines the revival of interest surrounding the Underground Railroad (p. 66); James Wood reads two collections of short stories by Joy Williams (p. 74); Joan Acocella reviews Christopher Wheeldon's new ballet, "The Winter's Tale," adapted from Shakespeare's play (p. 78); Alex Ross attends "The Exterminating Angel," a new opera by the British composer Thomas Adès (p. 80); Emily Nussbaum reviews two new series on Netflix, "Stranger Things" and "The Get Down" (p. 82); Anthony Lane watches Stephen Frears's "Florence Foster Jenkins" and Chad Hartigan's "Morris from America" (p. 84); a showcase by Mitch Epstein features an image from his forthcoming show, "Rocks and Clouds," which includes large-format black-and-white photographs of rocks and clouds in all five boroughs (p. 45); new fiction by Thomas McGuane (p. 58).

**Podcasts: Evan Osnos** speaks with the former Homeland Security Secretary Michael Chertoff about the open letter from G.O.P. national-security experts who oppose Donald Trump; **Evan Osnos** speaks with the gun advocate Mike Weisser about how the N.R.A. uses fear to further its pro-gun agenda; **Thomas McGuane** reads his short story, "Papaya"; and **Joyce Carol Oates** reads poetry by **John Updike** and discusses it with **Paul Muldoon**.

**Digital Extras: Justin Quinn** reads his poem, and **Richard Brody** comments on scenes from Bill Gunn's "Ganja & Hess," from 1973.

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