

10 BREAKTHROUGH TECHNOLOGIES

THE 2019 list

- Robot dexterity 11
- New-wave nuclear power 12
- Predicting preemies 13
- Gut probe in a pill 14
- Custom cancer vaccines 17
- The cow-free burger 20
- Carbon dioxide catcher 23
- An ECG on your wrist 24
- Sanitation without sewers 25
- Smooth-talking AI assistants 26

PLUS

10 books Bill Gates loves (*page 16*),
 10 grand challenges (*page 18*), and
 10 low-tech solutions (*page 22*)

Bill Gates

HOW WE'LL INVENT THE FUTURE

The thinking behind this year's list of 10 Breakthrough Technologies began with the plow. *page 8*

IT'S TIME TO RECONSIDER THE NEW

NUCLEAR OPTION

Facing up to the climate crisis means we need a fresh generation of nuclear power. *page 46*

Being able to measure your heart's electrical activity at all times could be revolutionary. *page 36*

Your heart ON YOUR SLEEVE

page 28

CO₂ CAPTURE

ALTERNATIVE MEAT

page 40

PREEMIE

predictor

What if a blood test could tell you the baby's coming early? *page 50*

THE STATE OF INNOVATION

What computers can't create

Why creativity is, and always will be, a human endeavor. *page 68*

PLUS:

W THE 10 R S T

IN CONVERSATION:

Bill Gates

page 56

David Silver

page 66

Katherine Chandler

page 76

AI'S BIG IDEA:

REINVENT

HOW WE INVENT

page 58

AI

CAN IT PASS THE SMELL TEST?

Businesses are rushing toward AI. They often have no idea what they need it for. *page 82*

Our bodies, our cells

Women's health is often viewed through the lens of fertility. Here's how that stymies innovation. *page 78*

TECHNOLOGIES OF THE 21ST CENTURY (SO FAR)

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