

# FAST COMPANY



## THE MOST CREATIVE PEOPLE IN BUSINESS 2016

By: Jill Bernstein

Fast Company Editor

John McDonough is the CEO of T2 Biosystems, a Massachusetts-based biotech company. One of his first acts after taking the helm of the startup involved the company asking clinicians across the country what diagnostic test they needed the most. The resounding answer: a faster and more accurate test for sepsis infections, one of the most common causes of death at hospitals. The key to treating sepsis is quickly identifying the strain of bacteria or fungus (less common, though also deadly) behind the infection. Most health systems still do this via a blood culture, a century-old technology that only detects the infectious agent in about 60% of patients and takes between two and five days. So when McDonough tasked his team with developing a rapid sepsis-detection test, they turned to magnetic resonance to do the diagnostic legwork. The T2 team spent seven years developing a process that releases magnetic particles that have been primed to bind with five different species of fungus into a blood sample. If the binding occurs, the magnetic properties of a sample's water molecules will change. The result: a sepsis test that works in three to five hours and detects the pathogen in 96% of positive patients. T2's test was approved by the FDA in 2014, and is being used in 30 hospitals worldwide. Now, McDonough is bringing it to

Europe, and working to get regulatory approval for a slew of new tests based on the same technology, including assessments for hemostasis, bacterial sepsis, and Lyme disease. McDonough, a serial entrepreneur who has worked with startups since the early 1980s, has a track record of working in under-resourced areas of health.



John McDonough — CEO, T2 Biosystems, Lexington, MA

**John  
McDonough**  
For saving lives by saving time

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