

# *The Tech* Science Stories in a Social Context



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March 28, 2026



MIT's oldest and largest student newspaper  
 Science department: feature-style and profile-style pieces on science and scientists



## MIT Integration Bee Hosts 44th Annual Competition

Integration Bee is a very embedded part of MIT culture... It's the only place where you hear "3, 2, 1, Integrate!"



The top four finalists of the 2025 Integration Bee pose with their prizes. From left to right: Jacopo Rizzo, Karthik Vedula, Brian Liu, Hanhong Zhao.

By Sophia Zhang

The competition, sponsored by the MIT department, is open to all MIT students. It

...is out of the game. As the players advance, they will be faced with progressively more challenging rounds and integrals.  
 In the Regular Season, players are divided into groups of four, each receiving five out of 20 integrals with a two-minute time limit per integral. After all 20 questions, those with the most points will advance to the playoffs, with the brackets determined by the number of correctly solved integrals.  
 In the Quarterfinals, the remaining 8 integrators compete one on one. Each match is a best-of-three, where competitors will have 3 minutes to solve each integral.  
 In the Semifinals, the remaining 4 integrators continue to compete one on one. Each match is a best-of-five, where the competitors will have 4 minutes to solve each integral.  
 Lastly, the finals is where the remaining 2 integrators compete in 5 rounds of integrals, each round lasting 5 minutes. The competitor who answers the most of the 5 correct will be the title of the Grand Integrator!  
 This year, 53 participants competed in

## Major new NIH investment in women's health science arrives at MIT

A new \$3 million-a-year grant from the National Institutes of Health will fund a Technology Development Center for women's health

By Katelyn Howard

Endothelial lesions often cause severe pain, chronic inflammation, and infertility, microfluidic channels that control the flow of nutrients, drugs, and signaling molecules

## Computing of tomorrow

The Social and Ethical Responsibilities of Computing (SERC) initiative challenged students to imagine "the future of computing"

By Jennifer Chang

MIT NEWS CENTER

...quantity an individual's carbon emissions, and expressed hope that it could help encourage users make more informed purchasing decisions.  
 In his 13-minute speech, Stauder described how tokens — each representing one kilogram of carbon dioxide — would be passed from sources of emissions through a supply-chain network of businesses before finally aggregating in consumers' bank accounts. All this, he said, could be done almost purely by leveraging existing transaction technologies.  
 Stauder fielded questions on the feasibility, the efficacy of such tokens on actually driving consumer behavior, and the potential for government misuse.  
 Next on the podium was Juan Santoyo G., a Ph.D. Candidate in the Department of Brain and Cognitive Sciences. In a striped sweater, he spoke in the tone of a morning storyteller, spinning a tale of an AI built as a helper in a far-flung west.



Meyer describes the ethical concerns of her fictitious technology at SERC on Tuesday, March 19.

Volume 116, Number 3

### Pentagon cuts service college fellowships at MIT

Hezbollah accused MIT and peers of subjecting service members to "woke indoctrination"

...The Pentagon said earlier this week that it was cutting off funding for a program for service members at MIT. The program, known as the MIT Service Corps, had been providing stipends to about 100 service members at MIT and other universities. The Pentagon said the program was "subjecting service members to 'woke indoctrination'."



Massachusetts Avenue outside of Lobby 7. The Pentagon announced on Feb. 27 that it would cut service officer fellowships program at MIT and other top schools.

### Contentious UA debate follows recent budget controversy

...On March 3, a debate was held between three UA Election tickets: Marianna Abdulkhalil '25 and Francesco Gatti '25, Juliana Jones '25 and Matthew Barnett '25, and Nikita Popkova '25 and Anthony Thompson '25.



11th President-elect candidate Anthony Thompson '25 (center) gives his opening statement on Tuesday, March 19, 2025. Behind him are candidates Marianna Barnett '25, Juliana Jones '25, and Francesco Gatti '25 (left to right).

### Dean of Engineering Paula Hammond on the future of engineering education

...On March 5, The Tech interviewed Paula Hammond '92 (PhD '93) regarding her recent appointment as Dean of Engineering.



11th President-elect candidate Anthony Thompson '25 (center) gives his opening statement on Tuesday, March 19, 2025. Behind him are candidates Marianna Barnett '25, Juliana Jones '25, and Francesco Gatti '25 (left to right).

### Rep. Seth Moulton on Senate bid and American politics

Rep. Moulton, 42, is primarying the incumbent 79-year-old Democrat Senator Ed Markey



Rep. Seth Moulton, 42, is challenging the "Democrat Senator Ed Markey" in the upcoming primary.

### MIT Faculty share insights on TFUP proposal

Some faculty applauded changes, others, including an undergrad, disapproved

...The Tech spoke with several faculty members about their thoughts on the proposal. Some faculty members, including Professor John Doe, expressed support for the changes, while others, including Undergrad Student Jane Smith, expressed concerns about the impact on the student body.

# People-focused science communication

- public perceptions of science
- staying relevant in the attention economy

THURSDAY, DECEMBER 11, 2025

THE TECH 13

## When the image is not the disease

List Visual Arts Center exhibits a magnifying glass to the metaphors of multiple sclerosis

By Veronika Moroz  
SCIENCE EDITOR

Inside the Hayden Gallery at the MIT List Visual Arts Center, a fragmented diaspora of LEGO robots is creaking in unison. Each robot carries an iPhone, waving the phone back and forth to increment the step count on a health-tracking app.

When companies started providing cheaper insurance to those who walk a certain number of steps, some people with chronic illnesses turned to assembling robots like these to afford the care they need. The robots, collectively entitled *Lego Pedometer Cheating Machines* (2019), are a part of *Flare-Up*, an exhibit at the List by artistic duo Simon Goldin and Jakob Senneby (Goldin+Senneby) that explores the divide between the precise facts of medicine and the spiraling reality of human illness. Open at the List until March 15, 2026, *Flare-Up* pulls from a range of modern and historical portrayals of sickness to describe Senneby's experiences as a patient suffering from multiple sclerosis (MS), a neurodegenerative disease.

### White spots

On Jan. 20, 2000, a singular picture changed Jakob Senneby's life.

The picture – a Machine Resonance Imaging (MRI) scan of Senneby's brain – featured white spots characteristic of MS. It was enough for his doctor to diagnose him with the disease.

Senneby quit his job a few months later and enrolled in art school, where he part-



Jakob Senneby (left) and Simon Goldin (right), deliver a performative lecture on opening night of *Flare-Up*.

placebo. The FDA "accepted the image as the disease, and approved the drug to treat it," Senneby said.

15 years later, leading MS researcher George Ebers organized a follow-up study on the original patients, but couldn't find evidence that the MRI scans predicted disability progression. Betaseron continued to be sold as an MS treatment, and is now 10 times more expensive than it was in 1993.

"Drugs are developed on a lot of end-

treatment. The name is a direct translation of *Schluckbildchen*, the German word for tiny portraits of saints that 18th- to 20th-century religious pilgrims would swallow in hopes of curing their illnesses.

Each piece in *Swallowimage* consists of a historic oil painting of health, death, or sickness, the canvas reversed and inoculated with the fungus *Isaria sinclairii* — the source of an active ingredient in the MS drug Gilenya. Though *Isaria sinclairii* is mythologized as an elixir of eternal youth in

### What is multiple sclerosis (MS)?

Multiple sclerosis (MS) is a neurodegenerative disease that occurs when cells from the body's immune system enter the brain and attack the protective coating on cells called neurons. As the coating, called myelin, gets damaged, neurons in the area die and lesions form. These lesions are what doctors identify as white spots in magnetic resonance imaging (MRI) scans.

MS comes in multiple forms, including Relapsing-Remitting MS, in which myelin damage is temporary and occurs in short bursts that people refer to as "flare-ups." However, many patients accumulate damaged brain tissue, causing both cognitive and physical decline.

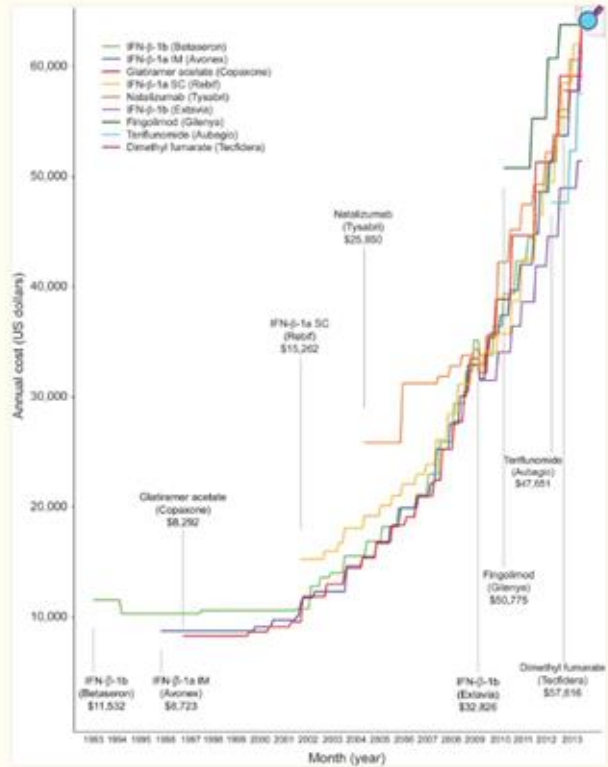
According to Xochitl Luna '22, an MS researcher and neuroscience PhD student at the Whitehead Institute, most current MS treatments are anti-inflammatory drugs "designed to tell the immune system to just calm down and stop attacking the body." This includes Betaseron, Tysabri, and Gilenya, each of which Senneby has been prescribed over the course of his illness. While over twenty drugs are available today to help with improving attack recovery, slowing

# A lot of different material...



# A lot to fact check...

Figure 1. Estimated annual costs of multiple sclerosis disease-modifying therapies in the United States from 1993 to 2013.



[Open in a new tab](#)

Annual costs estimated from average wholesale prices (AWP), or wholesale acquisition costs if AWP not reported, and discounted 12%. IFN = interferon.



## Health Communism

Beatrice Adler-Bolton, Artie Vierkant

\$19.95

Publish Date: July 29, 2025

Publisher: Verso

ISBN: 9781839765179

Pages: 240

Language: English



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**Current Research Areas:** history of medicine; pharmaceutical industry; clinical trials; healthcare economics; STS



## Xochitl Luna

Xochitl is a PhD student in Brain and Cognitive Sciences (BCS) who joined the lab in 2023. Previously, she graduated from MIT with a Bachelors of Science in Chemistry, where she studied the effect of Alzheimer's Disease genetic variants on neuron-microglia interactions. Now, she hopes to interrogate the role of enhancers in microglia in Multiple Sclerosis. Besides her passion for all things microglia and iPS, Xochi loves dancing, singing, and teaching science.

Contact: [xochitl@w.mit.edu](mailto:xochitl@w.mit.edu)

Goldin+Senneby

## Spot Price

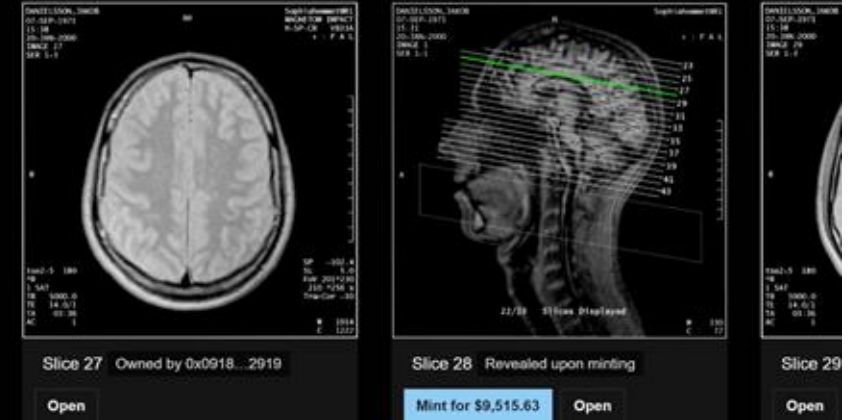
A series of blockchain-based artworks that offer views of the Seller's diseased brain and investments linked to the drugs targeting such images.

White spots have been on the Seller's mind for twenty-three years. They are likely to have

best record is  
es (MRI)  
ese images  
a non-expert,  
ey show.  
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hich are  
clusters of  
early appear  
tally through  
measuring

## Spot Price: Betaseron (Bayer) 2000/2023

Current Price  
**\$9,515.63**  
▲ 6.69% (1Y)



Connect Wallet

# Just one story

- art to keep the reader engaged
- Jakob Senneby's experiences with MS as the throughline of the piece
- focusing on the claims that I was able to contextualize

## When the image is not the disease

List Visual Arts Center exhibits a magnifying glass to the metaphors of multiple sclerosis

By Veronika Moroz  
SCIENCE EDITOR

Inside the Hayden Gallery at the MIT List Visual Arts Center, a fragmented diaspora of LEGO robots is creaking in unison. Each robot carries an iPhone, waving the phone back and forth to increment the step count on a health-tracking app.

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Senneby quit his job a few months later and enrolled in art school, where he partnered with classmate Simon Goldin to form Goldin+Senneby. As Senneby's condition progressed, their practice shifted to focus more on his feeling of living in "two incompatible realms: that of medicine, where bodies were measured and manipulated with incredible precision, and that of [Senneby's] own experience, where numbers refuse to add up and limbs fail to process commands."

Historically, doctors have characterized MS by the lesions it leaves on the nervous system, which show up as white spots in MRI scans. When the first MS treatment, Betaseron, was undergoing clinical trials in 1993, scientists chose to measure the drug's success by counting the lesions. The white spots became what scholars refer to as a "surrogate endpoint," said Thea Applebaum Licht, a PhD student at MIT who studies the history and economy of the U.S. pharmaceutical industry.

Patients taking Betaseron during the 1993 clinical trial developed fewer and smaller spots than patients treated with a



Jakob Senneby (left) and Simon Goldin (right), deliver a performative lecture on opening night of *Flare-Up*.

placebo. The FDA "accepted the image as the disease, and approved the drug to treat it," Senneby said.

15 years later, leading MS researcher George Ebers organized a follow-up study on the original patients, but couldn't find evidence that the MRI scans predicted disability progression. Betaseron continued to be sold as an MS treatment, and is now 10 times more expensive than it was in 1993.

"Drugs are developed on a lot of endpoints that are of mixed quality, and you need to keep validating them," Licht explained. Subsequent studies have found some correlation between brain lesions and disease severity, but researchers are still debating the extent to which MRI images should influence treatment.

Though he was initially told to take Betaseron, Senneby's doctors later switched his prescription to newer drugs. With each new medication came new scans. "Increasingly, my feeling was that all the doctors could find were the spots they had out to see: the image of their own diagnosis," he said.

### Making images of their own

Senneby's MS has taken away his cognitive capacity to speak freely and coherently, but creating art with Goldin has allowed him to continue sharing his ideas. *Flare-Up* is the artists' latest attempt to expose viewers to the suffering missing from clinical descriptions of MS.

Their *Swallowimage* series (2025) explores the emotional risk of starting a new

treatment. The name is a direct translation of *Schluckbildchen*, the German word for tiny portraits of saints that 18th- to 20th-century religious pilgrims would swallow in hopes of curing their illnesses.

Each piece in *Swallowimage* consists of a historic oil painting of health, death, or sickness, the canvas reversed and inculcated with the fungus *Isaria sinclairii* — the source of an active ingredient in the MS drug Gilemya. Though *Isaria sinclairii* is mythologized as an elixir of eternal youth in traditional Chinese medicine, it's a deadly parasite to cicadas, eating away until it blooms out of its host's head.

This dichotomy of *Isaria sinclairii* reflects patients' lack of control over the possible outcomes of a new treatment. "It is often said that you become what you eat," the artists wrote. "But as you swallow the pill, you are unsure if you are becoming more like the fungi of eternal youth, or indeed, the cicada whose head is about to sprout."

The artists' blockchain-based artwork, *Spot Price* (2023), gives viewers an expensive look at the scans that have defined Senneby's illness. In order for it to be visible, each scan needs to be minted for \$7,000 to \$10,000, an amount that is "pegged to the monthly cost of certain medications I've been on," Senneby said.

"Given the inexorable rise in prices and the decisive role of the white spots in validating drugs, the spots pictured in *Spot Price* (2023) may be the Seller's most valuable asset," the caption stated.

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According to Xochitl Luna '22, an MS researcher and neuroscience PhD student at the Whitehead Institute, most current MS treatments are anti-inflammatory drugs "designed to tell the immune system to just calm down and stop attacking the body." This includes Betaseron, Tysabri, and Gilemya, each of which Senneby has been prescribed over the course of his illness. While over twenty drugs are available today to help with improving attack recovery, slowing the onset of the disease, or managing symptoms, none of them offer a cure.

Because the drugs work by weakening the entire immune system, "a lot of the treatments make MS patients immunosuppressed," Luna said. "The folks that I know in my life with MS, some of them will wear a mask everywhere because it's worth it to be able to have a treatment, but the risk of getting sick is just too high."

At the exhibit's opening lecture, the artists distributed their own swallow images, which were chocolates imprinted with a QR code linking to *Spot Price*. Unlike Senneby, whose deteriorating health forces him to pay thousands of dollars for drugs that provide little long-term improvement, the audience was given a choice: investigate the QR code, or, like the religious pilgrims, swallow blindly.

"Epilogue," Goldin announced. "Eat your image, before your image eats you."

***Thank you! Any questions?***

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