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From talking plants to smarter insulin pumps: young scientists shine in 2026

At this year's EU Contest for Young Scientists, teenagers unveiled inventions that could save lives, deepen our understanding of a decades-old maths puzzle and even listen to plants.

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Three Italian teenagers – Abdoellah El Makkaoui (16), Frida Tirari (16) and Tommaso Vaninetti (17) – grinned as well-wishers congratulated them and photographers jostled for a shot.

As team PlantLeaf, they had just won one of four first prizes at the EU Contest for Young Scientists (EUCYS 2026). "We are still processing it," said Vaninetti. "We have been working on our project for a year and a half. We lost several previous competitions. Now, suddenly, we are winners."

Their prize-winning entry was a small device, paired with software, that measures how stressed plants are by listening to them. Plants emit acoustic signals that can reveal when they lack water or are under attack from pests or pathogens.

"That is very useful for farmers, for example," said Tirari. "These devices are, however, very expensive. They easily cost €2 000 or more. We built one that would cost around €20."

A total of 141 young scientists aged 14 to 20 came to the German city of Kiel between 22 and 27 September. This year's event was organised by Kiel University, with participants from 37 countries competing.

Launched by the European Commission in Brussels in 1989 with just 53 contestants, EUCYS brings together young scientists from Europe and beyond to exchange ideas and showcase their research.

This spirit was evident in Kiel, where contestants spent much of the week at their booths discussing their projects with visitors, judges and each another.

A 20-member jury assessed the projects, most of which had already won a similar contest in their home country. Four first prizes, each worth €7 000, went to teams from Italy, Poland, Georgia and Canada.

Opening up insulin pumps

Contestants also had a packed programme of lectures and visits to scientific institutes. Among those presenting their work was 17-year-old Belgian Rune Bobbaers, whose display featured devices he had built amid a tangle of wires, circuit boards and tubes.

Bobbaers has type 1 diabetes, which has presented challenges throughout his life. “I even got rejected from a high school once because of it,” he said. A prospective school director had feared staff would be unable to operate Bobbaers’ insulin pump in an emergency, leading to his rejection.

Because of his condition, he must always carry an insulin pump about the size of a walkie-talkie. The device delivers the insulin he needs, but can be complicated to use, particularly for a child.

That was one reason Bobbaers decided to take apart old insulin pumps. He learnt how every component worked and reverse-engineered the devices. He then built his own pump, wrote software to control it and shared the results online.

“As far as I know I am the only person in the world doing this,” he said. “My dream is to build an insulin pump which is easy to use, even for a child. I am now programming an interface inspired by the cartoon Bluey.” The Australian animated series, aimed at young children, follows the adventures of a six-year-old puppy.

Bobbaers’ project won an award for the most promising digital innovation from IHK Schleswig-Holstein, a local business association.

Chicken McNugget problem

The jury of veteran scientists was led by its president, Dutch tropical agronomist Hans Langeveld.

“We are seeing the next generation of European scientists rise up before our eyes,” he said. “Science can be a hard path to take. By stimulating these kids now, we can make that path easier.”

AI was again a prominent theme, while medicine and the social sciences were also well represented.

“These kids are just teenagers, but they are doing research that really advances science and helps people,” said Langeveld.

Kazimierz Jakub Chomicz from Poland was another first-prize winner, for a mathematics project. “This is like a dream,” he said, still giddy after the award ceremony. “I cannot believe it.”

He studied a mathematical problem known as the Chicken McNugget theorem. Its name comes from the way McDonald’s once sold Chicken McNuggets – in boxes of 6, 9 and 20. Maths enthusiasts began asking: what is the largest number of nuggets you could never buy exactly using any combination of the available boxes?

More broadly, the theorem concerns the combinations possible when things come in fixed-size units. It has applications in fields ranging from designing efficient computer codes to cryptography. Chomicz advanced our understanding of the problem through research done in his free time.

“The problem also has other names, but the Chicken McNugget problem name just attracts attention,” Chomicz said. “That also backfired though. One afternoon my booth got swarmed by a class of high schoolers intrigued by the promise of McNuggets. I did not get much rest that day,” he added with a laugh.

The 18-year-old will start university in October to study mathematics. For him, it is part of a passion for the unknown. “I like to discover new things, things that are not known yet,” he said.

Chomicz began taking part in mathematics Olympiads in his early teens. Despite his competitive streak, he acknowledged: “Fundamentally, I want everyone to succeed. The talks I had with the other participants were much more valuable than the prize I won.”

Beyond Europe

EUCYS reaches well beyond Europe. Young scientists came to Kiel from around the world, including 17-year-old Canadian Gurnoor Kaur, another first-prize winner. She began her project after a frightening experience involving her father in hospital.

“He had symptoms of hypoxia, a condition where the body does not get enough oxygen,” said Kaur. “However, it was not detected until days later by the doctors.”

Pulse oximeters – the clips attached to patients’ fingers – are supposed to detect low oxygen levels. But they do not work as well for people with darker skin. The problem has been known since the 1990s, but little has been done to address it. She believes this contributed to her father’s condition going undetected.

Kaur is trying to change that. Her project explored whether adding new wavelengths to the detectors could overcome some of the limitations of existing finger sensors and improve results for people with darker skin.

“I find joy in understanding the world around me,” said Kaur. “I like solving problems like this.”

Although still in high school, Kaur is working to advance the technology and eventually introduce it into hospitals. EUCYS has helped move that work forward.

“I learned so much from the other contestants,” said Kaur. “At one moment, I could be talking to someone about the latest advances in space technologies, and moments later get involved in a discussion about a subject in the social sciences. It was just incredible.”

Nikoloz Tkebuchava (17) and Lizi Chachua (16), schoolmates from Georgia, won the fourth first prize. “I am still flabbergasted,” Tkebuchava said afterwards.

They studied FAM163A, a protein that has not received much research attention, and may play a role in the development of certain brain and lung cancers.

Using AI-based computer simulations, they found that the protein might create a feedback loop involved in cancer growth. If confirmed in laboratory studies, their findings could eventually help doctors treat those cancers.

For them, EUCYS was a revelation – conversations with their peers and feedback from jury members helped them enormously. Tkebuchava also enjoyed a simpler pleasure during the week in Kiel. “I liked having an individual hotel room,” he laughed.

Back to school

After the event, the young scientists returned to their schools and universities. The PlantLeaf team was looking forward to seeing their beloved physics teacher, who had sparked their interest in the subject.

The prize money will pay for professional manufacturing, helping them develop their device. “Our teacher also spent more than €1 000 on parts for us,” El Makkaoui said. “Now we can pay him back.”

But winning brought another advantage for the teenagers. “It will also be fun to show our award to certain teachers who complained about us missing classes,” said Vaninetti.

EUCYS 2026

Since 2026, EUCYS has been part of the wider **Science Comes to Town** initiative and supports the objectives of the **ERA Policy Agenda** by bringing science closer to citizens. The initiative is a Horizon Europe-funded action under the WIDERA Work Programme, which supports groups of cities in co-organising a year-long programme of science-engagement activities, in the spirit of the European Capital of Culture or European Green Capital initiatives.

This year’s edition has three host cities: Kiel (Germany), Brest (France) and Split (Croatia). With over 1 000 activities and more than 70 partners, Science Comes to Town 2026 is connecting scientific institutions, innovation ecosystems and the public throughout the year.

Science Comes to Town will return for a second edition in 2027, hosted by four new cities: Aarhus (Denmark), Genoa (Italy), Kaunas (Lithuania) and Oeiras (Portugal). EUCYS 2027 will take place in Genoa.

More info

- EU Contest for Young Scientists (EUCYS)
- EUCYS 2026
- EUCYS 2026 press release
- EUCYS 2026 event recap (video)