



**Institute of Experimental Botany
of the Czech Academy of Sciences**

The Director's Monthly

September 2026

Foreword



Everything Comes to an End Someday

“Everything comes to an end someday”—her father used to traumatize my friend with this sentence at the start of summer vacations. Maybe he meant well; perhaps he wanted to toughen her up, to make her realize how the world works and prepare her for it. She often recalls this, but she doesn’t seem to do so with joy.

The summer vacations are over, the world without artificial intelligence is over, and the institute’s Board term is coming to an end. That’s the way of the world; it’s just the way it is, and we need to be prepared for it.

Anyone who heeded Honza Bartoš’s call from the last issue of this newsletter and truly rested during the summer does not mind the end of vacations, and is now better prepared for the next phase of the world’s course.

Artificial intelligence is here. At the end of September, Karel Müller, our AI coordinator, will be joined by a new team member, AI specialist RNDr. Jana Kaspar, Ph.D. She will be here for you to help with the transition to this new world (but don’t worry, this isn’t about a cult, hopefully). In the meantime, you can look forward to this new world, or at least think about what possibilities it might offer you.

The term of the current IEB Board ends on 20 January of next year. In early September, the Board definitively approved the new IEB Election Guidelines. These guarantee at least three seats on the new Board for women and at least three for men. This wasn't a given, and just a few months ago, it was far from certain how this proposed change would turn out. With the outgoing Board, the situation that Chairwoman Lenka Burketová once described after one of its meetings—saying that *"there was a bit too much testosterone there"*—should also change. It should. However, some naysayers claim that there won't be enough female candidates for the Board. I maintain that there will be enough. So I hope you won't let me down on this, my female colleagues—including those from outside the institute.

Wishing you a lovely Indian summer,

Jan Martinec, IEB director

(And don't let your fathers stress you out!)

CONGRATULATIONS and ACKNOWLEDGEMENTS

The 2025 impact factor of the institute's journal *Photosynthetica* [rose to 2.0](#). As a result, the journal has returned to the second quartile—that is, among the top 50%—in the Plant Sciences category. Our thanks go to the journal's editorial office.

The [new apple variety Lyra](#), created by experts from the Station of Apple Breeding for Disease Resistance, won the **2026 Liberec Region Product of the Year** award. The breeders accepted the award on 29 August at a ceremony during the Regional Harvest Festival in Jilemnice. Congratulations to everyone who contributed to the development of this variety and is now working on its promotion and sales.

I would like to thank the young colleagues for organizing this year's **Poster Party**. Research projects and their results were discussed in an informal atmosphere on 19 August in Prague-Lysolaje. The organizing team consisted of David Ušák, Maria Voloshina, Kateřina Šléglová, and Jan Martinek.

This summer, our researchers published a **number of papers in prestigious journals** ranked in the top decile—which includes the top 10% of journals in their respective fields. I congratulate all the authors on their publication success and thank them very much for promoting the institute's reputation around the world.



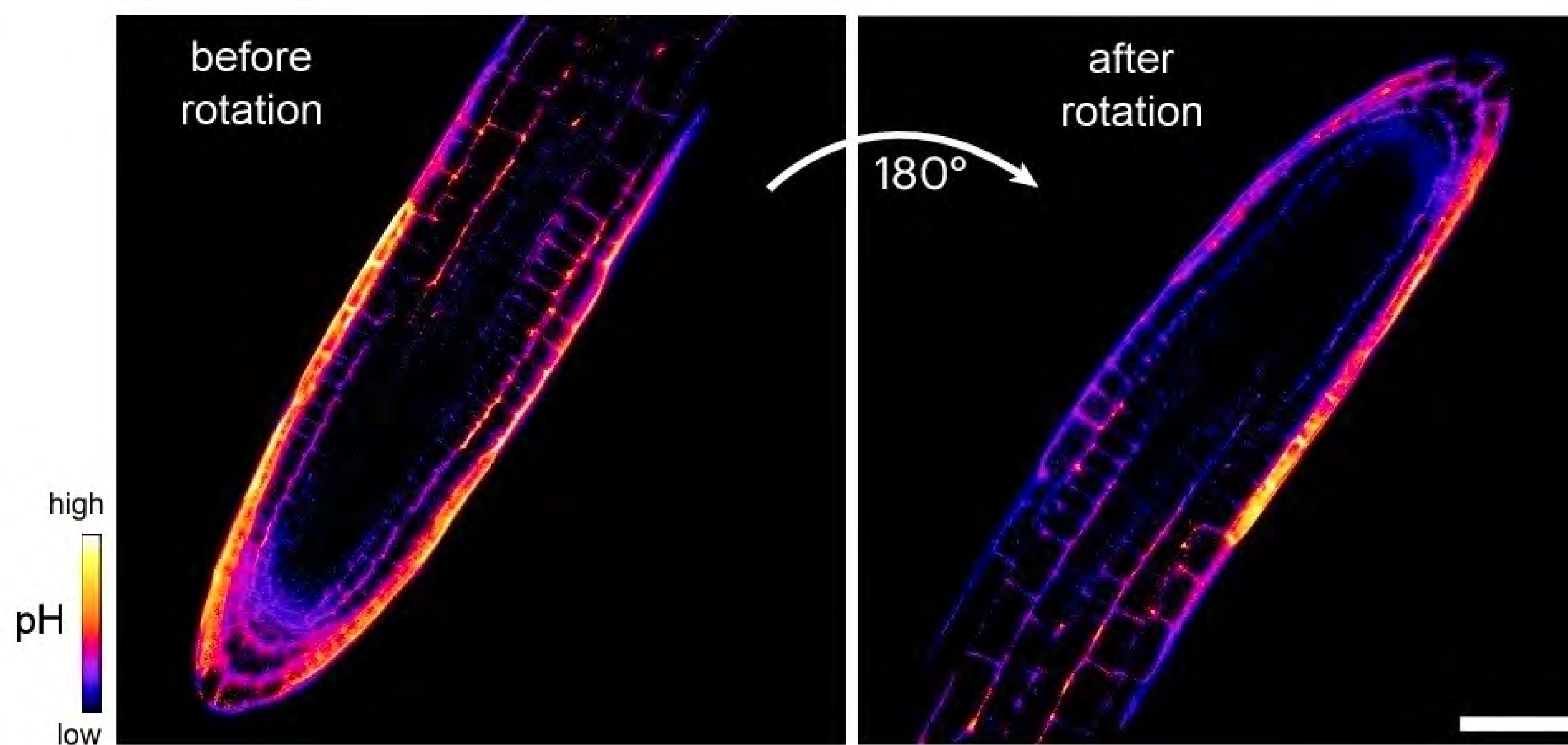
Fruits of the award-winning Lyra variety

Notable Publications

The long-held notion about root cell elongation growth appears to be incorrect. According to new research, so-called auxin-regulated **acid growth** contributes to root bending in response to gravity but does not play a key role in cell elongation during the development of this organ. The results pave the way for seeking previously unknown mechanisms of root growth.

From our institute, **Pavel Krupař** (first author), **Lorena Huffer**, **Radek Vítek**, **Matouš Glanc**, and **Matyáš Fendrych** (corresponding author) were in the author team.

(*Nature Plants*: [Root developmental zonation is independent of cell wall pH](#))



Changes in the cell wall pH during the root's response to gravity. Source: authors of the article in Nature Plants, modified, CC BY 4.0 license.

Researchers from our genomics center and the BIOCEV center studied the **elimination of “supernumerary” B chromosomes** during the development of the wild sorghum embryo. Using an innovative method, they were able to distinguish between cells that retain B chromosomes and those that specifically remove them. They also identified genes that may be involved in this process.

Contributors from the IEB were **Tereza Bojdová** (first author), **Jan Bartoš**, and **Miroslava Karafiátová** (corresponding authors).

(*Plant Biotechnology Journal*: [Single-nucleus transcriptome analysis provides new insights into B chromosome elimination in sorghum](#))

Notable Publications

Phloem sieve elements are cells that must undergo a radical transformation in order to fulfill their function—distributing sugars and other substances throughout the plant. Until now, however, it was unclear how the **final stages of this transformation** occur. A team led by our researcher Adriana Jelínková is now the first to describe them in detail.

In addition to **Adriana Jelínková**, the first and co-corresponding author, **Matěj Drs, Karel Müller, Vojtěch Schmidt, Ivan Kashkan, Michael Karampelias, Kateřina Malínská, Martina Knirsch**, and **Jan Petrášek** from the IEB participated in the project.

(*Current Biology*: [Rapid cell-to-cell expulsion completes phloem sieve element maturation](#))

Glowing plants will help study defenses against diseases and pests. An international team created plants that glow in the dark thanks to a phenomenon called bioluminescence. The intensity of the emitted light serves as an indicator of the levels of salicylic and jasmonic acids—hormones that are key to plants' responses to pathogens and pests.

The research team included these members from the IEB: **Michael Karampelias** (shared first author), **Jan Macháček, Nikola Drážná, Zuzana Vondráková, Karel Müller, Tetiana Kalachova**, and **Jan Petrášek** (co-corresponding author).

(*Nature Communications*: [Non-invasive imaging of defense responses in plants](#))

A process known as **conjugation** is important for maintaining **optimal auxin levels** within the cell. During this process, hormone molecules bind to other substances, forming hormonally inactive compounds. Our scientists characterized in detail the enzymes responsible for auxin conjugation with amino acids. They discovered that they form **two subgroups**, which catalyze reactions with different amino acids and also differ in their response to auxin. They also determined the localization of these enzymes within cells.

All authors of the study work at the IEB. They are **Lenka Helusová** (first author), **David Ušák, Zuzana Vondráková, Petre I. Dobrev, Barbora Svobodová, Julie Talpová, Federica Brunoni, Tomáš Moravec, Jan Petrášek**, and **Karel Müller** (corresponding author).

(*Plant Physiology*: [GH3 phylogenetic subgroups define divergent routes of auxin inactivation via aspartate and glutamine conjugation](#))

Notable Publications

Researchers from the Laboratory of Growth Regulators studied the effect of light on **tomato salinity tolerance**. They found that a mutant with increased light sensitivity is more tolerant and accumulates more protective compounds. Sensitivity to light (especially blue) also influenced the levels of the “stress” hormone abscisic acid and the production of another hormone, ethylene. The plants appear to **integrate** light and hormonal signals in their response to salinity. These findings could be applied in the breeding of crops that are better able to cope with soil salinity.

The authors of the publication are **Petra Bublavá** (first author), **Kateřina Cermanová**, **Michal Karady**, and **Martin Fellner** (corresponding author).

(*Plant Stress*: [Light-hormone crosstalk coordinates multiple stress adaptation pathways in salt-stressed tomato plants](#))

News from the IEB

Advanced microscopy course

Can I use STED for my lines/projects? What is FLIM good for? How does the Dynamics Profiler work? How do I analyze time-resolved data?

The Imaging Facility invites all microscopy specialists and principal investigators to its traditional fall advanced microscopy course. It will take place on 13–14 October and will **cover new topics** that have not yet been presented at the IEB. Come learn more about them and meet international lecturers.

For [more information](#), visit the institute’s website. You can register by sending an email to ifieb@ueb.cas.cz.

TANGENC conference

[The annual meeting of the TANGENC project](#) will take place on 5–6 October at Kampus Hybernská in Prague. It will provide an opportunity to present current research results, share experiences among participating teams, and engage in a discussion on the project’s further direction and opportunities for future collaboration.

Elections to the institute's and Academy's governing bodies

Two [sets of elections](#) await us in October and November—next month for [the CAS Academy Assembly](#) and in November for the IEB Board. The Academy Assembly elections will take place on 8–12 October, the IEB Board ones on 10–12 November; both in accordance with the new [Election Guidelines](#).

You received an informational email regarding the CAS Academy Assembly elections on 10 September; you will get another one regarding the Board elections in early October. The candidate lists will be published on the intranet. The election is valid only if more than half of the eligible voters participate, so it is **important to vote**.

We invite all female colleagues who consider running for the institute's Board to an **informational brunch** with Board chairwoman Lenka Burketová. It will take place on Thursday, 8 October, at 10:00 a.m. in Prague-Lysolaje, in the conference room of the B2 building.

Laboratory evaluation

At its meeting on 25 August, the IEB Board **evaluated research laboratories** for the years 2021 through 2025—with the exception of the Station of Apple Breeding for Disease Resistance, which will be evaluated together with the service laboratories later during the IEB Board's fall meetings.

The documents submitted by the individual laboratories and the evaluation results will be [published on the intranet](#).

Certification

Planned certifications are being prepared, as well as early certifications for those employees nominated by their supervisors or directors. We will specify the date later; tentatively, expect it to be in the **first half of November**.

The employees concerned will be notified in advance by email. This year, for the first time, they will fill out an electronic form, which should simplify the entire process.

News from the IEB

Plant Cultivation Platform

In July, we launched the initial version of the **growth chamber reservation system**.

You can find the system at booking.ueb.cas.cz/technika/. It is still in **trial operation**. A standard reservation for a single experiment is 1–2 shelves in a chamber; alternatively, you can reserve an entire chamber. Limit the reservation period to ca. four months.

You must always **specify the cultivation parameters**. Platform staff use them to set up and monitor the chamber, and other users can assess whether it is suitable for their experiment as well. For in vitro cultivation, you do not need to use the reservation system at this time. However, use only boxes labeled “FOR IN VITRO ONLY.”

Please send suggestions regarding the system’s operation to urban.m@ueb.cas.cz.

HR Award

In July, we submitted an application to the European Commission for the **HR Excellence in Research Award**. The application passed a formal review and is now being evaluated by a panel of assessors. We expect the results within the next few months.

In the meantime, we are implementing our **action plan** according to schedule. The activities outlined in the action plan and in the INOVATE project are aimed at **modernizing management, improving the work environment**, and bringing us closer to the standards of foreign research institutions.

The **documents** submitted to the European Commission, along with their Czech versions, can be found on the [HR Award](#) page of the IEB website.

Employee training starts in September

Training activities under the INOVATE project begin, covering both **professional topics and personal development**. Information about the activities and their focus will be published on the intranet. Some courses are one-time events, others will be repeated. Employees will vote on the dates to accommodate as many participants as possible.

Each course has its **target audience** and limited capacity. Eligible employees will be contacted via email in advance. If anyone outside the target audience is interested in a specific course, they may contact Lenka Zemanová (zemanova.lenka@ueb.cas.cz).

Compliance with smoking rules

We ask employees to be **considerate** when smoking outdoors and to refrain from smoking in the immediate vicinity of windows, doors, and other areas from which smoke may enter the workplace. The Labor Code requires employees not to smoke in workplaces or other areas where nonsmokers are also exposed to the effects of smoking.

News from the Human Resources and Payroll Department

IEB provides 5 weeks of vacation. The legally granted portion (4 weeks) **must be taken** in the year when it was earned. Only the part of this legally granted vacation that could not be taken due to work-related obstacles (e.g., illness or parental leave) or due to urgent operational reasons on the employer's part may be carried over to the next year.

Documents for new employee contracts must be submitted to the HR and Payroll **at least 14 calendar days** before the person's scheduled **start date**. This applies to employment contracts, DPPs, and DPČs. The reason is that we are now required to report hiring to the Czech Social Security Administration before the employee begins work.

You can find updated **employment-related documents** on the intranet in the [Forms – Payroll Department](#) section. Please use only these current versions. English versions of the documents will also be added gradually for colleagues who do not speak Czech. However, only the Czech version remains legally binding.

You can continue to send comments on the draft **onboarding brochure** for new employees to hr@ueb.cas.cz.

Equal opportunities at IEB

In October, we'll focus on equal opportunities. We'll meet Gabriela Langhammerová, an expert from the Centre for Gender and Science, and conduct a **questionnaire survey** to help us assess where we stand in this area. We'll use the results to prepare a new **Gender Equality Plan**, effective on 1 January, 2027.

You can learn more on Friday, **October 16, at 9:30 a.m.** in the reading room of the B1 building in Prague-Lysolaje. We invite all employees, especially managers. Those in Střížovice and Olomouc will be able to join online. You will learn how the Czech Republic is faring in terms of equal opportunities in science and what the current legislative requirements and rules for research institutions mean for the IEB.

News from the IEB

BALANC

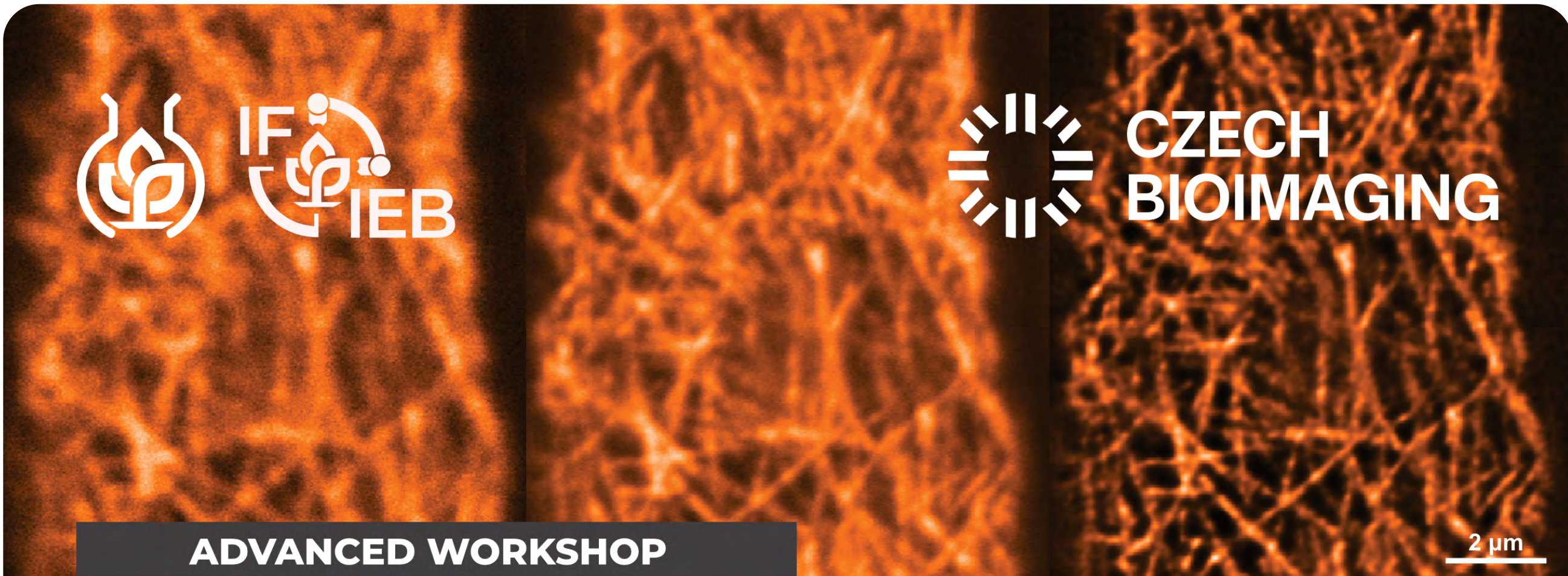
You can now find a [collection](#) of materials (*in Czech*) on the intranet with practical information on **maternity and parental leave management**, from announcing a pregnancy to returning to work.

Further news

The institute now reimburses travel expenses for international researchers **invited to give a lecture** at the IEB. First, coordinate the date of your guest's lecture with the person organizing seminars at your facility. At least three weeks before that date, fill out [the travel reimbursement request form](#), which you can find on the intranet.

[The BIOCEV GeneCore Facility](#) offers services primarily in the field of transcriptomics—from consultation on experimental design through sequencing to data analysis. If you are interested in news about their activities, [subscribe to a newsletter](#).

Petr Soudek invites anyone interested to an informal discussion about the basics of **genetic genealogy**. The event will take place on 30 September at 5:30 p.m. in Prague-Lysolaje (B2 building, conference room on the 2nd floor).



The image shows a microscopic view of plant tissue, likely roots or stems, with a complex network of orange-brown structures. In the top left corner, there are two logos: the IEB logo (a stylized plant) and the IF logo (a stylized plant with a circular arrow). In the top right corner, there is a logo for CZECH BIOIMAGING (a stylized sun or star) and the text "CZECH BIOIMAGING". In the bottom right corner, there is a scale bar labeled "2 µm".

ADVANCED WORKSHOP

Multi-modal light microscopy imaging in plant research

13-14 October 2026
Institute of Experimental Botany of the CAS | **Prague**

Explore cutting-edge microscopy
Tailored for experienced microscopists
Registration 2000 CZK/80 EUR + VAT

New Colleagues

The following persons joined the IEB in August and September:

- **Jan Zima Jr.** (research laboratory technician, Station of Apple Breeding for Disease Resistance),
- **Robin Klubarski** (research associate, Station of Apple Breeding for Disease Resistance),
- **Luisa Barth** (Ph.D. student, Centre of Plant Structural and Functional Genomics),
- **Victor Hugo de Souza Reis Arruda** (researcher, Centre of Plant Structural and Functional Genomics),
- **Jan Klein** (researcher, Laboratory of Growth Regulators),
- **Jana Novotná** (research associate, Centre of Plant Structural and Functional Genomics),
- **Kryštof Popela** (research associate, Laboratory of Plant Morphodynamics),
- **Aranza Xhaly Quintana Armas** (postdoctoral researcher, Laboratory of Integrative Structural Biology).

We wish them all the best in their work and hope they enjoy their time with us.

AI News

Our colleague Miroslav Fridrich regularly shares news from the world of AI with us; I'd like to highlight in particular his emails from 28 July and 6 August.

Michaela Liegertová continues her active promotion of AI, and you'll find many useful resources [on her GitHub](#), including a [comprehensive list of useful AI tools](#).

And there is a piece of news from **Anthropic**, described in [this report](#): AI agents autonomously operate devices and control experiments. We certainly have a lot to look forward to (or fear?).

Karel Müller, institute's coordinator for AI

Do you have a question or idea related to AI, have you read an inspiring article, or do you know about an interesting lecture or application?

Then don't hesitate to contact our coordinator (muller@ueb.cas.cz).

- Ongoing** The call [LA GRANTS—GA ČR as a partner organization](#) for 2- or 3-year projects is open. Cooperating agencies are the Austrian Science Fund (**Austria**) and the German Research Foundation (**Germany**).
- 21 Sep 2026** Deadline for applications to support research stays abroad and return to research after a career break under the CAS **Academy of the Future** program. An application, along with a Letter of Intent, must be sent to projekty@ueb.cas.cz. The [application form](#) is available on the intranet or Zuzana Hroncová can send it to you.
- 8 Oct 2026** Deadline for submitting proposals for [Swiss-Czech LA projects](#) in collaboration with the **Swiss National Science Foundation (SNSF)**, where the Czech Science Foundation acts as a partner organization. Projects are expected to begin in 2027.

Changes to ERC grants from 2027

Researchers who have earned their Ph.D. within the past 0–10 years will now be eligible to apply for a Starting Grant, and those who have received their Ph.D. within the past 5–15 years can apply for a Consolidator Grant. Only one application may be submitted per work program. The rules for repeat applications are also being tightened.

Upcoming deadlines:

- ERC Starting Grant (StG 2027): 14 October, 2026
- ERC Consolidator Grant (CoG 2027): 12 January, 2027
- ERC Synergy Grant (SyG 2027): 11 May, 2027
- ERC Advanced Grant (AdG 2027): 26 August, 2027

Grant Opportunities

Other news

Due to budgetary restrictions, the Ministry of Education, Youth, and Sports **will not open** the INTER-COST and INTER-ACTION calls for cooperation with the U.S. and Bavaria this year.

The institute has submitted a project proposal to the OP JAK – Open Science III call for proposals, which is primarily intended to support full-time positions and the development of competencies in the field of **Open Science**, as well as the development of an electronic lab notebook connected to the National Data Infrastructure. The project is planned to last 2.5 years with a budget of CZK 3.4 million.

Through the INOVATE project, each research group can receive a support for one annual license or 12 monthly licenses for an **artificial intelligence tool**, up to CZK 8,400 per year. If interested, please contact Zuzana Hroncová.

For more information, contact Zuzana Hroncová
(B2/223, hroncova@ueb.cas.cz, phone 225 106 802).

Project annotations for Executive Board approval should be sent in advance to the Board secretary Barbora Jindřichová (jindrichova@ueb.cas.cz).

IEB in the Media

How can Czech agriculture cope with drought and climate change? Aleš Pečinka from the genomics center discussed this topic on 14 August on the Czech Television program *90' ČT24*. Among other things, he spoke about breeding more resilient crops using **new genomic techniques**. You can watch the [debate](#) in the Czech Television archive.

Other researchers from the genomics center also appeared in the media. Professor Jaroslav Doležel wrote a full-page article for *Katolický týdeník* titled "What to grow in the face of climate change?"

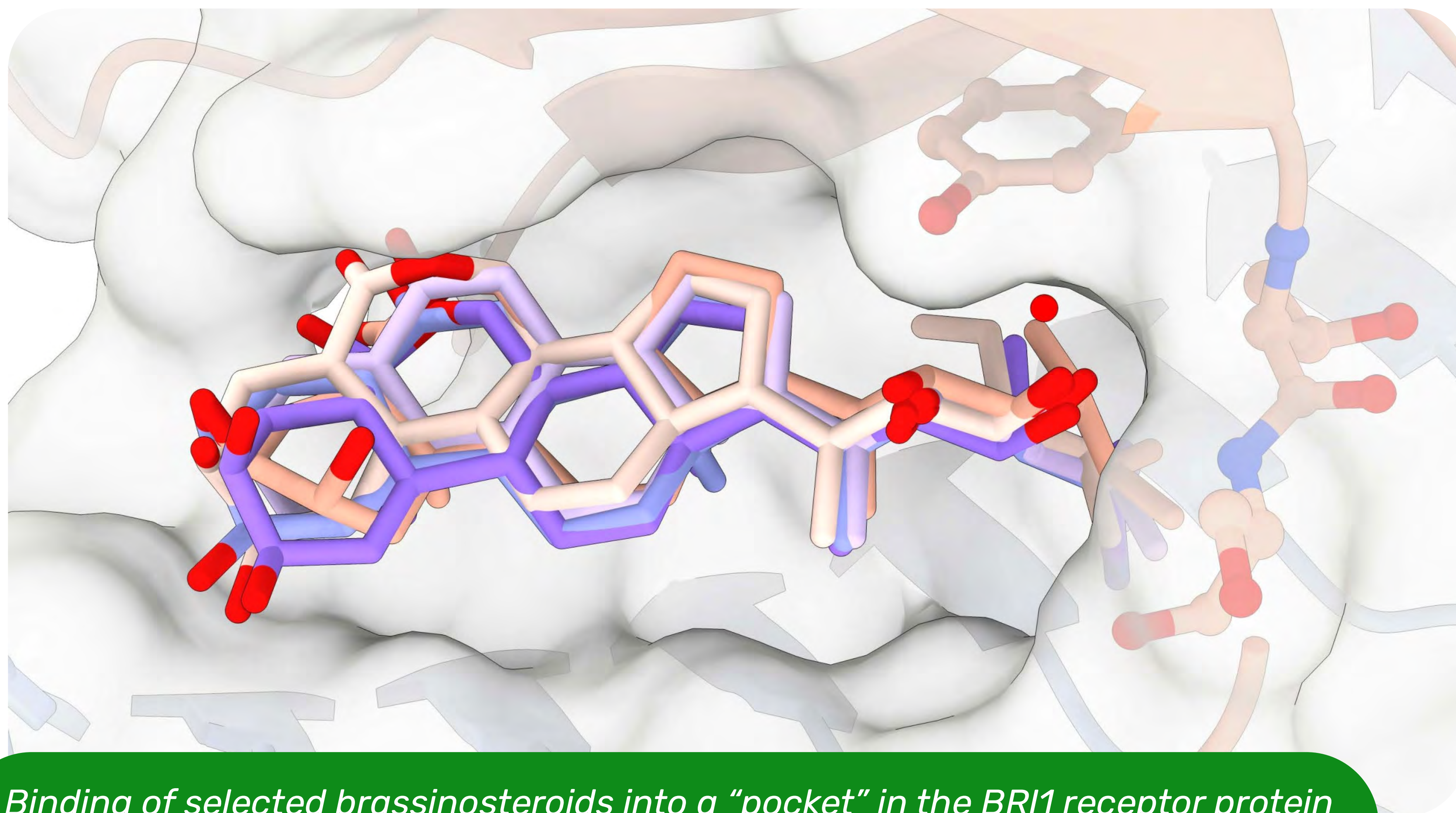
Jan Šafář spoke to the daily *Mladá fronta DNES* about ways to remove false barley, whose awns can pose a threat to dogs. The article was also posted on the news websites [impuls.cz](#), [metro.cz](#), and [iDNES.cz](#).

Popular science websites [sciencemag.cz](#) and [vedavyzkum.cz](#) reported on a study that examined the disappearance of "supernumerary" **B chromosomes** during the embryonic development of wild sorghum.

It has long been assumed that so-called acid growth regulated by auxin plays a significant role in **root development**. However, an article by our scientists in *Nature Plants* has shown that this is not the case. The Czech Press Agency included information about this surprising discovery in its news coverage. The report was picked up by websites such as [ekolist.cz](#), [sciencemag.cz](#), [silvarium.cz](#), and [uroda.cz](#), among others.

[Sciencemag.cz](#) published an article on **glowing (bioluminescent) plants**. As we report in the "Notable Publications" section, authors from the IEB and several international institutions have shown that these plants can be used to study plant hormonal responses to pathogens and pests.

Brassinosteroids are an important group of plant hormones. An international team, which included experts from the Laboratory of Growth Regulators, described in detail how cellular receptors recognize individual brassinosteroid compounds and what determines their biological activity. The leading news website [novinky.cz](https://www.novinky.cz) reported on the research, as did [sciencemag.cz](https://www.sciencemag.cz) and [TVMorava.cz](https://www.tvmorava.cz).



Binding of selected brassinosteroids into a “pocket” in the BRI1 receptor protein molecule. Source: authors of the article in Nature Plants, CC BY 4.0 license.

Do you have an **article** coming out in a prestigious journal, did you get a major **grant project**, or are you organizing a **scientific event**?

Please inform the Communications and PR Office (komunikace@ueb.cas.cz) and discuss the possibilities for publicity.

What is coming up

In September, the **children's club** will resume in Prague. This year, it will focus primarily on biology, experiments, and the basics of scientific work. It is intended for children **ages 10 to 15** and will take place every Wednesday from 4:30 to 5:45 p.m. You can register your kid with Nikola Siegelmannová (siegelmannova.nikola@ueb.cas.cz).

After the summer, elementary and high schools can once again sign up for one of the [specialized workshops](#) offered by our institute. We would appreciate **your help in spreading this information** to teachers and students in your community.

On Friday, 25 September, **Science Night** (formerly Researchers' Night) will take place, introducing various scientific topics to visitors throughout the country. The IEB will be represented by its apple breeding station at the [National Museum of Agriculture](#) in Prague's Letná district.

The institute is co-organizing the [Earth on a Plate](#) documentary film festival, which will focus on food production and consumption in Olomouc. It will be held on 7 October from 6:00 p.m. at the Fortress of Knowledge, and its main theme will be "Water Lost and Reclaimed."

Get talented high school students involved in your research and help them discover the world of science! You can submit internship topics for the **Open Science** project through the end of October. [Detailed information for mentors](#) (*in Czech*) is available on the project's website.

With the fall comes [The Week of the Czech Academy of Sciences](#) (2–8 November), and with it, **Open Door Days** at our institute. As usual, both Prague and Olomouc facilities will participate in the event. Preparations are already underway. Please send any comments, suggestions, or tips regarding the format and organization of the Prague Open Door Days to Nikola Siegelmannová (siegelmannova.nikola@ueb.cas.cz).

Science Outreach Events

Past events

On 8 September, students from the **biology seminar** at the Jan Blahoslav High School and the Secondary School of Education in Přerov visited the genomics center. High school seniors who consider a career in science experienced a genuine research environment and gained a better understanding of the study and work in this field.

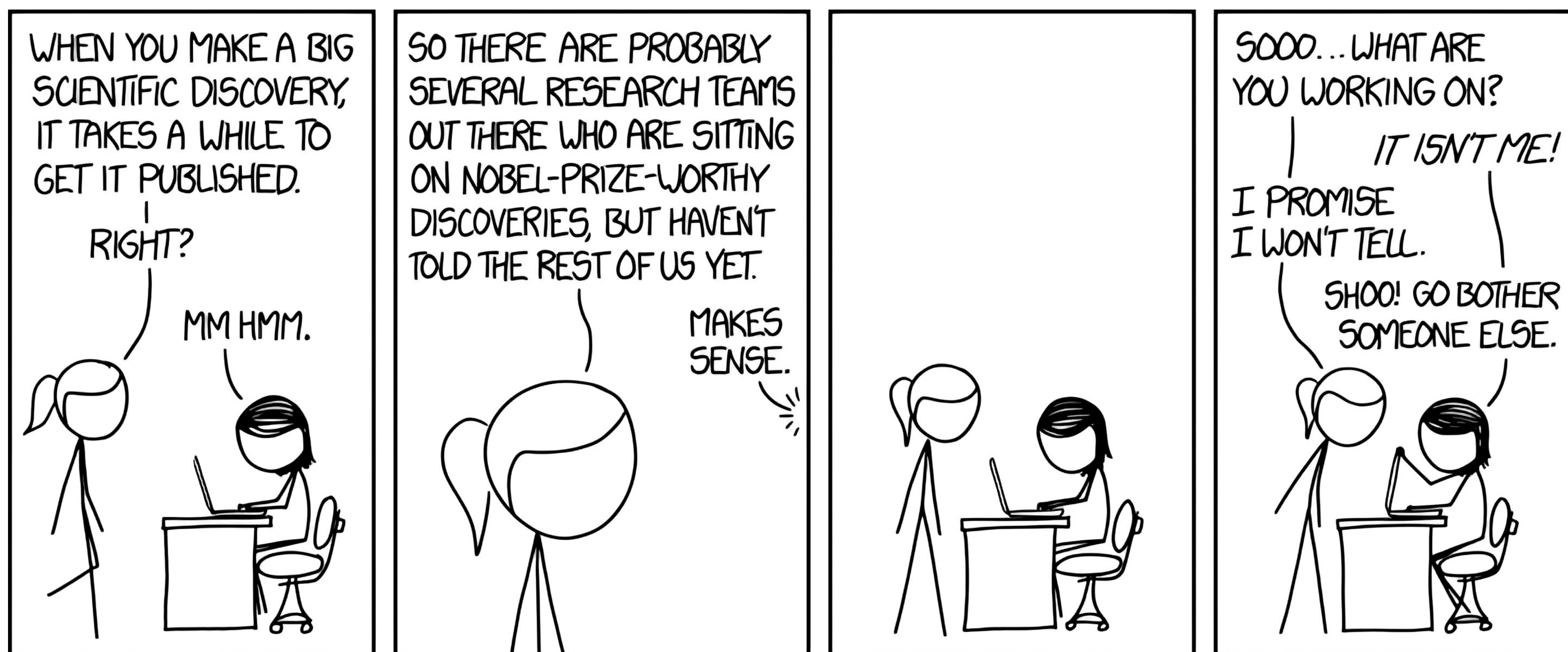
On 21 July and 4 August, Ph.D. students at our Olomouc facility introduced plant biology to young scientists from the summer **Science Camp** organized by Palacký University's Fortress of Knowledge. The students prepared an interactive program, during which the children tried such tasks as working with a microscope or isolating DNA.

Two **day camps** for our employees' children took place in Prague during the summer vacations. Their participants explored the worlds of plants, animals, chemistry, or paleontology. We would like to thank all our colleagues who put together an interesting program for the kids.



At the day camps, the children engaged not only with plants but also with subjects such as paleontology.

For more information about IEB's outreach events, please contact the Communications and PR Office (komunikace@ueb.cas.cz).



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Please send suggestions for other scientific comics (publishable under a Creative Commons license) to the newsletter editor Jan Kolář at kolar@ueb.cas.cz.