

# Annual IMG Conference

May 25-26, 2023

Milan Hašek Auditorium, IMG



15:30-16:30

Petr Dráber

Director's presentation + IMG Director's Awards for best publications in 2022

16:30-24:00

*After conference party + discussions*

**Long-term tradition at IMG (The whole Institute meetings):**

**December: Annual IMG Conference**

**Followed by after conference party**

**January: Welcoming the new year**

**Because of Covid-19 regulations in 2021 - 2022:**

**All activities in December 2021 and January 2022  
were cancelled and postponed to May 26-27, 2022**

**Based on the last year experience there might be a new tradition of the whole Institute meetings:**

**January: Welcoming the new year (summary of previous year and plans - focused on administration and services (CZ))**

**May: Annual IMG research conference  
Followed by a meeting focused mostly on research activities and achievements (EN)  
and after conference party**

# Outline

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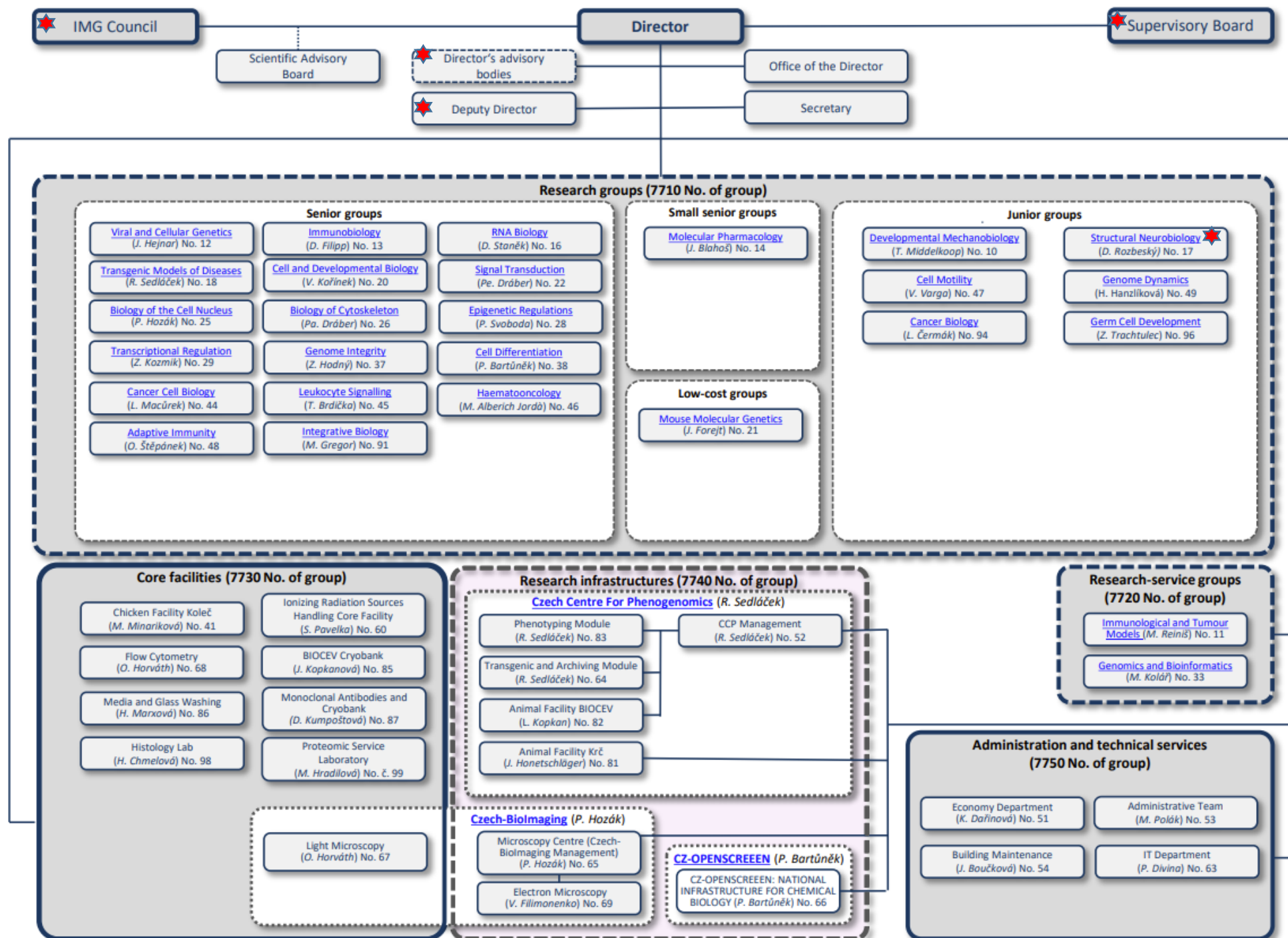
## Recapitulation

**2022+**

\*

**+ Plans 2023**

- 1. Organizational changes**
2. Life at IMG - notes
3. Research activities
4. Awards for the best 2022 IMG publications
5. Plans + Conclusions



# IMG Council

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*End: Petr Bartuněk  
Jiří Hejnar*

*New: Libor Macurek  
Ondřej Štěpánek*

*May 25, 2023*



★ **Prof. Petr Svoboda, Ph.D.**  
Chairman



★ **Martin Gregor, Ph.D.**  
Vice-Chairman



**Meritxell Alberich Jordà, Ph.D.**  
Internal Member



**Vladimír Kořínek, Ph.D.**  
Internal Member



**Zbyněk Kozmík, Ph.D.**  
Internal Member



★ **Libor Macůrek, M.D., Ph.D.**  
Internal Member



**Prof. David Staněk, Ph.D.**  
Internal Member



★ **Ondřej Štěpánek, Ph.D.**  
Internal Member



**Miroslava Anděrová, Ph.D.**  
**[Institute of Experimental  
Medicine, Czech Academy of  
Sciences, Prague]**  
External Member



**Prof. Jan Černý, Ph.D. [Faculty of  
Science, Charles University,  
Prague]**  
External Member



**Assoc. Prof. Libor Krásný, Ph.D.**  
**[Institute of Microbiology, Czech  
Academy of Sciences, Prague]**  
External Member



**Prof. Karel Smetana, M.D., Ph.D.,  
DSc. [First Faculty of Medicine,  
Charles University, Prague]**  
External Member



**Věra Chvojková, M.Sc., MBA**  
Secretary

## Supervisory Board of IMG

*End: Václav Hořejší  
Jiří Hašek  
Jana Pěkníková  
New: Ondrej Horváth  
Jiří Gabriel  
Petr Malý*



**Zdeněk Havlas, Ph.D., D.Sc.**  
**[Czech Academy of Sciences]**  
Chairman



★ **Ondrej Horváth, M.D.**  
Vice-Chairman



★ **Assoc. Prof. RNDr. Jiří Gabriel,**  
**Ph.D., DSc. [Institute of**  
**Microbiology, Czech Academy of**  
**Sciences]**  
Member



★ **Petr Malý, Ph.D. [Institute of**  
**Biotechnology, Czech Academy**  
**of Sciences]**  
Member



**Ján Matejka, Ph.D. [Institute of**  
**State and Law, Czech Academy of**  
**Sciences]**  
Member

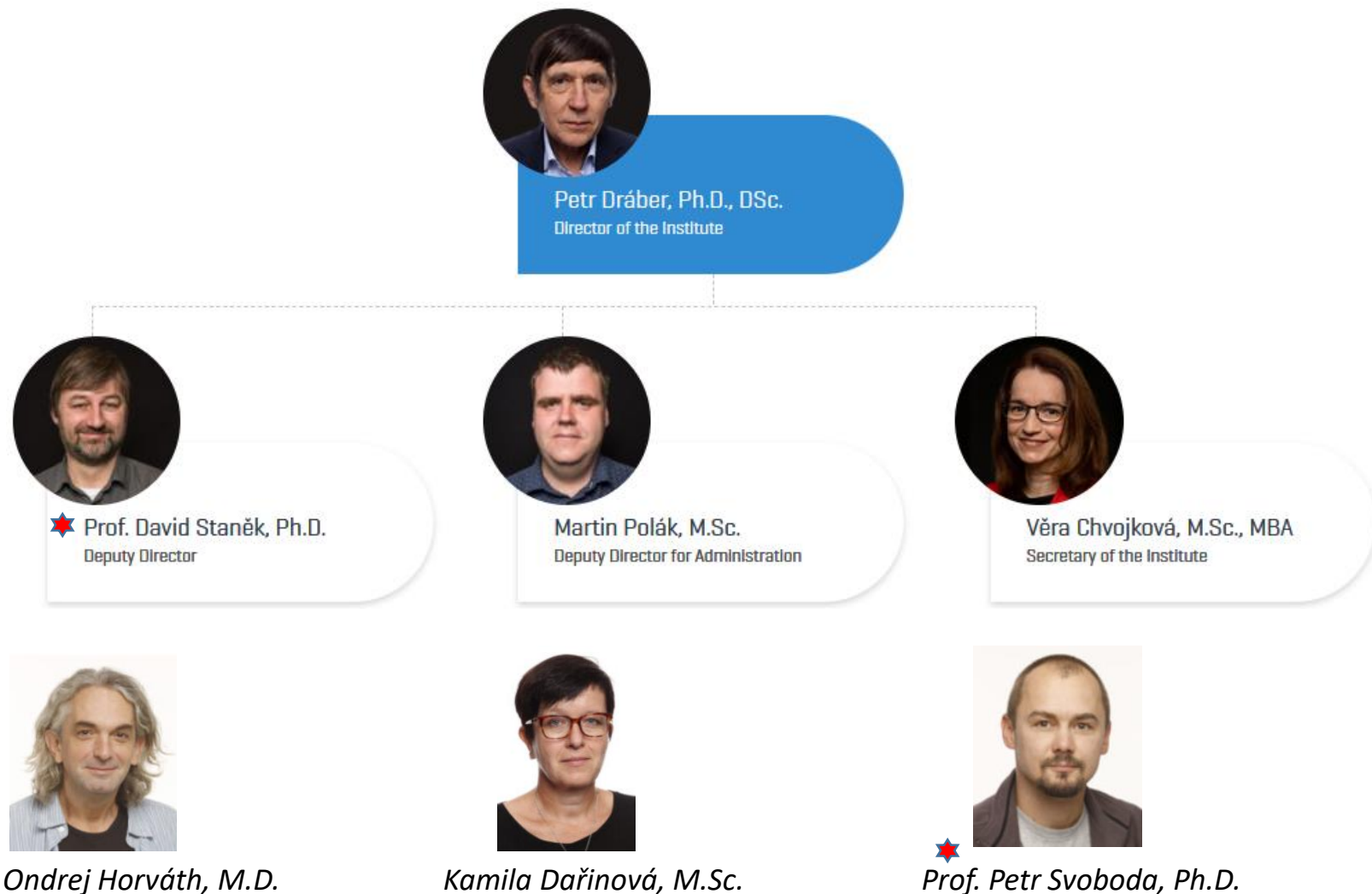


**Leona Krausová**  
Secretary

# Institute Management Board

*End: Vladimír Kořínek  
Jiří Hejnar*

*New: David Staněk  
Petr Svoboda*



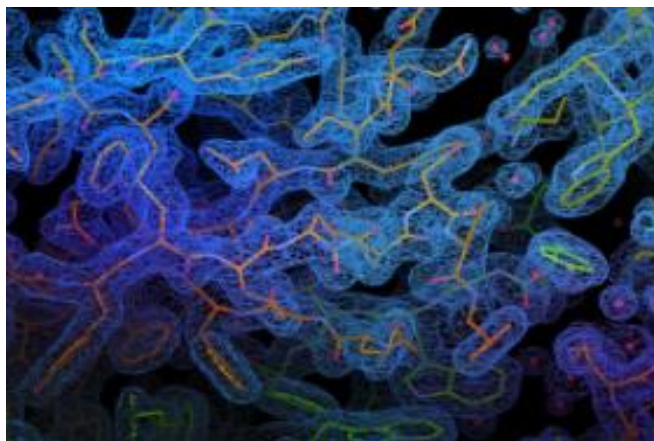


# New IMG research group

Laboratory of Structural Neurobiology



**Daniel Rozbeský**  
Group leader



**Joint laboratory of Charles University and IMG**

# Outline

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## Recapitulation

**2022**

\*

**+ Plans 2023**

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- 2. Life at IMG - notes**
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4. Awards for the best 2022 IMG publications
5. Plans + Conclusions

## Milan Hasek founder of IEBG/IMG

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Picture: a portrait of Milan  
Hasek and his work –  
parabiosis  
Lept painting  
by Roman Havlík, 1983

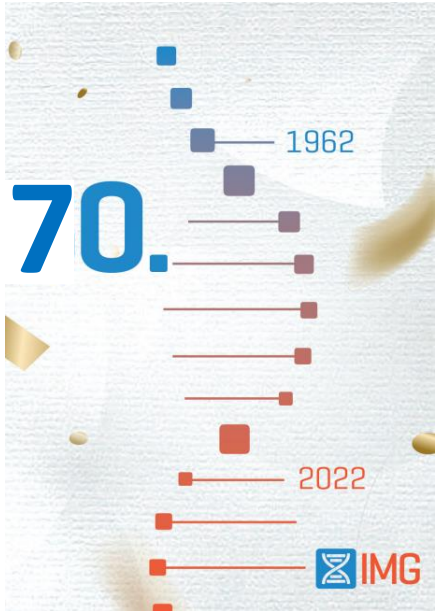




Milan Hašek  
Připomenutí ČLOVĚKA  
(A reminder of the man)

*„Jedinné co po tobě zůstane je to,  
co jsi za svého života sám rozdál“*

(“The only thing you have left is what you gave away in your lifetime”)



Československá  
B I O L O G I E  
ročník 2. (1953) — č. 5

Vegetativní hybridisace živočichů spojením krevních oběhů  
v embryonálním vývoji

MILAN HAŠEK

Biologický ústav ČSAV, experimentální biologie, Praha

Došlo 11. 5. 1953

VEGETATIVE HYBRIDIZATION OF ANIMALS BY JOINT BLOOD CIRCULATION DURING EMBRYONAL DEVELOPMENT

No. 4379 October 3, 1953

NATURE

603

ACTIVELY ACQUIRED TOLERANCE OF FOREIGN CELLS

By DR. R. E. BILLINGHAM\*, L. BRENT and PROF. P. B. MEDAWAR, F.R.S.

Department of Zoology, University College, University of London

*Nobel Prize in Physiology 1960: Frank M. Burnet + Peter Medawar –  
Discovery of acquired immunological tolerance*

# Emil Von Behring prize

*1968*

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*May 25, 2023*



Die Philipps-Universität Marburg/Lahn verleiht Herrn Professor

**DR. MILAN HAŠEK**

Direktor des Instituts für experimentelle Biologie und Genetik  
der tschechoslovakischen Akademie der Wissenschaften in Prag

für seine bahnbrechenden Forschungen auf den Gebieten der  
Immuntoleranz und Transplantations-Immunologie,  
die neue Einblicke in komplizierte immunologische Phänomene eröffneten, den

**EMIL VON BEHRING  
PREIS 1968**

MARBURG AN DER LAHN,  
DEN 21. JUNI 1968

## A. Lacassagne prize

1983

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*“A van Gogh style of painting of a man with a chicken and a nest with two eggs in garden”*

 OpenAI |  ChatGPT |  DALL-E 2

DALL-E 2 - AI system that can create realistic images and art from a description in natural language

*May 25, 2023*





*“A cubism oil painting of a scientist writing a book in garden with flowers, chicken and two eggs”*



A large, multi-story, light-colored stone building with a prominent central tower and a red-tiled roof, situated on a grassy hill. The building is surrounded by lush greenery and a clear blue sky with scattered white clouds. In the background, a smaller church with a red roof and a steeple is visible.

# Castle Liblice meeting

October 25 – 26, 2022

# Castle Liblice meeting – program

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**Evaluation of the institute from the director's and PhD student perspectives – what to improve** (org. by Director and PhD committee representatives)

**Technology transfer, proof of concept projects, intellectual properties of IMG**  
(org. by M. Schmoranz; invited speaker Martin Smekal from CETTAV)

**Evaluation of the IMG services and available digital technologies**  
(org. by M. Polak, O. Horvath, P. Divina)

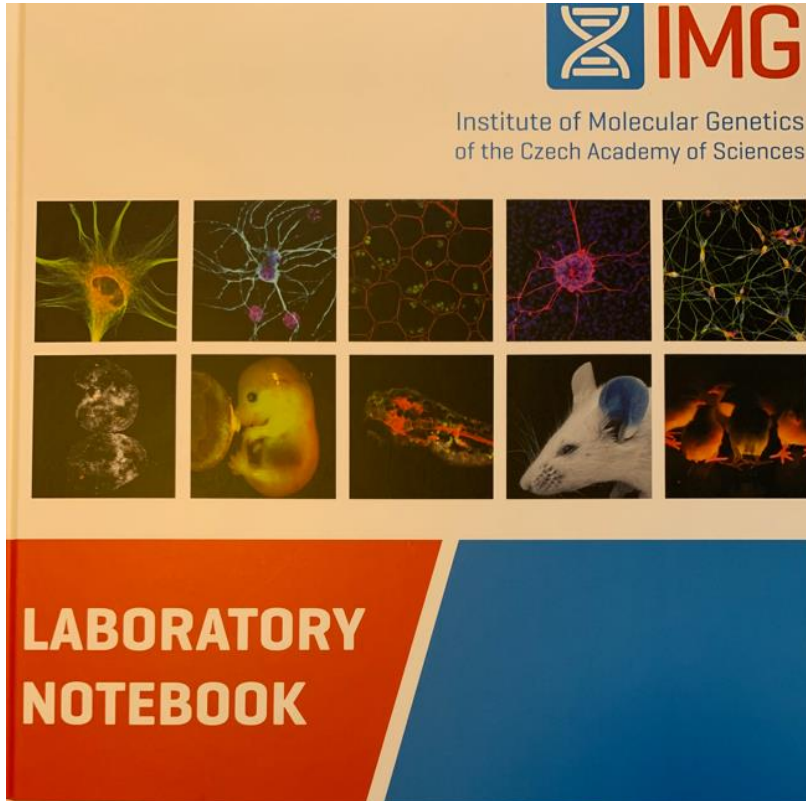
**IMG large national infrastructures: a vision where they will be in 5 and 10 years**  
(org. by Director, M. Polak, and heads of the infrastructures)

**Publish or perish / predatory journals / accessibility of journals**  
(org. by T. Brdička; invited speaker Jiří. Jirát from CzechElib)

## Discussions

# Laboratory data handling

## Rules for keeping laboratory notebooks



**LABORATORY  
NOTEBOOK**

Researcher Name: \_\_\_\_\_

Laboratory Name / Number: \_\_\_\_\_

Notebook Number: \_\_\_\_\_

Date from: \_\_\_\_\_ Date to: \_\_\_\_\_

Researcher Signature: \_\_\_\_\_

Laboratory Head Signature: \_\_\_\_\_

May 25, 2023

### Handling laboratory records:

All forms of laboratory records, including laboratory notebooks, electronically stored data or other types of documentation (e.g., documents in office binders), are the property of IMG and must be kept in a dedicated place within the affiliated laboratory. When leaving the position in the laboratory or the Institute, the researcher is bound to hand over the records to the head of the laboratory. The records must be stored by the laboratory for at least ten years. Laboratory notebooks issued by the Institute should be used as the main laboratory evidence containing all information, including location of electronic data files and other materials.

### **How to use the laboratory notebook:**

1. The laboratory notebooks must be signed by the researcher and marked by the number of the group to which the researcher belongs.
2. Always date each daily record.
3. Every page must be signed and dated by the researcher.
4. Do not remove any pages from the laboratory notebook.
5. Any mistakes in the written record must be denoted and explained, but never erased. Erasing the original records is not allowed.
6. Do not skip pages; use pages completely - cross any necessary blank space with a pen.
7. Do not add later additions to the existing pages. If you need to add any notes or data to an existing text, use a new page and make a corresponding reference on the original page.
8. Attach any additional data (e.g., output files from analyses) to the page it refers to by stitching. If it is not convenient (e.g., due to the size of the generated documents), store such data separately and make clear indication where to find it.
9. For written records, use permanent ink of a color suitable for copying (blue, black); do not use a pencil.
10. Keep the records factual and specific, write legibly.
11. Avoid using special abbreviations or non-standard codes in the text. If you do so, define them.
12. Record any novel ideas and concepts related to your work. Record such ideas/concepts even in the case when their scientific (or applied) potential is not obvious.

## Laboratory data handling

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**February 28, 2023 / 1<sup>st</sup> meeting at CZ-OPENSOURCE re. ELN, storage of laboratory protocols, Inventory management...**

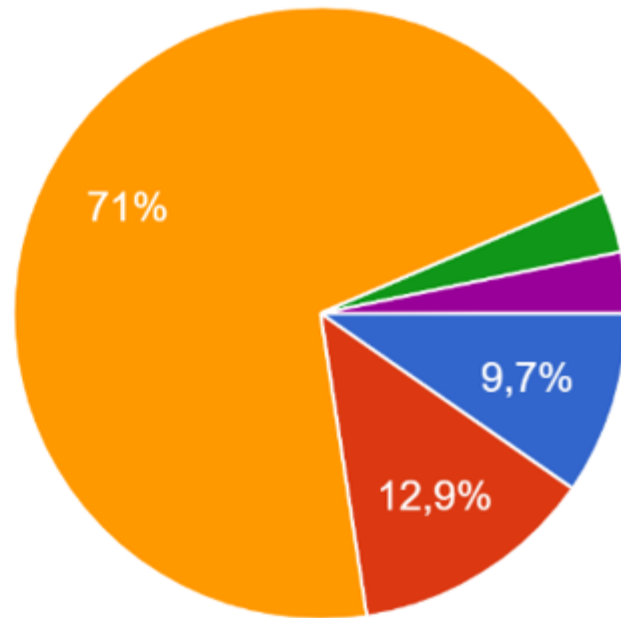
**Questionnaire survey on the use and forms of laboratory NBs and ELN at IMG**



## Questionnaire Laboratory notebooks at IMG

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How do you keep laboratory books in your research group?

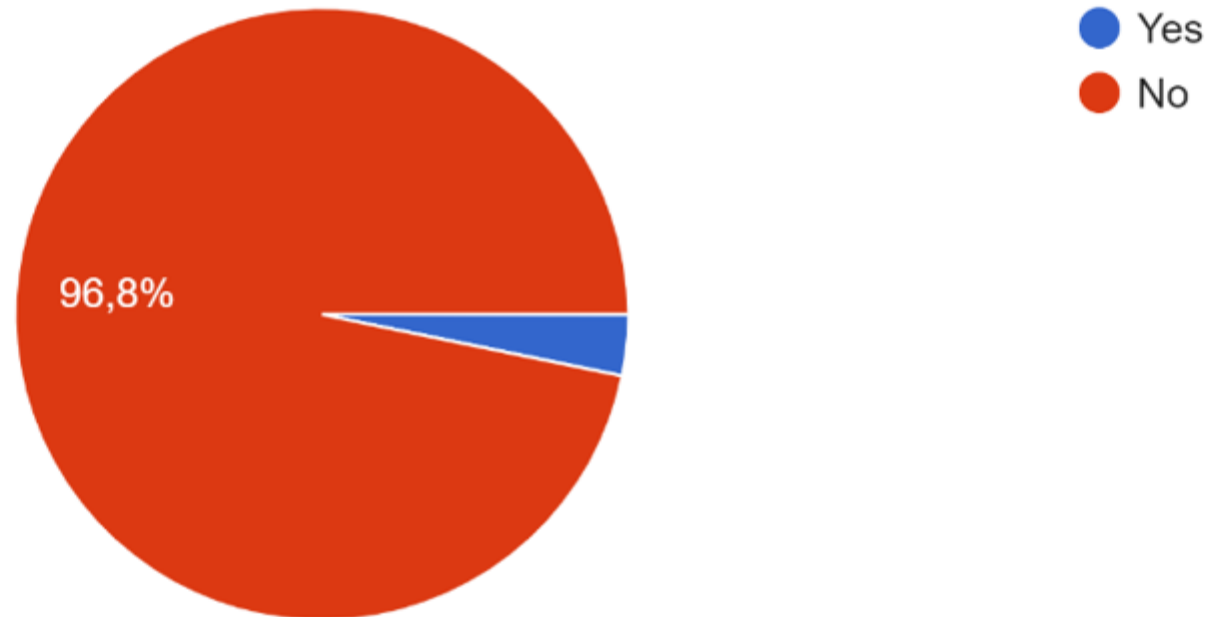


- A paper "laboratory book" provided by the institute
- Electronically
- Paper and electronically
- combination of paper, electronic and hardcopy (X-ray films)
- most of the res. work: paper lab book; phenotyping pipelines, services, contract res.: software coupled with statistics

## Questionnaire Laboratory notebooks at IMG

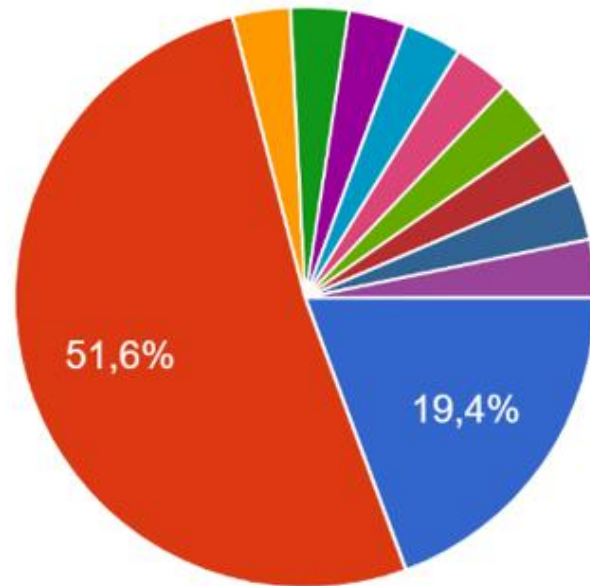
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Do you sign the LNB during inspections?



## Questionnaire Laboratory notebooks at IMG

Where do you keep the completed printed laboratory books?



- In the department head's office
- The individual department staff memb...
- The individual department staff memb...
- As far as lab members are in the lab, t...
- After a persons leaves the lab, I keep...
- Everything is kept with department sta...
- po odchodu z UMG v kancelari
- in the lab, each individual keeps his/h...

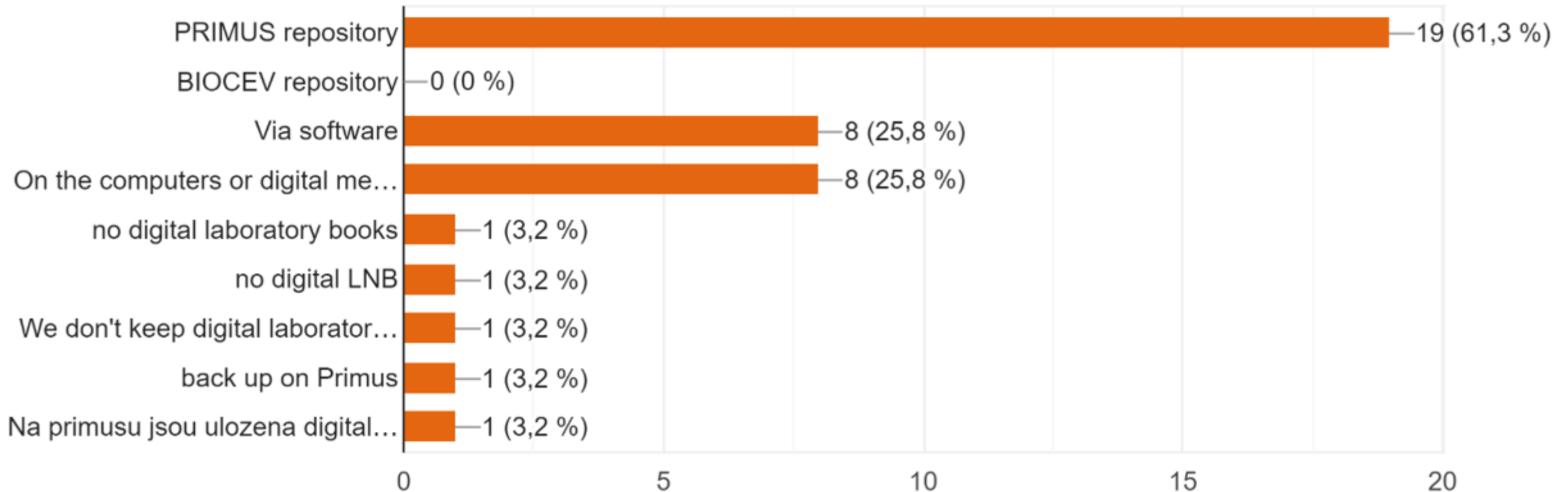
▲ 1/2 ▼

- online
- with the lab manager
- ve skrini v laborce nebo ve skladu odd.



## Questionnaire Laboratory notebooks at IMG

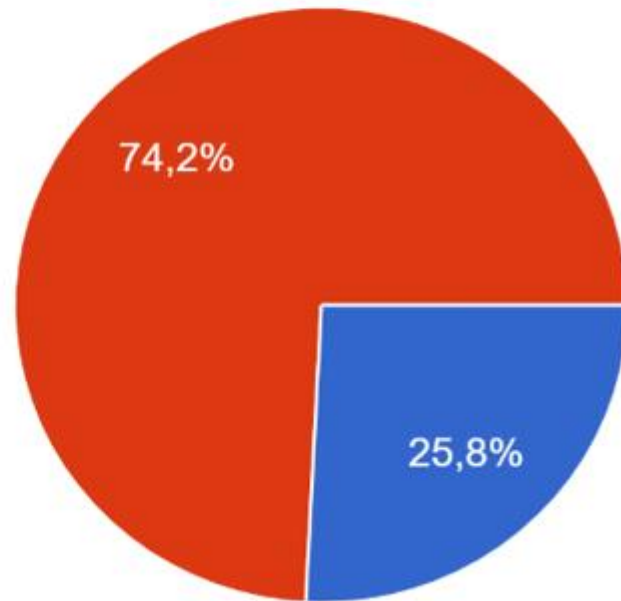
Where do you keep the digital laboratory books?



## Questionnaire Laboratory notebooks at IMG

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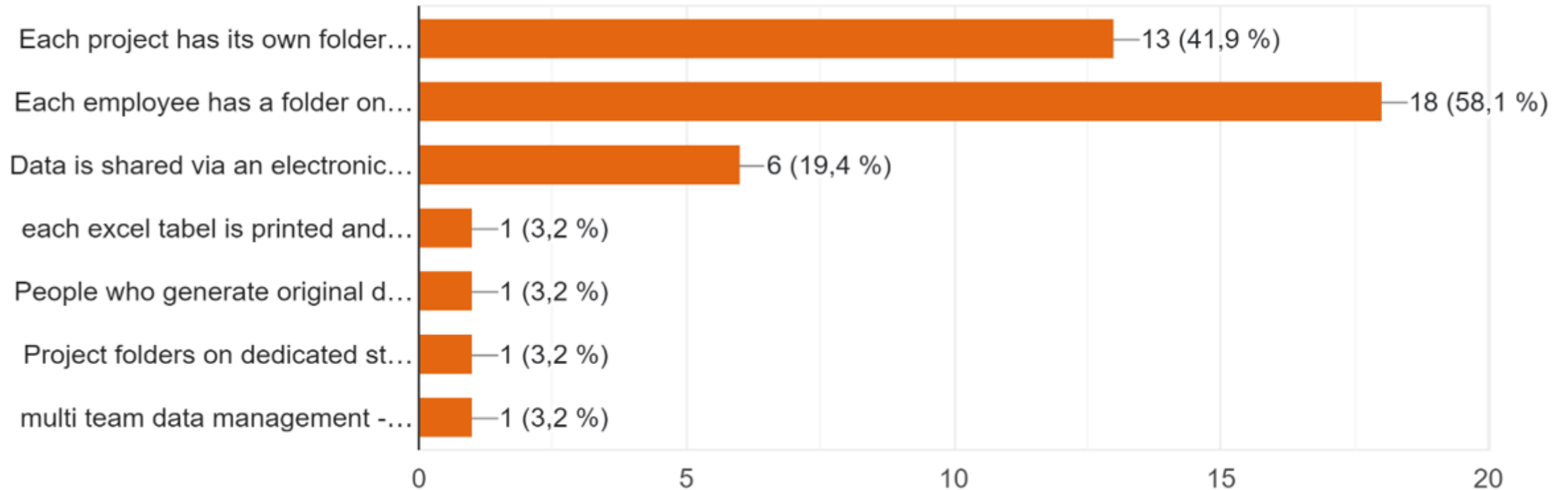
If you have project folders on Primus, do they have a predefined structure? (E.g. raw data, analyzed data, graphs/reports, etc.)



- Yes, each project folder has a fixed substructure
- No, I leave the structure of the project components to the subordinates.

## Questionnaire Laboratory notebooks at IMG

How do you handle project data sharing when more than one employee is working on a project?







## scientific **data**



**OPEN**  
**ARTICLE**

### The FAIR Cookbook - the essential resource for and by FAIR doers

Philippe Rocca-Serra <sup>1,2</sup>✉, Wei Gu <sup>3,4</sup>, Vassilios Ioannidis <sup>5</sup>, Tooba Abbassi-Daloi <sup>6</sup>,

The notion that data should be **F**indable, **A**ccessible, **I**nteroperable and **R**eusable, according to the **FAIR Principles, has become a global norm for good data stewardship and a prerequisite for reproducibility.** Nowadays, FAIR guides data policy actions and professional practices in the public and private sectors. Despite such global endorsements, however, the **FAIR Principles are aspirational, remaining elusive at best, and intimidating at worst.**

The FAIR Cookbook covers the key steps in a FAIRification journey, the levels and indicators of FAIRness, the maturity model, the technologies, the tools and the standards available, as well as the skills required, and the challenges to achieve and improve data FAIRness. Part of the ELIXIR ecosystem, and recommended by funders, the FAIR Cookbook is open to contributions of new recipes.

**FAIR data management** - Hot topic with growing interest.

In Pub Med at 2023: 375 references; first 2016

Electronic laboratory notebooks (ELN) - an important part of the process.

Discussion with CETTAV (Center of Technology transfer at Cz. Acad. Sci).

CETTAV recommends **Labfolder** used at MPI



**SciNote**



*230 USD/year/person*



IMG – ELN: based on the know-how of CZ-Openscreen. Option to prepare our own ELN, simple, robust, with all required parameters we need. CETTAV is also preparing some instructions for ELN and we will evaluate it.























Institute of Molecular Genetics of the Czech Academy of Sciences

60

YEARS ANNIVERSARY

1962 - 2022

ANNUAL REPORT  
2020 - 2022





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# Outline

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## Recapitulation

**2022**

\*

**+ Plans 2023**

1. Organizational changes
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5. Plans + Conclusions

nature immunology



Article


<https://doi.org/10.1038/s41590-022-01366-C>



## Unique roles of co-receptor-bound LCK in helper and cytotoxic T cells

Received: 1 December 2021

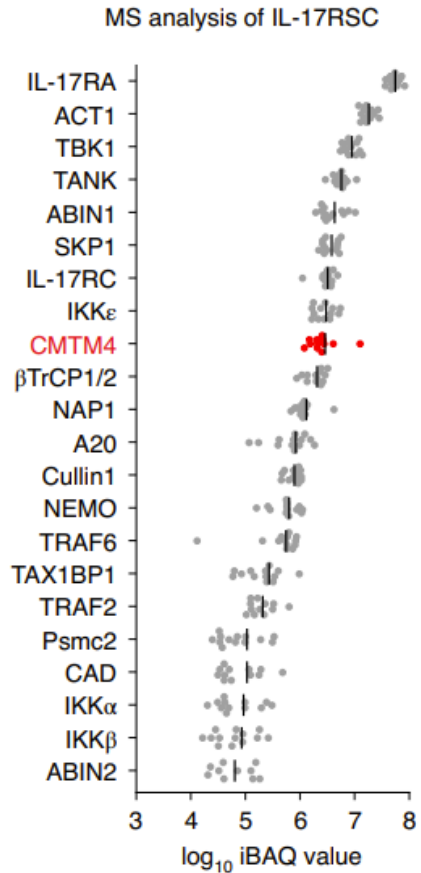
Accepted: 20 October 2022

Published online: 23 December 2022

 Check for updates

Veronika Horkova <sup>1</sup>, Ales Drobek <sup>1</sup>, Darina Paprckova <sup>1</sup>,  
Veronika Niederlova <sup>1</sup>, Avishek Prasai<sup>1</sup>, Valeria Uleri <sup>1</sup>, Daniela Glatzova<sup>1</sup>,  
Markus Kraller<sup>2</sup>, Michaela Cesnekova<sup>1</sup>, Sarka Janusova<sup>1</sup>, Eva Salyova<sup>1</sup>,  
Oksana Tsyklauri <sup>1</sup>, Theresa A. Kadlecsek<sup>3</sup>, Katerina Krizova<sup>1</sup>, René Platzer<sup>2</sup>,  
Kilian Schober<sup>4,5</sup>, Dirk H. Busch <sup>4</sup>, Arthur Weiss<sup>3</sup>, Johannes B. Huppa <sup>2</sup> &  
Ondrej Stepanek <sup>1</sup> 

The findings reveal the role of co-receptor-bound LCK in T cell biology, show that CD4- and CD8-bound LCK drive T cell development and effector immune responses using qualitatively different mechanisms and identify the co-receptor–LCK interactions as promising targets for immunomodulation.



nature immunology



Article


<https://doi.org/10.1038/s41590-022-01325-9>

## CMTM4 is a subunit of the IL-17 receptor and mediates autoimmune pathology

Received: 3 June 2021

Accepted: 7 September 2022

Published online: 21 October 2022

 Check for updates

Daniela Knizkova<sup>1,2,4</sup>, Michaela Pribikova<sup>1,4</sup>, Helena Draberova<sup>1</sup>,  
Tereza Semberova<sup>1</sup>, Tijana Trivic<sup>1</sup>, Alzbeta Synackova<sup>1</sup>, Andrea Ujevic<sup>1</sup>,  
Jana Stefanovic<sup>1</sup>, Ales Drobek<sup>2</sup>, Martina Huranova<sup>2</sup>, Veronika Niederlova<sup>2</sup>,  
Oksana Tsyklauri<sup>2</sup>, Ales Neuwirth<sup>2</sup>, Jolana Tureckova<sup>3</sup>,  
Ondrej Stepanek<sup>2</sup>✉ and Peter Draber<sup>1,2</sup>✉

The data identified CMTM4 as an essential component of IL-17R and a potential therapeutic target for treating IL-17-mediated autoimmune diseases.

# Top research papers

Molecular Cell

CellPress  
OPEN ACCESS

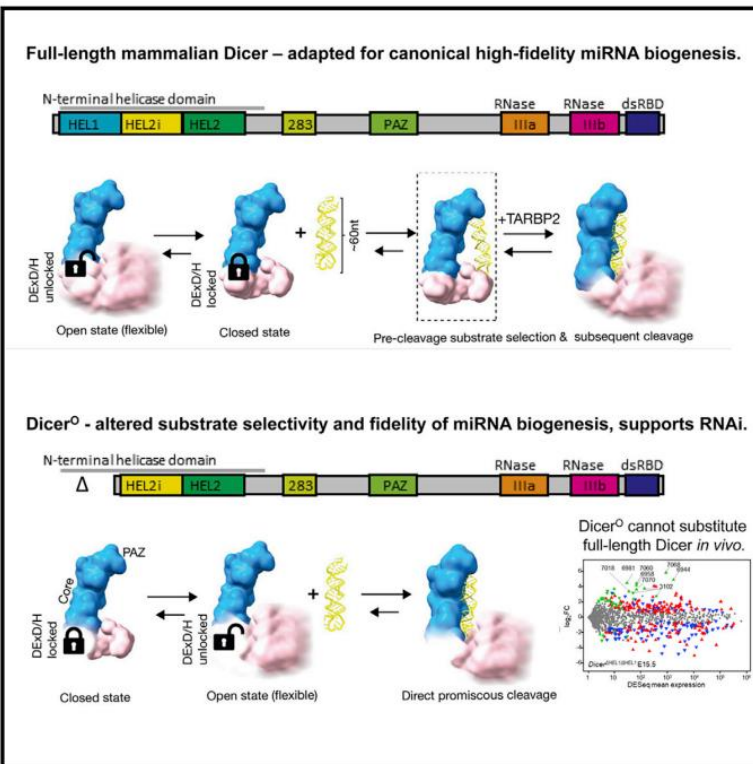
Article

## Structural and functional basis of mammalian microRNA biogenesis by Dicer

David Zapletal,<sup>1,2,10</sup> Eliska Taborska,<sup>3,10</sup> Josef Pasulka,<sup>3,10</sup> Radek Malik,<sup>3</sup> Karel Kubicek,<sup>1,3</sup> Martina Zanova,<sup>1</sup> Christian Much,<sup>4,5</sup> Marek Sebesta,<sup>1</sup> Valeria Buccheri,<sup>3</sup> Filip Horvat,<sup>3,6</sup> Irena Jenickova,<sup>7</sup> Michaela Prochazkova,<sup>7</sup> Jan Prochazka,<sup>7</sup> Matyas Pinkas,<sup>1</sup> Jiri Novacek,<sup>1</sup> Diego F. Joseph,<sup>3</sup> Radislav Sedlacek,<sup>7</sup> Carrie Bernecky,<sup>8</sup> Dónal O'Carroll,<sup>4,5,9</sup> Richard Stefl,<sup>1,2,\*</sup> and Petr Svoboda<sup>3,11,\*</sup>

The authors provide evidence explaining how the DExD/H domain functions in an ATP-independent manner, segregates miRNA from the RNAi pathway in vivo, and makes **Dicer an essential gatekeeper in miRNA biogenesis.**

May 25, 2023



nature communications



Article

<https://doi.org/10.1038/s41467-022-32763-6>

# BRAT1 links Integrator and defective RNA processing with neurodegeneration

Received: 8 September 2021

Accepted: 15 August 2022

Zuzana Cihlarova<sup>1,2</sup>, Jan Kubovciak<sup>3</sup>, Margarita Sobol<sup>1</sup>, Katerina Krejcikova<sup>1</sup>,  
Jana Sachova<sup>3</sup>, Michal Kolar<sup>3</sup>, David Stanek<sup>4</sup>, Cyril Barinka<sup>5</sup>,  
Grace Yoon<sup>6</sup>, Keith W. Caldecott<sup>1,7</sup> & Hana Hanzlikova<sup>1,7</sup> ✉

The data identify BRAT1 as a factor important for the efficient functioning of the Integrator, thus linking the neuropathology of patients with the BRAT1 mutation and patients with the Integrator mutations.

nature  
structural &  
molecular biology

ARTICLES

<https://doi.org/10.1038/s41594-022-00747-1>



OPEN

## PARP inhibition impedes the maturation of nascent DNA strands during DNA replication

Alina Vaitsiankova<sup>1</sup>, Kamila Burdova<sup>1</sup>, Margarita Sobol<sup>2</sup>, Amit Gautam<sup>1</sup>, Oldrich Benada <sup>3</sup>,  
Hana Hanzlikova <sup>1,2</sup>  and Keith W. Caldecott <sup>1,2</sup> 

Collectively, these data show that PARP inhibitors impede the maturation of nascent DNA strands during DNA replication, and implicate unligated Okazaki fragments and other nascent strand **discontinuities in the cytotoxicity of the PARP inhibitors.**

## Top research papers



RESEARCH ARTICLE



# A model of preferential pairing between epithelial and dendritic cells in thymic antigen transfer

**Matouš Vobořil<sup>1†</sup>, Jiří Březina<sup>1,2†</sup>, Tomáš Brabec<sup>1</sup>, Jan Dobeš<sup>1,2</sup>, Ondřej Ballek<sup>1</sup>, Martina Dobešová<sup>1</sup>, Jasper Manning<sup>1</sup>, Richard S Blumberg<sup>3</sup>, Dominik Filipp<sup>1\*</sup>**

The findings suggest a preferential pairing model for the distribution of medular thymic epithelial cells (TEC)-derived antigens among distinct populations of thymic DCs.








## Top research papers

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### ARTICLE

# Plectin-mediated cytoskeletal crosstalk controls cell tension and cohesion in epithelial sheets

Magdalena Prechova<sup>1</sup>, Zuzana Adamova<sup>1,2</sup>, Anna-Lena Schweizer<sup>3</sup>, Miloslava Maninova<sup>1</sup>, Andreas Bauer<sup>4</sup>, Delf Kah<sup>4</sup>, Samuel M. Meier-Menches<sup>5</sup>, Gerhard Wiche<sup>6</sup>, Ben Fabry<sup>4</sup>, and Martin Gregor<sup>1</sup>

The study revealed that plectin-controlled cytoarchitecture and balanced internal distribution of tension are directly linked to cell cohesion and maintenance of epithelial stability.



🔒 | RESEARCH ARTICLE | CANCER



## Cancer cells use self-inflicted DNA breaks to evade growth limits imposed by genotoxic stress

[BRIAN D. LARSEN](#)  , [JAN BENADA](#)  , [PHILIP YUK KWONG YUNG](#)  , [RYAN A. V. BELL](#) , [GEORGE PAPPAS](#) , [VACLAV URBAN](#) , [JOHANNA K. AHLKOG](#) , [TIA T. KUO](#)  ,  
[PAVEL JANSČAK](#) , [LYNN A. MEGENEY](#)  , [SIMON J. ELSÄSSER](#)  , [JIRI BARTEK](#)  , AND [CLAUS S. SØRENSEN](#) 

SCIENCE • 28 Apr 2022 • Vol 376, Issue 6592 • pp. 476-483 • DOI: [10.1126/science.abi6378](https://doi.org/10.1126/science.abi6378)

Genotoxic treatments, such as radiation and some chemotherapy drugs, are a mainstay of cancer therapy, but they often fail to fully destroy tumor cells. Normal cells can protect themselves from genotoxic insults by activating the G<sub>1</sub> cell cycle checkpoint, but this checkpoint is often dysfunctional in tumors.

The authors discovered that tumor cells can activate a nuclease that causes limited induction of DNA breaks at specific sites, which is coordinated with the process of DNA break repair. These self-inflicted DNA breaks trigger the G<sub>2</sub> cell cycle checkpoint, **preventing tumor cells from cycling and protecting them from death due to treatment-induced DNA damage.**

12274–12290 *Nucleic Acids Research*, 2022, Vol. 50, No. 21  
<https://doi.org/10.1093/nar/gkac1116>

Published online 1 December 2022

## DDX17 helicase promotes resolution of R-loop-mediated transcription–replication conflicts in human cells

Barbora Boleslavská <sup>ID</sup>1,2, Anna Oravetzová <sup>ID</sup>1,2, Kaustubh Shukla <sup>ID</sup>1,  
Zuzana Nascaková <sup>ID</sup>1, Oluwakemi Ngozi Ibini <sup>ID</sup>3, Zdenka Hasanová <sup>ID</sup>1, Martin Andrs <sup>ID</sup>1,  
Radhakrishnan Kanagaraj <sup>ID</sup>3,4,5, Jana Dobrovolná <sup>ID</sup>1,\* and Pavel Janscak <sup>ID</sup>1,6,\*

Our experiments highlight DDX17 helicase as a potential genome caretaker during transcription-induced replication stress. Our findings suggest that DDX17 might be involved in R-loop unwinding at sites of TRCs to promote replication restart via the MUS81–LIG4–ELL axis.

nature  
structural &  
molecular biology

ARTICLES

<https://doi.org/10.1038/s41594-022-00747-1>



OPEN

## PARP inhibition impedes the maturation of nascent DNA strands during DNA replication

Alina Vaitsiankova<sup>1</sup>, Kamila Burdova<sup>1</sup>, Margarita Sobol<sup>2</sup>, Amit Gautam<sup>1</sup>, Oldrich Benada <sup>3</sup>,  
Hana Hanzlikova <sup>1,2</sup>  and Keith W. Caldecott <sup>1,2</sup> 

Collectively, these data show that PARP inhibitors impede the maturation of nascent DNA strands during DNA replication, and implicate unligated Okazaki fragments and other nascent strand **discontinuities in the cytotoxicity of the PARP inhibitors.**

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**2022**

\*

**+ Plans 2023**

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2. Life at IMG - notes
3. Research activities
- 4. Awards for the best 2022 IMG publications**
5. Plans + Conclusions

**Award of the Director of the Institute of Molecular Genetics  
of the Czech Academy of Sciences  
For novel essential scientific knowledge  
obtained in scientific research (further referred to as “Award”)**

The Award shall be granted to the team of authors of an **original publication that appeared** in the past calendar year. The Award was granted for the first time in 2021 for results published in 2020.

Every year, a maximum of **three best publications** shall be awarded, in the order of first, by a sum of CZK **120,000**, second, by a sum of CZK **90,000**, and third, by a sum of CZK **60,000** (the amounts have been increased since 2023 starting by publications from the year 2022). The distribution of the award to individual authors shall be decided by the corresponding author of the publication.

The proposals for granting the Award in the particular calendar year shall be **prepared by the IMG Council** and presented to the IMG Director.

**Award of the Director of the Institute of Molecular Genetics  
of the Czech Academy of Sciences  
For novel essential scientific knowledge  
obtained in scientific research (further referred to as “Award”)**



The funds associated with granting the Award shall be covered from the estate of former IMG Director, [Prof Josef Říman, DSc, \(information in Czech\)](#) whose wish was **“to use these funds for awarding individuals and/or scientific teams for novel essential scientific knowledge obtained during their scientific research in every calendar year.”**



Zuzana Cihlarova, Jan Kubovciak, Margarita Sobol, Katerina Krejcikova, Jana Sachova, Michal Kolar, David Stanek, Cyril Barinka, Grace Yoon, Keith W. Caldecott, Hana Hanzlikova

Laboratory of Genome Dynamics, IMG and others

### ON A RECENT PUBLICATION ACHIEVEMENT

“BRAT1 links Integrator and defective RNA processing with neurodegeneration”

published in

Nature Communications, 2022;

<https://doi.org/10.1038/s41467-022-32763-6>

# IMG Director's Award

for novel essential scientific knowledge obtained in scientific research

## 3<sup>rd</sup> position

### best publication in 2022

**Cihlarova Z, Kubovciak J, Sobol M, Krejcikova K, Sachova J, Kolar M, Stanek D, Barinka C, Yoon G,  
Caldecott KW, Hanzlikova H:**

BRAT1 links Integrator and defective RNA processing with neurodegeneration.

**Nat Commun 2022 13(1): 5026.**

May 25th, 2023

A handwritten signature in blue ink, appearing to read 'Petr Draber', is written over a horizontal line.

Petr Dráber, PhD, DSc  
Director

Institute of Molecular Genetics of the Czech Academy of Sciences





David Zapletal, Eliska Taborska, Josef Pasulka, Radek Malik,  
Karel Kubicek, Martina Zanova, Christian Much, Marek Sebesta,  
Valeria Buccheri, Filip Horvat, Irena Jenickova, Michaela Prochazkova,  
Jan Prochazka, Matyas Pinkas, Jiri Novacek, Diego F. Joseph,  
Radislav Sedlacek, Carrie Bernecky, Dónal O'Carroll, Richard Stefl,  
Petr Svoboda

Laboratory of Epigenetic Regulations, IMG and others

### ON A RECENT PUBLICATION ACHIEVEMENT

“Structural and functional basis of mammalian microRNA  
biogenesis by Dicer”

published in

Molecular Cell, 2022;

<https://doi.org/10.1016/j.molcel.2022.10.010>

# IMG Director's Award

for novel essential scientific knowledge obtained in scientific research

## 2<sup>nd</sup> position

### best publication in 2022

Zapletal D, **Taborska E, Pasulka J, Malik R, Kubicek K**, Zanova M, Much C, Sebesta M, **Buccheri V, Horvat F, Jenickova I, Prochazkova M, Prochazka J**, Pinkas M, Novacek J, **Joseph DF, Sedlacek R**, Bernecky C, O'Carroll D, Stefl R, **Svoboda P**:

Structural and functional basis of mammalian microRNA biogenesis by Dicer.

**Mol Cell 2022 82(21): 4064-4079.e13.**

May 25th, 2023

A handwritten signature in blue ink, appearing to read 'Petr Dráber', written over a horizontal line.

Petr Dráber, PhD, DSc  
Director

Institute of Molecular Genetics of the Czech Academy of Sciences



Veronika Horkova, Ales Drobek, Darina Paprckova,  
Veronika Niederlova, Avishek Prasai, Valeria Uleri, Daniela Glatzova,  
Markus Kraller, Michaela Cesnekova, Sarka Janusova, Eva Salyova,  
Oksana Tsyklauri, Theresa A. Kadlecsek, Katerina Krizova, René Platzer,  
Kilian Schober, Dirk H. Busch, Arthur Weiss, Johannes B. Huppa,  
Ondrej Stepanek

Laboratory of Adaptive Immunity, IMG and others

### ON A RECENT PUBLICATION ACHIEVEMENT

“ Unique roles of co-receptor-bound LCK in  
helper and cytotoxic T cells ”

published in

Nature Immunology, 2022;

<https://www.nature.com/articles/s41590-022-01366-0>

for novel essential scientific knowledge obtained in scientific research

**1<sup>st</sup> position**

**best publication in 2022**

**Horkova V, Drobek A, Paprckova D, Niederlova V, Prasai A, Uleri V, Glatzova D, Kraller M, Cesnekova M, Janusova S, Salyova E, Tsyklauri O, Kadlecek TA, Krizova K, Platzer R, Schober K, Busch DH, Weiss A, Huppa JB, Stepanek O:**

Unique roles of co-receptor-bound LCK in helper and cytotoxic T cells.

**Nat Immunol 2023 24(1): 174-185. [Epub 2022 Dec 23.]**

**May 25th, 2023**

A handwritten signature in blue ink, which appears to read 'Petr Draber', is written over a horizontal line.

Petr Dráber, PhD, DSc  
Director

Institute of Molecular Genetics of the Czech Academy of Sciences

# Outline

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## Recapitulation

**2022**

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**+ Plans 2023**

1. Organizational changes
2. Life at IMG - notes
3. Research activities
4. Awards for the best IMG publications 2022
5. **Plans + Conclusions**

## Plans + Conclusions

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1. 2023 budget – balanced, without debts after restrictions (electricity and gas price) + inflation
2. As usual, we expect numerous controls and evaluations (Office of the Director, Administration)
3. Continuing renovations in Koleč, building maintenance. **Search for new group leader using chicken models**
4. *Finishing renovation in BIOCEV (BSL3) – OPENED on March 9, 2023*
5. Continuing research and preclinical studies with PREVECAN (phospholipids produced in CZ-OPENSREEN - preclinical studies) in collaboration with Smart Brain,
6. Lot of work for all Committees (Ph.D., Animals, Ethics, Literature, Accommodation, Instruments purchase, Microscopy, and others)
7. *Liblice meeting regarding the future direction of IMG – (?) depending on energy money spending*
8. *New IMG web intranet – improving – (?)*
9. *Preparing agreement with Charles University re D. Rozbesky's joint workplace of IMG and Faculty of Science CU*
10. **Many other administrative and service duties**
11. **ELN – IMG (?) in collaboration with CZ-OPENSREEN**
12. **Great research discoveries** in all research groups; reflecting, among others, efficient collaborations at all levels and perfect research and administration services.

**Many thanks  
for your excellent cooperation at all levels  
&  
Thank you for your attention**

# Outline

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