ÚOCHB AV ČR
IOCB PRAGUE

Meeting with Group Leaders

November 27, 2020

Zdenek Hostomsky

Agenda

- IOCB Most significant publications in 2019
- RSG evaluation (Pavlína Řezáčová)
- HR Award (Alena D. Morávková)
- PhD interview day info (Alena D. Morávková)

- Miscellanea
  - DCA + NFMR (Pavel Jungwirth)
  - Interview update – CryoEM facility manager
  - IOCB parking situation
  - Candidates for AC and SC of the CAS
  - Pepa Lazar

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IOCB PRAGUE

IOCB Most Significant Publications 2019

November 27, 2020

Zdenek Hostomský

Most significant publications 2019

- **PHYS** (9 for 2018) **11** submissions → **5** awards
- **CHEM** (6 for 2018) **8** submissions → **4** awards
- **BIO** (7 for 2018) **8** submissions → **4** awards

Evaluators' Comments

- Overall very high quality of 2019 submissions (but maybe less so than in 2018 …)
- PHYS was the strongest category, competitively speaking …
- Some unexpected assignment to categories

- 12 external judges vs. 14 internal evaluators

External *Internal*

Šimonová A, Svojanovská B, Trylčová J, Hubálek M, Moravčík O, Zavřel M, Pávová M, Hodek J, Weber J, Cvačka J, Pačes J, and Cahová* H

LC/MS analysis and deep sequencing reveal the accurate RNA composition in the HIV-1 virion

Scientific Reports | (2019) 9:8697

Vaníková Z, Janoušková M, Kambová M, Krásný L, and Hocek* M

Switching transcription with bacterial RNA polymerase through photocaging, photorelease and phosphorylation reactions in the major grooveof DNA

Chem. Sci., 2019, 10, 3937

Most Significant Publications 2019 part 2

External

Macháčková K,Mlčochová K, Potalitsyn P, Hanková K, Socha O, Buděšínský M, Muždalo A, Lepšík M, Černeková M, Radosavljević J, Fábry M, Mitrová K, Chrudinová M, Lin J, Yurenko Y, Hobza P,Selicharová I, Žáková L, and Jiráček* J

Mutations at hypothetical binding site 2 in insulin and insulin-like growth factors 1 and 2 result in receptor- and hormone-specific responses

J. Biol. Chem. (2019) 294(46) 17371–17382

Internal

Makukhin N, Havelka V, Poláchová E, Rampírová P, Tarallo V, Strisovsky * K, and Míšek* J

Resolving oxidative damage to methionine by an unexpected membrane-associated stereoselective reductase discovered using chiral fluorescent probes

The FEBS Journal 286 (2019) 4024–4035

Tupec M, Buček A, Janoušek V, Vogel H, Prchalová D, Kindl J, Pavlíčková T, Wenzelová P, Jahn U, Valterová I and Pichová* I

Expansion of the fatty acyl reductase gene family shaped pheromone communication in Hymenoptera

eLife 2019;8:e39231.

Director's Award

Internal

Holubová M, Hrubá L, Popelová A, Bencze M, Pražienková V, Gengler S, Kratochvílová H, Haluzík M, Železná B, Kuneš J, Hölscher C, and Maletínská* L

Liraglutide and a lipidized analog of prolactin-releasing peptide show neuroprotective effects in a mouse model of β-amyloid pathology

Neuropharmacology 144 (2019) 377–387

Rationale behind Director‘s Awards

- Papers highly rated by some of the judges, usually the ones with the best understanding of the topic, but with no sufficient overall support to influence the composite vote

- Director‘s conviction that this is a high quality publication with an important impact for the field which may have been overlooked by others

External *Internal*

Hernández-Guerra D, Hlavačková A, Pramthaisong C, Vespoli I, Pohl R, Slanina T, and Jahn* U

Photochemical C-H Amination of Ethers and Geminal Difunctionalization Reactions in One Pot

Angew. Chem. Int. Ed. 2019, 58, 12440 –12445

Tenora L, Jalt J, Dash RP, Gadiano AJ, Novotná K, Veeravalli V, Lam J, Kirkpatrick QR, Lemberg KM, Majer* P, Rais* R and Slusher* BS

Tumor-Targeted Delivery of 6-Diazo-5-oxo-L-norleucine (DON) Using Substituted Acetylated Lysine Prodrugs

J. Med. Chem. 2019, 62, 3524−3538

Listed alphabetically by first author

External

Grüner B, Brynda J, Das V, Šícha V, Štěpánková J, Nekvinda J, Holub J, Pospíšilová K, Fábry M, Pachl P, Král V, Kugler M, Mašek V, Medvedíková M, Matějková S, Nová A, Lišková B, Gurská S, Džubák Hajdúch* M, and Řezáčová* P

Metallacarborane Sulfamides: Unconventional, Specific, and Highly Selective Inhibitors of Carbonic Anhydrase IX

J. Med. Chem. 2019, 62, 9560−75

Internal

Ivancová I, Pohl R , Hubálek M, and Hocek* M

Squaramate-Modified Nucleotides and DNA for Specific Cross-Linking with Lysine-Containing Peptides and Proteins

Angew. Chem. Int. Ed. 2019, 58, 13345 –13348

Director's Award

Novotná B, Vaneková L, Zavřel M, Buděšínský M, Dejmek M, Smola M, Gutten O, Tehrani ZA, Pimková Polidarová M, Brázdová A, Liboska R, Štěpánek I, Vavřina Z, Jandušík T, Nencka R, Rulíšek L, Bouřa E, Brynda J, Páv O, and Birkuš* G

Enzymatic Preparation of 2′−5′,3′−5′-Cyclic Dinucleotides, Their Binding Properties to Stimulator of Interferon Genes Adaptor Protein, and Structure/Activity Correlations

J. Med. Chem. 2019, 62, 10676−10690

PHYS Most Significant Publications 2019 part 1

External

Li G, Kessler J, Cheramy J, Wu T, Poopari MR, Bouř* P and Xu* Y

C and Amplification of Chirality within the "Ring of Fire" Observed in Resonance Raman Optical Activity Experiments

Angew Chem Int Ed 2019, 58, 16495-98

Mason* PE, Jungwirth* P & Duboué-Dijon* E

Quantifying the Strength of a Salt Bridge by Neutron Scattering and Molecular Dynamics

J Phys Chem Lett 2019, 10, 3254-59

Internal

Raabová H, Chvátil D, and Cigler* P

Diamond nano-optode for fluorescent measurements of pH and temperature

Nanoscale. 2019, 11, 18537-42

Straka* M, Andris E, Vícha J, Růžička A, Roithová J, and Rulíšek* L

Spectroscopic and Computational Evidence of Intramolecular $Au^{1}\cdots H^{+}$- N Hydrogen Bonding

Angew. Chem. Int. Ed. 2019, 58, 2011 –16

Most Significant Publications 2019 part 2

External *Internal*

Jaroš A, Bonab EF, Straka* M and Foroutan-Nejad* C

Fullerene-Based Switching Molecular Diodes Controlled by Oriented External Electric Fields

J. Am. Chem. Soc. 2019, 141, 19644−19654

Hellerstedt J, Cahlík A, Stetsovych O, Švec M, Shimizu TK, Mutombo P, Klívar J, Stará IG, Jelínek* P and Starý* I

Aromatic Azide Transformation on the Ag(111) Surface Studied by Scanning Probe Microscopy

Angew. Chem. Int. Ed. 2019, 58, 1 – 7

Director's Award

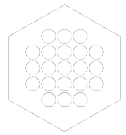
Eyrilmez SM, Köprülüoglu C, Řezáč J, and Hobza* P

Impressive Enrichment of Semiempirical Quantum Mechanics-Based Scoring Function: HSP90 Protein with 4541 Inhibitors and Decoys

ChemPhysChem 2019, 20, 2759–66

Pavlína Řezáčová

Research-Service Groups Evaluation



IOCB Board activities and agenda concerning Research-service groups

2018: Discussions of the Research-service teams with the board, group leaders, and users.

Board initiated and organized individual presentations/discussions of the Research-service teams with the board, group leaders, and users.
The aim was to gather information to make a well informed suggestion to the director of the institute about how to keep the good quality of services provided at IOCB, how to steer it to serve the future needs of IOCB research teams.

Meeting format:
Meeting in the large lecture hall on Tuesdays 10 a.m., presentation plus steered discussion

- Meetings were well attended by current and perspective users.
- Very positive feedback from users, that appreciated information about provided services.

IOCB Board activities and agenda concerning Research-service groups

2019: Evaluation of RSG groups

The IOCB Board believes that **regular evaluation of research-service groups would be helpful in keeping a high quality of services provided at IOCB**. This also represents an opportunity **to steer them according to the future needs of IOCB research groups. Research and service components should be evaluated separately.**

The purpose of the evaluation is:

- Achieving and maintaining high-quality services at IOCB
- Establishing or closing research-service groups
- Motivating research-service groups to conduct their research (collaborative and/or individual)
- Responding to requirements of research-service groups (equipment, space, staff)

Evaluation of RSG was also goal of the previous IOCB Board and was included in IOCB goals and Organization 2016-2020 strategy document.

Document Suggestions of the IOCB Board concerning evaluation of RSG available on intraweb:

https://intraweb.uochb.cas.cz/rada-instituce-57.htm

IOCB Board activities and agenda concerning Research-service groups

2019: Evaluation of RSG groups

The satisfaction of users from research groups is most important. In order to meet users' requirements and to keep the service dynamic and flexible, regular workshops or discussions with users are expected, which should preferably take place once a year. These workshops will be organized independently by the individual research-service groups. In addition, to keep users' feedback continuous, a **Board of Users will be established**.

The members of the Board of Users can either nominate themselves or be nominated by research-service group leaders. The task of the Board of Users is to collect and transmit users' feedback and **to assist the IOCB Director during the evaluation.**

Each research-service group leader will submit an Annual Service Report to the IOCB Director by September/October 2019.

The evaluation of both, the service and research parts, will be internal. The IOCB Director and the IOCB Board will evaluate the research-service groups based on the provided report and will give recommendations.

IOCB Board activities and agenda concerning Research-service groups

- **Evaluation will be internal (not trough IAB)**
- **Evaluation by IOCB Board (research part) and Board of Users (service part)**
- **Evaluation will be based on the provided Evaluation reports**
- **IOCB Board will complete evaluation reports and provide recommendation to IOCB Director**

Evaluation timeline

- Announced in November 2019
- Deadline January 2020
- IOCB Board received reports in April 2020
- Worked on evaluation reports in May-July 2020
- Board of users was created in June 2020
- Worked on evaluation reports July-August 2020
- Evaluation reports finalized and sent to RSG leaders August 2020 (8/25)
- On-site discussion on the reports September 2020 (9/21)
- Recommendation of IOCB Board to Director was drafted in October 2020
- Recommendation of IOCB Board approved in November 2020

Board of Users

1 Iva Pichová
2 Michal Tichý
3 Veronika Sýkorová
4 Jaroslav Šebestík
5 Kvido Stříšovský
6 Jiří Jiráček
7 Marcela Krečmerová
8 Milan Dejmek
9 Milan Vrábel
10 Eva Kudová
11 Rastislav Dzijak
12 Zlatko Janeba
13 Radim Nencka
14 Hana Macíčková Cahov
15 Ivo Starý
16 Jiří Schimer
17 Václav Vaněk

Evaluation of research service groups: recommendation of IOCB Board

General recommendations

- priority of RSG is to guarantee and maintain highest quality service.
- the service component is fully covered by IOCB and budget is negotiated with director/management based on a report on service for the previous year.
- own research is a great way to keep service at top level and is recommended and appreciated
- the research component should be fully covered by external support.

- RSG should actively build and maintain their user base
- regular workshops or discussions with users are expected
- presentation and advertisement of available services or methods should be part of the group webpages with clear instructions and contact persons.

Document Recommendations… will be available on intraweb: https://intraweb.uochb.cas.cz/rada-instituce-57.htm

Evaluation of research service groups: recommendation of IOCB Board

Evaluation

- regular evaluation of research-service groups would be helpful in keeping a high quality of services provided at IOCB
- reports are a good way of documenting the progress and quality of RSGs.
- service and research should be evaluated separately as proposed below

1. annual report on service

✓ Concise annual report about provided services should be submitted to the director in October each year.
✓ Report, will serve as a material for budget and personnel negotiation with director/management.
✓ If purchase of equipment is planned, this report will also serve as a background material for Methodological board.

2. Internal 5-year evaluation of RSG performance

✓ internal evaluation of RSG is recommended to be performed every five years.
✓ evaluation will be organized by IOCB Board and director
✓ research component will be evaluated by IOCB Board.
✓ Board of Users will assist in evaluation of the service component.

3. Internal RSG evaluation of service quality by their users.

✓ RSG leaders to organize surveys on user satisfaction themselves in order to get regular and immediate feedback on the quality of services.

Evaluation of research service groups: recommendation of IOCB Board

Other recommendations

- RSG might contain a targeted research component. This should be taken into account during evaluation.
- in case the research component of RSG is significantly larger than the service component, RSG may apply for promotion to a Research group. The decision will be made by the director after considering the recommendation of the IOCB International Advisory Board and the IOCB Board.
- in case the service provided by the RSG is not in high demand and the user community is rather limited, the service personnel and space of the RSG should be revised.
- if the service demand cannot be met within the current limits increase of personnel and space should be considered, but emphasis should be placed on efficient use of space.

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HR Award

Alena Morávková| 27.11.2020

HR Award is finishing

The materials for HR Award were finalized

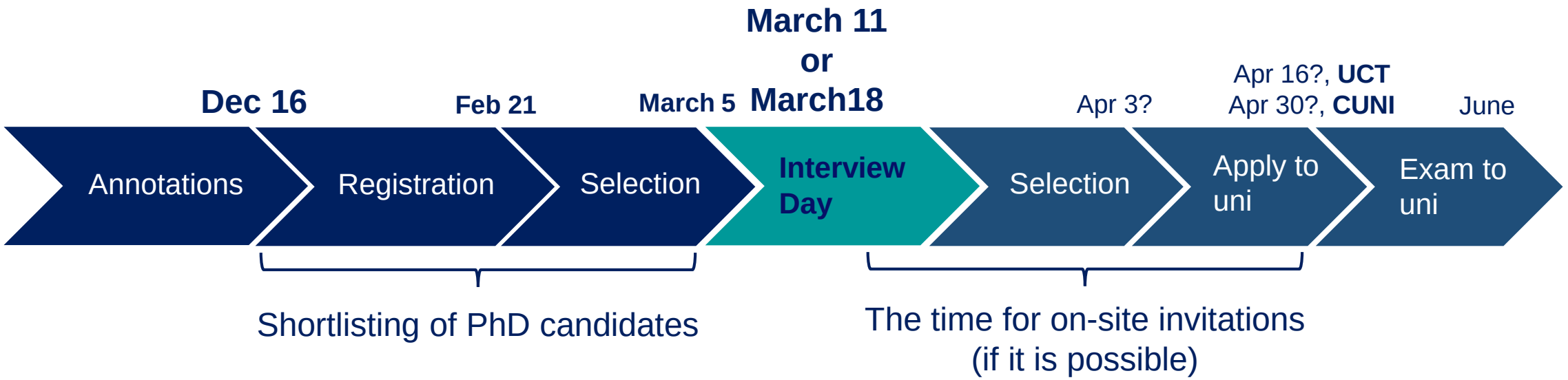
- HR Process (How we prepared analysis, who was involved into the process, timeline)
- GAP analysis (discussed at the GLS meeting in September)
- Action plan for next 2 years (column suggestions from GAP in timeline)
- OTM-R check list (answers to specific questions about recruitment process according to Recruitment part of GAP)

HR Award is finishing

The materials for HR Award were finalized

- Next steps: publication of materials
- Final approval by Board
- Materials will be sent to the EC during December (dead line December 18)
- Comments from the EC
- HR Award (EC projects, TACR bonifications, bonuses in recruitment process)

PhD recruitment strategy for 2021



ANNOTATIONS for PhD projects

ANNOTATION by Wednesday, Dec 16:

Research group
PhD Project (EN/CZ)
University/Faculty
Field of study (EN/CZ)
Supervisor/Supervisor assistent
Abstract (EN/CZ)
References (optional)

Example of the annotation

Please, send your annotations in the word document to PhD Coordinator.

Since Charles University wants us to post PhD project annotations on our website and UCT wants annotations to post also on their website, Alena will collect all PhD projects annotations. Please, let her know if you wish to select the student via PhD Interview Day (**use PID sign, if yes**) or not.

Research group: Milan Vrábel (Chemistry of Bioconjugates)

PhD Project (EN/CZ): Construction of synthetic scaffolds enabling subcellular organelle-specific release chemistry

Příprava syntetických látek umožňujících uvolňování malých molekul v specifických buněčných organelách.

University/Faculty: FCHT / FPBT UCT, PřF UK

Field of study (EN/CZ): Organic chemistry / Organická chemie

Supervisor/Supervisor assistent: Milan Vrábel

Abstract (EN/CZ):

Chemical reactions compatible with biological systems offer unique possibility to manipulate and study biological processes under native conditions. Our group has a long term interest in these, so-called, bioorthogonal reactions. They are mainly known as efficient chemical transformations leading to formation of covalent bonds. It has been only recently when the concept was extended to something what is known as bioorthogonal cleavage reactions. The power of this type of reactions is only slowly becoming recognized. In this project, we aim to construct a new type of releasing systems, which will enable de-caging of small molecules within specific cellular compartments. We believe that such systems will offer not only a unique possibility to deliver small biologically active molecules to particular subcellular location, but in a broader sense, to shed light on the function of individual cellular organelles. This project combines organic chemistry with modern chemical biology experiments.

Chemické reakce kompatibilní s biologickými systémy nabízejí jedinečnou možnost studia biologických procesů za přirozených podmínek. Naše skupina má dlouhodobý zájem o tyto tzv. bioortogonální reakce, které jsou známé především jako účinné chemické transformace vedoucí k tvorbě kovalentních vazeb. Teprve nedávno došlo k jejich rozšíření na něco, co je známé jako bioortogonální štěpné reakce. V tomto projektu se zaměříme na konstrukci nového typu systémů umožňujících uvolňování malých molekul v rámci specifických buněčných částí. Věříme, že takové systémy nám nabídnou nejen jedinečnou možnost doručit malé biologicky aktivní molekuly na konkrétní místo v buňce, ale v širším smyslu povedou i k osvětlení funkce jednotlivých buněčných organel. Tento projekt zahrnuje práci na poli organické chemie a moderní chemické biologie.

References (optional):

1. Jie Li & Peng R Chen, Development and application of bond cleavage reactions in bioorthogonal chemistry, Nature Chemical Biology 2016, 12, 129-137.

PhD INTERVIEW DAY @ IOCB - 2021

Annotations

- Dead-line:
  Wednesday December 16, 2021

On-line Application

- Dead-line:
  Sunday February 21, 2021

Interview Day

- Proposed:
  Thursday March 11/18, 2021?

Interview Day schedule - virtual

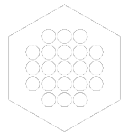
- 1 day
- Welcome speech – the IOCB director – I would go for it even if it is a virtual interview.
- PhD candidates present their thesis in front of the IOCB committees
  - Online (teams, zoom, skype or ?)
- Face-to-face interview
  - Online (it will be scheduled with group leaders)
- A chat room with PhD students of IOCB Prague
- Written test – on group leaders

NO IOCB PhD fellowship

- I am not sure we will be able to guarantee equal validation to all applicants

The time between „Interview Day“ and UNI ADMIN

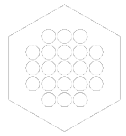
- Invitation already selected candidates during the virtual interview before UNI ADMIN (mid-April „UCT“ or end of April „CUNI“)
- Reimbursement of travel cost (up to some amount – it will be specified) and accommodation for two nights in the Masaryk Dormitory



Miscellanea

Pavel Jungwirth

- DCA and NFMR



Finals of the Dream Chemistry Award 2020

ONLINE EVENT – Live Stream on YouTube

Day 1: November 30th (Monday)

YouTube link

18:00-18:05 (CET)	**Welcome speech** Prof. Marcin Opałło – Director of the Institute of Physical Chemistry PAS
18:05-18:10 (CET)	**Introduction to the Dream Chemistry Award contest** Prof. Robert Hołyst - Institute of Physical Chemistry PAS
18:10-18:50 (CET)	**Yunyan Qiu**, Northwestern University, USA *"Achieving the Holy Grail of Polymer Synthesis Using Catalytic Aritifical Molecular Machines"*
18:50-19:00 (CET)	First break
19:00-19:40 (CET)	**Claudia Bonfio**, University of Cambridge, UK *"Unlocking Primitive Chemical Messages"*
19:40-20:20 (CET)	**Pawel Dydio**, Universite de Strasbourg, ISIS, France *"Artificial Intelligence for Sustainable Chemistry of the Future"*
20:20-20:30 (CET)	Second break
20:30-21:10 (CET)	**Ivana Drienovska**, Vrije Universiteit Amsterdam, The Netherlands *"New-to-Nature Reactivities in Biocatalysis: A Closer Look at Enzymatic Fluorination"*
21:10-21:50 (CET)	**Christopher Hendon**, University of Oregon, USA *"A Chemical Fix for Bad Beverages"*
21:50-22:00 (CET)	Closing speech of the first day of DCA 2020

Day 2: December 1st (Tuesday)

YouTube link

18:00-18:30 (CET)	**Open and Award Ceremony**
18:30-19:30 (CET)	**Lecture of the Dream Chemistry Award 2020 Winner**
19:30-19:40 (CET)	Break
19:40-20:40 (CET)	**SPECIAL EVENT** **Russell Johnson,** Editor at Nature Chemistry "*Perspectives on the chemistry publishing landscape*"
20:50-21:00 (CET)	Closing ceremony

Páté výročí – pět nových držitelek grantu – gratulujeme!

15. 11. 2020

U příležitosti pátého výročí Nadačního fondu se správní rada rozhodla ocenit pět uchazečů:

- Rasha Abdelrahman, MSc. (CEITEC VUT, Brno)
- Mgr. Monika Čechová, Ph.D. (Ústav živočišné fyziologie a genetiky AV ČR, Liběchov)
- Mgr. Anna Mrázová (Jihočeská univerzita v Českých Budějovicích)
- Ing. Markéta Tesařová (CEITEC, Brno)
- Mgr. Anna Týčová, Ph.D. (Ústav analytické chemie AV ČR, Brno)

Blahopřejeme všem vítězkám a jejich rodinám.

New IOCB Parking Rules

New system from mid January 2021

- only registered vehicles of permit holders will be allowed to enter and park
- new applications will be required and permits will be allocated from scratch
- details to be announced in December

Candidate for a member of Academy Council of the CAS

- Election process : November, 30 – December, 4
  on-line, click on link in election e-mail
- Minimum of 50% votes
- Eliglible voters: senior scientists, scientists, associate scientists, postdoctoral fellows, emeriti (V3 – V8)

- Candidate : RNDr. Zdenek Havlas, DrSc.

Support statement for candidate for a member of Science Council of the CAS

- Election process : November, 30 – December, 4
  on-line, click on link in election e-mail
- Minimum of 50% votes
- Eliglible voters: senior scientists, scientists, associate scientists, postdoctoral fellows, emeriti (V3 – V8)

- Candidate : RNDr. Jaroslav Kunes, DrSc., proposed by Institute of Physiology

Candidates for the CryoEM facility manager

- Research-Service Group Leader

- Tomáš Kouba (Grenoble)
- Adam Schröfel (Brussels)
- Alexander Myasnikov (St.Jude Children's Res.Hospital, Memphis, TN)

A plan to choose one of them before the end of the year …

Jr. Group Leader Organic Synthesis Status

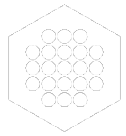
- 8 candidates selected by an appointed committee
  (Michal Hocek, Ullrich Jahn, Ivo Starý)

- Tynchtyk Amatov (MPI für Kohlenforschung, Mülheim)
- A. Michael Downey (MPI of Colloids and Interfaces, Potsdam}
- Indrajit Ghosh (University of Regensburg)
- Philipp Gritch (U of Nat.Resources and Life Sciences, Vienna)
- **Durga Prasada Rao Hari** (University of Bristol) – **back to India**
- Matthew A. Horwitz (University of Oxford)
- Michael Jirasek (University of Oxford)
- Pavla Perlíková (IOCB)

A new call for 2021

Pepa Lazar

- A farewell address



Mtgs w GLs - 2020 Schedule

- January 17
- February 14
- March 25
- April 24
- May 22
- June 26
- September 25
- October 23
- November 27
- December 11-> 18?

Always on Fridays at 10:00 am in the Director‘s Boardroom A4.01 (**or via Zoom**)