



ÚOCHB ^{AV}
IOCB PRAGUE

Meeting with Group Leaders

Jan Konvalinka | June 17, 2022

Agenda

- Introduction of new Vice-directors
- Unfortunate event in Valeč
- Most significant publications 2021
 - External vs. internal
- GSRC 2022-2027
- OP JAK
- IAB visit
- Happy Hours
- Waste water limits
- Miscellanea
 - Proposal: student and postdoc seminars
 - Upcoming events

Organization

- New Vice-director for Research: **Pavlína Řezáčová**
- New Vice-director for International Relations: **Zdeněk Hostomský**
- Vice-director for Strategic Development: **Martin Fusek**
- Vice-director for economic affairs is currently searched for

To contact the Director, please use **director@uochb.cas.cz**

Thank you, Iva!

Unfortunate event during Valeč retreat

- Unacceptable behaviour of one of the employees of the institute
- Unauthorized entry into the room of another employee during the night and inappropriate breaching into her privacy
- The perpetrator was sent away from the retreat the next morning and his working contract to the Institute has been immediately terminated
- The victim was offered assistance including psychological help
- A criminal complaint („trestní oznámení“) has been filed by the victim

Take-home message I

- This kind of behaviour is unacceptable and will not be tolerated
- If you experience any kind of assault or inappropriate behaviour at IOCB, please talk to the ethical proxy/supervisor/director
- In this particular case, the criminal investigation is taking place already and the victim does not wish any publicity
- If approached by the press, please refer to Dušan Brinzanik (IOCB Communications) or to Martin Opatrný (PR Specialist - IOCB Tech, Crisis Communication Specialist for IOCB)

Take-home message II

- The Institute will establish an Ethical Panel and follow the guidelines as outlined in the HR Award principles
- Our Ethical Proxy (Zuzana Kečkéšová) is doing great job; she needs help!
- The second Ethical Proxy needs to be elected!

IOCB Most significant publications 2021

(prepared and presented by Z. Hostomský)

PHYS: 10 submissions (9 for 2020) → **4 awards**

CHEM: 12 submissions (9 for 2020) → **5 awards**

BIO: 10 submissions (11 for 2020) → **5 awards**

- Authors in **red** are IOCB employees.
- Check mark ✓ indicates an agreement between external and internal judges.

Most significant publications 2021 - BIO

External

Cermakova K, Demeulemeester J, Lux V, Nedomova M, Goldman SR, Smith EA, Srb P, Hexnerova R, Fabry M, Madlikova M, Horejsi M, De Rijck J, Debyser Z, Adelman K, Hodges* HC, Veverka V*.

A ubiquitous disordered protein interaction module orchestrates transcription elongation. *Science* **374**, 1113-1121 (2021)

Internal



Most significant publications 2021 - BIO

10

External

Pavel Dostalik, Petra Krafcikova, Jan Silhan, Jan Kozic, Dominika Chalupska, Karel Chalupsky, Evzen Boura*. **Structural Analysis of the OC43 Coronavirus 2'-O-RNA Methyltransferase.** *J Virol.* 2021, vol. 95, Issue 15

Internal

Natalie Ben Abu, Philip E. Mason, H Klein, N Dubovski, Y Ben Shoshan-Galeczki, E Malach, V. Pražienková, L Maletínská, C Tempra, V Cruses Chamorro, J Cvačka, M Behrens, MY Niv*, and Pavel Jungwirth*. **Sweet taste of heavy water.** *Communications biology* (2021)

Most significant publications 2021 - BIO

External

Kristýna Blažková, Jana Beranová, Martin Hradilek, Libor Kostka, Vladimír Šubr, Tomáš Etrych, Pavel Šácha*, and Jan Konvalinka*. **The development of a high-affinity conformation-sensitive antibody mimetic using a biocompatible copolymer carrier (iBody).** *J. Biol. Chem.* (2021) 297(5)

Internal

Tereza Streckerová, Jaroslav Kurfürst, and Edward A. Curtis*. **Single-round deoxyribozyme discovery.** *Nucleic Acids Res.* (2021)

Most significant publications 2021 - BIO

External

Zuzana Hejdankova, Vaclav Vanek, Frantisek Sedlak, Jan Prochazka, Audrey Diederichs, Sami Kereïche, Barbora Novotna, Milos Budesinsky, Gabriel Birkus, Klara Grantz Saskova*, and Petr Cigler*. **Lipid Nanoparticles for Broad-Spectrum Nucleic Acid Delivery.** *Adv. Funct. Mater.* 2021, 2101391

Internal



Most significant publications 2021 - BIO

Director's Award

Adéla Jílková, Martin Horn, Jindřich Fanfrlík, Jim Küppers, Petr Pachi, Pavlína Řezáčová, Martin Lepšík, Pavla Fajtová, Petra Rubešová, Marta Chanová, Conor R. Caffrey, Michael Gütschow*, and Michael Mareš*. **Azanitrile Inhibitors of the SmCB1 Protease Target Are Lethal to *Schistosoma mansoni*: Structural and Mechanistic Insights into Chemotype Reactivity.** *ACS Infect Dis.* 2021, 7, 189-201

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

Most significant publications 2021 - CHEM

External

Rastislav Dzijak, Juraj Galeta, Arcadio Vázquez, Jaroslav Kozák, Marika Matoušová, Helena Fulka, Martin Dračínský, and Milan Vrabel*. **Structurally Redesigned Bioorthogonal Reagents for Mitochondria - Specific Prodrug Activation.** *JACS Au* 2021, 1, 23–30

Internal



Most significant publications 2021 - CHEM

External

Internal

Denise-Liu' Leone, Martin Hubálek, Radek Pohl, Veronika Sýkorová, and Michal Hocek*. **1,3-Diketone-Modified Nucleotides and DNA for Cross-Linking with Arginine-Containing Peptides and Proteins.** *Angew. Chem. Int. Ed.* 2021, 60,17383–17387

Most significant publications 2021 - CHEM

External

David Kodr, Cansu Pinar Yenice, Anna Simonova, Dijana Pavlović Saftić, Radek Pohl, Veronika Sýkorová, Mayreli Ortiz, Luděk Havran, Miroslav Fojta, Zbigniew J. Lesnikowski, Ciara K. O'Sullivan, and Michal Hocek*. **Carborane- or Metallocarborane-Linked Nucleotides for Redox Labeling. Orthogonal Multipotential Coding of all Four DNA Bases for Electrochemical Analysis and Sequencing.** *J. Am. Chem. Soc.* 2021, 143, 7124–7134

Internal



Most significant publications 2021 - CHEM

External

Katerina Svehlova, Ondřej Lukšan, Martin Jakubec, and Edward A. Curtis*. **Supernova: A Deoxyribozyme that Catalyzes a Chemiluminescent Reaction.** *Angew. Chem. Int. Ed.* 2022, 61, e202109347

(Biochemistry Hot Paper)

Internal



Most significant publications 2021 - CHEM

Director's Award

Markéta Pimková Polidarová, Petra Břehová, Martin Maxmilian Kaiser, Miroslav Smola, Martin Dračínský, Joshua Smith, Aleš Marek, Milan Dejmek, Michal Šála, Ondrej Gutten, Lubomír Rulíšek, Barbora Novotná, Andrea Brázdová, Zlatko Janeba, Radim Nencka, Evzen Boura, Ondřej Páv, and Gabriel Birkuš*. **Synthesis and Biological Evaluation of Phosphoester and Phosphorothioate Prodrugs of STING Agonist 3',3'-c-Di(2'F,2'dAMP).** *J. Med. Chem.* 2021, 64, 7596–7616

Most significant publications 2021 - **PHYS**

External

Philip E. Mason, H. Christian Schewe, Tillmann Buttersack, Vojtech Kostal, Marco Vitek, Ryan S. McMullen, Hebatallah Ali, Florian Trinter, Chin Lee, Daniel M. Neumark, Stephan Thürmer, Robert Seidel, Bernd Winter, Stephen E. Bradforth, and Pavel Jungwirth*. **Spectroscopic evidence for a gold-coloured metallic water solution.** *Nature* 595, 673-676 (2021)

Internal



Most significant publications 2021 - **PHYS**

External

Miroslav Smola, Ondrej Gutten, Milan Dejmek, Milan Kožíšek, Thomas Evangelidis, Zahra Aliakbar Tehrani, Barbora Novotná, Radim Nencka, Gabriel Birkuš, Lubomír Rulíšek*, and Evzen Boura*. **Ligand Strain and Its Conformational Complexity Is a Major Factor in the Binding of Cyclic Dinucleotides to STING Protein.** *Angew. Chem. Int. Ed.* 2021, 60, 10172–10178

Internal



Most significant publications 2021 - **PHYS**

External

B. Mallada, A. Gallardo, **M. Lamanec**, B. de la Torre, **V. Špirko**, **P. Hobza***, P. Jelinek*. **Real-space imaging of anisotropic charge of s-hole by means of Kelvin probe force microscopy.** *Science* 374, 863–867 (2021)

Internal



Most significant publications 2021 - PHYS

External

Benjamin Mallada, Bruno de la Torre*, Jesús I. Mendieta-Moreno, **Dana Nachtigallová***, Adam Matěj, Mikulas Matoušek, Pingo Mutombo, Jiri Brabec, Libor Veis*, Timothée Cadart, Martin Katora*, and Pavel Jelínek*. **On-Surface Strain-Driven Synthesis of Nonalternant Non-Benzenoid Aromatic Compounds Containing Four- to Eight-Membered Rings.** *J. Am. Chem. Soc.* 2021, 143, 14694–14702

Internal

Moumita Das,
D Gangopadhyay, J Šebestík,
L Habartová, P Michal,
J Kapitán, and **Petr Bouř*.**
Chiral detection by induced surface-enhanced Raman optical activity. *Chem Commun* (2021)

GSRC 2022–2027

(prepared by M. Fusek)

- agreement will be signed around end of June / fingers crossed
- there will be at least one month for the proposal submission
- proposal will be structured and max. 5 pages
- the scope of supported projects will be mainly in fields of: infectious diseases, oncology, fibrosis and inflammation.
- focus mainly on small molecules
- the selection of projects will be done by the Joint Steering Committee and the projects will be focused on concrete application in the above mentioned areas
- there will be a maximum of 4 projects running in one year
- the total maximum funding over the 5 years period shall be \$3.5M.
- funding provided by Gilead to each of the selected projects will be in accordance with each approved project budget.
- aggregate funding for all projects per year cannot exceed \$700K.
- if funding amount for a year is less than \$700K any difference in amount will be rolled over and added to the \$700K for the next year.
- if a project requires any external collaboration with another academic institution or entity, it must be announced in advance and relevant agreements must be signed before any such collaboration can be made part of the project.

Operational program Jan Amos Komenský OP JAK

- Excellent Research subprogram, approx. 8 mld CZK
- Max 500 mil CZK per project, limit for the application from an institution
- IOCB could apply for 2 projects (CUNI for 5, btw); number of co-application unlimited
- Application encouraged, companies not eligible

Emerging projects at IOCB

- “RNA project” – H. Cahová, M. Hocek
- “Materials science project” – T. Slanina, I. Starý
- eCOMAT - P. Hobza (outside IOCB)

International Advisory Board visit

Friday, June 24, 2022 (IOCB Lecture Hall – A.2.01)

9:00 Welcome and introductions – Jan Konvalinka

Senior Group Leaders' 5-year evaluations

9:10 Petr Cígler

9:50 Evžen Bouřa

10:30 ---- Coffee break ----

Distinguished Chairs' presentations

10:55 Pavel Hobza

11:45 Pavel Jungwirth

12:35 ---- Lunch and closed IAB discussion ----

An ERC opportunity presentation

14:00 Petr Šulc (Arizona State University, Tempe)

Interview presentations for a Junior Group leader position in Organic Chemistry

14:30 Thomas Mies (Imperial College, London)

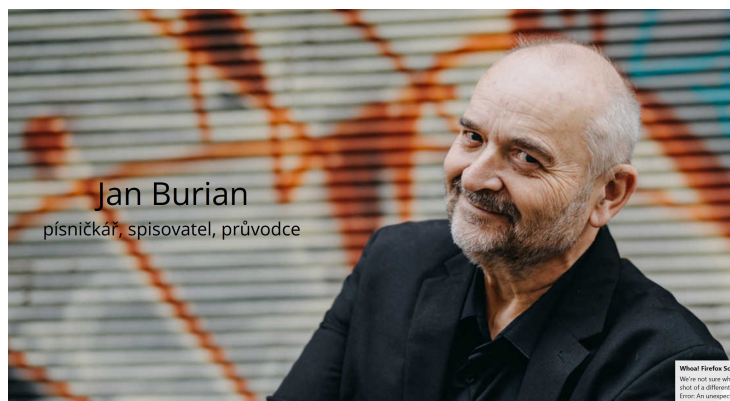
15:00 ---- Coffee break ----

15:25 Rafael Navrátil (Charles University, Prague)

15:55 Paulo Paioti (University of Strasbourg)

16:25 Ciro Romano (Inst. Catalá d'Investigació Química, Tarragona)

Happy Hours



16:30 Opening by the new Director

17:00 Concert of Jan Burian

Food, drinks and fun until 21:30

Special guests:

- IAB members
- Applicants for Junior Group in organic chemistry
Chaperones for them needed! (Organic chemists, preferably junior scientists)

WARNING: Exceeded limits for the contamination of waste water!

(prepared by K. Šobíšek)

Jedná se o překročení

	pv 25.3.2022	pv 27.4.2022	kanalizační řád (pv)
BSK ₅	1800 mg/l	1300 mg/l	900 mg/l
CHSK _{Cr}	3000 mg/l	2300 mg/l	2000 mg/l
Trichlormethan (Chloroform)	158 µg/l	38 µg/l	10 µg/l

- Please, do separate organic solvents from common waste (including solid waste, e.g. glass)
- More information will be sent via news
- Call for “safety proxy” person!

Miscellanea

Proposal: student and postdoc seminars

(prepared by T. Pluskal and H. Cahová)

- Why?**
- there are several student/postdoc seminars running in the institute
 - presentations are not advertised, seminars are not “official”
- How?**
- we propose three official bi-weekly seminars **BIO** **CHEM** **PHYS**
 - seminars organized by the secretariat, rotating groups in each cluster
 - group leaders nominate the speakers from their group
 - seminars announced in weekly emails and on the hallway screens
 - IOCB seminar room as the venue, seminars open to all employees
- Benefits**
- students get used to present in a more official atmosphere
 - everyone knows the speakers and titles of the coming talks

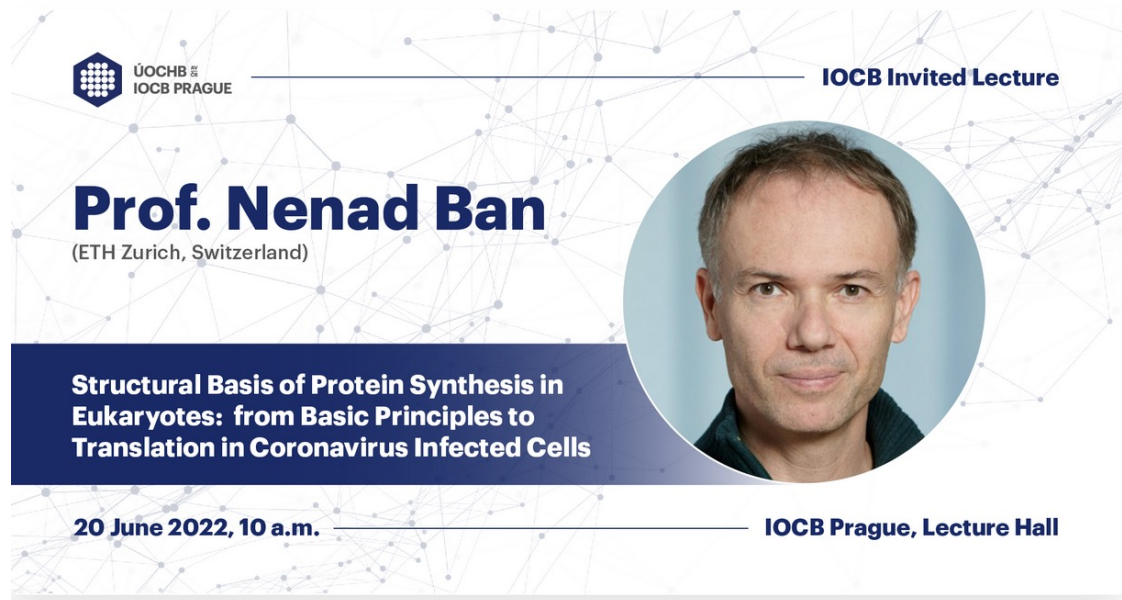
Upcoming events

IOCB INVITED LECTURE

Invited Lecture – Nenad Ban

20 June 2022

📍 IOCB Prague



UOCHB & IOCB PRAGUE

IOCB Invited Lecture

Prof. Nenad Ban
(ETH Zurich, Switzerland)

Structural Basis of Protein Synthesis in Eukaryotes: from Basic Principles to Translation in Coronavirus Infected Cells

20 June 2022, 10 a.m. IOCB Prague, Lecture Hall

IOCB INVITED LECTURE

Invited Lecture – Michaela Frye

6 September 2022

IOCB Prague

Prof. Michaela Frye (Deutsches Krebsforschungszentrum, Heidelberg, Germany)

Lecture: Targeting RNA Modifications in Cancer



IOCB INVITED LECTURE

Invited Lecture – Eva Nogales

4 October 2022

IOCB Prague

Prof. Eva Nogales (University of California, Berkeley, CA, USA)

Lecture: Cryo-EM to Study Structure, Dynamics and Interactions of Large Protein Complexes



IOCB INVITED LECTURE

Invited Lecture – Daniel G. Anderson

31 October 2022

IOCB Prague

Prof. Daniel G. Anderson (Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology, Cambridge, MA, USA)



Thanks to I. Stará for organizing Invited lectures

Upcoming events (dense September)

- 8th Prague-Weizmann Summer School **Sept 5-9, 2022**
- Invited Lecture: Michaela Frye **Sept 6, 2022**
- The Elegance of the Molecule - Symposium in Leuven **Sept 7-8, 2022**
- Tony Holý Lecture (Pete Schultz) **Sept 9, 2022**

Mtgs with GLs - 2022 Schedule

- January 28
- February 18
- March 31
- April 29
- May 20
- June 17
- September 23
- October 21
- November 18
- December 16

Always on Fridays at 10:00 am in the Director's Boardroom A.4.01 (and/or via ZOOM)