



INTERNATIONAL TRANSMEMBRANE TRANSPORTER SOCIETY

Newsletter

A Word from the President

Dear Transporterologists,

It is difficult for me to believe that my two years as President of the ITTS is fast coming to a close. While it is disappointing that ITTS2020 in Copenhagen had to be rescheduled, it has been wonderful to see ITTS hold strong. In the last two years, we have seen our membership hold steady, explored a partnership with Frontiers in Physiology, and have welcomed new members to our Executive Committee and Council. Vice President, Balázs Sakardi, will begin his two-year term as President, effective January 1, 2021, opening up a position for a new Vice President. A call for nominations is within this newsletter.



It is with great sadness that we learned on May 26 of the passing of one of the world's greatest scientific minds, Oleh Hornykiewicz. An obituary, written by our immediate past President, Harald Sitte, and Christian Pifl, is within.

As the pandemic continues, ITTS leadership remains optimistic that our society will continue to thrive. With hope of a COVID-19 vaccine on the horizon, we are optimistic that the postponed ITTS2020 meeting in Copenhagen will take place at the rescheduled dates of Jun 8-11, 2021. We will keep you up-to-date with developments as they come to hand. With Experimental Biology (EB) 2021, April 27-30, taking place virtually, we will schedule our annual business meeting, virtually, around the same time. Stay tuned for details, and remember that as a guest society at EB, ITTS members receive discounted registration, and ability to sponsor abstract submissions. In other news, after much debate and consideration, the ITTS Executive Committee unanimously decided against partnering with

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Frontiers in Physiology, Membrane Physiology section. We continue to pursue other avenues to associate our society with a journal that will be of mutual benefit to both parties.

Also included in this issue you will find a call from guest editor, Laura Bianchi, for contributions to a Special Issue of the International Journal of Molecular Sciences on "Glial Ion Channels and Transporters in Health and Disease", updates on ITTS "2020" and Brain in Flux "2021", alerts to new publications from our members, and don't forget to checkout our "Transporter Fun Corner".

In order to maintain our vibrant society during the pandemic, I urge you to keep your membership current. You can do so here <http://www.ittsociety.org/member-login>. A key advantage of membership includes substantial reductions in registration fees for our biennial meetings.

As always, I give my thanks to our Secretary, Sonja Sucic, and Associate Councilor, Lee Gilman, for putting this newsletter together. In closing, it has been a delight to be a part of ITTS for so many years, since its inception in 2014, to now. I look forward to continuing to contribute to the ITTS in my term as Immediate Past President, and to seeing many of you in person as soon as the pandemic permits. Please stay safe and healthy.



Lynette C. Daws, PhD

President

A Tribute to Prof. Oleh Hornykiewicz

The former president of our society, Prof. Harald H. Sitte, a former student of the late Prof. Hornykiewicz, kindly contributed (together with Christian Piffl) the following tribute to his very first research mentor.

Oleh Hornykiewicz was born 94 years ago, in Sykhiv near Lviv, in East Galicia, then Poland and now Ukraine. After attending the Sperlgynasium in Vienna, he studied medicine at the University of Vienna, graduating as a doctor of general medicine in 1951. He immediately took an unpaid post as a research assistant at the University's Institute of Pharmacology, directed by Professor Franz von Brücke at the time. In 1956, he moved to the Institute of Pharmacology in Oxford on a British Council scholarship. Oleh's interest in catecholamine research began in the laboratory of Hermann Blaschko, an Anglo-German biochemist. Following his return to Austria in 1958, he accepted a post as a university assistant at the Institute of Pharmacology at the University of Vienna, where he, inspired by his time in Oxford, continued working on catecholamines.

Oleh pursued the hypothesis of dopamine being a distinctive neurotransmitter, evident from his papers on the blood pressure-lowering effect of dopamine in guinea pigs, mediated by dopamine receptors. In 1960, he published his ground-breaking paper, on the loss of dopamine in basal ganglia in the brain tissues of Parkinson's disease patients, written in conjunction with Herbert Ehringer. Upon the loss of dopamine in the corpus striatum, Oleh made the revolutionary inference of the possibility of replacing dopamine with its precursor molecule, L-DOPA. Just a year later, he and Walter Birkmayer validated the therapeutic effect of L-DOPA in Parkinson's disease patients. In subsequent years, Oleh continued to work on the pathophysiological mechanisms underlying Parkinson's disease and L-DOPA.



A photo taken by Harald Sitte in 2016 of Oleh Hornykiewicz, sitting in his office in the Center for Brain Research, during a brainstorming session finalizing their last joint paper on the implications of reduced dopamine and noradrenaline levels in the claustrum of Parkinson's disease patients.

He obtained his postdoctoral qualification in pharmacology and toxicology in Vienna in 1964. Soon after in 1967, he took a position as Professor of Psychopharmacology at the Department of Pharmacology and Psychiatry of the University of Toronto and the associated post as Head of the Department of Psychopharmacology at Clarke Institute of Psychiatry, Toronto, Canada, and, in 1973, was also appointed as a professor at the Department of Psychiatry, University of Toronto. During this time period, his research work focused on investigating the neurochemical and neuropathological changes in the brains of patients suffering from various neurological and psychiatric disorders. In 1976, he was recruited back to the University of Vienna, becoming the head of the newly founded Institute of Biochemical Pharmacology (while simultaneously holding the position of the Head of the newly established Human Brain Laboratory at the Clarke Institute in Toronto, Canada). His work at the Viennese in-

stitute focused on animal experiments, while his working group at the Clarke Institute carried out clinical neuropathological studies. He retired from the Clarke Institute in 1992 and from the University of Vienna in 1995. However, Oleh continued to serve as interim head of the Vienna institute up until 1999, playing a chief role in establishing the Viennese university's Center for Brain Research, now located at the Medical University of Vienna. The Institute of Biochemical Pharmacology became part of this new center.

In collaboration with renowned researchers in the transporter field, including Marc Caron, Bruno Giros and Christian Piffl, to name just a few, Oleh Hornykiewicz authored many papers on transporter proteins over the past couple of decades. These studies focused largely on the human dopamine and norepinephrine transporters, and the mechanisms of action of psychostimulants such as amphetamine, cocaine and mephedrone, as well as parkinsonism inducing agent 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) and its neurotoxic metabolite 1-methyl-4-phenylpyridinium (MPP+). Oleh was the recipient of numerous prizes and awards. To name just a few, in addition to the highest honours of the Austrian Republic and the City of Vienna, he and Arvid Carlsson were awarded the Wolf Prize in 1979, for their new approach to handling Parkinson's disease using L-DOPA. This prize, awarded by the Wolf Foundation in Israel, deems as one of the most prestigious prizes in natural sciences, after the Nobel prize. In fact, like many other Wolf Prize-winners, Arvid Carlsson went on to win the Nobel Prize in 2000 (together with Paul Greengard and Eric Kandel) for their discoveries relating to signal transmission in the nervous system. The fact that Oleh's contribution, in identifying the role of dopamine in Parkinson's disease and its treatment with L-dopa, failed to be recognized prompted an open letter to the Nobel Prize Committee in 2001. The letter was signed by 230 scientists, who all expressed their regret over the omission of Oleh Hornykiewicz from the prize.

Oleh's commitment to the Center for Brain Research was lifelong, as he continued to work in his office almost daily even well into his 90s, giving the staff and students in the Center the benefit of his sharp wit. With his passing, the Medical University of Vienna lost an outstanding neuroscientist. He certainly was one of the few who truly deserve the title of "discoverer", as the therapy he developed left a mark in a profound and lasting way.

By Christian Pifl and Harald H. Sitte
 Medical University of Vienna, Austria

Further Links of Interest

[Video](#)

[Autobiography](#)

[On the occasion of Oleh's 90th birthday](#)

[Remembering a Titan](#) - mention of the book and Hollywood film Awakenings, inspired by Oleh's L-Dopa miracle

[Facebook](#)

[ResearchGate](#)

Call for Papers Special Issue



International Journal of
Molecular Sciences
 an Open Access Journal by MDPI

The open access journal International Journal of Molecular Sciences (IJMS (ISSN 1422-0067, IF 4.556)) is pleased to announce a new Special Issue entitled "Glial Ion Channels and Transporters in Health and Disease".

I cordially invite you and your colleagues to contribute full research articles and comprehensive review papers for peer-review and possible publication in this special issue. The paper from your group will be treated with high priority during the processing and be published once accepted.

The submission deadline is 30 April 2021 and

papers may be submitted immediately or at any point up until the deadline, as papers will be published on an ongoing basis.

For more information on this Special Issue and submission guidelines, please visit pages on the [special issue](#) and [submission instructions](#).

Guest Editor, Prof. Laura Bianchi
 University of Miami

ITTS Guest Society at Experimental Biology 2021

The ITTS has been a guest society at the annual Experimental Biology (EB) meeting since 2018. There is no financial obligation to either party, nor revenue sharing. As a guest society, we promote abstract submissions and attendance at EB to our members. In exchange, EB provides ITTS:

- Visibility to a larger pool of life scientists across all the EB disciplines by listing our society in all EB electronic and print publications where guest societies are listed.
- The same EB registration discounts that members of the American Society for Pharmacology and Experimental Therapeutics (ASPET) receive.
- Ability to sponsor abstracts, without needing to be an ASPET member.
- Promotion of ITTS organized symposia, and annual business meeting on the ASPET website.

Please plan to attend, and present your research at the VIRTUAL [Experimental Biology Meeting](#), April 27-30, 2021.

SAVE
 THE DATE!

EB
 Experimental Biology
2021 APRIL
 27-30

Call for Vice President

We are seeking nominations for Vice President. A description of the terms and duties for this position, as appears in the ITTS constitution, is below. **Please note that the two Vice Presidents cannot be from the same continent. Current VP, John Schuetz is from North America, therefore, the VP replacing Balázs Sakadi, cannot be from North America.**

The Vice-Presidents shall each be elected for a term of four years, with no re-election to that position. The Vice-President positions cannot be simultaneously held by individuals based in the same continent. Their duties consist of arranging the scientific and social program of dinner/mixer meetings of the Society, advising the President, and assisting with general operations of the Society including membership drives and production of a biannual newsletter. Vice-Presidents will be elected such that their terms are two-years out of cycle.

Nominations will close December 20, 2020. Please email your nomination, together with curriculum vitae of nominee to ittsociety@ittsociety.org. Self nominations are welcome.

Brain in Flux Update

The satellite meeting of the International Society for Neurochemistry (ISN), titled "The Brain in Flux: Genetic, Physiologic, and Therapeutic Perspectives on Transporters in the Nervous System" has been moved from 2021 to 2022 due to the ongoing pandemic. This fifth "biennial" gathering of scientists who study various aspects of brain transporters, ranging from structural studies to the roles of transport in physiology and pathophysiology is being organized by Drs. Parry Hashemi, Hidenori Aizawa, and Michael Robinson with the support of an organizing committee composed of internationally recognized leaders in the field.

The meeting will be held in the vicinity of Kyo-

to, Japan. It will be 3.5 days long starting on August 25, 2022 with departures on the morning August 29, 2022 with an easy transfer to the main ISN meeting in Kyoto.

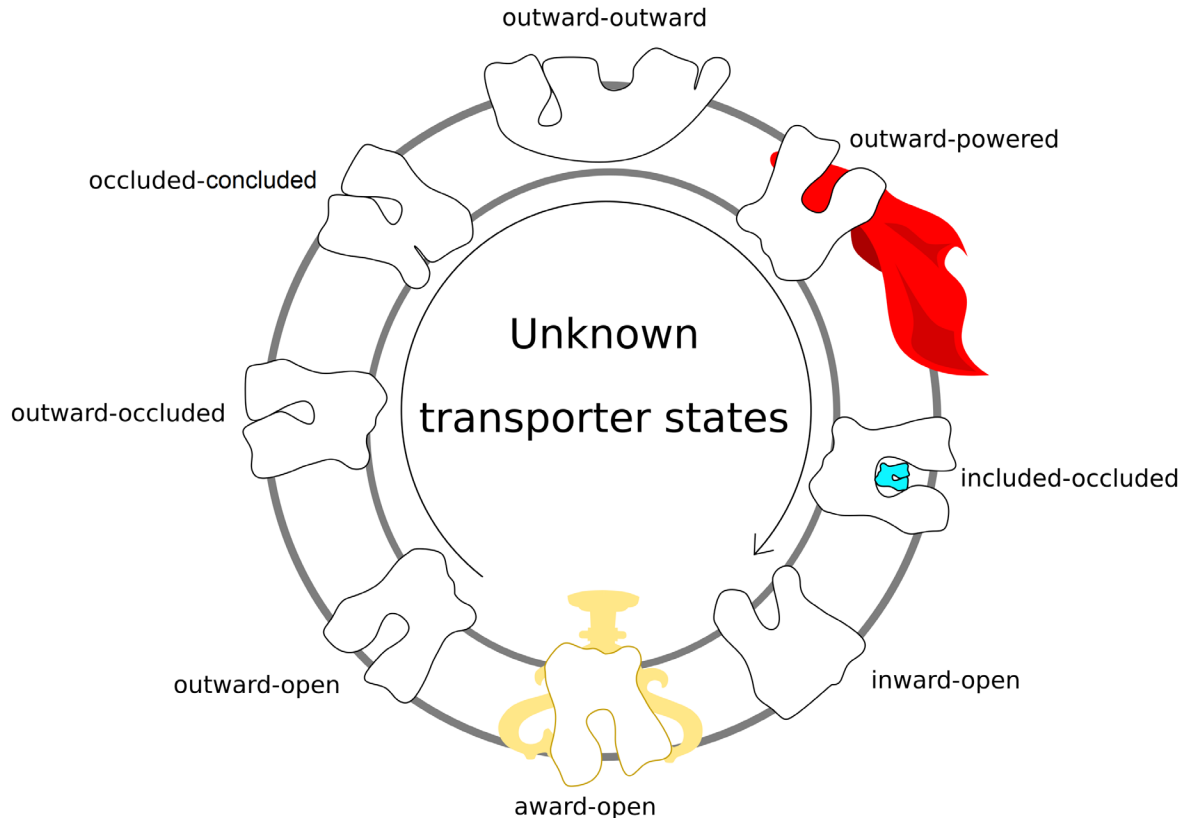
As has been a tradition of this transporter meeting, there is essentially no overlap of invited speakers with those who presented at earlier meetings, at least half of the presenters will be chosen from submitted abstracts, and there will be an emphasis on opportunities for trainees and early-stage faculty to present their work. The organizers are committed to encouraging diversity of the science as well as presenters/attendees. The venue will be chosen to encourage interactions. As additional information becomes available, it will be posted at the ITTS website with links to additional information and registration information.

Student and Post-Doctoral ITTS Chapters Welcome

ITTS welcomes applications for local Chapters of ITTS, comprised of students and post-doctoral fellows. To form a Chapter, have your mentor nominate you as leader of that Chapter, and provide assurance of your rank, good academic standing, and commitment to the ITTS. Please also provide a name for your Chapter. Annual dues for Chapter members is only \$10, and paid by your mentor (with their blessing, of course). Chapter members will receive a member card, and have this as a valuable addition to their curriculum vitae. ITTS Chapters will be evaluated annually for their contributions to the society. The role of Chapters is to encourage active involvement with the ITTS through local outreach events, and attracting new members. Inactive Chapters, as deemed by the ITTS Executive Committee and Council, will be disbanded.

Please send applications to ITTS secretary, Dr. Sonja Sucic at sonja.sucic@meduniwien.ac.at

Transporter Fun Corner



Updates from Slotboom Lab

Rempel, S., Gati, C., Nijland, M. et al. [A myco-bacterial ABC transporter mediates the up-take of hydrophilic compounds](#). *Nature*, 580, 409-412 (2020)

Arkhipova, V., Guskov, A., & Slotboom, D. J. [Structural ensemble of a glutamate transporter homologue in lipid nanodisc environment](#). *Nat Comm* 11(1), 998 (2020)

Faustino, I., Abdizadeh, H., Souza, P.C.T. et al. [Membrane mediated toppling mechanism of the folate energy coupling factor transporter](#). *Nat Commun* 11, 1763 (2020)

Garaeva, A. A., & Slotboom, D. J. [Eleva-tor-type mechanisms of membrane transport](#). *Biochem Soc Trans* 48(3), 1227-1241 (2020)

Update from Erdő Lab

Bajza, A., Kocsis, D., Berezhvai, O. et al. [Verification of P-glycoprotein function at the dermal barrier in diffusion cells and dynamic "skin-on-a-chip" microfluidic device](#). *Pharmaceutics*, 12(9), 804 (2020)

Update from Blakely Lab

Quinlan, M.A., Robson, M.J., Ye, R. et al. [Ex vivo quantitative proteomic analysis of serotonin transporter interactome: Network impact of the SERT Ala56 coding variant pharmaceuticals](#). *Front Mol Neurosci*, 13, 89 (2020)

Update from Tsai Lab

Kelly, E., Meng, F., Fujita, H. et al. [Regulation of autism-relevant behaviors by cerebellar-prefrontal cortical circuits](#). *Nat Neurosci*, 23(9), 1102-1110 (2020)

Update on RESOLUTE

RESOLUTE

Update on RESOLUTE by Álvaro Inglés-Prieto, Ph.D., communication manager

Below is a list of recent publications by RESOLUTE

Girardi, E., César-Razquin, A., Lindinger, S. et al. [A widespread role for SLC transmembrane transporters in resistance to cytotoxic drugs](#). Nat Chem Biol 16, 469-478 (2020)

Heinz, L.X., Lee, J., Kapoor, U. et al. [TASL is the SLC15A4-associated adaptor for IRF5 activation by TLR7-9](#). Nature 581, 316-322 (2020)

Bensimon, A., Pizzagalli, M.D., Kartnig, F. et al. [Targeted degradation of SLC transporters reveals amenability of multi-pass transmembrane proteins to ligand-induced proteolysis](#). Cell Chem Biol 27(6), 728-739.e9 (2020)

Meixner, E., Goldmann, U., Sedlyarov, V. et al. [A substrate-based ontology for human solute carriers](#). Mol Syst Biol 16, e9652 (2020)

Kell, D.B. [Hitchhiking into the cell](#). Nat Chem Biol 16, 367-368 (2020)

Colas, C., Banci, G., Martini, R. et al. [Studies of structural determinants of substrate binding in the Creatine Transporter \(CreaT, SLC6A8\) using molecular models](#). Sci Rep 10, 6241 (2020)

Superti-Furga, G., Lackner, D., Wiedmer, T. et al. [The RESOLUTE consortium: unlocking SLC transporters for drug discovery](#). Nat Rev Drug Discov 19(7), 429-430 (2020)

For more information, see the RESOLUTE website <https://re-solute.eu> or their Twitter account [@RESOLUTE_IMI](#).

BECOME A MEMBER

Renew Your Membership or Join ITTS Now

Payment can be made by credit card (via PayPal) or by check.
Details on how to pay can be found at <http://www.ittsociety.org/join-itts>.

ITTS 2021 Status



June 8-11 in Copenhagen

The recent announcement that a COVID-19 vaccine might already be available by the end of this year is indeed good news for the planning of meetings in the spring and summer of 2021. If this forecast is realized, we expect to proceed with the ITTS2021 on June 8-11 in Copenhagen as planned. Naturally, we will follow the situation closely and announce any changes on the ITTS web page, newsletters and e-mail lists. With a few exceptions, all presenters have confirmed their engagement and are ready to attend the new meeting dates. We have found excellent substitutions for the two presenters that were unable to make it.

Accordingly, the meeting is intact and still represents world leading science within multiple aspects of membrane transport proteins. The ITTS2021 web site has been updated so registration is now open, including the booking of accommodation at a selection of nearby hotels at discounted rates. If you wish to extend your stay at either end of the meeting, please send a request to the conference administrator (bo@cecevent.dk). *Importantly: we guarantee a full refund of your registration fee if we are forced to cancel due to COVID-19.*



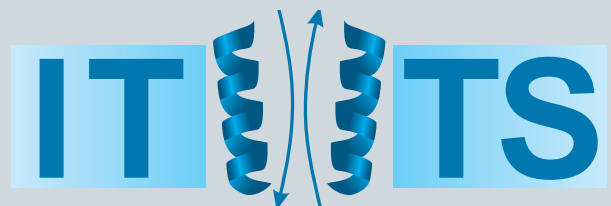
2nd International Transmembrane Transporter Society Meeting
CATCHING TRANSPORT IN MOTION

Open Positions & Job Announcements



Please welcome a brand new addition to our "News" page on the ITTS website! We hope the "Jobs Corner" will serve as a convenient platform for group leaders to announce open positions in their labs and institutions, for researchers at various stages of their career (PhD, Postdoc and beyond). Should you like to post a job opening, please send an email to Dr. Sonja Sucic (sonja.sucic@meduniwien.ac.at).

<http://www.ittsociety.org/new-page>



**International Transmembrane
Transporter Society**

**Not Sure of Your
Membership Status?**

Go to our secure website to check whether your membership is current:
<http://www.ittsociety.org/member-login>

ITTS Executive Committee



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University of Texas Health
Science Center at San Antonio,
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Past President

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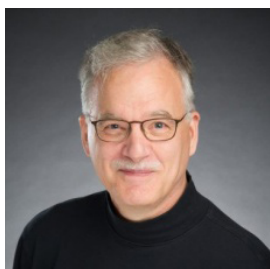
Medical University of Vienna,
Vienna, Austria



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Balázs Sarkadi, M.D., Ph.D.

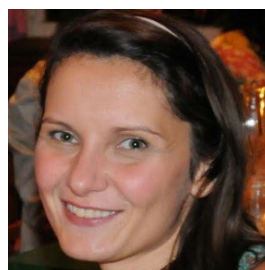
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