

NSFT

Norsk Selskap for Farmakologi og Toksikologi

Annual Report 2021 – Toxicology section NSFT

This is the Toxicology board's report for our activities during February 2021 through January 2022. This report is submitted for approval at the toxicology board's annual meeting which will be held digitally using Zoom from **15.30-16:00** on January 27th 2022.

1. The composition of the board

The board members for the toxicology section in 2021 were as follows:

Leader – Jason Matthews (2019-2023) – UiO, Oslo
Vibeke Ansteinsson, (2019-2023)- TKØ, Oslo
Christian Kruse Fæste, (2021-2023)- VI, Oslo/Ås
Odd Andre Karlsen (2020-2022) – UiB, Bergen
Dag Markus Eide (2019-2023) – FHI, Oslo
Marie Dahlberg Persson (2020-2022) – Miljødirektoratet, Oslo
Johanna Samulin Erdem (2020-2022) – Stami, Oslo

Jason Matthews has been the representative of the section on NSFT's main board
Nomination Committee for 2021: Shan Zienolddiny and Hubert Dirven

2. The work of the board

The board had six digital meetings and several email communications during the year.

Jason Matthews participated in the Eurotox 2021 digital business meeting (September 2021).

3. Membership

NSFT members =259
Toxicology section only members = 125 (Pharm only 63)
Members of both toxicology and pharmacology = 31
Total members that associate with toxicology = 156

*Members that wrote "no" or left the section "blank" = 40

4. Meetings/Conferences

Joint Pharmacology/Toxicology Digital Spring Meeting (Vintermøtet 2021)

The program for the Zoom digital spring meeting was as follows:

13:00 Welcome - by NSFT's leader Mohammad Nouri Sharikbad

13:05 Winner of NSFT's award for best publication 2020; toxicology.

Anna Jacobsen Lauvås, Folkehelseinstituttet: Exposure to human relevant mixtures of halogenated persistent organic pollutants (POPs) alters neurodevelopmental processes in human neural stem cells undergoing differentiation.

13:25 Winner of NSFT's award for best publication 2020; pharmacology.

Ngoc Nguyen Lunde, Department of Pharmacy, UiO: Legumain is upregulated in acute cardiovascular events and associated with improved outcome - potentially related to anti-inflammatory effects on macrophages

13:45 Pause

Coronavirus and Covid19 Theme Meeting:

14:00 Susanne Dudman, Chief Physician at the Department of Microbiology, OUS and Associate Professor UiO: SARS - CoV - 2: virology and pathogenesis

14:30 Magnhild Eide MacPherson, chief physician at the Department of Infectious Diseases, OUS: Treatment of patients with covid-19

15:00 Maja Sommerfelt Grønvold, Senior Advisor clinical assessment, Norwegian Medicines Agency: Covid-19 vaccination platforms, treatments, and approval processes.

15:30 Rounding off

5. Vintermøtet 2022 postponed and will be held in May 2022

The winter meeting scheduled for January 27th to 30th 2022 in Beitostølen was postponed due to coronavirus pandemic. The meeting will be re-scheduled and take place in early May 2022 at a venue closer to Gardermoen. The same research themes and sessions are planned. More information will be provided once everything has been confirmed.

The board proposed several topics for the symposium:

- Current trends in Nanotoxicity
- Microbiota
- The aryl hydrocarbon receptor – from toxicity to a novel therapeutic target for human diseases (BCPT sponsored Nordic Symposium)
- Using fish as models for identifying toxic drivers and mechanisms of toxicity; results from three interconnected projects

The Toxicology section has so far received 9 abstracts for poster/presentation for the Spring/postponed winter meeting 2022. We hope for more when the new dates and venue are announced.

The ***Joint Pharmacology/Toxicology Digital Spring Meeting*** which replaced the 2021 winter meeting was organized in place of a spring meeting due to Coronavirus Pandemic.

Nominasjon av NSFT's publikasjonspris innen toksikologi for 2021

Since 2014, NSFT has awarded a prize for the year's best publication from Norwegian based Researchers within pharmacology and toxicology (accepted for publication in the period 1 November the year before to 31 October this year).

The deadline for submission/nomination of an article was mid-December. The committee consisted of Dag Markus Eide (FHI) and Tim Hofer (FHI). The evaluation committee received 3 nominations.

Aranguren-Abadía, L., Yadetie, F., Donald, C. E., Sørhus, E., Myklatun, L. E., Zhang, X., Karlsen, O. A. (2022). Photo-enhanced toxicity of crude oil on early developmental stages of Atlantic cod (*Gadus morhua*). *Science of the Total Environment*, 807. <https://doi.org/10.1016/j.scitotenv.2021.150697>

Artikkelen vinner fordi den tar opp et sentralt tema i toksikologi på en grundig og overbevisende måte, og tilfører ny kunnskap om blandingseffekter mellom miljø og eksponering for miljøkontaminanter, selv om UV/olje interaksjonen er beskrevet tidligere-

Forskningstema er høyst relevant for diskusjonen om offshore oljeaktivitet og fiskehelse.

Eksponering for PAH og UV dosimetri er godt beskrevet.

Endepunktsmetodene er moderne, selv om det kan innvendes at utvalgsstørrelsen, sample size, er i minste laget for RNAseq. Både sensitivitet og spesifisitet kan være lav. RNAseq er supplert med qPCR for utvalgte gener, og morfologiske parametre er detaljert registrert, noe som styrker konklusjonene.

Statistisk analyse og RNAseq metode og pipeline er standard, og godt beskrevet. Men slektskap mellom individer (tre halvøskenegrupper) kan medføre en kulleffekt, og dersom hver dosegruppe har kun et eksponeringskar, er eksponeringskar og dosegruppe konfundert.

Artikkelen er klart skrevet. Metoden og tankegangen er lett å følge for forskere som jobber med tilsvarende problemstillinger, og vil også være nyttig for forskere utenfor strålings- og toksikologimiljøet.

Resultater og diskusjon er systematiske og klare, og konklusjonen er overbevisende: Det er additive effekter av UV stråling og PAH eksponering på de nivåer som er sannsynlige ved eksponering i havet. BMDL beregning er interessant.

6. Poulsson Award/Lecture Fall Meeting 2021

Professor Åke Bergman at Örebro University, Sweden, was awarded the 2021 Poulsson Medal for his long-standing achievements in the field of toxicology. Professor Bergman is currently a guest professor at Örebro University, a position he has held since 2018. He is

also active at the Man-Technology-Environment research centre (MTM) and active as a professor emeritus at Stockholm University and Tongji University, Shanghai. Over a long and distinguished career, he has stimulated and contributed to international collaborations in chemical and environmental toxicology. Professor Bergman has been particularly active in studying how environmental pollutants are transformed in the environment and living organisms. He has made several important contributions to human and wildlife exposures to organic contaminants, as well as to the understanding chemical reactivities of environmental pollutants. In recent years he has become particularly interested in the endocrine effects of chemicals and has greatly contributed to the field through research publications, and the development of methods for the synthesis of environmental contaminants and their metabolites.

The Poulsson Lecture was held on Thursday November 25th from 13:00-15:45 in the Store Auditorium at the Dental College (Tannlegehøyskolen) in Oslo. We arranged a hybrid meeting in which the presentations were given in-person and streamed live via Zoom. The program included a short welcome and Award Presentation by Mohammad Nouri Sharikabad and Jason Matthews. This was followed by Professor Åke Bergman (Örebro University) given his Poulsson award seminar titled: From scientific discoveries of chemical threats to societal actions (or not) – Brominated flame retardants (BFRs), Chlorophenols (CPs), and endocrine disrupting chemicals (EDCs). After a short coffee break, Gro Delhi Villanger from FHI spoke about “Endocrinal disruption –linking environmental and population effects” The final presentation was given by Ketil Hylland from UiO titled “Endocrine Disruptors - how different is wildlife to humans?”. The presenters then took part in a panel discussion on the topic “What’s special about Endocrine Disruptors?” led by Dag Markus Eide from FHI.