2022 Report of the IG/TR/MH Nomenclature Sub-committee to the IUIS Nomenclature Committee

Presented by Co-Chairs Felix Breden and John Hammond

The IG/TR/MH Nomenclature Sub-committee (**ITM-NSC**) is responsible for nomenclature of immunoglobulin and T-cell receptor germline genes (**IG** and **TR**, respectively), as well as MHC genes of non-human species. Marie-Paule Lefranc, Emerita Professor of the University of Montpellier and previous Director of the International Immunogenetics Information System® (**IMGT**), has approved submissions and provided names for these genes as Chair of ITM-NSC and Chair and only active member of the IMGT-Nomenclature Committee, subsequently renamed the IMGT-NC Reports Review Committee (**IMGT-NC Reports RC**). During 2022, Professor Lefranc posted 3 new sets of genes and alleles on the IUIS ITM-NSC website on behalf of the IMGT-NC Reports RC.

At the beginning of 2022, the 17 members of IMT-NSC had never met as a committee and were not involved in the nomenclature decisions being made under the auspices of the Sub-committee. A temporary leadership group of 3 ITM-NSC members, Drs. Jamie Scott, Felix Breden and Corey Watson, were tasked by the Chair of the Nomenclature Committee, Dr. Menno van Zelm, and the IUIS Executive Committee to transform the ITM-NSC into an active committee following democratic and transparent principles of governance. During 2022, two meetings of the ITM-NSC were held under the temporary leadership of Drs. Scott, Breden and Watson. ITM-NSC adopted new Terms of Reference, a 6-month plan of action, then elected two co-Chairs, Dr. Felix Breden (Canada) and Dr. John Hammond (UK), and adopted an open and inclusive process for re-populating the IMGT-NC Reports RC.

In recognition of the important nomenclature work conducted by Professor Marie-Paule Lefranc, the revitalized ITM-NSC wishes to retain as much as possible the present framework for approving and naming IG and TR alleles. Initially, the revised IMGT-NC Reports RC will be tasked with:

- approving submissions
- naming new IG and TR germline gene sequences whose locus/position is known.

While providing this continuity, it is also important that the IMGT-NC Reports RC evaluate its future role, which could include:

- adopting a new name
- re-evaluating IUIS's role in assigning IG and TR nomenclature
- providing information on and links to existing IG and TR reference sets
- assigning permanent identifiers to track the advancement of new IG and TR allele sequences through validation, (naming) and addition to one or more reference sets.

In this initial phase, the ITM-NSC also intends to preserve the relationship established under Prof. Lefranc's leadership between the IMGT-NC Reports RC and the Inferred Allele Review Committee (**IARC**) of the AIRR Community (www.airr-community.org). The IARC reviews and approves new IG and TR alleles inferred from deep sequencing of adaptive immune (antibody/B-cell and T-cell) receptor repertoire sequencing (**AIRR-seq**) data, curates these in the Open Germline Receptor Database (**OGRDB**), and has been working with IMGT and IMGT-NC Reports RC to integrate these into the IMGT germline gene database.

Given IUIS's respect for the independence of committees and their sub-committees, Working Groups and RCs, the ITM-NSC intends for the renewed IMGT-NC Reports RC and the IARC to work together to determine the best way forward on issues regarding IG and TR nomenclature and related matters. We believe that this relationship will ultimately provide the guidance and stability that the immunogenetics community so greatly needs, given the current disarray of IG and TR nomenclatures and databases, as well as the massive influx of data anticipated by the immunology/immunogenetic community.

ITM-NSC broadly distributed a call for applications for the repopulated IMGT-NC Reports RC, and received 7 highly qualified applications for 6 positions. The ITM-NSC conducted a review and election by email, and the results of this process will be reviewed at the November 2022 meeting.

The immediate goals for the revitalized ITM-NSC during this time of transition are:

- Advertise widely and elect new IMGT-NC Reports RC members
- Explore formal a relationship between IARC and ITM-NSC
- Revise the IUIS ITM-NSC website
- Stabilize the process for approving submissions and providing names for new genes and alleles
- Ensure that this nomenclature process is open and transparent to the entire immunology and immunogenetics community
- Provide guidance to the community on the multiple germline reference data sets being developed for IG and TR