

## **Appendix C: AIRR-C Sub-committee (SC) and Working Group (WG) Reporting Template**

*Instructions.* This form is to be used for AIRR-C Meeting updates. The form should be completed by SC or WG (Co)-leaders, with input from other SC or WG members, and submitted to the Chair of the AIRR-C Executive SC at least one week prior to the AIRR-C Meeting.

### **Current**

Date of this report: April 20th 2022

**SC/WG Name:** Diagnostics Working Group

**SC/WG Co-leaders:** Rubelt, Gooley, Schwab

### **SC/WG Active Members (list):**

Rohit Arora, Lmar Babrak, Justin Barton, Rachael Bashford-Rogers, Magnolia Bostick, Felix Breden, Syed Ahmad Chan Bukhari, Brian Corrie, Lindsay Cowell, Zhaoqing Ding, Sol Efroni, Khalil El Mazouari, Christopher Gooley (Co-lead), Victor Greiff, David Klatzmann, Yoshinobu Koguchi, Ton Langerak, Theam Soon Lim, Eline Luning Prak, Susanna Marquez, Pieter Meysman, Enkelejda Miho, Nima Nouri, Milena Pavlović, Florian Rubelt (Co-lead), Geir Kjetil Sandve, Tilman Schneider-Hohendorf, Nicholas Schwab (Co-lead), Erand Smakaj, Cinque Soto, Ulrik Stervbo, Johannes Trück, Henk-Jan van den Ham, Eric Waltari, and Corey Watson

### **Purpose:**

To advance AIRR-seq for clinical use, i.e. in prognosis, diagnostics, and disease monitoring. The working group strives to uncover why there has been little translation of the tremendous progress in the field of AIRR-seq into the clinics. Furthermore, the working group aims to identify and promote ways of expanding AIRR-seq techniques (both sequencing technologies and analysis) into general clinical use. This we will do through:

- Evaluate the usage of AIRR-seq data for diagnostic purposes. These include diagnosis, prognosis, monitoring purposes, inclusion biomarkers for clinical studies, etc.
- Identify bottlenecks or challenges for AIRR-seq based clinical assays. These can be software tools, but also data sets or general approaches (statistical, machine learning, pattern recognition, etc).

### **Goals for the previous interval:**

- Work with other interested WGs on a chapter in Immunogenetics about AIRR sequencing methodology from the standpoint of using them for diagnostics (our part) and help where we can on the other parts
- Establish a podcast-like interview series with experts in the AIRR sequencing diagnostic space to discuss their work and views

- Work with Diagnostics WG members, Communications and Meetings SC to help source interviewees and for technical support
- Work with The Antibody Society for further distribution
- Potential topics:
  - Discuss published and future use cases for AIRR sequencing diagnostic testing starting with eg. MRD, COVID-19
  - Diagnostic methods and study design
  - Commercial and Research Use Only applications of diagnostic techniques
- Support the AIRR-C efforts with regard to the sequencing analysis of the immune response against the novel coronavirus SARS-CoV-2

**Long-term vision and how WG products integrate with the AIRR-C mission:**

- Act as an umbrella for clinic-oriented members of various AIRR-C working groups, such as the Biological Resources, Legal and Ethics and Software Working Groups, to brainstorm and promote further development and applications of AIRR-seq clinical testing (e.g. potential project design, standard data collection, software tools, extension to new diseases or uses)
- Represent a link between the AIRR-seq community and regulatory agencies when it comes to using AIRR-seq as a diagnostic tool

**Products (if any):**

**Podcast:**

- <https://onairr.podbean.com/>
- <https://www.antibodysociety.org/the-airr-community/airr-c-podcast/>

**Paper:**

- The Future of Blood Testing Is the Immunome' (Front. Immunol., 15 March 202)
- <https://www.frontiersin.org/articles/10.3389/fimmu.2021.626793/full>

**Book chapter (contribution):**

- Immunogenetics: Methods and Protocols, Methods in Molecular Biology, In press.

**Resources (if any):**

- Contribution to data sets shared in the AIRR data commons (COVID-19)

**Progress report on current purpose, goals, products and resources:**

- Goals have been achieved

### **Proposed plans for the coming interval:**

**Purpose: Advance AIRRseq for clinical diagnostics & monitoring**

#### **Goals:**

- Engage key opinion leaders to uncover barriers in translating progress in AIRR-seq into the clinic
- Broadly disseminate the existing and potential possibilities for AIRR-seq in the clinic
- Engage regulatory bodies (e.g. FDA) to create strategies to overcome obstacles in bringing AIRR-seq into the clinic

#### **Products (if any):**

- Produce and extend reach of additional episodes of the podcast “onAIRR” through support and direct contribution
- Plan and hold a single meeting with diagnostics as a focal point, with support of the AIRR-C Communications SC, Legal and Ethics WG, and Meetings SC.
  - Proposal: e.g. satellite symposium during the IUIS 2023
- Coordinate a white paper response to regulatory bodies (how to include AIRR-seq in regulatory processes)

#### **Resources (if any):**

- [OnAIRR - Immune receptors in the clinic](#)

#### **Long-term vision and how WG or SC products integrate with the AIRR-C mission:**

- Promote the vision described in our perspective paper ‘The Future of Blood Testing Is the Immunome’ (Front. Immunol., 15 March 2021 | <https://doi.org/10.3389/fimmu.2021.626793>) through community outreach and engagement
- Promote adoption of the standards established in the Standards Working Group for a common framework for clinical classifier discovery
- Act as an umbrella for clinic-oriented members of various AIRR-C working groups, such as the Biological Resources, Legal and Ethics and Software Working Groups, to brainstorm and promote further development and applications of AIRR-seq clinical testing (e.g. potential project design, standard data collection, software tools, extension to new diseases or uses)
- Represent a link between the AIRR-seq community and regulatory agencies regarding clinical application of AIRR-Seq

#### **Proposed SC/WG Co-leaders:**

- Ulrik Stervbo
- Susanna Marquez
- The three ex-co-leads as permanent resource and active members of the

working group, not as official co-leaders (only supposed to be 2 co-leads)