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 5, 2022

SC/WG Name: Software

SC/WG Co-leaders: William Lees and Chaim Schramm

SC/WG Active Members (list):
William Lees, Chaim Schramm, Bryan Briney, Brian Corrie, Susanna Marquez, Luke Myers, Mats Ohlin, Adrian Shepherd, Wenming Xiao

Purpose: To make it easy to do rigorous analysis of AIRR-seq data.

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

The purpose of our working group is to encourage practices that enable software tools to work, and to work with one another.: this dovetails with the AIRR-C mission to improve methods and standards. We aim to promote awareness of AIRR standards within the software tools community, and to provide a forum through which software tools developers can discuss and progress topics of mutual interest.

**Current Period**

Goals:

- Complete a benchmarking framework for comparing annotation tools
- Identify datasets for testing annotation tools
- Build a tool for assessing repertoire credibility (RepCred)

A key first priority is to assemble data sets that people can use to test and compare the functionality of various programs. To progress this, we have defined summary statistics that can be used to characterize simulated data sets and compare them to real-world data sets. The result is a software tool, Sumrep, which is described in a recent paper. We will use this tool to assist in the collection of simulated and real-world data sets for testing and benchmarking.

We have also defined a standard for AIRR-Seq software tools. We continue to promote this as a way of encouraging inter-operation and adoption of AIRR standard protocols by providing community support and publicity to compliant tools. We have built the core of a tool to assess the biological credibility of an AIRR-Seq repertoire, and to identify common technical errors

that can occur during its preparation, which can be heard to spot from read quality annotations and other technical measures commonly available today.

Products (if any):
- Benchmarking framework
- RepCred tool

Resources (if any):
- Gold standard datasets

Progress report on current purpose, goals, products and resources:
- Benchmarking framework was derailed by loss of collaborators
- RepCred tool is nearly complete

Proposed plans for the coming interval:

Purpose and long-term vision as above.

Goals:
- Complete RepCred
- Align benchmarking and gold-standards dataset with PrecisionFDA activities
- Survey our AIRR-C membership for key focus areas (particular emphasis on industry needs)
- Support the Communications WG industry initiative by drawing on WG members' knowledge of the tools marketplace
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Products (if any):
- **RepCred tool**

Resources (if any):
- **Gold standard datasets**

Proposed SC/WG Co-leaders: William Lees and Chaim Schramm

List new members (if any) not in Active Member list above: