

2023-12-19 Best Practices Meeting Notes

Date

19 Dec 2023

Attendees

Committee Member	Present	Absent
Kuffel, Gina (NIH/NCI) [C]	X	
Toby Hecht		X
Kim, Erika (NIH/NCI) [E]		
Sommers, Connie (NIH/NCI) [E]		
Elaine Ostrander		
Deborah Knapp		
Jeff Trent		
Dawn Duval		
Amy Leblanc		
Heather Gardner		
Cheryl London		
Christina Mazcko		
Paula Jacobs		X
Renee Chambers		
Shaying Zhao		
Sunetra Das		

Outstanding Action Items

- [Kuffel, Gina \(NIH/NCI\) \[C\]](#) to start 2 docs, 1 for items to track for standardization, 1 for the letter to move the needle on canFam4 annotations.
- Toby to reach out to Connie about extending invite to new PRECINCT members.

Agenda

Agenda Item	Who	Notes
BPSC Review Article: Tools & Resources for the Canine Genomic Landscape	Group Discussion	<ul style="list-style-type: none">Published by Veterinary and Comparative Oncology on October 1, 2023<ul style="list-style-type: none">"Leading the Pack: Best Practices in Comparative Canine Cancer Genomics to Inform Human Oncology"https://doi.org/10.1111/vco.12935

Meeting Minutes (Not Verbatim)

TH - Wrapping up 5 years of the ICDC. New options begin on September 24, 2023. Lets think about if we still need this committee and what are the specifics that we want to tackle in the next 5 years. Once everything is signed off on, we need to send everyone a copy of the statement of work. Do we still need this committee and do we need additional expertise? We don't need to make decisions today, but we need to begin thinking about this.

JT - The field is changing, many players will be making contributions from a genomic perspective. There is value in a harmonized analysis framework structurally in comparable human resources.

TH - The next 5 years will focus on the usability of the repos within the CRDC (PDC, CTDC, GDC). Important for comparative oncology. If we can get additional people who are fluent in this type of analysis, we have not approached this yet. Data analysis and structural differences can pose issues.

PJ - Data are more valuable if there are clearly comparable from study to study, especially in regards to histology.

TH - Do we want to invite someone else to augment expertise and provide guidance.

AL - PetCT consortium fell apart for a little bit due to personnel change. I've joined forces to help consortium-based data standards. We've reached out to radiologists to see if we can have consensus for a core set of sequences important to brain cancer, but there is pushback at times without a structured driver.

PJ - Biggest pushback came from the most advanced centers. We made a protocol that defined a core and allowed for flexibility beyond that. On the human side I can bring in a couple of people.

HG - 2 elements that would be useful, harmonized pipeline work and optimizing non-standard NGS practices. Getting good data is important since ultimately it will end up in the ICDC. Need guidelines around sample prep and QC.

PJ - Take another look that groups are harmonizing in a way that is consistent.

JT - There is a suite of new approaches whether single cell, spatial, long reads, etc. The data normalization that is required needs standardization.

CL - I will take the chair of this committee. I made all corrections to final draft of the BPSC article, can someone take one last final look?

JT - I would be happy to.

TH - Funding is secured, we are headed into uncharted waters, but funding is secured for the ICDC. Previous Meeting Minutes (Not Verbatim)

TH - Let's think about repurposing this committee or augmenting the scope of this committee

CL - Issues with integrity of RNA and frozen specimens just as an example, perhaps protocol and data analysis standardizations.

AL - Beginning with nucleic acid extraction, dependent on tissue type, getting a single nuclei out of a real bone tumor, easy to do in mouse and simple tissues, but there are not standard protocols in dog.

TH - Would there be a place in the ICDC for SOPs pertaining to RNA isolation, nucleic acid extraction, library preparation, sequencing methods?

TH - Highlighting differences between human and dog, maybe differences in assay prep could contribute to differences in data

HG - Moving away from bulk RNA-Seq and whole exome, instead working with liquid biopsy and microRNA-Seq. It would be nice to have a community that has been working in parallel on some of these things, obtaining samples and QC of samples, library prep, and data analysis (no input on the canine side since most tools are developed for human).

AL - Methylation is a good example, doing this in Osteo right now, low pass whole genome helps to interpret methylation results computationally, this was something that was not known initially.

CL - A roadmap for people that don't always work with canine samples would be helpful so that they are not discouraged.

HG - Availability of analysis pipelines even for working locally.

SZ - Some discussion around canFam4 and annotation

AL - Sample procurement and processing is a good place to start as well as the buckets for analysis mentioned by Heather.

DD - There is talk of a Pan canFam genome

SZ - Genome annotation cannot be done by a single lab, this needs to be a community effort

CL - We can start with simple things such as sample requisition and sample preservation, OCT blocks cannot be used because the RNA is degraded.

HG - Challenges are around RNA quality and it is not high enough to perform 10X spatial transcriptomics. My understanding is that NCBI was going to handle annotations for canFam4, but instead they did the ROS version of the genome instead.

TH - Elaine may be a good contact for reaching out to NCBI

AL - We gained a ton of experience with NanoString from FFPE and how to approach these type of samples for the canine IO profiling assay, garbage in garbage out.

HG - QC has changed for the nCounter

AL - Having a pathologist involved is very important when assessing the integrity of samples, it is no longer RIN

Contacts from Dawn Duval regarding canFam4

Kerstin Lindblad-toh gave me these individuals as potential contacts to pressure for annotation of the GSD genome. ENSEMBLE

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Action items

- Jeff Trent to provide final review of BPSC manuscript.