

Sirarat Sarntivijai

bioinformatician –ontologist at the EMBL-EBI

Dear Nominating Committee:

I am an ontologist – an invisible relationship designer in the world of biocuration. Since 2005, I have been building my career in biomedical ontologies – developing ontologies, curating ontologies, and applying ontologies to practical research. I have worked very closely with biocurators, especially in the last few years at the European Bioinformatics Institute where the institutional aim is to provide the exceptional research and service of biology big data. At the Biocuration 2017 meeting at Stanford University, I stated my appreciation of all the “blood, sweat, and tear” that biocurators have put into the hard work of curating biomedical data to be the “invisible support” that the world sometimes fails to recognize, and I meant it. I also want to change that perception of the world. And that is why I am signing up to offer my labor to help change that perception as it is a task needing a team to accomplish. Running for a position on the Executive Committee is a step toward that aim.

In my PhD thesis, I founded my entire dissertation on building and applying various ontology-based approaches to aid translational medicine. I moved on to conduct my postdoctoral training in integrating drug safety data at the Department of Clinical Pharmacology, US Food and Drug Administration before I became an ontologist at EMBL-EBI. I have been hands-on in every step along the way, including generating, cleaning, processing, and curating experimental and clinical data. To this end, I am confident to say that I understand the importance of biocuration to the very essence of it. I work across multiple societies – clinical pharmacology, bioinformatics, and experimental and computational biology. I am going to leverage this nature of my work by raising awareness of the importance of biocuration everywhere possible, as recognition of this effort is critical to promoting our work to the “visible” state to the world. My aim is to build the bridges across these inter-connected domains via the work of biocuration through different channels. Organizing biocuration workshops at the conference in areas outside the usual suspects of ISMB-Bioontologies, or Biocuration for example. Some of the venues that I can be the voice of Biocuration are the American Society of Clinical Pharmacology and Therapeutics (ASCPT), the American Medical Informatics Association (AMIA), the TranSMART Foundation and the Human Cell Atlas (HCA). I am hoping that my involvement in different domains will come in useful

to ISB community. I thank you very much for your time.

Biosketch

My scientific interest has long been the utilization of translational bioinformatics to integrate biomedical big data and analyze these data for a useful application in the health care domain. Restructuring and normalizing data from multiple sources that come in various formats requires expertise in biomedical ontology processing and linked-data analysis, of which the skills I have acquired over the long period of education and training. Linking from clinical phenotype observation to understanding the underlying disease prognosis and the related medical treatment adverse effects is a very complex biological question, especially in the area of cancer research. Having graduated and been trained at the National Center for Integrative Biomedical Informatics (NCIBI – one of the seven National Centers for Biomedical Computing in the NIH roadmap), University of Michigan under the supervision of Dr. Brian Athey, and the Office of Clinical Pharmacology, Office of Translational Sciences, FDA under the supervision of Dr. Darrell Abernethy has prepared me for the challenge of the question to study relationship between animal model and human cancer progression, and the treatment complication observed in mice and humans in this study. My PhD research has based heavily in the translational health informatics by biomedical ontologies. I have developed the Cell Line Ontology (CLO), and the Ontology of Adverse Events (OAE) - two ontologies that will play a vital role in linking experimental information to disease biology. My current role as a bioinformatician – ontologist at the EMBL-EBI with Dr. Helen Parkinson's Samples, Phenotypes, and Ontologies Team has also placed me at a unique position with the benefits in accessing the expert knowledge from our team members to put together the scientific puzzle pieces to answer this very complicated human cancer treatment and the side effects question from the information studied in animals. As a person in charge of the content of the Experimental Factor Ontology (EFO) at the EMBL-EBI, I have demonstrated the power of exploiting biomedical ontologies with the EFO to integrate

and analyze a massive pool of biomedical data to establish the connections between drug targets and diseases drawn from various sources of traceable scientific evidence at the Open Targets project, a collaboration of EMBL-EBI, Sanger Institute, GSK, and Biogen (<http://www.opentargets.org>). I have also demonstrated the power of integrating multi-domain ontologies with EFO in integrating high-content data-driven classification of cell types in the Human Cell Atlas project (HCA - <http://www.humancellatlas.org>).

Statement of Conflicts and Other Commitments

I declare that I do not have any conflicts of interest in the area of Biocuration work. All my scientific work done in the area has always been open and public by the virtue of the US NIH, and the EMBL-EBI Open Science policy. I am an active member/collaborator of the following organizations/consortia: the OBO Foundry, PredicTOX initiative (FDA-initiated public-private partnership on cancer drug safety), the American Society for Clinical Pharmacology and Therapeutics (ASCPT), the Cancer-Disease Ontology workgroup, and TranSMART Foundation. I am featured as the international profile in Clinical Pharmacology & Therapeutics (CPT Journal, Wiley) August 2017 issue¹, and interviewed/cited by New Scientist magazine in December 2016², and in Regulatory Affairs Professional Society (RAPS) in July 2014³.

¹DOI: 10.1002/cpt.486: ASCPT News -

<http://ascpt.onlinelibrary.wiley.com/hub/issue/10.1002/cpt.v102.2/>

²<https://www.newscientist.com/article/2115164-spikes-in-search-engine-data-2>
<https://www.newscientist.com/article/2115164-spikes-in-search-engine-data-predict-when-drugs-will-be-recalled/>

³<http://www.raps.org/Regulatory-Focus/News/2014/07/29/19890/Is-Google-a-Key-Part-of-the-Future-of-Drug-Safety-FDA-Researchers-Say-Yes/>