Computation and Data Committee Report to the CASCA Board, Dec 2011

Current Committee membership:

James Wadsley (McMaster U.) (Chair)	Term ends: 31 June 2013
Jonathan Dursi (CITA/SciNet)	Term ends: 31 June 2014
J. J. Kavelaars (HIA/NRC/CADC):	Term ends: 31 June 2014
Jason Fiege (U. Manitoba)	Term ends: 31 June 2013

Status of Computing in Canada: Brief Update

The situation has been deteriorating due to the lack of new funding on the horizon. The direct consequence of this will be no new CFI funded systems available before 2016. This is based on the fact that the next large CFI competition will not begin before 2013 with a deadline no earlier than 2014. Then it takes 2 years to go from the deadline through approval, the RFP-process, installation and testing to actually having functioning equipment available to users. By 2016 all current systems will be old and far behind the leading edge and Canada as a whole will be something like an order of magnitude below the G10 average in HPC capability per GDP. Some consortia are likely to have essentially no functioning CFI funded systems by this time. Due to the connection between systems and operating expenses (e.g. CFI overhead funds), many experienced staff will have been lost and thus large regions of Canada will be unserved. Compute Canada's researcher-based lobbying committee, CPAC, is now defunct and has not met in over 6 months. Compute Canada thus has no researcher-driven lobbying beyond whatever indivduals or consortia may be doing. On the networking side, Canarie is currently undergoing a standard 5 year review for the period ending in March 2012. It seems likely that Canarie will be renewed for another 5 years and will continue to support cloud-based development for data analysis and retrieval via joint projects with the CADC. The key issue is the necessary hardware to make those projects feasible. There has been no progress on ideas for a combined "cyberinfrastructure" program which might unite Canarie and Compute Canada within a single umbrella.

Canada will not be in a position to support upcoming astronomical facilities requiring improved storage capacity or HPC for processing. Similarly, theoreticians and computational astrophysicists will have to fulfill their HPC needs outside Canada though collaboration or a direct brain drain. There is no serious lobbying effort to support the need to continue past funding (e.g. The CFI NPF program), to establish alternatives or even to raise awareness of the issue at the Federal level. Provincial governments, such as Ontario, have been made aware of the issue and have provided short term assistance with operating costs. However, we are not aware of any provincial initatives that would address the loss of HPC hardware. In principle the collapse of HPC in Canada will be quite embarassing for the Federal Government and they should be ready to listen despite the current economic constraints.

As was stressed in our May report, CASCA should be ready to take on a more direct role in lobbying on behalf of HPC and related facilities in Canada. Computing is not able to take care of itself. Astronomers take up 1% of discovery grants but consume 11% of Compute Canada resources. It will require a sustained effort by disciplines like Astronomy that make disproportionate and intensive use of these facilities to re-establish the importance of HPC and get Canada on a sustained and competitive funding track. Compute Canada has been so ineffective (due to lack of resources among other reasons) that we would be better off directly approaching other discipline-based groups (e.g. CAP, professional engineering societies) and putting together a coalition for scientific computing with which to approach government.