

2012 Compute Canada Allocations

Institution	Principal Investigator	Project Title	Allocation	Market Value
Acadia University	Richard Karsten	Numerical Simulations of Tidal Flow with applications to Tidal Energy Development	842,000 processor hours 1 TB storage	\$81,175
Baycrest Centre for Geriatric Care	Tomas Paus	Trans-generational Brain & Body Network	1,534,000 processor hours 105 TB storage	\$274,931
Compute Canada	Kirk Bevan	Computational Design of Nanoelectronic Materials	1,753,000 processor hours 3 TB storage	\$170,242
Concordia University	Clement Lam	Computation of the van der Waerden number $w(3,4)$	1,140,000 processor hours 4 TB storage	\$113,180
	Marius Paraschivoiu	Aerodynamic Simulation of Vertical Axis Wind Turbines	701,000 processor hours	\$66,620
	Gilles Peslherbe	Application of Quantum Chemistry and Molecular Dynamics Simulations to Materials, Solvation and Biophysics	2,209,000 processor hours 7 TB storage	\$218,467
	Guillaume Lamoureux	Two projects: Large-scale dynamics of metalloproteins and ammonia transport in membrane proteins	3,708,000 processor hours 5 TB storage	\$358,406
Dalhousie University	Christopher Beaumont	Modelling the three-dimensional dynamics of geological systems: From sub-sea salt to the Himalayan peaks	955,000 processor hours	\$90,770
	Stanimir Bonev	Matter under extreme conditions: first principles theory and applications	8,766,000 processor hours 20 TB storage	\$857,360
École de Technologie Supérieure	Azzeddine Soulaïmani	Modélisation de l'écoulement dans les turbines hydrauliques complètes	281,000 processor hours 4 TB storage	\$31,570
École Polytechnique	Alain Rochefort	Propriétés électroniques et structurales de matériaux électroactifs organiques	1,324,000 processor hours 6 TB storage	\$133,128

2012 Compute Canada Allocations

Institution	Principal Investigator	Project Title	Allocation	Market Value
École Polytechnique	François Bertrand	Modélisation d'écoulements de fluides et de solides pour les procédés de	3,638,000 processor hours	\$345,592
	Michel Meunier	Nanoplasmonics for cell nanosurgery and surface nanopatterning	526,000 processor hours 2 TB storage	\$52,426
Hospital for Sick Children	Régis Pomès	Computational Studies of Biomolecular Structure and Function	116,515,000 processor hours 296 TB storage	\$11,433,145
	John Parkinson	Evolution and operation of host-pathogen relationships	929,000 processor hours 2 TB storage	\$90,733
McGill University	Alan Evans	The CBRAIN Neuroimaging Platform	3,682,000 processor hours 27 TB storage	\$382,978
	Yi Huang	A GCM-based satellite simulator	877,000 processor hours 10 TB storage	\$95,580
	Daniel Kirshbaum	Cloud-resolving modelling of cumulus convection over complex terrain	438,000 processor hours 1 TB storage	\$42,868
	Hong Guo	Computational modeling of nano-scale electronic devices	9,178,000 processor hours	\$871,890
	Warren Gross	Monte-Carlo Simulation of Hardware Optimized Error-Correcting Decoders	964,000 processor hours	\$91,603
	Victoria Kaspi	Large-Scale Galactic Surveys for Radio Pulsars	10,519,000 processor hours 13 TB storage	\$1,015,297
	Guillaume Bourque	High-performance computing for high-throughput sequencing and genetic studies	877,000 processor hours 250 TB storage	\$390,892
	Eric Galbraith	Fundamental Controls on Earth System Dynamics	1,341,000 processor hours 4 TB storage	\$132,333

2012 Compute Canada Allocations

Institution	Principal Investigator	Project Title	Allocation	Market Value
McGill University	Wagdi Habashi	Development of Massively Parallel Multi-disciplinary CFD	4,164,000 processor hours 2 TB storage	\$398,018
	Luc Mongeau	High Fidelity Large Eddy Simulation for Aeroacoustics Applications	2,428,000 processor hours 27 TB storage	\$263,895
McMaster University	Alison Sills	Formation and evolution of star-forming cores in giant molecular clouds	3,629,000 processor hours 12 TB storage	\$359,525
Memorial University of Newfoundland	John Whitehead	A Simulation Study of Ordered 3D Arrays of Magnetic Nanoparticles	2,104,000 processor hours 0.5 TB storage	\$200,475
Ouranos	Anne Frigon	Production d'un ensemble de simulations climatiques régionales à très haute résolution à Ouranos	3,945,000 processor hours 35 TB storage	\$417,804
Perimeter Institute for Theoretical Physics	Luis Lehner	Electromagnetic and gravitational signals from compact binaries: Neutron Stars and Black Holes	5,259,000 processor hours 20 TB storage	\$524,260
Queen's University	Tucker Carrington	Towards a potential for liquid water; rovibrational spectra of methane and CH5+; and non-product interpolants for solving the Schroedinger equation.	535,000 processor hours 3 TB storage	\$54,489
	Art McDonald	Simulations and Analysis for Dark Matter and Neutrino Experiments	877,000 processor hours 10 TB storage	\$95,580
Royal Military College of Canada	Xiaohua Wu	Very-large-scale direct numerical simulation of aeronautical flows	4,488,000 processor hours 35 TB storage	\$469,435
Simon Fraser University	George Kirczenow	Theoretical Studies of Nanoscale Systems	2,761,000 processor hours 1 TB storage	\$263,547
	Steven Jones	Molecular dynamics structure modeling of SHC protein in RET-driven cancers	3,506,000 processor hours 4 TB storage	\$338,022

2012 Compute Canada Allocations

Institution	Principal Investigator	Project Title	Allocation	Market Value
Simon Fraser University	Peter Borwein	IRMACS	842,000 processor hours 30 TB storage	\$116,858
	Noham Weinberg	Theoretical studies of kinetic effects of high pressure and high viscosity	2,104,000 processor hours	\$199,860
	Fiona Brinkman	Bioinformatics for Combating Infectious Diseases	526,000 processor hours 60 TB storage	\$123,793
	Michael Eikerling	Computational Modeling of Electrochemical Materials for Energy Conversion and Storage	2,463,000 processor hours 8 TB storage	\$243,847
	Mirza Faisal Beg	Early Detection of Alzheimers and discrimination from other dementias using high dimensional morphometric features	1,166,000 processor hours 10 TB storage	\$123,061
Saint Mary's University	Robert Thacker	Galactic disk dynamics in the Gaia era	2,498,000 processor hours 10 TB storage	\$249,639
TRIUMF	Reda Tafirout	The ATLAS Experiment: Investigation of Fundamental Interactions and the Structure of Matter by the Study of Very High Energy proton-proton Collisions at the CERN Large Hadron Collider	17,733,000 processor hours 2614 TB storage	\$4,901,101
	Arthur Olin	TWIST	65 TB storage	\$79,980
	Gregory Hackman	Gamma-Ray Spectroscopy at ISAC	20 TB storage	\$24,609
Université de Montréal	Yoshua Bengio	Deep Learning Algorithms	1,964,000 processor hours 19 TB storage	\$209,915
	Pierre L'Ecuyer	Random Number and Quasi-Random Number Generators, and Simulation of Stochastic Systems	394,000 processor hours 1 TB storage	\$38,704

2012 Compute Canada Allocations

Institution	Principal Investigator	Project Title	Allocation	Market Value
Université de Montréal	Laurent Lewis	Physical properties of advanced materials - from the atom to large-scale structures	3,945,000 processor hours 7 TB storage	\$383,351
	Nicolas Lartillot	Modèles Bayésiens de génomique évolutive par Chaénes de Markov Monte Carlo	5,259,000 processor hours 3 TB storage	\$503,342
	Michel Côté	Calculs de structure électronique des supraconducteurs, nanotubes et polymères	10,519,000 processor hours	\$999,301
	Radu Iftimie	Proton transfer reactions in chemistry and biochemistry	2,498,000 processor hours 6 TB storage	\$244,717
	Normand Mousseau	Simulations de matériaux complexes	9,642,000 processor hours 15 TB storage	\$934,483
	Hervé Philippe	Phylogénomique et Modelisation de L'Evolution des Proteines	701,000 processor hours	\$66,620
	Paul Charbonneau	Simulations magnétohydrodynamiques de la convection solaire	1,315,000 processor hours 6 TB storage	\$132,295
	Guy Rouleau	High Throughput Sequencing	1,315,000 processor hours 25 TB storage	\$155,674
Université de Sherbrooke	Andre Dieter Bandrauk	Molecules in Intense Laser Fields-FAZSST-Femto-Atto-Zepto-Second Simulations and Theory	73,247,000 processor hours 141 TB storage	\$7,131,963
	Yannick Huot	Classification océanique automatisée des provinces bio-optiques par télédétection	1,052,000 processor hours 30 TB storage	\$136,844
	André-Marie Tremblay	Strong coupling physics in high-temperature superconductors and layered organic superconductors	5,996,000 processor hours 2 TB storage	\$572,063
	Alexandre Blais	Optique quantique et information quantum avec qubits supraconducteurs	298,000 processor hours	\$28,314

2012 Compute Canada Allocations

Institution	Principal Investigator	Project Title	Allocation	Market Value
Université de Sherbrooke	David Poulin	Simulations numériques pour informatique quantique théorique	657,000 processor hours	\$62,456
	Claude Legault	Computational Organic Chemistry: Understanding the origin of selectivity	351,000 processor hours 1 TB storage	\$34,541
	Eli Zysman-Colman	Modeling the Excited State Behaviour of Luminescent Organometallic Complexes for Visual Display Applications	263,000 processor hours 2 TB storage	\$27,443
	David Sénéchal	Méthodes d'amas quantiques pour les systèmes fortement corrélés	421,000 processor hours	\$39,972
	Martin Aube	Modélisation de la première réserve internationale de ciel étoilé du Mont-Mégantic	438,000 processor hours	\$41,638
	Noureddine Atalla	Modélisation de la réponse vibroacoustique et aéroacoustique de structures complexes multimatériaux	526,000 processor hours 2 TB storage	\$52,426
	Armand Soldera	Approche multi-échelles appliquée à l'étude des transitions de phases	2,367,000 processor hours 5 TB storage	\$230,995
	Hugo Larochelle	Learning Algorithms for Deep Architecture Systems	482,000 processor hours 12 TB storage	\$60,567
	Pierre Harvey	Prédiction d'Effets Antennes de Biomimiques Photosynthétiques	877,000 processor hours 4 TB storage	\$88,197
	Patrice Masson	Uncertainty quantification and propagation in a spectral element simulation of guided waves propagation for structural health monitoring applications.	281,000 processor hours 5 TB storage	\$32,800
Stephane Moreau	Direct noise predictions for transport applications	5,259,000 processor hours 35 TB storage	\$542,717	

2012 Compute Canada Allocations

Institution	Principal Investigator	Project Title	Allocation	Market Value
Université de Sherbrooke	Yves Dory	Conception de Nanotubes et Nanosphères Supramoléculaires	438,000 processor hours	\$41,638
Université du Québec à Montréal	Alessandro Forte	Terrestrial Thermal Convection Modelling with Earth-like Time Scales & Physical Properties: Reconstructing the Past Evolution of our Planet	2,244,000 processor hours 2 TB storage	\$215,645
	Pierre Gauthier	A Canadian Earth System Numerical Research Laboratory	4,383,000 processor hours 150 TB storage	\$600,946
Université Laval	Faiçal Larachi	Collector's selection and optimization to account for ores mineralogy in flotation processes	526,000 processor hours 5 TB storage	\$56,117
	Guy Dumas	Optimization Studies through CFD for Green Energy Production Systems and Propulsion	3,068,000 processor hours 20 TB storage	\$316,072
Université Laval	Patrick Lague	Molecular modelling of peptides and proteins playing key roles in bacterial and viral infections	2,411,000 processor hours 10 TB storage	\$241,311
	Sophie LaRoche	Modeling and simulation of photonic lightwave circuits in SOI	263,000 processor hours	\$24,983
	Christian Gagné	Ingénierie de systèmes intelligents distribués	421,000 processor hours	\$39,972
University Health Network	Jacques Corbeil	Massively paralleled computational approaches for genomics	2,191,000 processor hours 40 TB storage	\$257,407
	Claire Deschenes	Numerical and experimental investigations of low-head turbines hydrodynamic for generation of greener hydro-electricity	877,000 processor hours 8 TB storage	\$93,119
	Frances Skinner	Inhibitory Cells and Networks in Hippocampus	2,770,000 processor hours 5 TB storage	\$269,302

2012 Compute Canada Allocations

Institution	Principal Investigator	Project Title	Allocation	Market Value
University of Alberta	Andriy Kovalenko	Theory, modeling and simulation on multiple space and time scales for rational design in nanochemistry, nanoelectronics, nanomaterials, energy and health applications	16,155,000 processor hours 3 TB storage	\$1,538,451
	Gane Ka-Shu Wong	1000 Plants / Viral Metagenomics	438,000 processor hours 11 TB storage	\$55,173
	Duane Szafron	Computer Poker Research	1,753,000 processor hours 40 TB storage	\$215,769
	Paul Myers	Development of an Ocean/Sea-Ice Modelling Capacity for Marine Forecasting	351,000 processor hours 30 TB storage	\$70,224
	Gino DiLabio	Fixing the Dispersion Problem in Density-Functional Theory Methods	2,516,000 processor hours	\$239,000
University of British Columbia	Hirohisa Tanaka	The Tokai-to-Kamioka Experiment	6,443,000 processor hours 400 TB storage	\$1,104,259
	Douglas Bryman	Rare Decay Experiments and Applied Physics Projects	701,000 processor hours 250 TB storage	\$374,237
	Gren Patey	Computer Simulation of Molecular Systems	2,630,000 processor hours	\$249,825
	Mark Thachuk	Dynamics of Gas Phase Ions	2,104,000 processor hours	\$199,860
	Joerg Rottler	Predicting the properties of complex materials from molecular simulations	1,052,000 processor hours	\$99,930
	Holger Hoos	Automated Configuration of Heuristic Algorithms from Components	3,506,000 processor hours 1 TB storage	\$334,331

2012 Compute Canada Allocations

Institution	Principal Investigator	Project Title	Allocation	Market Value
University of British Columbia	Steven Plotkin	Computational solutions for the structural and dynamic origins of protein misfolding and biomolecular electromagnetic sensing	2,665,000 processor hours 1 TB storage	\$254,387
	Ingrid Stairs	Renewal of radio telescope pulsar data repository	7 TB storage	\$8,613
	Matthew Choptuik	Problems in Computational Relativity	1,972,000 processor hours 44 TB storage	\$241,510
	Gregory Lawrence	Modeling of hydrodynamic instability, turbulence and mixing	736,000 processor hours 41 TB storage	\$120,400
University of Calgary	Peter Tieleman	Computational studies of biological membranes	39,446,000 processor hours 150 TB storage	\$3,931,950
	Arvi Rauk	Ab Initio and Empirical Study of the Chemistry of Alzheimer's disease	2,191,000 processor hours 15.5 TB storage	\$227,260
	Tom Ziegler	Theoretical Inorganic Chemistry and New Computational Methods	1,227,000 processor hours 2 TB storage	\$119,046
	Dennis Salahub	Multiscale modeling of complex systems: i) systems biology ii) in-situ catalysis for sustainable energy	8,766,000 processor hours	\$832,751
	Sergei Noskov	Theoretical Models of Solute Transport Across Biological Membranes.	11,396,000 processor hours 70 TB storage	\$1,168,709
	Carey Williamson	ELISA storage	25 TB storage	\$30,762
	University of Guelph	Susan Brown	60 TB Storage for the Canadian Writing Research Collaboratory	60 TB storage
University of Lethbridge	Hans-Joachim Wieden	Molecular Dynamics of Translation Factors	394,000 processor hours 15 TB storage	\$55,931

2012 Compute Canada Allocations

Institution	Principal Investigator	Project Title	Allocation	Market Value
University of Manitoba	Scott Ormiston	Detailed Two-Phase Flow Predictions of Film Condensation in Heat Exchanger Applications	2,630,000 processor hours 2 TB storage	\$252,286
	Bob McLeod	A Novel Agent Based Modelling Platform for Public Health Decision Support	1,841,000 processor hours 1 TB storage	\$176,108
University of Northern British Columbia	Brian Menounos	High resolution dynamical downscaling for assessing change in glacier mass	1,473,000 processor hours 30 TB storage	\$176,816
University of Ottawa	Thomas Brabec	Bridging the microscopic and macroscopic realms of laser-driven plasma physics	3,156,000 processor hours	\$299,790
	Tom Woo	Virtual Screening of Advanced Materials for Clean Energy Applications	8,328,000 processor hours 5 TB storage	\$797,266
University of Saskatchewan	Tomasz W. Wysokinski	Biomedical Imaging and Therapy Facility	15 TB storage	\$18,457
	Yuanming Pan	Theoretical modeling of defects in minerals and other Earth and planetary materials	2,972,000 processor hours 2 TB storage	\$284,764
	Kathryn McWilliams	SuperDARN (Canadian Space Science Data Portal)	10 TB storage	\$12,305
	John Tse	Materials Science under Extreme Conditions	728,000 processor hours 20 TB storage	\$93,728
	Barbara Szpunar	Simulations of properties of nuclear materials	438,000 processor hours	\$41,638
	Chris Soteris	Knot Reduction for a Lattice Model of Strand Passage with applications to DNA Topology	307,000 processor hours 20 TB storage	\$53,756
University of Toronto	Radhakrishnan Mahadev	Application of Grid Computers to Sustainable Uranium Bioremediation in Subsurface	561,000 processor hours 2 TB storage	\$55,757
	David Zingg	High-fidelity numerical optimization for future aircraft design	28,577,000 processor hours 2 TB storage	\$2,717,229

2012 Compute Canada Allocations

Institution	Principal Investigator	Project Title	Allocation	Market Value
University of Toronto	Richard Peltier	Atmospheric and geophysical Fluid Dynamics	12,710,000 processor hours 370 TB storage	\$1,662,762
	Ue-Li Pen	Computational Cosmology	34,011,000 processor hours 345 TB storage	\$3,655,586
	Clinton Groth	Multi-Scale Adaptive Modelling and Numerical Methods for Turbulent Reactive Flows	21,915,000 processor hours 30 TB storage	\$2,118,792
	Chandra Veer Singh	Understanding failure mechanisms in novel nano-structured material systems	5,259,000 processor hours	\$499,651
	Raymond Kapral	Mesoscopic Dynamics of Protein Machines and Nanomotors	4,471,000 processor hours 10 TB storage	\$437,008
	John Polanyi	Atomic Motions Underlying Chemical Reaction	2,104,000 processor hours	\$199,860
	Patrick Brown	Spatio-temporal modelling and mapping of disease risk	3,243,000 processor hours	\$308,118
	Ulrich Fekl	Quantum Chemistry for Catalysis and Non-Linear Optics	386,000 processor hours	\$36,641
	Hue Sun Chan	Order and Disorder in Protein Folding and Interactions	6,732,000 processor hours	\$639,553
	Sabine Stanley	Numerical Simulations of Planetary Dynamos	2,744,000 processor hours 4 TB storage	\$265,573
	Nasser Ashgriz	Large Eddy Simulation of a Liquid Jet Atomization in Crossflow	2,481,000 processor hours	\$235,669
	John Dubinski	Interacting Galaxies in the Universe	3,901,000 processor hours	\$370,574
Hans-Arno Jacobsen	Large-Scale Publish/Subscribe-Based Event Processing and Content Dissemination	526,000 processor hours 1 TB storage	\$51,196	

2012 Compute Canada Allocations

Institution	Principal Investigator	Project Title	Allocation	Market Value
University of Toronto	Edward Sargent	Modeling of reduced-dimensionality semiconductors and their surfaces	561,000 processor hours	\$53,296
	J. Richard Bond	CMB, Early Universe, and Large Cosmic Structures	13,149,000 processor hours 35 TB storage	\$1,292,193
	Murray Thomson	Parallel Solution of Particle Formation in Chemically Reacting Flow Problems	11,799,000 processor hours 2 TB storage	\$1,123,344
	Paul Kushner	Characterizing Uncertainty of Climate Variability and Change across Spatial Scales	3,769,000 processor hours 90 TB storage	\$468,825
	Aimy Bazylak	High-performance computing for clean energy and emissions-reduction applications	991,000 processor hours	\$94,101
	Harald Pfeiffer	Numerical studies of compact object binaries and data-analysis of gravitational wave detectors	23,405,000 processor hours 150 TB storage	\$2,408,015
	Joaquim Martins	High-Fidelity Multidisciplinary Design Optimization for the Next Generation of Aircraft	6,311,000 processor hours 2 TB storage	\$602,042
	Dylan Jones	Understanding the impact of global climate change on the atmospheric circulation over southern Africa	140,000 processor hours 5 TB storage	\$19,476
	Qinya Liu	Full 3D Seismic Imaging of the Earth's Interior	316,000 processor hours 18 TB storage	\$52,127
	Norman Murray	Star Formation, radiative feedback, and radiating accretion flows	3,699,000 processor hours	\$351,421
University of Victoria	Christopher Pritchett	Canadian Advanced Network for Astronomical Research	4,383,000 processor hours 1000 TB storage	\$1,646,844
	Andrew Weaver	Simulations using the UVic Earth System Climate Model	1,096,000 processor hours 5 TB storage	\$110,246

2012 Compute Canada Allocations

Institution	Principal Investigator	Project Title	Allocation	Market Value
University of Victoria	John Fyfe	Understanding the Role of the Southern Ocean in Global Climate Change Using High Resolution Modelling	1,052,000 processor hours 10 TB storage	\$112,235
	Adam Krawitz	fMRI for Cognitive Neuroscience at the University of Victoria	5 TB storage	\$6,152
	Benoît Pirene	Improved access and processing for data from the NEPTUNE Canada and VENUS cabled ocean observatory	100 TB storage	\$123,047
	Arif Babul	Computing the Universe: Unified Modeling of the Evolution of Galaxies and Hot Diffuse X-ray Emitting Gas in Group and Cluster Environments	2,630,000 processor hours 9 TB storage	\$260,900
	Falk Herwig	Simulations for stellar physics and nuclear astrophysics	3,270,000 processor hours 24 TB storage	\$340,147
	Ned Djilali	Modeling of PEM Fuel Cells and Hydrogen Dispersion	701,000 processor hours 2 TB storage	\$69,081
	Boualem Khouider	Numerical models for tropical convection and related topics	1,315,000 processor hours 10 TB storage	\$137,217
	Stephen Neville	Study of large scale mobile networks, peer-to-peer networks, and computing cloud behaviours	394,000 processor hours 5 TB storage	\$43,626
University of Waterloo	Edward Sudicky	Development and application of an integrated high-performance computational framework to analyze the impact of climate change on Canadian water resources	500,000 processor hours	\$47,467
University of Windsor	Robin Gras	Analysis of a predator-prey evolving ecosystem simulation	920,000 processor hours 65 TB storage	\$167,419

2012 Compute Canada Allocations

Institution	Principal Investigator	Project Title	Allocation	Market Value
University of Winnipeg	Seyed Moghadas	Strategies for Protecting Vulnerable Canadian Populations from Emerging Infectious Diseases	1,832,000 processor hours 10 TB storage	\$186,350