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Dear CSDMS members,

On behalf of all the staff of the Integration Facility (IF) we wish all of our hard working members the very best for the New Year. Below I provide brief snippets of updates. For those wanting more details on all of these topics please see CSDMS 2009 Annual report posted on our web site.

Our Community: 350 members, 76 US Academic Institutions, 63 Foreign Institutes from 17 countries, 17 US Federal labs and agencies, 11 companies

Model Repository: 97 open-source models, >2.9 million lines of code, 7 computer languages, 250 downloads per month. We are working to get the source code, or clean pathway for members to get the code for on another 55 models.

CSDMS Model Protocols: Now streamlined and being adopted by the journal Computers & Geosciences (International Association of Mathematical Geosciences), to better penetrate the research community.

Data Repository: Grown by 61% in 2009 to now include: ICE-5G Model Data, Sea Ice data, Harmonized World Soil Database, Sea Level Data, Human dimensions data, ASTER Global Digital Elevation Model. CSDMS distinguishes between at least 3 data types relevant for modeling: 1) boundary or initialization data, 2) model algorithm test or benchmark data, and 3) integrated datasets for model validation of coupled systems.

EKT Repository: 4 modeling courses, educational codes (~ 60 modules) associated with 3 major modeling textbooks, 20 modeling labs, 25 model animations

CSDMS High Performance Computing Cluster (HPCC): Fully functional, presently supporting 7 major projects using multiple processors, and provides the backbone for the CSDMS Modeling Framework for model coupling.

CSDMS Ccaffeine GUI: Fully functional GUI allowing users to graphically build applications from CSDMS components on their own platforms (PC, OX, Linux) and then run them on the CSDMS HPCC server "Beach" *csdms.colorado.edu/wiki/Help:Ccaffeine_GUI* . The new GUI also offers VisIt, a multi-dimensional graphic package designed for Terra-scale, multi-processor rendering for HPC models in a client-server configuration. **This valuable CSDMS functionality is being underwritten through the generous support of StatOil and ConocoPhillips.**

Proof-of-Concept Projects: Completed 3 highly varied exercises in linking six models (SedFlux, GC2D, CHILD, TopoFlow, CEM, HydroTrend) written by 6 authors, in 4 computer languages (c, c++, IDL, Matlab), 3 different grids (raster, non-uniform mesh, spatially-averaged), and 2 levels of granularity (process and modular) {and a partridge in a pear tree}. Valuable lessons learned, including the need for faster more robust grid meshing routines.

Year 4 Goals: 1) CSDMS Website 'A Gateway into the CSDMS World', 2) Usability of the 'CSDMS Modeling Framework', 3) Componentizing the CSDMS Model Repository, 4) Advancing WG & FRG Goals, 5) All-hands Jamboree (either San Antonio or Hawaii) and associated Special Issue, 6) More Technical Advances, and 7) Pedagogical EKT modules.

New CSDMS staff: Dr. Maureen Berlin who is presently working on plume dynamics in Greenland fjords (satellites and modeling) to invert for time-dependent Ice Sheet melt (with Irina Overeem), will be later transitioning to a CSDMS CDI community coordinator and EKT innovator.

Student Modelers Award Winners: (1) Adam Campbell 'Numerical Model investigations … — ice sheet dynamics from a physics-based perspective. (2) Elchin Jafarov for his 'Numerical Modeling of Permafrost Dynamics … Using a High Spatial Resolution Dataset'. CSDMS will fund their visit to Boulder CO to work with staff scientists and develop their models into a CSDMS component.

Reminders: Get your abstracts in (deadline April 30) to the Special CSDMS Symposia SS-11 Recent advances in numerical model on morphodynamics, sediment transport and stratigraphy, part of the 18th Intl Sedimentological Congress, Mendoza Argentina (Sept 26-Oct 1).

Again thanks for your efforts!

James P.M. Syvitski
CSDMS Executive Director