

BY-LAWS OF THE COMMUNITY SURFACE DYNAMICS MODELING SYSTEM

Version 3 Approved by the Executive Committee, June, 2007

As approved by the Steering Committee, XXXXX

PREAMBLE

The Community Surface Dynamics Modeling System (CSDMS) assumes responsibilities to develop, support, and disseminate to the earth-science research and teaching community integrated software modules that are aimed at predicting the erosion, transport, and deposition of sediment and solutes in landscapes and their repository sedimentary basins. The goal of CSDMS is to enable the rapid development and application of linked dynamical models tailored to specific landscape-basin evolution (LBE) problems and at specific temporal and spatial scales. In addition, to foster longer term progress in surface modeling, CSDMS will gather and make available models designed to elucidate poorly understood aspects of landscape and seascape dynamics. To be successful, the CSDMS will develop and maintain a high-level of community participation to ensure:

- a) well-documented and user-friendly LBE software that demonstrably keeps pace with both hardware and scientific developments;
- b) partnerships with related computational and scientific programs in order to eliminate duplication of effort, and leverage mutual progress (i.e., to provide and benefit from an intellectually stimulating environment);
- c) appropriate training for both the users and teaching communities;
- d) hardware and personnel resources to support and facilitate software development and its use by the community;
- e) a strong link between what is predicted by CSDMS codes and what is observed both in nature and in physical experiments.

The CSDMS will develop and maintain the computational system, and it will ensure the portability and interoperability of modules, the computational efficiency of system code, and the clarity and consistency of documentation, interfaces, etc. The CSDMS will also offer pedagogically evaluated LBE technology to enhance and inform education in environments of high school, undergraduate programs, and science museums.

The By-Laws of the Community Surface Dynamics Modeling System (CSDMS) are adopted by the Member Institutions for the purpose of conducting CSDMS business in a collegial manner. They do not override the standard responsibilities and prerogatives of

Principal Investigator and his institution. Should the Director, the CSDMS Executive Committee, and the Directorate not be able to reach agreement on any given issue, the Director, as Principal Investigator, on the core CSDMS Cooperative Agreement, will ultimately retain full authority to make and implement decisions on core CSDMS programs and policies.

ARTICLES

ARTICLE I. NAME

Section 1. Name: The name of the Organization is *Community Surface Dynamics Modeling System (CSDMS)*.

ARTICLE II. MEMBER INSTITUTIONS

Section 1. Membership: Academic institutions, not-for-profit organizations, U.S. state and federal labs, and consulting and industrial companies (Members) that are chartered in the United States, and have a major commitment to research in Earth System Science with a particular emphasis on computational earth-surface dynamics, and related fields (hydrology, fluvial processes, biogeochemistry, sedimentology, stratigraphy, geomorphology, glaciology, oceanography, marine geology, climate forcing, active tectonics, surface geophysics, remote sensing, geomathematics, computational fluid dynamics, computational science, and environmental engineering) may join as Member Institutions of the CSDMS Organization. The Office of the CSDMS Executive Director shall maintain a list of Member Institutions. A membership fee may be applied to for-profit organizations.

Section 2. Election: Qualifying institutions applying for membership may be elected as a CSDMS Directorate member, by the affirmative vote of two-thirds of the members of the entire Directorate, or by unanimous vote of the Executive Committee of CSDMS. The rights and privileges of Members with respect to participation in the scientific activities of CSDMS will be according to policies established by the Directorate.

Section 3. Foreign Affiliations: Institutions not chartered in the United States may be elected to the CSDMS International Partner Sub-Committee for an indefinite term by the affirmative vote of two-thirds of the members of the entire CSDMS Directorate, or by a unanimous vote of the CSDMS Executive Committee. Foreign Affiliates will be represented on the CSDMS Directorate through their elected Chair of the International Partner Sub-Committee. The rights and privileges of Foreign Affiliates with respect to participation in the scientific activities of CSDMS will be according to policies established by the Directorate.

Section 4. Government Agencies: U.S. federal and state agencies may be elected to the CSDMS Agencies Partner Sub-Committee for an indefinite term by the affirmative vote of two-thirds of the members of the entire Directorate, or by a unanimous vote of the CSDMS Executive Committee. The rights and privileges of Agency Affiliates with respect to

participation in the scientific activities of CSDMS will be according to policies established by the Directorate.

Section 5. Industrial Partners: Relevant consulting and industrial companies may be elected to the CSDMS Industrial Partner Sub-Committee for an indefinite term by the affirmative vote of two-thirds of the members of the entire Directorate, or by a unanimous vote of the CSDMS Executive Committee. The rights and privileges of Consulting and Industrial Affiliates with respect to participation in the scientific activities of CSDMS will be according to policies established by the Directorate.

Section 6. Resignation or Removal: Any Member or Affiliate may resign at any time by giving written notice to the Chairperson of the Steering Committee or to the CSDMS Executive Director. Such resignation shall take effect at the time of receipt of the notice, or at any later time specified therein. Given sufficient cause, any Member may be removed by the affirmative vote of two-thirds of the Members of the entire Directorate.

ARTICLE III. CSDMS DIRECTORATE

Section 1. Powers: So long as they do not conflict with the responsibilities of the Principal Investigator (the CSDMS Executive Director), power in the management of the affairs of the CSDMS Organization is vested in the Directorate. To this end and without limitation of the foregoing or of its powers expressly conferred by these By-Laws, the Directorate shall have power to authorize such action on behalf of the Organization, make such rules or regulations for its management, and create additional offices or special committees. The Directorate shall have the power to fill vacancies in, and change the membership of, such committees as are constituted by it.

Section 2. Composition: The Directorate shall be composed of one Representative from each of the Members. Large stand-alone research Institutes, located off a university's main campus, may apply for a separate membership, as an addition to any main campus membership. An Executive Officer, such as a School or College Dean, or Institute Director, shall designate one CSDMS Directorate Representative and an Alternate. The Representative and Alternate shall be holders of an academic or research appointment, with major responsibilities for instruction and/or research in the earth, environmental and engineering sciences, in a department, program, or other organizational unit of such Members.

Section 3. Term of Office: The term of membership is five years. Membership can be renewed, given a review on activities and contributions of the Member.

Section 4. Resignation: Any Member may resign at any time giving written notice to the Chairperson of the Steering Committee, or the Executive Director of CSDMS. Such resignation shall take effect at the time of receipt of the notice, or at any later time specified therein.

Section 6. Alternates: In the absence of a Representative from any meeting of the Directorate, the Alternate may attend such meeting and exercise all the rights, powers, and privileges of the absent Representative.

ARTICLE IV. MEETINGS OF THE CSDMS DIRECTORATE

Section 1. Annual Meeting: An annual meeting of the CSDMS Directorate will be held for any elections and for the transaction of other CSDMS business.

Section 2. Special Meetings: Special meetings of the CSDMS Directorate may be called by the Chairperson of the Steering Committee, or by the CSDMS Executive Director, upon written request of at least one-fifth (1/5) of the membership of the Directorate.

Section 3. Place of Meetings: The CSDMS Executive Director shall designate the place and form (face-to-face or virtual) of the annual meeting or any special meeting and which shall be specified in the notice of meeting or waiver of notice thereof.

Section 4. Notice of Meetings: Notice of such meeting of the Directorate shall be given to each Representative by the CSDMS Executive Director, or by an officer directed by the Executive Committee. Notice shall be given at least sixty (60) days before the date fixed for the meeting. Within 14 days Representatives shall notify the Executive Director of their intent to attend.

Section 5. Quorum: Except as may be otherwise expressly required by these By-Laws, at all meetings of the Directorate, attendance and/or a notification of intent to attend by thirty percent (30%) of the Representatives then serving shall constitute a quorum. At all meetings of any committee of the Directorate a majority of the members of that committee shall constitute a quorum. For the purposes of election of Executive Committee members, a quorum shall be determined in accordance with Article VIII. If a quorum is not present, a majority of the Directorate present may adjourn the meeting without notice other than by announcement at said meeting, until a quorum is present.

Section 6. Voting: Each Directorate Member shall be entitled to one vote. Except as otherwise expressly required by law or these By-Laws, all matters shall be decided by the affirmative vote of a majority of the Representatives present at the time of the vote, if a quorum is then present.

Section 7. Action without a Meeting: Any action required or permitted to be taken by the Directorate, or the Executive Committee, may be taken without a meeting if the Directorate, or the Executive Committee, consent in writing to the adoption of a resolution authorizing the action. The resolution and the written consents thereto shall be filed with the minutes of the proceedings of the Directorate or the Executive Committee.

ARTICLE V. OFFICERS

Section 1. Officers and Qualifications: The Officers of CSDMS shall consist of an Executive Director & Chair of the Executive Committee (the PI), a Chairperson of the Steering Committee, a Chief Software Architect, Chairs of the Working Groups, such other officers as the Directorate may from time to time establish and appoint. Unless otherwise specified by Directorate action, Officers need not be Representatives of Member Institutions.

Section 2. Executive Director: The Executive Director shall, when present, preside at all meetings of the Executive Committee and shall perform such other duties and exercise such other powers as shall from time to time be assigned by the Directorate. The Executive Director shall be an *ex officio* member of all CSDMS committees. Except as otherwise provided by the Directorate, the Director shall be the Chief Executive Officer of the Organization, and unless authority is given by the Directorate to other officers or agents to do so, he or she shall execute all contracts and agreements on behalf of the Organization. The Director shall be the Principal Investigator on proposals, which fund the core CSDMS Facility. It shall be his or her duty, insofar as the facilities and funds furnished to him or her by the Organization permit, to see that the orders and votes of the Directorate and the purposes of the Organization are carried out. The Director shall preside at meetings of the Directorate. The Director shall be a non-voting member of the CSDMS Directorate.

Section 3. Chairperson of the Steering Committee: The Chairperson when present shall preside at all meetings of the Steering Committee and perform such other duties and exercise such other powers as shall from time to time be assigned by the Directorate. The Chairperson of the Steering Committee shall be an *ex officio* member of all CSDMS committees.

Section 4. Chief Software Architect: The Chief Software Architect will act as the chief advisor to the CSDMS Director and Executive Committee on matters of software development and integration. The Chief Software Architect shall be a non-voting member of the Executive Committee.

Section 5. Chairs of Working Groups: Chairs of the defined working groups will be full voting members of both the CSDMS Directorate and the Executive Committee and will represent the following areas of surface dynamics expertise: (i) Terrestrial Systems, (ii) Coastal Systems, (iii) Marine Systems, (iv) Cyberinfrastructure & Numerics, and (v) Education and Knowledge Transfer. They will have the authority to call meetings of the working groups they are responsible for, and according to the directives of the CSDMS Directorate, to meet the collective long-term CSDMS objectives.

Section 6. Election and Term of Office: Appointments of the Executive Committee, for the first start-up year only, shall rest with the Principal Investigator. Appointments for the Working Group members, for the first start-up year only, shall rest with the Executive Committee. All members of the Executive Committee must stand for election thereafter. The Chairperson of the Steering Committee shall be elected by the Directorate for a term not to exceed three years or until his or her successor is chosen and qualifies. The Chairperson of the Steering Committee shall not be eligible for reelection until another

person shall have served an intervening term, or a portion of a term of more than one year, as Chairperson. All other Officers of the Organization, with the exception of the Executive Director, shall be elected by the Directorate for terms not to exceed three years or until their successors are chosen and qualify, and they shall be eligible for reelection.

Section 7. Resignation: Any Officer may resign at any time by giving written notice to the Chairperson of the Steering Committee, or the CSDMS Executive Director. Such resignation shall take effect at the time of receipt of the notice, or at any later time specified therein.

Section 8. Vacancies: Any vacancy in any Office may be filled for the unexpired portion of the term of such office by the Executive Director.

Section 9. Removal: Any officer may be removed at any time with cause by vote of the Directorate.

ARTICLE VI. EXECUTIVE AND OTHER COMMITTEES

Section 1. Executive Committee of CSDMS: The Executive Committee (ExCom) will comprise a) Executive Director and PI of the award as Chair, (non-voting, except to break a tied vote), b) Chair of the Steering Committee (voting); c) Chief Software Architect (non-voting), d) Chairs of the defined working groups (voting): (i) Terrestrial, (ii) Coastal, (iii) Marine, (iv) Computational Cyberinfrastructure, and (v) Education and Knowledge Transfer. The elected members of the Executive Committee shall have terms not to exceed three years or until his or her successor is chosen and qualified. Members of the Executive Committee other than the chair of the Steering Committee may not simultaneously serve on the Steering Committee.

Section 2. Powers of the Executive Committee of CSDMS: Unless otherwise provided by resolution adopted by the affirmative vote of a majority of the entire Directorate, the Executive Committee may have and may exercise all the powers of the Directorate, except that it shall not have authority as to the following matters:

- (a) the amendment or repeal of the By-Laws, or the adoption of new By-Laws; and
- (b) the amendment or repeal of any resolution of the Directorate, which by its terms shall not be so amendable or repealable.

The ExCom is the primary decision-making body of the CSDMS, and will meet twice a year to approve the annual science plan, the semi-annual reports, the management plan, budget, partner membership, and other day-to-day issues that arise in the running of the CSDMS. The Executive Committee will ensure that the objectives of the Cooperative Agreement are met. The ExCom will also develop the By-Laws and Operational Procedures, to be approved by the Directorate. At all meetings of ExCom, the presence of a simple majority of its members then in office shall constitute a quorum for the transaction of business.

Section 3. Special Committees: The Directorate may create such special committees as may be deemed desirable, the members of which shall be appointed by the Executive Director from among the Directorate, with the membership approved by the Executive Committee. Each such committee shall have only the lawful powers specifically delegated to it by the Directorate.

Section 4. Standing Committees: There will be standing committees as defined in Article VII for overseeing the major scientific and research programs to which the Organization provides scientific counsel and advice or management direction and fiscal recommendations.

ARTICLE VII. STEERING COMMITTEE AND PARTNER COMMITTEE

Section 1. Steering Committee: In order to carry out and oversee CSDMS operations, a Steering Committee (SC) shall be established. The Steering Committee will comprise eight (8) members: five (5) selected by the ExCom to represent the spectrum of relevant Earth science and computational disciplines, and one (1) from each of the three Partner Sub-Committees. The cognizant NSF program officer or his/her designate, and the Executive Director or his/her designate, will serve as *ex officio* members of the SC. During SC meetings, there may be occasions when these *ex officio* members would exclude themselves from discussions.

The SC members will serve terms up to three years duration. The Steering Committee will meet once a year to assess the competing objectives and needs of the CSDMS; will comment on the progress of CSDMS in terms of science (including the development of working groups and partner memberships), management, outreach, and education; and will comment on and advise on revisions to the 5-year strategic plan. The Steering Committee will provide a timely report to the Executive Director to which s/he will respond within four weeks.

Section 2. Partner Committee: The Partner Committee (PC) will comprise the International, the Agencies, and the Industrial Partner Sub-Committees. The PC will be provided with all relevant documents in order to provide meaningful feedback to the Executive Committee and to the NSF Program Director. The Partner Membership will be encouraged to develop its own governance.

ARTICLE VIII. WORKING GROUPS

Section 1. Working Groups: Five Working Groups will be established to support the CSDMS program: three (3) Environmental Working Groups and two (2) Integrative Working Groups. The three key Environmental Working Groups are:

- i) Terrestrial WG: weathering, hillslope, fluvial, glacial, aeolian, lacustrial;
- ii) Coastal WG: delta, estuary, bays and lagoons, nearshore;

- iii) Marine WG: shelf, carbonate, slope, deep marine.

The two key Integrative Working Groups are:

- iv) Education and Knowledge Transfer (EKT) WG: includes marketing to gain end-users, workshops to provide training for end-users, web-based access to simple models (e.g. K-12 teaching), access to archives of simulations. This WG will interact closely with the Partner Committees (Industrial, Agency, International), and field programs, and our cyberinformatic partners.
- v) Technology WG: includes technical computational aspects of the CSDMS, ensures that the modeling system properly functions and is accessible to users; software protocols are maintained, along with model standardization and visualization. Details are spelled out below in CSDMS Objectives and Tasks.

Section 2. Membership: Membership is open to all interested participants. Working Group members should represent the Community knowledge base and state-of-the-science; know the Community of practitioners and experts including ongoing funded projects and developing opportunities; and foster interdisciplinarity within and between CSDMS working groups. Working Group Chairs may appoint a Coordinating Committee.

Section 3. Responsibilities/Activities:

- iv) **Group Discussion:** Identify processes that should be in their disciplinary toolkit, gaps in knowledge, and areas where numerical tools need to be developed. Set scientific modeling priorities for their discipline. Make recommendations for resource prioritization and facilitate the movement of these priorities up the hierarchy from technology group to steering committee.
- v) **Review Activities:** Ensure quality control for the algorithms and modules for their area of expertise (benchmarking and model testing). Coordinate the evaluation of numerical codes according to interoperability, scientific contribution, and technical documentation. Ensure adequacy of supporting boundary conditions and boundary initializations.
- iv) **Group Project:** Address a CSDMS proof-of-concept challenge, if appropriate.
- v) **Individually and collectively:** Stimulate proposals and input from the community. Create and/or manage the various environmental process modules related to their discipline. Provide community continuity to meet long-term CSDMS objectives.
- vi) **Meetings:** Working Groups will coordinate much of their activity via remote communication systems, but are encouraged to meet as resources and interests permit.
- vii) **Reporting:** Working Groups will report annually on their progress.

ARTICLE IX. ELECTIONS

Section 1. Executive Committee: After the first year and with the exception of the Executive Director, Executive Committee members will be elected by the Directorate annually in accordance with the procedures established in this Article.

Section 2. Nominations for the Executive Committee: In consultation with the Steering Committee the Executive Director will nominate candidates for each position to be filled. The Directorate is encouraged to suggest nominees to the Executive Director.

Section 3. Election: Election shall be conducted electronically or by written ballot. If the election occurs at the Annual Meeting, ballots may be cast in person by a Representative at the meeting, or by email. Electronic votes must be received by the CSDMS Office by the deadline specified in the ballot. The outcome of the election will be decided by a simple majority of the votes cast.

Section 4. Counting of ballots: Ballots shall be counted by the Steering Committee Chair or his/her designated representative.

ARTICLE X. COMPENSATION

Section 1. Compensation: No Representative shall be paid any compensation for serving as a Representative. Representatives may be reimbursed for the actual expenses incurred in performing duties assigned to them by the Directorate, within limitations of the host Institution's budget associated with the NSF Cooperative Agreement 0621695.

ARTICLE XI. AMENDMENTS TO THE BY-LAWS

Section 1. Amendments: All By-Laws of the Organization shall be subject to amendment or repeal and new By-Laws may be made by the affirmative vote of two-thirds of the entire Directorate at any annual or virtual meeting.