System Dynamics Review Submission Categories

The *System Dynamics Review* invites work in and about the field of system dynamics. We encourage formal scholarly research, insights and ideas for improving theory and practice, and descriptions of work done using the tools and techniques of the field. We strive for a publication that reflects the state of the art in what can be done, and the breadth of activities in what is being done. To accomplish this, we have several different submission categories for which contributions are evaluated using criteria tailored to the category.

Research Articles

Research articles represent high quality academically grounded work that advances the field of system dynamics. They include research about methodology, applications, educational practices, and other work that adds to the body of knowledge in the field. They provide the foundation for ongoing research, curriculum development, and the improvement of practice. Research articles document original work, the foundations for that work, and the rigorous assessment of the value of that work for both the theoretical and practical developments in the field. They identify a method, approach, tool, technique, or process that could be of value to the field, or applications of existing tools and techniques that provide substantive insights into an area of application. In all cases the work should be grounded in the appropriate literature and have a clearly articulated framework in which the value of the contribution is assessed.

Focus

Applications of the tools and techniques of system dynamics, including any or all of problem framing, conceptualization, feedback analysis, simulation, and validation, to important or novel problem areas are encouraged. Work that enhances, makes more accessible, or provides alternatives to those existing tools and techniques is welcome. Research articles should identify what new knowledge or understanding they are attempting to provide and convincingly demonstrate their success in providing it. They should be grounded in the literature of system dynamics and other relevant disciplines. The *System Dynamics Review* strives to be the journal of record for the field of system dynamics and invites authors to submit both groundbreaking and foundational work. Derivational work is welcome for substantive improvements and adaptations, while authors providing summaries of, or small changes to, foundational research are encouraged to submit work in the Notes and Insights category described below.

Demonstration of Value

Work must be original and substantive and have the potential to advance the theory and practice of system dynamics. Value is judged on (1) whether the hypothesized advance is sufficiently novel and addresses a clear problem in the field, (2) whether the methodological approach is appropriate and the evidence provided is sufficiently rigorous to justify the conclusion, and (3) how clearly the authors state and demonstrate their contribution to the field. Research questions can be very diverse, including

application of the conceptual and quantitative tools and techniques of system dynamics to both real world problems and theoretical constructs from other fields. In all cases, investigating the research questions needs to be done with the rigor appropriate for the tools being applied and accepted standards of practice in the domain under study.

Nature of Citations

Research articles should be well-grounded in appropriate literature and include relevant citations. A literature review, or its equivalent, should demonstrate how the work being done fits in with the existing body of knowledge. Authors should assume a basic familiarity of the reader with work done in the field of system dynamics and forego citations that are foundational to system dynamics, but not directly germane to the work being done (it is not necessary to describe the basics of system dynamics in SDR). Foundational citations from other disciplines are helpful insofar as they provide a starting point for the reader to acquaint themselves with that discipline but should be kept to a minimum.

Format Expectations

Submitted articles should be between 5,000 and 10,000 words in length and include figures and tables as necessary to convey content; shorter papers demonstrating clear value will also be considered. Research articles follow the basic structure of introduction, methods, results, and discussion, which include the following content:

- A clear statement of the research problem and hypothesis being investigated.
- Background discussion of related work including citations providing information on any domain specific issues that will be addressed.
- A description of the methods used in conducting the work.
    - For applications include an overview of the model, the process it was arrived at, the dynamic hypotheses it embodies, the validation steps used, and, for quantitative models, the key elements of structure driving the behavior of interest and the computational process used to get results.
    - For methodological work articulate the practical implications of the research problem for addressing dynamics problems with system dynamics.
- The results of conducting the work or a brief chronicling of the engagement process.
- A description of the evidence used to demonstrate that the conclusions are grounded or otherwise validated.
- An articulation of the practical value the work has in moving the theory and practice of system dynamics forward.
- Reflection on whether the work achieved the intended contribution and why.
- Suggestions for extensions and expansion of the work described.

The inclusion of diagrams, equations, survey summaries, or other elements of the work within the body of the paper is encouraged. Detailed artifacts such as models, data, surveys, and other material should be included as supplementary attachments.

Review Process

Submitted papers will first be evaluated by the Executive Editor, possibly in consultation with a Managing Editor, who will decide if the work is a good fit and of apparently sufficient quality to potentially be published in the System Dynamics Review. Papers that do not meet these criteria s will not be further reviewed and the authors so informed (desk decision). Papers that do will be sent to a Managing Editor who will assign two or more blind reviewers based on the content. The Managing Editor will synthesize the comments of the reviewers and make a decision to: 1) accept the paper as is, 2) accept the paper with minor revisions, 3) accept the paper with major revisions, or 4) reject the paper. Papers accepted with minor changes when resubmitted will normally be accepted or returned by the Managing Editor without further assignment of blind reviewers. Papers for which major revisions were requested will be sent on for additional blind review if the Managing Editor believes the authors have substantively addressed the communicated concerns, or directly returned if not. The assigned blind reviewers may or may not be those originally assigned. There is a target of only one major revision cycle for each submitted paper.

Review Criteria

Papers submitted in this category will be valued based on:

- **Completeness:** Does the paper clearly state the research problem, hypothesis/innovation, methods, and findings?
- **Relevance:** Does the research fill a clear need in the field or demonstrate the value of the field? Is the research problem clearly justified?
- **Citations:** Is the paper appropriately grounded in the literature?
- **Framing**: Are the methods used and evidence provided appropriate for evaluating the work?
- **Rigor:** Does the paper clearly connect the findings with the hypothesis?
- **Reflection:** Does the paper sufficiently discuss advances for the field that are indicated by the findings? If the findings do not support the hypothesis, are the research paths to be avoided clearly indicated?

Papers of Practice

Papers of practice demonstrate the breadth of ways in which people are applying system dynamics and its constituent tools and techniques in diverse organizational, educational, and societal settings. They provide information about the state of practice in the field and introduce innovations and adaptations that have been employed with different degrees of success. As such, they serve as a knowledge repository of current practice which can be used by practitioners to tailor their own offerings and by researchers to evaluate the contributions of the different approaches and adaptations.

Focus

Papers of practice are welcome in all areas where system dynamics or its constituent tools and techniques are being applied, whether to solve specific problems or develop the problem-solving skills of others. Papers should clearly articulate the problem, opportunity, or objective of the application and show the way in which the work helped, or intended to help, in addressing the problem. What was done

should be described in a way that is clear to other practitioners. Applications need to use the tools and technique of system dynamics, but need not represent complete model development and analysis. Skill building activities can include curricular material, workshop designs, and exercise descriptions used in formal educational settings, skill development for professionals, community outreach, or other learning environments.

Papers of practice are intended to be of value to those who are also doing or intending to do hands-on work. As such, papers should focus on the practical aspects of the work done, include the information necessary for readers with the requisite background to perform similar work, and include reflections on the experience that would be useful to others considering similar work.

Demonstration of Value

The intent of these papers is to keep people in the field apprised of what is being tried, what works, what does not work, and why. Papers of Practice should describe consulting, teaching, and other interactions intended to help with understanding, decision making and policy design. The goals of the work, which should include the expected improvements in performance, learning, or behavior, should be articulated. However, the value of papers of practice does not depend upon whether the work achieved its goals. There is much to be learned from work that failed to achieve its objectives and reflections on why, as this can help others avoid pitfalls.

To the extent that any work is repeated in different contexts or with different groups of participants it is useful to report the results in each case. Measures of success should be reported, whether these are anecdotal or formally collected data. It is recognized that much of current practice is done in settings where formal data collection and evaluation is not part of the process. As such, reporting on outcomes as observed by the authors and any other stakeholders should be included to help provide context.

In all cases reflection on the work being described is critical. Discussing the ways that the setting in which the work was performed contributed to (or detracted from) success can help others better understand where the work might be effectively used. Realized outcomes that are a surprise, essentially side effects, should also be brought to the readers' attention and discussed. Work of this type will help in building a strong community of practice and can also form a basis for rigorous academic research.

Nature of Citations

Papers of practice should be practically grounded and do not require a comprehensive literature review. However, the material presented should clearly indicate the base of knowledge on which it was built. In many cases this may be a small number of textbooks or articles. Techniques and procedures developed by others should be appropriately credited. Literature used in support of reflections, even when referenced after completion of the work, should be included. Novelty of approach is not a prerequisite for publication, as these articles also build the body of knowledge around applying similar techniques in different practical settings.

For papers that deal with a substantive issue in a specific problem domain, such as transportation or public health, citations that put the work in context should be included. Citations that are approachable by those without domain expertise are the most valuable.

Format Expectations

Submissions should be concise, but complete, and approximately 3,000 to 5,000 words in length.

Interventions intended to understand a dynamic phenomenon or to inform or guide the decisions of stakeholders should lay out clearly what has been done, for whom, and with what effect. There is an example template for these papers. Papers of Practice should include as many of the following topics as possible:

- Problem articulation or objective of the intervention.
- Existing approaches to dealing with the problem that would have been used had no intervention occurred.
- A description of the process used in the work being described.
- Key artifacts (models, diagrams, pictures) used in the process that help describe what was done.
- Recommendations or insights delivered.
- The actions taken by stakeholders after the intervention contrasted with the momentum policies.
- Reflections on what worked and what didn't, any key insights about the practice and suggested revisions to the approach.
- Recommendations/suggestions for other practitioners who might be interested in applying a similar approach.

Work that is educational in nature should describe the learning objectives, what was done to achieve them, and include the content needed to replicate the work. There is an example template for these papers, and they should include as many as possible of:

- A description of the learning objective, target audience, and any specific skills being developed.
- Sufficient grounding in previous work done in this area and discussion of how this approach extends or differs from previous work.
- Description of the educational approach used in sufficient detail that other practitioners could repeat it. Specific details or curriculum materials may be included in appendices or supplementary material.
- Outcome measures that indicate whether and how well the learning objectives were achieved. In contrast to the assessments required for a research article, outcome measures for papers of practice may include observations or participant reactions that are not part of a rigorous research design.
- Reflections on what worked and what did not, any key insights into best practice and suggested revisions to the approach.
- Recommendations/suggestions for other practitioners who might be interested in applying a similar approach.

Review Process

The review process follows the standard process for research articles but with different review criteria as described below.

Everything submitted for review should also be available in the final publication. Confidential or sensitive information not appropriate for publication should not be included in submissions. When data and descriptions have been modified to protect confidential information, a statement to that effect should be included in the submitted material.

Review Criteria

Papers submitted in this category will be valued based on:

- **Relevance** Does the paper demonstrate a legitimate use of one or more of the tools and techniques of system dynamics and systems thinking?
- **Novelty or Valuation** Does the paper: 1) demonstrate a novel use of techniques based on application domain, target audience, or formulations; or 2) provide distinct evidence around what is effective and what is not for commonly use techniques?
- **Completeness** Does the paper (and any supporting materials) make clear what was done and when it was done (while protecting confidential information as needed)?
- **Context** Is there sufficient relevant reflection to understand the settings in which the work described could flourish or might flounder?
- **Clarity** Is the paper sufficiently well organized and written to be clearly understood?
- **Grounding** Is the work clearly grounded in the practice of system dynamics?

- **Generalizability** Have the authors reflected on the circumstances under which the work could be applied in other settings?

Notes and Insights

Notes and Insights are important, but contained, observations on and extensions of existing work that can be conveyed in a relatively short article.

Focus

Notes and insights will typically try to make one or two points that are of interest and value to those working in the field of system dynamics. This includes extensions of or corrections to work already published, results of experiments conducted based on published material, innovations in process that had a noticeable impact, formulations for problems that helped in a modeling project, summaries of work germane to the field published in other journals, and anything else that might be of interest and value to those working in system dynamics and can be conveyed concisely.

Demonstration of Value

Notes and insights are intended to be nuggets of information and not complete research projects. They should improve understanding and provide useful guidance in the practice of system dynamics or

provoke discussion within the system dynamics community. The contribution should be original to the System Dynamics Review, though it can summarize work published elsewhere.

Nature of Citations

Citations of work being extended, corrected, or summarized are necessary. For notes related to practice, citations should include commonly accepted descriptions of the best related practice. For notes relating to formulations or technical approaches, citations should include the foundational work from which the derivation was made and alternative derivations that address the same issue. In short, the citations should provide the context in which the note or insight applies.

Format Expectations

Notes and Insights submissions should be between 1,000 and 3,000 words. There should be a clear statement of the context in which the work is being applied, and then a clear delineation of the note or insight. When applicable, examples are welcome as these will increase the ability of readers to make use of the work. Suggestions for other work that would build on, or more fully contextualize, the content provided are welcome.

Review Process

Notes and insights may be directly accepted or rejected by the Executive Editor working in conjunction with a Managing Editor or be sent out for blind review. Decisions on revisions based on reviewer feedback will be handled directly by the Executive Editor or a Managing Editor.

Review Criteria

Notes and insights submissions will be judged based on their relevance, clarity, helpfulness and technical correctness.

Fast Track

Not a category in and of itself, Fast Track is an option for each of the above categories that guarantees a negative decision more quickly by rejecting any submissions for which a major revision will be required. When received, any substantial shortcomings in organization, presentation, or content will cause the submission to be rejected without going out for review. This is true even for submissions that appear promising. After review, if a major revision is deemed necessary the submission will be rejected.

Fast Track is designed to facilitate work that is related to current societal issues and will be more valuable the sooner it is published. Any Fast Track submissions that ultimately appear in the System Dynamics Review will go through the same rigorous review process as all published articles. The only difference is that the decision not to accept a submission will be given more quickly, without multiple opportunities for revision.

Letters and Commentary

Letters and commentary include announcements, responses to articles published in the System Dynamics review, short essays or editorials, and errata. They should be short, 300-1500 words, and

focused on one article, activity or message relevant to system dynamics. They will be reviewed by the Executive Editor to determine suitability for publication.

Confidential Information, Human Subject Research and Personally Identifiable Information

Authors are responsible for ensuring that all information provided can be disclosed in accordance with common ethical practices and the wishes of any clients or stakeholders as well as applicable rules and regulations in the area of application.

Much of the work done in system dynamics is about systems involving people and is typically conducted with stakeholders and subject matter experts. In conducting this work authors are expected to follow the ethical guidelines for human subject research in accordance with the policies of their institutions and the laws of the countries where the work is done.

In all cases, personally identifiable information beyond the names and organization information of the authors, cited authors and widely known figures should not be included in any submission.