AAAI Spring Symposium Series Call for Participation

March 25, 26, & 27, 1992
Stanford University • Stanford, California

Sponsored by the American Association for Artificial Intelligence
445 Burgess Drive, Menlo Park, CA 94025 (415) 328-3123 sss@aaai.org

THE AMERICAN ASSOCIATION FOR ARTIFICIAL INTELLIGENCE (in cooperation with Stanford University's Department of Computer Science) presents the 1992 Spring Symposium Series to be held Wednesday through Friday, March 25 – 27, 1992, at Stanford University.

The topics of the nine symposia in the 1992 Spring Symposium Series are:

- ▲ Artificial Intelligence in Medicine
- ▲ Cognitive Aspects of Knowledge Acquisition
- ▲ Computational Considerations in Supporting Incremental Modification and Reuse
- ▲ Knowledge Assimilation
- ▲ Practical Approaches to Planning and Scheduling
- ▲ Producing Cooperative Explanations
- ▲ Propositional Knowledge Representation
- ▲ Reasoning with Diagrammatic Representations
- ▲ Selective Perception

Most symposia will be limited to approximately 60 participants. Each participant will be expected to attend a single symposium. Working notes will be prepared and distributed to participants in each symposium.

A general plenary session will be scheduled during which the highlights of each symposium will be presented. An informal reception will be held Wednesday evening, March 25th.

In addition to invited participants, a limited number of other interested parties will be allowed to register in each symposium. Registration information will be available in December 1991. To obtain registration information write to the address above.

Submission Requirements

Submission requirements vary with each symposium, and are listed in the descriptions of the symposia. Please send your submissions directly to the address given in the description. DO NOT SEND submissions to AAAI. All submissions must arrive by November 15, 1991. Acceptances will be mailed by December 13, 1991. Material for inclusion in the working notes of the symposia will be required by January 31, 1992.

Artificial Intelligence in Medicine

In the Call for Participation for the 1990 AAAI Spring Symposium on Artificial Intelligence in Medicine (AIM), we stated: "The richness of medical knowledge and the complexity of clinical inference continues to challenge workers in AI to explore novel approaches in the modeling of medical expertise." Two successful Spring Symposiums in 1988 and 1990 highlighted the diversity of issues and methods addressed within the AIM community.

In the 1992 AIM Symposium, we seek to emphasize the presentation of new work that addresses issues at the foundation of representing and reasoning with medical knowledge. Relevant topics that illustrate the type of foundational issues that are of particular interest include:

- ▲ Alternative conceptualizations of medical knowledge. Topics related to the ontology and epistemology of medical knowledge required for expert-level system behavior. Research on the unified representation of causal, temporal, stochastic, and phenomenological knowledge is particularly relevant.
- ▲ Methodologies for understanding and encoding medical knowledge. Topics related to new cognitive, sociological, and anthropological methodologies as applied to the structure and function of medical knowledge in clinical problem solving. Research on task-specific knowledge acquisition is particularly relevant.
- ▲ Approaches to generating and reusing medical knowledge. Relevant topics include machine learning from medical databases, case-based reasoning, and language standardization for knowledge sharing across methodologies, representations and tasks.

To stimulate comparisons across representational formalisms and inferential methodologies, the Program Committee has selected a recent review article to be used as the focus of workshop activities. The article "Graft-versus-Host Disease" from the New England Journal of Medicine Volume 324, Number 10, pages 667–674 (March 7, 1991), describes a wide range of medical diagnostic, pathophysiologic, clinical, and therapeutic concepts and problems in GVH disease. These concepts are typical of the knowledge needed to identify and solve difficult clinical issues.

Investigators are asked to select any aspect of this article (diagnostic, therapeutic, physiologic, etc.) and either to describe how they would represent this knowledge in their formalism or to demonstrate how their methodology would approach the required reasoning tasks. Any of the 55 citations referenced in the primary article may be consulted to acquire more detailed medical knowledge. Investigators who do not have access to this article will be sent a copy by sending a written, electronic, or fax message to Michael Kahn (address and phone numbers below). Invited participants will receive 2–3 clinical vignettes of GVH disease; these vignettes will be used by participants during the workshop to demonstrate their solutions to specific clinical problems.

To accommodate truly unique methodologies that address issues not represented in the NEJM article, investigators may demonstrate their approach using a different source of medical knowledge (please cite the source). These submissions will be stringently reviewed to ensure that the NEJM article could not have been used as the knowledge source.

The desired format for the workshop will be oral presentations and poster sessions. If you would like to attend, please submit an abstract of no more than two pages that describes your representation of any portion of the NEJM article. Also indicate if you would be willing to submit a written extended analysis (4–5 pages) for oral presentation. Invited participants will receive the set of GVH disease clinical vignettes with their acceptance notice. As part of the workshop notes, all participants will receive a copy of the submitted abstracts, extended analyses, the clinical vignettes, and the knowledge sources used in the submissions.

Send all materials by November 15, 1991, to:

Michael G. Kahn
Medical Informatics Laboratory
Department of Internal Medicine
Washington University School of
Medicine, Campus Box 8005
660 South Euclid Avenue, St. Louis MO 63110
kahn@informatics.wustl.edu.
Fax: 314/362-8015 • Phone: 314/362-4320.

Program Committee: Michael Kahn (cochair), Jack Smith (cochair), Bruce Buchanan, Mark Musen, Peter Szolovits.

Cognitive Aspects of Knowledge Acquisition

The objective of this Symposium is to bring together a multidisciplinary group of researchers to focus on issues associated with cognitive aspects of knowledge acquisition. It will have as its theme the knowledge processes of society, what these are, how the knowledge construct arises in model, what purpose it serves as a theoretical and practical construct, how individual cognitive processes mesh with sociocultural processes, and the roles of information technology and artificial intelligence in the development of these processes.

The issues center around the relation between the individual as a skilled autonomous agent and the knowledge processes within the cultures and societies within which that individual is embedded. What artifacts arise when we model knowledge as located within the individual and neglect the dependence of that individual's knowledge processes on supporting cultures? In particular, the individual's knowledge acquisition processes seem critically dependent on sociocultural phenomena which have so far not been overtly taken into account in the study of knowledge acquisition in artificial intelligence.

It would be unrealistic to expect the Symposium to provide answers to these questions. Rather it is intended to nucleate an ongoing discussion between various communities of interest that have related ideas, problems, and complementary contributions to a very significant and wide-ranging research domain. The sessions will be structured around provocative position papers raising and clarifying major issues, with a focus on discussing the significance of these issues for different subdisciplines of artificial intelligence, and the contributions to these issues both from within artificial intelligence and from many other disciplines including philosophy, psychology, anthropology, cognitive science, sociology and economics.

Those wishing to participate should submit five copies of a position paper of five to twenty pages. Theoretical papers addressing the basic issues and practical papers on relevant experience and the impact on knowledge acquisition methodologies are equally welcome. Papers should be concise and crisp in style, raising issues and stating them clearly for general discussion.

Prospective participants are encouraged to contact committee members for more information on the symposium.

Papers must be sent so that they arrive by 15 November, 1991, to:

Brian Gaines
AAAI Spring Symposium
Knowledge Science Institute
University of Calgary
Calgary, Alberta T2N 1N4
Canada

Program Committee: John H. Boose, Boeing Advanced Technology Center (john@atc.boeing.com); Bill Clancey, Institute for Research on Learning (William_Clancey.PARC@xerox.com); Brian Gaines, University of Calgary (gaines@cpsc.ucalgary.ca); Alain Rappaport, Neuron Data (Alain.Rappaport@ml.ri.cmu.edu)

Computational Considerations in Supporting Incremental Modification and Reuse

The ability to modify previously synthesized artifacts (such as plans, designs, and programs) to meet new specifications is very valuable for many tasks. Such reuse can provide substantial computational advantages by respecting previous commitments and avoiding repetition of computational effort. Consequently, incremental modification has emerged as an important research issue in many areas of AI, including planning, scheduling, design, knowledge-based software engineering, and scientific theory formation. A variety of computational mechanisms—such as heuristic modification, derivational replay, causal analysis, and dependency and rationale management—have been explored within these areas.

This symposium seeks to bring together researchers working on modification issues in various areas to facilitate sharing of techniques. The major goals of the symposium are to identify the principles that have been used in developing methods for incremental modification in various domains, classify the tasks to which they are applicable, and search for unifying themes among the diversity of modification strategies and systems.

The emphasis of the symposium will be on discussions of computational principles and mechanisms for supporting incremental modification and reuse. Several types of submissions are encouraged:

- Descriptions of implemented modification systems with an emphasis on the relation between the characteristics of the particular modification task (e.g. requirements on the autonomy and efficiency of the modification process, requirements on the quality of the modified artifact) & the modification technique.
- Conceptual frameworks addressing issues pertinent to incremental modification and reuse such as the relation between the modification process and the content of knowledge (e.g. rationale, causal model, derivational record) about the artifact being modified.
- Analyses of domain-independent enabling technologies (e.g., reason maintenance systems, constraint propagation) for supporting modification.
- Frameworks for empirical and theoretical evaluation of the efficiency, optimality and correctness of modification strategies.

Prospective participants are encouraged to contact the chair of the program committee by email to obtain a more detailed description of the symposium's goals. Those wishing to only attend the symposium should then submit four copies of a 1-page statement of research interests and accomplishments, and a bibliography of selected publications. Those wishing to present their work for discussion should submit, in addition, four copies of an extended abstract of no more than 4 pages.

Submissions should be sent to arrive by November 15th to:

Subbarao Kambhampati
Dept. of Computer Science and Engineering
Arizona State University, Tempe, AZ 85287

Program Committee: Ashok Goel (goel@cc.gatech.edu), Subbarao Kambhampati (chair, rao@cs.stanford.edu), John Mylopolous (jm@ai.toronto.edu), Bill Swartout (swartout@isi.edu).

Knowledge Assimilation

In recent years, much of machine learning research has concentrated on algorithms for the two relatively separate tasks of accelerating problem solvers, and inducing concepts from examples. Important new techniques have emerged in both areas, notably explanation-based learning and probably-approximately-correct algorithms. However, relatively little attention has been paid to learning techniques that can enable an agent to improve its performance along multiple dimensions over time. The symposium will focus on this task as a potential new unifying theme for research.

A system whose performance improves in an independently changing environment must be capable both of acquiring fresh information and of increasing the effectiveness with which it uses the information it already possesses. The title "Knowledge Assimilation" emphasizes the need to mesh together old and new knowledge, in sharp distinction to both pure speedup learning and pure concept induction. Overall performance improvement is also more than speedup learning plus concept induction, because new and old knowledge must be restructured and interlinked to allow all information to be used effectively. Moreover, knowledge assimilation cannot have a single objective: ecologically useful learning algorithms must make rational tradeoffs between increasing an agent's stock of information, its speed, and other aspects of performance.

Some specific research questions relevant to the theme of knowledge assimilation include:

- What knowledge must an agent possess before it can start learning?
- How is knowledge assimilation different for robots and for disembodied knowledge base?
- How does the availability of a teacher or the ability to perform experiments influence learning?
- How should an agent allocate resources to different learning subtasks?
- What are the implications of PAC results for practical learning agents?
- When is it useful to introduce new ontological distinctions?
- How can theories be restructured to accommodate new concepts?
- How can the usefulness of alternative knowledge (re)organizations be measured?
- How should analytical and empirical support for elements of knowledge be combined?
- How should knowledge be updated to account for contradictory evidence?

Although it is hoped that participants will reflect on the theme of knowledge assimilation, and make efforts to discuss their work from a shared perspective, there will be room at the symposium for conflicting points of view. The fundamental objective is to bring together researchers in machine learning and related areas to discuss the opportunities for consolidating past work and moving forward in a common direction.

Concretely, the symposium will consist of indi-

vidual presentations and panel debates, with ample opportunity for all participants to relate experiences and express opinions. Those who wish to make presentations should submit a draft paper, of length at most ten pages. In addition to reports on current research, which may be preliminary, critical reviews and rational reconstructions of previous work are also welcome. All prospective submitters are encouraged to contact the program committee (preferably by email) to discuss how what they wish to present is coordinated with the objectives of the symposium. Paper submissions are encouraged from students as well as from experienced researchers.

Those who wish to attend without presenting a paper should send a description of their research interests and a list of their related publications.

Four copies of all submissions should be sent to arrive by November 15, 1991, to:

Charles Elkan
Dept. of Computer Science and Engineering
University of California, San Diego
La Jolla, California 92093-0114

Program Committee: Tom Dietterich (tgd@cs. orst.edu), Charles Elkan (elkan@cs.ucsd.edu), Oren Etzioni (etzioni@cs.washington.edu), and Bart Selman (selman@research.att.com).

Practical Approaches to Scheduling and Planning

Government and industry require practical approaches to a diverse set of complex scheduling and planning problems. While scheduling has been studied in isolation for many years, recent advances in artificial intelligence, control theory, and operations research indicate a renewed interest in this area. In addition, the scheduling problem is being defined more generally, and work is beginning to consider the closed-loop use of scheduling systems in operational contexts. This symposium will serve to bring together theorists and practitioners from diverse backgrounds, with the aim of disseminating recent results and fostering the development of a cross-discipline understanding.

The symposium will focus on issues involved in the construction and deployment of practical scheduling systems that can deal with resource and time limitations. To qualify as "practical," a system must be implemented and tested to some degree on non-trivial problems (ideally, on real-world problems). However, a system need not be fully deployed to qualify. Systems that schedule actions in terms of metric time constraints typically represent and reason about an external numeric clock or calendar, and can be contrasted with those systems that represent time purely symbolically.

Issues to be discussed at the symposium include, but are not strictly limited to, the following:

- ▲ Integrating planning and scheduling
- ▲ Integrating symbolic goals & numerical utilities
- ▲ Managing uncertainty
- ▲ Incremental rescheduling
- ▲ Managing limited computation time
- ▲ Anytime scheduling and planning algorithms
- ▲ Systems
- ▲ Dependency analysis and schedule reuse
- ▲ Management of schedule and plan execution
- ▲ Incorporation of techniques from discrete event control
- ▲ Incorporation of techniques from operations research
- ▲ Learning
- ▲ Measures of schedule and plan quality
- ▲ Search techniques
- ▲ Methodology
- ▲ Applications.

Prospective participants are encouraged to submit papers that deal with any of these issues. Research results, position declarations, and system descriptions are all appropriate. A paper need not describe final results, so reports on work in progress are welcome. Papers must be no longer than 10 pages and should be as short as possible. All papers are to be sent via electronic mail to zweben@ptolemy. arc.nasa.gov (standard LaTeX or pure ASCII only), to arrive by November 15, 1991. Prospective participants may contact committee members for more information on the symposium.

If electronic mail is impossible, send five paper copies (same deadline) clearly marked AAAI Spring Symposium to:

Monte Zweben, NASA Ames Research Center
MS: 244-17, Moffett Field, CA 94035

Program Committee: Mark Drummond, NASA Ames Research Center (drummond@ptolemy. arc.nasa.gov); Mark Fox, University of Toronto; Austin Tate, AI Applications Institute (A.Tate% ed@nsfnet-relay.ac.uk); Monte Zweben, NASA Ames Research Center (zweben@ptolemy. arc.nasa.gov)

Producing Cooperative Explanations

Many AI applications now attempt to provide cooperative explanations to their users. These applications include expert systems, tutoring systems, help systems, automated design assistants, and natural language interfaces to data bases. Explanations are cooperative when they are intended both to help the system's users achieve their goals and to be as easy as possible to understand. Often this requires that these systems not only explain their reasoning and the knowledge underlying it, but also correct and explain errors in user reasoning and beliefs. In addition, the systems must ensure that these explanations are presented in terminology familiar to the user. These explanations are important, as they can help hasten the user's gradually deepening understanding of a particular domain.

Modeling this process of providing cooperative explanations is relevant to many different areas within AI. These areas include user and student modeling, discourse processing, plan formation, text generation, intelligent interfaces, and expert systems. This symposium provides a forum for researchers from these diverse communities to present and evaluate computational models of the process of providing these explanations. Some of the questions to be discussed include:

- ▲ What techniques can be used to form cooperative explanations, and what are their relative strengths and weaknesses?
- ▲ What knowledge must be available to construct these explanations?
- ▲ How are these explanations represented, and what makes one representational scheme better or worse than another?
- ▲ What are the criteria for evaluating the quality and appropriateness of a particular explanation?
- ▲ What should be done when the user doesn't understand or fails to accept a provided explanation?
- ▲ How does the choice of task or domain affect the explanation-producing process?
- ▲ How are theoretical models of the process of providing these explanations actually implemented in existing systems?

Prospective participants should submit a single page summarizing their research interests, and providing pointers to any relevant, previously published papers. Those interested in presenting their work should also submit a complete paper describing it (up to a maximum of ten pages). Electronic submissions are preferred, and should be sent to alex@wiliki.eng.hawaii.edu. If electronic mail is unavailable, four paper copies should be submitted to:

Dr. Alex Quilici, Dept. of Electrical Engineering
University of Hawaii at Manoa
2540 Dole St, Holmes Hall 483
Honolulu, HI, 96822

All submissions must be received by November 15, 1991.

Program Committee: David Chin, Johanna Moore, Cecile Paris, Alex Quilici (chair).

Propositional Knowledge Representation

The key to propositional knowledge representation is that propositions can be represented by terms in a formal representation language, and hence properties of propositions and beliefs about propositions can be represented. This facilitates the study of representation and reasoning about beliefs, nested beliefs, and other propositional attitudes such as desires, wants, hopes, and intentions. Several knowledge representation formalisms based on the above ideas have been designed, proposed, implemented, and applied to various AI modeling tasks. Some examples include Sowa's conceptual graphs, Shapiro's SNePS, Arbab's propositional surrogates, and Wilks's ViewGen. Though the motivations for each of these may appear distinct, they all have to address a common core of knowledge representation issues.

The goals of this symposium are to encourage a free exchange of ideas among the various groups of researchers, to discuss their solutions to common problems, to compare the theoretical and practical significance of their approaches, and to explore the possibilities for closer cooperation in the future.

Those interested in participating should submit 5 copies of a short position paper (not exceeding 10 pages) on one of the following themes concerning propositional representations:

- ▲ A discussion of one or more significant problems or issues you think are most important to discuss at the symposium
- ▲ An analysis and comparison of two or more distinct approaches to the same problem
- ▲ A presentation of some topic in the theory,

implementation, or application of propositional representations

The paper should include appropriate references to related work, especially the author's own work. Multi-author papers are permissible. Indicate which, if any, authors are students. Prospective participants may also contact the program committee to obtain a more detailed description of the symposium's goals and issues. Submissions should be sent, to arrive by November 15, to:

Deepak Kumar, Dept .of Computer Science
226 Bell Hall, State University of New York at Buffalo, Buffalo, NY 14260
kumard@cs.buffalo.edu
Phone: 716/636 2193 • Fax : 716/636 3464

Program Committee: Stuart C. Shapiro (Chair), State University of New York at Buffalo (shapiro@cs.buffalo.edu); John Barnden, New Mexico State University (jbarnden@nmsu.edu); Joao P. Martins, University of Lisbon, Portugal (ist_1416@ptifm.bitnet); John F. Sowa, IBM (sowa@watson.ibm.com)

Reasoning with Diagrammatic Representations

The goal of this symposium is to examine issues regarding the representation of and reasoning with information that is easily depictable in and perceivable from diagrams. Humans are adept at reasoning with and making inferences directly from diagrams. Even information that is nonspatial in nature can easily be grasped and reasoned about when diagrammatically represented. Recently cognitive scientists have begun investigations of representations that underlie imagery, visual processes that support imagery, and the role of imagery in inference and reasoning from an information processing perspective. Though it appears that many interesting problems of AI, especially those involving spatial reasoning, can benefit from this corpus of research, there has been surprisingly little actual work in this direction. We believe that a computational capability to understand, represent and reason about diagrams will be of immense benefit to many AI problems. Therefore this symposium is designed as a forum to bring together researchers from disciplines such as artificial intelligence, cognitive psychology, linguistics and philosophy who share an interest in imagery and reasoning.

For the purposes of this symposium, the term "diagrammatic representations" implies mental representations that underlie imagery and computer representations that are image-based or pictorial. The power of diagrammatic representations stems from the property that they allow the explicit representation and direct retrieval of information that can be represented only implicitly in other types of representations and then has to be computed, sometimes at great cost, to make it explicit for use. Such representations will permit systems to reason at a level much closer to perception than current paradigms allow. The unifying themes of this symposium are diagrammatic representations, information processing operators associated with such representations, and the use of these two elements in the course of reasoning. Broad goals of the symposium are to:

- ▲ Stimulate interdisciplinary dialogues facilitating cross-fertilization
- ▲ Provide a review of current state of research
- ▲ Investigate potential roles of diagrammatic representations and reasoning in different tasks
- ▲ Identify productive directions for future research

Issues to be addressed in the symposium include, but are not limited to:

- ▲ Cognitive theories of imagery and imaginal reasoning
- ▲ Novel approaches to computational realization of diagrammatic representation and reasoning
- ▲ How cognitive theories of imagery and imaginal reasoning provide constraints to computational models
- ▲ Diagram understanding
- ▲ Potential uses of reasoning with diagrammatic representations in AI tasks
- ▲ Connections between the symposium topic and AI paradigms such as case-based reasoning and model-based reasoning

Potential participants are encouraged to submit papers that address these and other related issues from different perspectives (e.g., computational, cognitive, philosophical, etc.). Those interested in presenting their work for discussion should submit a paper or an extended abstract that describes completed research, work in progress (if substantial progress has been made), experimental/empirical work, or theoretical analyses. Survey papers are also welcome. Those interested only in participating should submit a statement of research interests which describes research in preliminary stages or plans of future research on topics relevant to the symposium. Invitations will be issued on the basis of submissions reviewed by members of the program committee. Relevance to the symposium topic and substantiveness of the contribution will be the primary considerations for selection.

Hardcopy submissions (4 copies) are strongly encouraged though we will also accept electronic submissions. Submissions (please include email address if available) may be sent to arrive by November 15, 1991 to:

Hari Narayanan, Laboratory for AI Research
Dept. of Computer & Information Science
The Ohio State University
Columbus, OH 43210, USA
narayan@cis.ohio-state.edu
Phone: 614/292-1413

Enquiries and requests for more information may also be sent to this address.

Program Committee: B. Chandrasekaran (Co-chair), Yumi Iwasaki, Hari Narayanan, Herbert Simon (Cochair).

Selective Perception

Sensing concerns are increasingly being recognized as crucial to the development of competent mobile robots and other autonomous agents. As tasks and environments increase in complexity, however, it is not feasible to continually sense all relevant features. The robot or agent must selectively perceive features of the environment: it must decide what and where to sense, when to sense, and at what resolution. Often these decisions depend on the context and the task being performed.

Controlling perceptual focus of attention is of concern to researchers in many fields, including planning, robotics, vision (machine and biological), and agent architectures. For example, research in reactive, or "behavior-based" agents, is confronting the need to focus sensors on specific aspects of the world at certain times, rather than assume that everything relevant can be perceived continuously. Approaches include the use of visual routines and the packaging of sensing and actions together. More deliberative approaches include using the expected utility, or information content, of sensing operations to control what and when to perceive, filtering out irrelevant sensor data, and using causal and temporal analysis to insert explicit monitors into plans.

A variety of machine vision techniques are being developed to focus real-time processing resources on restricted aspects of a visual scene. Impetus for this may come from studies that have shown the importance of phenomena such as selective focus of attention, filtering, and goal-directed pop-out phenomena in biological vision. In addition, some researchers have used machine learning techniques to automatically determine which features are relevant for triggering actions.

These approaches all share a common concern with actively controlling sensory processing requirements. The goal of this symposium is to bring together researchers who are tackling this problem through a diversity of techniques and methodologies, both empirical and theoretical. The symposium will address the current status and future directions of the field, highlight common concerns, and define canonical problems in the control of selective perception.

Important questions to be addressed include:

- ▲ When is selective perception necessary?
- ▲ What selective perception techniques are currently available; what are the unsolved problems?
- ▲ How can the use of selective perception be reconciled with the need to remain reactive to changes and uncertainty in the world?
- ▲ How can rational tradeoffs be made between sensing, planning and action? Between sensing accuracy and sensing cost?
- ▲ How can an agent effectively determine what information is necessary to achieve particular tasks and which sensing operations will produce that information?

Those interested in attending should submit a 3–5 page extended abstract describing their current work in this field and/or prospects for future research. The submission should make clear how the use of selective perception facilitates the system's tasks.

Four (4) copies of each submission should be sent to arrive by November 15, 1991 to:

Reid Simmons, School of Computer Science
Carnegie Mellon University, 5000 Forbes Ave.
Pittsburgh, PA 15213

Submissions may also be sent by electronic mail to reid.simmons@cs.cmu.edu. This address may also be used to obtain more information about the goals of the symposium and for other inquiries.

Program Committee: Dana Ballard, Tom Dean, James Firby, Reid Simmons (chair) ■