

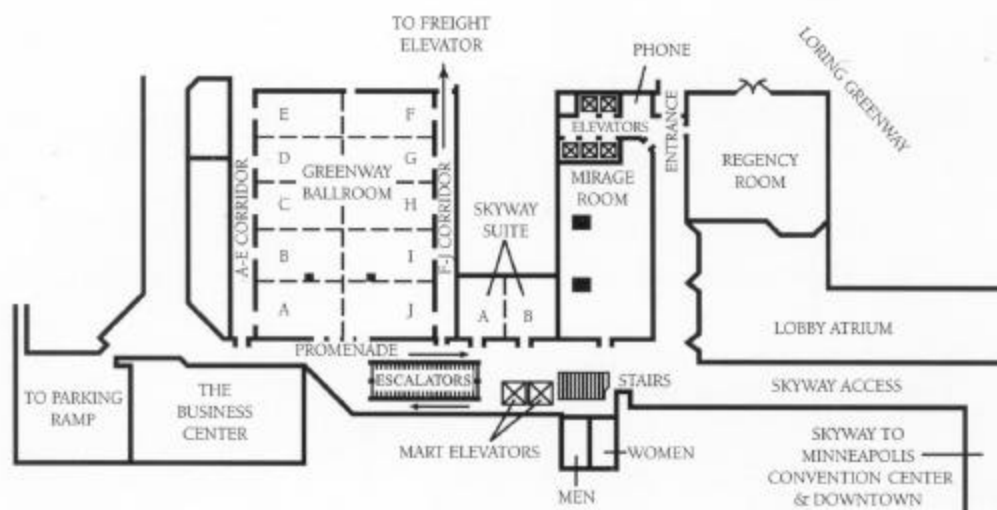
SCiP 2004 Program



34th Annual Meeting of The
Society for Computers In Psychology

Hyatt Regency Hotel
Minneapolis, Minnesota
November 18, 2004

Hyatt Regency Hotel – 2nd Level
SCiP Conference Level



Announcements

Refreshments outside Greenway Rooms (F-J Corridor)

7:30 – 8:00 a.m.

10:15 – 10:30 a.m.

2:35 – 2:50 p.m.

Lunch

Try Buca Di Beppo (Italian), 1300 Nicollet, 612 288-2382, or a restaurant in the hotel.

Poster Session 12:45 a.m. – 1:15 p.m. in the Regency Room

(see program for listings)

User Discussion Groups 12:45 a.m. – 1:15 p.m. in the Regency Room

Psychology Software Tools – Facilitator: Debbie Gilkey

CogLab (offered through Wadworth Publishing) – Facilitator: Rosemary T. Hornak

Black Box Toolkit – Facilitator: Richard R. Plant

Vendors – Throughout the day in the Regency Room

Psychology Software Tools

American Psychological Association

(see ads in the SCiP program)

SCiP 2004

Officers

President: Robert Proctor
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Past President: Curt Burgess
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Michael Birnbaum	Kay Livesay
Anne Britt	Ken McGraw
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Paula Gookasian	Larry Rosenblum
Xiangen Hu	Roman Taraban

Officers are also members of the Steering Committee.

Proceedings Editor

John Krantz

Federation Representative

Nancy Duncan

Welcome from the President

Welcome to the 34th annual meeting of the Society for Computers in Psychology. As computer technology has continued to advance at an ever-increasing rate, it has become more important than ever for psychologists to stay abreast of the latest developments and issues concerning use of computers in research and teaching. The SCiP meeting provides psychologists with various backgrounds and interests the opportunity to be informed about cutting-edge work involving computer applications and technology, as well as to interact with individuals with whom they share interests and concerns. The present meeting continues in the tradition of previous ones of including paper and poster sessions on a range of topics, as well as symposia and special addresses from the keynote speaker, Walter Kintsch, and the president. I would like to extend my gratitude to Roman Taraban, the Program Chair, for the exciting program that he has organized, and I hope that you gain much useful knowledge from this year's meeting.

Robert Proctor



Greetings from the Program Chair

We are honored to have Walter Kintsch as our keynote speaker, and we are grateful to the organizers of the symposia for their thoughtful planning and hard work. Thanks to all of you who are sharing your research and insights at this conference, and for the program chairs who will keep things running smoothly. We sincerely appreciate the support given to our conference by the vendors – Be sure to visit their tables and say hello. I hope that you enjoy SCiP 2004 and your visit to Minneapolis.

Roman Taraban



Special thanks to Lisa R. Mills of the Teaching, Learning, & Technology Center at Texas Tech University for her contributions to the program design.

TIME	Greenway AB	Regency Room	Greenway IJ	Greenway FGH	Regency Foyer
7:30 – 8:00 a.m.	Coffee and Pastries in the Greenway Rooms Corridor				Registration
8:00 – 8:45 a.m.	Statistical Methods <i>Chair:</i> Roman Taraban <i>Papers:</i> Sheu et al.; Su et al.; Chen et al.	Vendors and Posters	Web-Based Applications <i>Chair:</i> Xiangen Hu <i>Papers:</i> Birchmeier et al.; Wade et al.; Anson	Computer Tools <i>Chair:</i> John Krantz <i>Papers:</i> Hatzopoulos et al.; Li et al.; Plant et al.	
8:55 – 10:15 a.m.	Transcription and Coding Tools <i>Chair:</i> Calvin Garbin <i>Papers:</i> Brubaker; Jones et al.; MacLin et al., Brunstein et al.		Cognitive Modeling <i>Chair:</i> Joseph Magliano <i>Papers:</i> Hu et al.; Matsuka et al.; Unsworth et al.; Duran et al.	Visual Processing and Eyetracking <i>Chair:</i> Anne Britt <i>Papers:</i> Mitchell et al.; Myers et al.; Jones et al.; Rueckert	
10:15 – 10:30 a.m.	Refreshments in the Greenway Rooms Corridor				
10:30 – 11:45 a.m.			Symposium: Modeling Inference Making and Memory for Text: Illustrations Using the Landscape Model <i>Organizer and Chair:</i> van den Broek	Symposium: Tools for Internet-Based Research <i>Organizer and Chair:</i> Schulte-Mecklenbeck	

11:45 a.m. – 12:45 p.m.	LUNCH				
TIME	Greenway AB	Regency Room	Greenway IJ	Greenway FGH	Regency Foyer
12:45 – 1:15 p.m.	<p>Poster Presenters Are Available At Their Posters in the Regency Room. <i>Participants:</i> Natanios & Schmidt; Burgess & Fritchel; English & Van Whitlock; Arnott, et al.; Arnott et al.; Whitwer & Garbin; Kreiner & Price.</p> <p>User Discussion Groups in Regency Room. <i>Gilkey: Psychology Software Tools; Hornak: Coglab; Plant: Black Box Toolkit</i></p>				
1:15 – 2:35 p.m.	<p>Experiment Tools <i>Chair:</i> Kay Livesay</p> <p><i>Papers:</i> Mueller; St. James et al.; Schneider et al; MacLin et al.</p>	Vendors and Posters	<p>Computer-Based Instruction <i>Chair:</i> John Anson</p> <p><i>Papers:</i> Burgess et al.; Bradshaw; Britt et al.; Magliano et al.</p>	<p>Computer Animation <i>Chair:</i> Linda Rueckert</p> <p><i>Papers:</i> Moreno et al.; Kriete et al.; Krantz; Garbin et al.</p>	Registration
2:35 – 2:50 p.m.	Refreshments in the Greenway Rooms Corridor – Visit the Vendors in the Regency Room!				
2:50 – 4:00 p.m.	<p>Keynote Address in Greenway FGH</p> <p>Walter Kintsch <i>Meaning in Context: Emerging Word Senses, Metaphor, and Analogy</i></p>				
4:10 – 5:10 p.m.	<p>Presidential Address in Greenway FGH</p> <p>Robert Proctor <i>Methodology is More Than Research Design and Technology</i></p>				
5:10 – 5:40 p.m.	Business Meeting in Greenway FGH				

Session 1: 8:00-8:45 a.m.

Greenway AB

Statistical Methods

CHAIR: Roman Taraban

8:00 **Estimating Model Parameters of Item Response Theory Using SAS**

Ching-Fan Sheu, DePaul University
Cheng-Te Chen, National Chung Cheng University, Taiwan
Ya-Hui Su, National Chung Cheng University, Taiwan
csheu@condor.depaul.edu

Item response theory (IRT) plays an increasingly important role in the analysis of measurement data in behavioral research. Although several specialized software products are available to analyze data with IRT models, performing the analysis within an existing general purpose statistical package already familiar to the user is clearly more efficient. As a step toward realizing such a goal, this presentation illustrates the generality and flexibility of using SAS to estimate IRT model parameters. Using real data examples, we illustrate the implementations of a variety of IRT models for dichotomous, polytomous and nominal responses.

8:15 **Bootstrapping Confidence Intervals for IRT Fit Statistics**

Ya-Hui Su, National Chung Cheng University, Taiwan
Ching-Fan Sheu, DePaul University
Wen-Chung Wang, National Chung Cheng University, Taiwan
d9132001@ccu.edu.tw

Various fits statistics have been routinely used to screen items in the analysis of test and measurement data using item response theory. Four types of fit statistics (mean square of infit, infit t , mean square of outfit, and outfit t) have been used individually or in combination to diagnose whether data fit the model expectation. Unfortunately, theoretical distributions of these fit statistics remain unknown. Commonly used IRT software such as WINSTEPS does not report the standard error estimates of these fit statistics. Thus, the decisions to retain or reject items are nothing more than guesswork. Using the bootstrap technique, we developed computer programs to compute confidence intervals for item (difficulty) measures, mean squares of infit and outfit and to locate misfit items.

8:30 **Diagnostic Plots for Item Response Theory Models Using R**

Cheng-Te Chen, Department of Psychology, National Chung Cheng University
Ching-Fan Sheu, Department of Psychology, DePaul University
d92315007@ccu.edu.tw

Item response theory (IRT) has become increasingly important for the analysis of measurement data in behavioral research. Many popular software packages for data analysis using IRT focus on parameter estimation and possess only crude graphical capability. The purpose of this paper is to illustrate the flexibility of using R to construct high quality graphs in IRT data analysis.

Computer Tools

CHAIR: John Krantz

8:00 **Novel Method of Media Bias Investigation by Comparing High-Dimensional Semantic Spaces**

Alex Hatzopoulos, University of California – Riverside

Chris Crew, University of California - Riverside

Curt Burgess, University of California - Riverside

curt@citrus.ucr.edu

Current methods of media bias research are criticized for their subjective methodologies. An objective and transparent methodology of media bias needs to be conducted to help reduce the potential critical response to media bias research that is based on a faulty method. An adaptation of the IAT and the HAL model of meaning was used to identify racial bias in the media broadcasts of Fox News and CNN. Results suggest that CNN shows no signs of bias within its news agency, while Fox shows unequal negative representations of both whites and blacks. The comparison between the two agencies shows that Fox's representation of black in HAL is further away from the pleasant dimensions. This result is consistent with the theory of modern racism.

8:15 **The APA Style Converter: A Web-based Interface for Converting Articles to APA Style for Publication**

Ping Li, University of Richmond

Krystal Cunningham, University of Richmond

Megan Kuhn, University of Richmond

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URL: <http://cogsci.richmond.edu>

The APA Style Converter is a web-based tool for authors to prepare their papers in APA style according to *APA Publication Manual* (5th ed.). The tool provides a user-friendly interface that allows authors to cut and paste text and upload figures through the web, and automatically converts all texts, references, and figures to an APA-style article. The output is saved in PDF format, ready for either electronic submission or for hardcopy printing.

8:30 **Assessing Information and Communication Technology Aptitude and Ability Using a Psychometric Approach Together With Computer-Based Delivery**

Richard R. Plant, Department of Psychology, University of York, UK

Nick Hammond, Department of Psychology, University of York, UK
Sue Beadle, Department of Psychology, University of York, UK
r.plant@psych.york.ac.uk
URL: <http://www.sherwood-assessment.com>

ICT aptitude and ability are constructs which many are keen to assess. We outline how changes within the computing landscape, e.g. command-line to GUI, have altered focus from testing candidates' underlying cognitive abilities and aptitudes to skill-based attainment benchmarks. We discuss the development of a hybrid computer-delivered test which combines the two approaches. The test assesses underlying cognitive abilities, taught and hobbyist knowledge, core application attainment and physical "usability and control" of mouse and keyboard.

Web-Based Applications

CHAIR: Xiangen Hu

8:00 **Optimizing Instant Messenger in Group Problem Solving: Coordination Efficiency and Discussion Behaviors in Electronic Teams Under Converging vs. Delegating Coordination Demands**

Zachary Birchmeier, Miami University
Garold Stasser, Miami University
birchmzp@muohio.edu

Electronic teams solved ten sets of logic and anagram problems. Groups were either rewarded for matching or delegating their choices of problems. Although teams generally coordinated more efficiently when delegating efforts, those groups did not demonstrate improvement until after discussion. Members under matching rewards expressed greater attention to their teammates' prior choices, and were able to make use of this feedback in improving coordination without discussion. Both types of teams benefited from discussion, however.

8:15 **Putting the Pieces Together: Testing the Efficacy of a Web-Based Intervention for Families of Children with Traumatic Brain Injury.**

Shari L. Wade, Children's Hospital of Cincinnati
Christopher Wolfe, Miami University
Shari.Wade@cchmc.org

We examined the efficacy of a Web-based family problem solving intervention for families of children with traumatic brain injury in a controlled randomized clinical trial. We hypothesized that relative to controls, families receiving an intervention integrating online exercises, video-clips, and synchronous videoconferences will show significant improvement in child adjustment, parent-child conflict, family functioning, and parental burden and psychological symptoms. We argue that randomized clinical trials are the best way to test the efficacy of treatments.

8:30 **Establishing a Psychology Teleconference Network**

John Anson, Stephen F. Austin State University
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URL: <http://vygotsky.sfasu.edu/ptn/>

The presentation's purpose is to help Psychology departments learn about and participate in the Psychology Teleconference Network. The current clearinghouse and infrastructure for high-speed internet connectivity, I2 and NLR, define the teleconference tool. Ideas for teleconference applications include several research colloquia formats, applied uses involving students and faculty, and teaching in the classroom. Finally, a proposed "clearinghouse" website would contain information about and procedures for scheduling and participating in teleconferences.

Transcription and Coding Tools

CHAIR: Calvin Garbin

8:55 Era: An Internet-Based Multimedia Research System for Transcription and Coding

Jed R. Brubaker, University of Utah
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URL: <http://www.psych.utah.edu/era/>

Era is an Internet based Flash program that assists in the transcription and coding of large microsequential research projects through integration with a Flash Communication Server and MySQL database using AMFPHP. Era also provides alternatives to traditional transcription and coding developed through the use of multimedia integration. Using streamed video footage and audio clips, these approaches reduce transcription time and provide coders with additional information from which to make decisions.

9:15 Quantifying Word Transitions in Sentences by Coding Statistical Properties of Text Corpora

Michael N. Jones, Queen's University – Kingston, Canada
Randall K. Jamieson, Queen's University – Kingston, Canada
D. J. K. Mewhort, Queen's University – Kingston, Canada
mike@psyc.queensu.ca

We present a model-based method of calculating uncertainty of word transitions in sentences based on statistical properties of language. The model is trained on a large corpus of text, and codes semantic and syntactic redundancies into composite word vectors. The information coded in the word vectors can be used to calculate measures of expectancy for stems and completions, and the point and degree of divergence from the garden path in structurally ambiguous sentences.

9:35 Coding Observational Data: A Software Solution

M. Kimberly MacLin, University of Northern Iowa
Otto H. MacLin, University of Northern Iowa
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URL: <http://www.uni.edu/~maclin/software/odcs/index.html>

The analysis of observational data, particularly social interaction, is often made difficult by the process of transcribing the verbal and behavioral interactions, having observers code on the transcriptions, and then transferring those codes to a statistical analysis program. The Observational Data Coding System (ODCS) is a flexible coding tool designed to make efficient the process of coding observational data captured on video or audio media.

9:55 **The Chemnitz LogAnalyser 2.13 – A Tool for Analyzing Data Out of Web-Based Experiments**

Angela Brunstein, Chemnitz University of Technology, Germany

Josef Krems, Chemnitz University of Technology, Germany

Tobias Winkler, Chemnitz University of Technology, Germany

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URL: <http://www.tu-chemnitz.de/phil/psych/projekte/NeueMedien>

Web based studies usually produce log files as row data. These data cannot be analyzed adequately by most conventional tools. The *Chemnitz LogAnalyser* provides tools for quick and comfortable visualizing and analyzing navigation behavior within hypertexts for individual users and for aggregated data. Moreover, it allows an analysis of questionnaire data and navigation behavior and the re-analysis with respect to several linearizations (e.g. by time, causality, space) of the same hypertext.

Visual Processing and Eyetracking

CHAIR: Anne Britt

8:55 **Impact of Orienting Questions on Researching Navy Websites**

Heather H. Mitchell, The University of Memphis
Sarah L. Petschonek, The University of Memphis
James E. Wallace, The University of Memphis
Max M. Louwerse, The University of Memphis
Art C. Graesser, The University of Memphis
hmitchell@memphis.edu

How people process web pages has recently been investigated using eye movements. We investigated whether the goal provided to participants systematically affects how they process web pages. Eye movements were recorded as participants searched Navy web pages to satisfy particular goals. Tracking eye movements was an invaluable tool, but logistical issues needed to be considered when using eye-tracking for web pages. Some of the technical challenges will be discussed in addition to the empirical findings.

9:15 **EMAPS: Eye Movement & Action Protocol Sequencer**

Christopher W. Myers, Rensselaer Polytechnic Institute
Michael J. Schoelles, Rensselaer Polytechnic Institute
myersc@rpi.edu
URL: <http://www.cogsci.rpi.edu/cogworks/?view=modules.research.spec&id=59>

The Eye Movement & Action Protocol Sequencer (EMAPS) is a modular software package that integrates two parallel streams of sequential behavioral data (eye and cursor positions) into a unified stream of data. EMAPS provides an assortment of filters along with a sequence alignment algorithm that allows the user to make and test hypotheses regarding interactive behavior, as well as explore data. EMAPS is not limited to static task environments, and may be used with dynamic tasks.

9:35 **Comparing Methods of Tracking Visual Attention**

Michael N. Jones, Queen's University – Kingston, Canada
Julie N. Buchan, Queen's University – Kingston, Canada
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We compared standard eye tracking, gaze-contingent eye tracking, and focus-window tracking (mouse driven) in an experiment where subjects classified artificial stimuli for which we knew a priori the diagnostic regions for different judgments. Although subjects could perform equally well with all techniques, their search behavior differed as a function of tracking technique. We conclude that the techniques are appropriate for different tasks, and may produce biased search data if used for an inappropriate task.

9:55 **A Web-Based Study of Cerebral Asymmetry for Perception of Emotion**

Linda Rueckert, Northeastern Illinois University

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URL: <http://www.neiu.edu/~lruecker/experiments>

Many studies have examined cerebral asymmetry via lateralized presentation of stimuli using specialized software. Because these studies typically require extensive control over variables such as stimulus exposure duration, size and location, etc., they are not easily transferred to the web. The present study replicated a free-vision lateralization task, the Levy chimeric faces task, via the internet, using html and Javascript. The results replicated those of the original paper and pencil study.

Cognitive Modeling

CHAIR: Joseph Magliano

8:55 Measuring Similarity Between Semantic Spaces

Xianguen Hu, University of Memphis
Zhiqiang Cai, University of Memphis
Andrew Onley, University of Memphis
Jianjing Shen, Zhengzhou Institute of Information Science and Technology, P. R. China
Arthur C. Graesser, University of Memphis
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URL: <http://xhuoffice.psyc.memphis.edu/SCiP04>

One of the challenges in Latent Semantic Analysis (LSA) is to decide which corpus is best for a specific application. Furthermore, there are many parameters in LSA, such as the size of the corpus, the weight (local or global) functions, number of dimensions to keep, etc. that are important in generating high quality LSA spaces. In this paper, we provide a general method to measure similarity between semantic spaces. Using this method, one can evaluate semantic spaces (such as LSA spaces) that are generated from different sets of parameters. The method we have developed is generic enough that it can also be used to evaluate other semantic spaces.

9:15 Survival of the Fittest Hypothesis: Computational Model of Category Learning Based on Evolving Category Concepts by Hypothesis Testing

Toshihiko Matsuka, Rutgers University - Newark
Areti Chouchourelou, Rutgers University- Newark
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In the present study, we introduce a computational model of categorization that incorporates a form of hypothesis testing as its learning algorithm. Here, we applied a stochastic optimization method in a neural network model of category learning. In this framework, the model's concepts about the category evolve as learning progresses by permitting the "good" hypotheses (occasionally "poor" ones) to survive, and using such enduring hypotheses as bases a new set of hypotheses about category concepts are regenerated. Simulation studies showed that the model successfully accounted for human category learning phenomena. In particular, individual differences in learning were successfully reproduced, as compared to a traditional, gradient based learning algorithm.

9:35 **An Automated Version of the Operation Span Task**

Nash Unsworth, Georgia Institute of Technology
Richard P. Heitz, Georgia Institute of Technology
Josef C. Schrock, Maryville College
Randall W. Engle, Georgia Institute of Technology
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We present an easy-to-administer and automated version of a popular working memory capacity task (Ospan) that is mouse driven, scores itself, and requires little intervention on the part of the experimenter. This version of Ospan correlates well with other measures of working memory capacity and shows both good internal consistency ($\alpha = .78$) and test-retest reliability (.83). The task is easily administered in field, clinical, or laboratory settings and thus open to wide array of research domains.

9:55 **Assessing HAL's Vocabulary Intelligence**

Nick Duran, University of California-Riverside
Curt Burgess, University of California-Riverside
Alex Hatzopoulos, University of California – Riverside
curt@citrus.ucr.edu

The performance of the HAL memory model was compared to human subjects on the Nelson-Denny vocabulary test. The HAL model represents word relationships as vectors of weighted co-occurrence values that reflect similarity in a semantic space. Results showed that college students performed at an appropriate grade level (13.8) which was two grade levels above HAL's performance. When errors that hinge on the model's training corpus are scored as hits, the model's performance is within one grade level of the humans. Ambiguity poses particular problems for these models that use distributed representations that encode multiple contexts, although the results demonstrate that a simple inductive learning mechanism can produce representations that account for a substantial share of item accuracy.

Session 7: 10:30 - 11:45 a.m.

Greenway FGH

Tools for Internet-Based Research

ORGANIZER and CHAIR: Michael Schulte-Mecklenbeck

10:30 Tools for Internet-Based Research (Overview)

Michael Schulte-Mecklenbeck, University of Fribourg, Switzerland
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The usage of the World Wide Web as a research tool has steadily grown over the last 10 years. As with the introduction of the computer as a research tool to Psychology, this method offers many new and powerful advantages. Several programs and Web-based services that have been developed to help researchers in conducting experiments on the World Wide Web will be presented during this symposium. These services range from Web-laboratories (Ulf-Dietrich Reips and Beat Muerner) and server-sided CGI programs (William C. Schmidt) for experiments to process tracing tools for decision making tasks (Michael Schulte-Mecklenbeck; Martijn Willemsen) and online Stroop tests (Ulf-Dietrich Reips and Ralph Lengler).

10:35 The "Web Experiment List": A Web Site for the Recruitment of Participants and Archiving of Internet-Based Experiments

Ulf-Dietrich Reips, University of Zurich, Switzerland
Ralph Lengler, University of Zurich, Switzerland
u.reips@psychologie.unizh.ch
URL: <http://genpsylab-wexlist.unizh.ch/>

The "web experiment list" (<http://genpsylab-wexlist.unizh.ch/>) is presented, a Web-based service for the recruitment of participants in Internet-based experiments. The web experiment list is also an archive for the research community. It lists more than 225 searchable links to and descriptions of current and past Web experiments. Usage data will be presented as well.

10:45 Server-Side Building Blocks for Web-Based Data Collection

William C. Schmidt, SUNY – Buffalo
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The Internet presents a fantastic opportunity for the automated collection of psychological data. The proposed presentation includes a set of programs and detailed descriptions of their components. These server-side CGI (Common Gateway Interface) programs provide building blocks will enable the user to exert control over web-based experiment delivery sessions. The building blocks, complete with descriptions of possible use, code and demonstrations of their use are freely available under the GNU General Public License. The programs are designed to work with other freely available tools, having been written in Perl and installable in any web server that support CGI programs.

11:00 Mouselab WEB: Performing Sophisticated Process Tracing Experiments in the Participant's Home!

Martijn C. Willemsen, Eindhoven University of Technology, The Netherlands
Eric. J. Johnson, Columbia University

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URL: <http://www.mouselabweb.org/>

MouselabWEB is a web-based tool for monitoring information acquisition processes during decision making. It uses simple browser technology (HTML/javascript) to gather process data over the internet, and can be included into existing web questionnaires. Web-experiments, when compared to on-campus lab studies increase both sample size and diversity, which is important when studying individual differences. We will demonstrate the technology, and discuss graphical displays and playbacks with examples from studies looking at framing and reference effects.

11:15 WebDiP – A Web-Based Decision Processes Tracking Tool

Michael Schulte-Mecklenbeck, University of Fribourg, Switzerland

Moritz Neun, University of Zurich, Switzerland

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URL: <http://webdip.sourceforge.net>

WebDiP is a tool that allows participants to search for information in a database, records click streams, manages multiple studies and pre-processes data for further analysis. In combination with, e.g., decision making studies, WebDiP enables the researcher to get insight into the information acquisition process. Through consequent use of Open Source Tools for programming, WebDiP is available for use and further development. WebDiP will be presented showing possibilities of the software. As an application we present data from a framing study (Asian disease) that demonstrate the transfer of a classical decision making task into an online information search task.

11:30 **"Stroop Invaders": A Web Tool for Creating Internet-Based Stroop Experiments in Game Format**

Ulf-Dietrich Reips, University of Zurich, Switzerland

Beat Muerner, University of Zurich, Switzerland

u.reips@psychologie.unizh.ch

URL: <http://www.psychologie.unizh.ch/sowi/reips/stroop/>

"Stroop Invaders" is presented, a freely available tool on the Web for creating Internet-based Stroop experiments in arcade game format. The tool allows teachers, students and researchers to create unlimited numbers of Stroop experiments with individual logins via a Web service that may then be administered either on the Internet or in the laboratory. The user may freely configure the following settings in the paradigm: (1) rules and (2) combinations of rules that define "hits" and errors, (3) the respective instructions, (4) number of levels, (5) colors and (6) meaning of words, (7) "skins", (8) number of words per round, (9) number of words to hit per round, (10) speed of words per round. Log files can be downloaded directly for analysis.

Session 8: 10:30 - 11:45 a.m.

Greenway IJ

Modeling Inference Making and Memory for Text: Illustrations Using the Landscape Model

ORGANIZER and CHAIR: Paul van den Broek

10:30 Modeling Inference Making and Memory for Text: Illustrations Using the Landscape Model (Overview)

Paul van den Broek, University of Minnesota
pvdbroek@umn.edu

We investigated reading comprehension in a wide range of situations, using the Landscape model as a unifying framework. We describe the technical details of the model, and present data and computational simulations on reading of different text genres (narratives, expository texts, refutation texts), in various complex situations (emotions in narratives, reading purpose, inconsistency detection), and as a function of prior knowledge. The behavioral and computational data are remarkably consistent in each of these situations, attesting to the psychological validity of the Landscape model.

10:35 The Dynamics of Inference Making and the Construction of a Representation During Reading

Paul van den Broek, University of Minnesota
pvdbroek@umn.edu

The Landscape model of reading is designed to capture the dynamic, reciprocal interaction between on-line inference making and the gradual construction of a mental representation of the text. After a conceptual description of the model, we present simulations of various aspects of reading, such as the role of background knowledge, the impact of emotional value, the role of reading purpose. We compare the results of the simulations to empirical data. The results show that the model can account for human performance in a wide variety of reading situations.

10:55 Modeling Inferential Processes and Memory Representations of Text Comprehension Using the Landscape Program

Yuhtsuen Tzeng, National Chung Cheng University, Taiwan
Chengyuan Lee, National Kaohsiung Normal University, Taiwan
Paul van den Broek, University of Minnesota
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A Windows-based computational tool for modeling inferential processes and memory representations of comprehension is presented. This program is an implementation of the Landscape model of comprehension and it also incorporates features of other important theories. Therefore, it is useful for testing many aspects of comprehension and comparing predictions of different theories. Several studies comparing simulations and human data indicate that this model is able to account for recall and cycle by cycle comprehension processes.

11:15 Modeling Comprehension of Non-Narrative Genres: Expository and Refutation Texts

Panayiota Kendeou, University of Minnesota
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We simulated the comprehension of science expository texts and compared the model's final text representation to human recall. The Landscape Model successfully predicted frequency of human participants' recall. We have also simulated science refutation texts and their non-refutation expository counterparts. The Landscape Model accurately predicted under what circumstances misconceptions and correct conceptualizations co-activated and thereby captured when readers were most likely to modify their beliefs.

11:35 Additional Questions and Discussion

Poster Session & User Discussion Groups

12:45 - 1:15 p.m.

Regency Room

Presenters will be available at their posters.

1. Feedback as an incentive in online surveys

Maged Natanios, SUNY – Buffalo and Wayne State University

William C. Schmidt, SUNY – Buffalo

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Two experiments were conducted to assess whether feedback would serve as an incentive for completing an online survey. Both experiments manipulated information on feedback time (immediate versus delayed), feedback type (personalized, group, no mention) and survey length (short versus long) for a survey on “Love Attitudes.” It was expected that completion rates would be highest when respondents completed a shorter survey and with the promise of immediate personalized feedback. Although there were no significant differences in the factors expected, the data suggested that respondents naturally expected personalized immediate feedback in the Web medium and that any information provided to the contrary results in lower completion rates.

2. Doing Well as an Undergraduate: Expanding the Psychology Graduate Applicant’s Portal

Curt Burgess, University of California – Riverside

Kellie Fritchel, University of California – Riverside

curt@citrus.ucr.edu

The Psychology Graduate Applicant’s Portal (PGAP) is a successful web site designed to present psychology students with the information they need to get into graduate school. The portal has been visited by almost 1 million users. Since its introduction, three other important information domains have been added: Doing Well As An Undergraduate, Succeeding in Graduate School, and Life After Graduate School. Many resources exist on the internet to assist the psychology student in all four aspects of the graduate experience, but the process of finding relevant sources is time-consuming and arduous. PGAP allows the unique opportunity of presenting relevant and substantive resources chosen by content editors all on one site.

3. A Case Study: Developing Online Research Tools in Clinical Settings for the COPAS

Nicole English, University of Missouri – Kansas City

Rod Van Whitlock, COPAS Assessment Center

EnglishN@umkc.edu

URL: <http://copascenter.com/Presentations/SCiP/>

The purpose of this paper is to present a case study of developing online, Web-based research tools, for use over the Internet. The case study in question will look specifically at the development and use of the Comprehensive Personality and Affect Scales (COPAS), for use in clinical settings. The development of the Web-based COPAS has also evolved into the development of the A-Syst system of screening and assessment tools, available for clinical and non-clinical settings.

4. The Chicago River E-Learning System: Learning New Material in a Formal or Personalized Setting

Elizabeth Arnott, DePaul University

Matthew Burkmier, DePaul University

Peter Wiemer-Hastings, DePaul University

earnott@depaul.edu

The Chicago River E-Learning System is a computerized tool that teaches its users about the history and operation of the Chicago River. Previous research has found that personalized systems result in better learning outcomes than formal systems. Thus, two versions of the system were implemented in order to assess the effect of personalized speech and the presence of an agent on learning. Learning scores were higher using the personalized system.

5. RMT: A Dual-Purpose Tutoring System for Psychology Research Methods

Elizabeth Arnott, DePaul University

Peter Wiemer-Hastings, DePaul University

David Allbritton, DePaul University

earnott@depaul.edu

URL: <http://alarm.cti.depaul.edu/rmt>

RMT (Research Methods Tutor) is a dialog-based tutoring system that was designed for use in psychology research methods courses. In addition to its educational benefit, RMT's modular architecture makes it useful for the investigation of learning with intelligent tutoring systems. In preparation for integration into psychology research methods courses, pilot tests have been conducted which compare text-only with animated agent versions of the tutor. Findings indicate that the text-only version results in higher scores at posttest, but this may be due to technical problems associated with the preliminary version of the animated agent.

6. Suppressor Situations: A Three-Ring Circus

Laura E. Whitwer, Talent Plus

Calvin P. Garbin, University of Nebraska—Lincoln

redpeppymito@hotmail.com

Suppressor variables in multiple regression and other models are potentially confusing. This project describes the possible combinations of correlations among a criterion and two predictors, along with the type of suppression that necessarily entails. Rules were created which dictate which type of suppression will occur in a given situation, and a possibly new type of suppression was uncovered.

7. Perceived Purpose of the Turing Test

David S. Kreiner, Central Missouri State University
Robert Z. Price, St. Louis University
kreiner@cmsu1.cmsu.edu

We investigated perceptions of the Turing Test in a sample of 105 adults. The majority reported no familiarity with the Turing Test. Familiarity was higher for those who had taken a course in Cognition. A popularized description of the test was perceived as more accurate than Turing's original (1950) version.

User Discussion Groups

Psychology Software Tools – Facilitator: Debbie Gilkey

CogLab (offered through Wadworth Publishing) – Facilitator: Rosemary T. Hornak

Black Box Toolkit – Facilitator: Richard R. Plant

Experiment Tools

CHAIR: Kay Livesay

1:15 **An Introduction to PEBL: The Psychology Experiment Building Language**

Shane T. Mueller, Indiana University

stmuelle@indiana.edu

URL: <http://pebl.sourceforge.net>

This is a brief introduction to the Psychology Experiment Building Language (PEBL), a Free cross-platform programming language and execution environment for creating computer-based psychology experiments. I will discuss some of the underlying design principles used to develop PEBL, provide an overview of the programming language, and describe some of the ways PEBL is designed to encourage novice programmers to use a structured, readable, and maintainable style. PEBL is available at <http://pebl.sf.net>.

1:35 ***PsychMate*: Providing Psychology Majors the Tools to do Real Experiments and Learn Empirical Methods**

James St James, Millikin University

Amy Eschman, Psychology Software Tools I

Anthony Zuccolotto, Psychology Software Tools I

Walter Schneider, University of Pittsburgh & Psychology Software Tools Inc.

wws@pitt.edu

URL: <http://www.pstnet.com/papers/PsyMate001.pdf>

PsychMate permits students to be subjects in a set of 29 psychological experiments illustrating research in perception, cognition, social psychology, human factors, and cognitive neuroscience. Students run experiments themselves and see basic results immediately. The automatic spreadsheet analysis forms provide the ability to look at aggregate data and create analyses, PowerPoint™ presentations, and web pages with a single click. Students can use the *PsychMate* Experiment Developer to create their own experiments in minutes. The included *BrainTutor* and *BrainViewer* applications teach brain anatomy and permit students to analyze fMRI brain imaging data for subjects that have performed the same memory experiments they participated in.

1:55 **PsychMate Experiment Developer – An Easy-to-Learn Method for Creating Complete Computerized Experiments**

Walter Schneider, University of Pittsburgh & Psychology Software Tools Inc.
D. J. Boldger, University of Pittsburgh
Amy Eschman, Psychology Software Tools Inc.
Christopher Neff, Psychology Software Tools Inc
Anthony P. Zuccolotto, Psychology Software Tools Inc.
wvs@pitt.edu
URL: <http://www.pstnet.com/papers/PsychMate002.pdf>

The PsychMate Experiment Developer is a novel interface allowing students with rudimentary spreadsheet skills to create cognitive and cognitive neuroscience experiments in minutes. Students fill in a spreadsheet listing of independent variables and stimuli, then columns that insert experiment objects such as slides and feedback displays to create complete experiments. The spreadsheet is read by an E-Prime program that runs the experiment. Usability studies have shown that undergraduates can learn to use the interface in a single lab session and create significant experiments in the next. The ability of students to create their own experiments in which they take intellectual ownership greatly facilitates understanding of empirical methods and the nature of scientific inquiry.

2:15 **PC_Eyewitness: Administration and Applications for Research in Eyewitness Identification Psychology**

Otto H. MacLin, University of Northern Iowa
Christian A. Meissner, Florida International University
Laura A. Zimmerman, The University of Texas at El Paso
Otto.MacLin@uni.edu
URL: <http://www.uni.edu/~maclin/software/pce/index.html>

Psychologists have conducted thousands of experiments exploring the various cognitive and social processes that govern eyewitness decisions. Attempting to maintain ecological validity, eyewitness experiments conducted in the laboratory are typically conducted in a ‘paper-and-pencil’ manner. A recent development has been to administer ‘double-blind lineups’ using a computer, moving away from the ‘paper-and-pencil’ approach. The paper presented here details PC_Eyewitness, a computer program designed to construct and administer lineups in both the laboratory and in the field.

Computer Animation

CHAIR: Linda Rueckert

1:15 **What Do We Know About Learning with Animated Pedagogical Agents? Implications of the Research for Educational Technology Theory and Practice**

Roxana Moreno, University of New Mexico
Casey Frechette, University of New Mexico
moreno@unm.edu
URL: <http://www.unm.edu/~moreno>

In this presentation, I will examine the role that animated pedagogical agents (APAs) may play in fostering students' understanding from multimedia environments. To do so, I first present a cognitive theory of multimedia learning (CTML) from which predictions for APA design are derived. Then, I provide a critical analysis of the literature summarizing what we know about APAs and discuss the implications of this research for instructional theory and design.

1:35 **NAV: A Tool for Producing Presentation-Quality Animations of Graphical Cognitive Model Dynamics**

Trent Kriete, Vanderbilt University
Matthew House, Vanderbilt University
Bobby Bodenheimer, Vanderbilt University
David C. Noelle, Vanderbilt University
david.noelle@vanderbilt.edu
URL: <http://www.vuse.vanderbilt.edu/~noelledc/resources/NAV/>

Computational models of cognition often exhibit complex dynamics that are difficult to discern without the use of visualization tools. Current visualization tools often provide insight only to the modeling expert, however, and they provide limited functionality for communicating model dynamics to the non-expert, as is needed during scientific presentations and in educational settings. We present NAV: an easy-to-use software tool which interactively transforms the output of cognitive modeling simulators into presentation-quality animations of model performance.

1:55 **Computerized Tutorials: Animation vs. Modeling**

John H. Krantz, Hanover College

krantzj@hanover.edu

URL: <http://psych.hanover.edu/research/SCiP2004>

As computer graphics have grown, so has the use of computer animations. It is time to go from animation to using simplified models of the psychological phenomena. Models are not merely illustrations, but are quantitative instantiation of theory. Models can do all that an animation can, but allow for both greater flexibility and allow the student to manipulate and explore the phenomenon in question, facilitating critical thinking. The concepts will be defined and examples of both presented.

2:15 **Adding Flash Animation to Lectures and On-line Exercises: Examples and Student Learning Outcomes from Teaching Statistics**

Calvin P. Garbin, University of Nebraska - Lincoln

Laura Whitwer, Talent Plus

cgarbin@unl.edu

We explored the use of Flash animations to help explain how statistical formulas “work” (e.g., ANOVA, ANCOVA & partial correlation). Use of these animations in lectures and on-line exercises promoted student learning and drew very positive student evaluations of their utility, especially when used in combination with on-line exercises to practice related concepts and applications.

Computer-Based Instruction

CHAIR: John Anson

1:15 **Broadening the Range of Student Knowledge Assessment of Plagiarism
Using plargiarismtest.org**

Curt Burgess, University of California – Riverside
Catherine Decker, University of California – Riverside
Alex Hatzopoulos, University of California – Riverside
curt@citrus.ucr.edu

Plagiarismtest.org provides an online resource for evaluating student knowledge on APA and MLA style and citation ability. The web site has undergone substantial upgrades in the last year. A taxonomy of academic dishonesty is available for faculty. Six categories of plagiarism are assessed with random selection from item subsets, and the user is provided with specific feedback on their performance in each area. A more general test of plagiarism knowledge assesses ethical issues. Instructors can assess their class data via a login procedure and determine what types of plagiarism are causing their students the most difficulty. This online test helps in decreasing plagiarism and complaints in plagiarism cases, as well as providing empirical data to improve learning outcomes and aid in grievance cases.

1:35 **Neural Networks on ePsych**

Gary Bradshaw, Mississippi State University
glb2@ra.msstate.edu
URL: <http://epsych.msstate.edu/biological/NeuralNetworks/>

Neural networks involve complex dynamics that are difficult to understand without experience. ePsych (<http://epsych.msstate.edu>) includes a module that begins with linear networks that perform simple “and/or” computations, illustrates why computing XOR functions is important, demonstrates the inadequacy of a two-layer system to solve XOR, introduces multi-layer systems with hidden nodes, and describes training using backpropagation. Java simulations allow control over these networks by assigning weights to links, activating and deactivating inputs, and training backprop systems.

1:55 **Computer-Based Research on Argument Comprehension**

M. Anne Britt, Northern Illinois University

Christopher R. Wolfe, Miami University
britt@niu.edu

Two experiments on argumentation investigated whether a computer-based tutor helps participants learn to reject faulty arguments. In experiment one, a paper and pencil tutor helped participants reject unsupported claims, but not unwarranted arguments where the reason did not support the claim. In experiment two, a computer-based version of the tutorial showed that only the immediate feedback group was significantly better at rejecting unwarranted arguments. Immediate feedback is apparently necessary for learning more advanced argumentation skills.

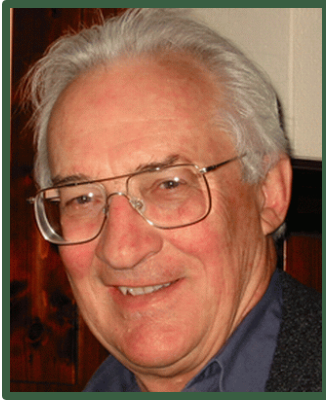
2:15 A Comparison of Live and Computerized Reading Strategy Training

Joe Magliano, Northern Illinois University
Stacey Todaro, Northern Illinois University
Keith Millis, Northern Illinois University
H. Joyce Kim, Rhodes College
Danielle McNamara, University of Memphis
jmagliano@niu.edu

The purpose of this study is to compare the relative effectiveness of live and computer-based reading strategy training. Prior to and after training, participants read scientific texts and self-explained after each sentence. They also answered comprehension questions. Students showed improvement in the quality of their self-explanations and in the performance on the comprehension question as a function of both live and computer-based training. These results indicate that computer-based, reading-skills training is viable.

2:50 - 4:00 p.m.

Greenway FGH



Keynote Address

Walter Kintsch

University of Colorado at Boulder

Meaning in Context: Emerging Word Senses, Metaphor, and Analogy

4:10 - 5:10 p.m.

Greenway FGH

Presidential Address

Robert Proctor

Purdue University

Methodology is More than Research Design and Technology

5:10 - 5:40 p.m. *Business Meeting* Greenway FGH

Minutes of the Steering Committee Meeting

Annual Meeting of the Society for Computers in Psychology, Vancouver, BC, Canada
Wednesday, November 5, 2003, 8:15 p.m.

Committee Members in Attendance

Curt Burgess (*President*), Michael Birnbaum, Peter Foltz, Paula Goolkasian, Xiangen Hu, John Krantz, Kay Livesay, Robert Proctor, Ulf Reips, Larry Rosenblum, Roman Taraban, Jon Vaughan, David Washburn, and Christopher Wolfe.

1. Opening Remarks

Curt Burgess welcomed all present.

2. Secretary / Treasurer Report

Election. Katja Wiemer-Hastings announced that Chris Wolfe had been elected as the new President-elect. Anne Britt, Peter Foltz, Xiangen Hu, and Roman Taraban were elected as new members of the Steering Committee.

Finances. Katja Wiemer-Hastings reported that the financial situation of the Society was stable. After paying off bills from the previous conference and adding pre-registration fees, the Society currently has \$11,151.63 in interest bearing accounts. (Addendum: At the conference, the Society gained US\$2730 in on-site registration fees.) Income from vendors was low this year. However, the rates were raised, so the financial difference was not too big.

Pre-registration. Thirty-two attendees pre-registered for the 2003 Annual Meeting. This was a higher rate than the previous year (12), but still low in comparison to earlier conferences.

3. SCiP Website

President Curt Burgess reported limitations of the current website, www.scip.ws. Password restrictions allow access for just one person, making it impossible to maintain the site with several people. Xiangen Hu suggested using a newly created site which is free and quick to set up. This site will allow members to self-subscribe and maintain their information. A motion to keep the current URL with a pointer to Xiangen Hu's machine was approved.

4. BRMIC Report

BRMIC editor Jon Vaughan reported that only one submission had been received to date for the special May issue. Jon Vaughan further reported on the archival site that is being developed for Psychonomics publications. This archive will contain data, norms, source codes, pedagogical materials for students, etc. and will be searchable from the Psychonomics web page. Authors submitting papers to BRMIC that are associated with an archiveable set of data, norms etc. will be invited to submit these to be included in the archive. Roman Taraban suggested that symposia authors are invited in future to submit collective papers to be presented together in BRMIC

5. Discussion Item: Using website www.scip.ws for more visibility and appeal

A number of suggestions were made for using the website more efficiently:

- i. Posting SCiP Presentations

Presenters at the Annual Meeting could post their presentations online for a wider audience and impact. This would also enable viewers to send comments to the authors and thus enable communication beyond the meeting. Jon Vaughan remarked that this would probably not interfere with the talks' publishability in BRMIC, since typically BRMIC submissions differ substantially from the presentations. As long as this is the case, the two could count as independent.

ii. Posting links to useful information, databases, etc.

iii. Christopher Wolfe suggested creating a registry for expert consultants on technologies, web-based research, etc. This would showcase one of the main strengths of the Society. The consultant registry would be accessible for members, adding another strong point to membership benefits.

6. Discussion Item: Low Membership

While attendance at the yearly meetings continues to be good, the actual membership of SCiP is decreasing. (At the last count December 03, there were 64 members including international and student members.) In addition to the items under point 5, several suggestions were made to attract new members and to make membership more lucrative:

i. Virtual Conferences, as adopted by the Cognitive Science Society.

ii. Roman Taraban suggested holding two yearly teleconferencing presentations on SCiP for recruitment purposes. These presentations could contain recordings of symposia or a new presentation. Peter Foltz suggested to apply for funding to finance this. The problem of how to capture talks was raised. The idea to move the conference back to a campus to enable affordable video capture of talks was discussed seriously, but has the obvious drawback that it weakens the convenient link to the Psychonomic Meeting. An Information Technology committee was formed to explore these issues further, consisting of Xiangen Hu, Roman Taraban, and Kay Livesay.

iii. Robert Proctor suggested that the membership concerns warrant formation of a special committee. He agreed to take this in his hand.

iv. With respect to registration, it was further commented that a lot of attendees at SCiP conferences do not register. It was suggested to track co-authors who do not register, and to try to keep a head count of unregistered attendees.

7. Report of the Program Chair

Roman Taraban reported that 34 non-symposium papers were submitted to this year's meeting, of which one was withdrawn, 26 were accepted for spoken presentations, and 7 for poster presentation. One poster was subsequently withdrawn. Additionally, 12 presentations were submitted and accepted as part of 3 symposia. Thus, a total of 46 submissions were received this year, an increase by 7 in comparison to 2002. Michael N. Jones was selected as the winner of this year's Castellan Award with his paper on calibration in the focus-window technique. Only 3 of the invited vendors chose to place ads in the conference program this year (a decrease by 6 from the previous year).

Roman Taraban volunteered to serve as program chair for the next meeting. Kay Livesay was suggested as associate program chair and graciously accepted.

9. Curt Burgess thanked all for their service and adjourned the meeting.

Submitted by Katja Wiemer-Hastings, Secretary / Treasurer (2003-2006).

Minutes of the Business Meeting
Annual Meeting of the Society for Computers in Psychology, Vancouver, BC, Canada
Thursday, November 6, 2003

1. Opening Remarks

C. Burgess, President

2. Secretary / Treasurer Report

Election. Katja Wiemer-Hastings announced that Chris Wolfe had been elected as the new President-elect. Anne Britt, Peter Foltz, Xiangen Hu, and Roman Taraban were elected as new members of the Steering Committee.

Finances. Katja Wiemer-Hastings reported that the Society currently held \$11,151.63 in interest bearing accounts and was financially stable.

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5. Castellan Award

The Castellan Award was presented to Michael N. Jones, Queen's University, for his presentation with D.J.K. Mewhort, "Calibration of Information Filter in the Focus-Window Tracking Paradigm."

6. Closing Remarks

Curt Burgess thanked all Society Officers and the Steering Committee for their service and adjourned the meeting.

Submitted by Katja Wiemer-Hastings, Secretary / Treasurer (2003-2006).



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- The *American Psychologist* – APA's monthly journal
- *Monitor on Psychology* – APA's monthly magazine
- Focused information from the APA Science and Education Directorates and the Public Policy Office, the Psychological Science Agenda newsletter, access to scientific divisions of the APA, and links to e-mail and listserv networks.

APA is working on behalf of scientists and academicians through endeavors such as:

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- Dr. Edward Kako, Swarthmore College

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