

**ISIMADE'99**  
**International Symposium on**  
**Intelligent Multimedia and Distance Education**

**In Conjunction with**  
The 11<sup>th</sup> International Conference on Systems Research, Informatics and Cybernetics  
**2-7 August 1999 in Baden-Baden, Germany**

Chairs: Syed Mahbubur Rahman, Orlando R. Baiocchi

# PROGRAM

## **ISIMADE'99**

**In Conjunction with**  
**11<sup>TH</sup> INTERNATIONAL CONFERENCE ON SYSTEMS**  
**RESEARCH, INFORMATICS AND CYBERNETICS**

**August 2-7, 1999**  
**at the Markgraf-Ludwig-Gymnasium**  
**in Baden-Baden, Germany**

*Sponsored by:*  
**The International Institute for Advanced Studies**  
**in Systems Research and Cybernetics**  
*in cooperation with*  
**UNESCO**

**ISIMADE' 99**  
**INTERNATIONAL PROGRAM COMMITTEE**

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M. Atiquzzaman, University of Dayton, USA  
Orlando R. Baiocchi, North Dakota State University, USA **(Co-Chair)**  
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Gregory Dudek, McGill University, Canada  
Thomas Ertl, Universitaet Erlangen, Germany  
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Mohammed Quaddus, Curtin Univ of Technology, Australia  
Laurent Romary, Laboratoire Loria, France  
Ruhul Sarker, UNSW, Australia  
Henry Selvaraj, University of Nevada, USA  
Timothy K Shih, Tamkang University, Taiwan  
Mahbubur Rahman Syed, North Dakota State University, USA **(Co-Chair)**  
Daniel Tan, Nanyang Technological University, Singapore  
José Carlos Teixeira, Universidade de Coimbra, Portugal  
Michalis Vazirgiannis, Athens University, Greece  
Brijesh Verma, Griffith University, Australia  
Benjamin Wah, The Chinese Univ. of HongKong  
Marcel Worryng, University of Amsterdam, The Netherlands

**ISIMADE' 99**  
**STEERING/ORGANIZING COMMITTEE**

Orlando R. Baiocchi, North Dakota State University, USA **(Co-Chair)**  
Khan M. Iftekharruddin, North Dakota State University, USA  
Paul Juell, North Dakota State University, USA  
Nancy Olson, North Dakota State University, USA  
Mahbubur R Syed, North Dakota State University, USA **(Co-Chair)**  
Val G. Tareski, North Dakota State University, USA

**ADDITIONAL REVIEWERS**

Magdi Abbas, Scientific Research Academy, Egypt  
Stefan Balaz, North Dakota State University, USA  
Rezaul Begg, Victoria University of Technology, Australia  
Dr. Liya Chen, Nanyang Technological University, Singapore  
Morshed U. Chowdhury, Monash University, Australia  
Ken Ebeling, North Dakota State University, USA  
Katsunobu Fushikida, NEC Informatec Systems Ltd., Japan  
Khan M. Iftekharruddin, North Dakota State University, USA  
Paul Juell, North Dakota State University, USA  
Guojun Lu, Monash University, Australia  
Kenneth Magel, North Dakota State University, USA  
Ganapathy Mahalingam, North Dakota State University, USA  
Phil McClean, North Dakota State University, USA  
M. Manzur Murshed, The Australian National University, Australia  
Zdzislaw Papir, University of Mining and Metallurgy, Poland  
Wayne Reitz, North Dakota State University, USA  
Brian M. Slator, North Dakota State University, USA  
Koun-Tem Sun, National Taiwan Teachers College, Taiwan  
David Turner, Institut Eurécom, France  
Ming Zhang, University of Western Sydney, Australia

## **INTERSYMP'99 CONFERENCE PROGRAM AT A GLANCE**

**(ISIMADE SESSIONS INDICATED)**

Monday	09:00-12:00	Registration
August 2, 1999	14:00-17:30	Opening Session, Keynote addresses
Tuesday	08:30 - 12:30	Plenary Session and Symposia (ISIMADE'99 sessions and posters)
August 3, 1999	12:30 - 14:00	Lunch Break
	14:00 - 18:00	Plenary Session and Symposia (ISIMADE'99 sessions, Panels)
	18:00 - 20:00	Presidential Reception
Wednesday	08:30 - 12:30	Plenary Session and Symposia (ISIMADE'99 sessions and posters)
August 4, 1999	12:30 - 14:00	Lunch Break
	14:00 - 18:00	Plenary Session and Symposia (ISIMADE'99 sessions)
Thursday	08:30 - 12:30	Plenary Session and Symposia (ISIMADE'99 Posters)
August 5, 1999	12:30 - 14:00	Lunch Break
	14:00 - 18:00	Plenary Session and Symposia
	17:00 - 18:00	Award Ceremony
Friday	10:00 - 12:00	Board of Directors Meeting
August 6, 1999	12:30 - 14:00	Lunch Break
	14:00 - 18:00	General Assembly I
Saturday	10:00 - 12:00	General assembly II
August 7, 1999	12:30 - 14:00	Lunch Break
	14:00 - 18:00	Closing Session

**Tuesday, August 3, 1999**

**Symposium on Intelligent Multimedia and Distance Education**

Chairs: Syed M. Rahman and Orlando R. Baiocchi, North Dakota State University, Fargo, North Dakota

**Intelligent Computation and Multimedia Systems (ICMS) Stream**

**08:30 - 10:30**

**ICMS. Technical Session 1:**

**Session Chair: Mohammad S. Alam, Purdue University, USA**

**Asynchronous Audio Conferencing on the Web**

by David A. Turner and Keith W. Ross, Inst. Eurécom, Sophia-Antipolis, France

**An Adaptive Playout Delay Adjusting Scheme for Full-Duplex Audio Communications in Interactive Multimedia Environments Over the Internet**

by Marco Rocchetti and Paola Salomoni, Univ.di Bologna, Italy

**Synthesis of the Sign Language of the Deaf from the Sign Video Clips**

by Slavko Krape\_ and Franc Solina, University of Ljubljana, Slovenia

**Video Retrieval Application for Distributed Education — Requirements, Implementation and Results**

by Piotr Pacyna, Zdzislaw Papir, Janusz Gozdecki, and Mikolaj Leszczuk, Cracow University, Cracow, Poland

**11:00 - 12:30**

**ICMS. Technical Session 2:**

**Session Chair: David A. Turner, Inst. Eurécom, Sophia-Antipolis, France**

**Digital Watermarking for Ownership Authentication Using Error Backpropagation**

by Eun Ju Choi, Hwang Kyu Yang, and Eui Young Cha,  
Pusan National University and Dongseo University, Pusan, Korea

**Converging Multimedia Applications with Intelligent Electronic Commerce Systems**

by Peter A. Stanski and T. Deshani Rodrigo, Monash University, Melbourne, Australia

**Biometric Authentication for Secure Smart Card Applications**

by Syed M. Rahman, Deepak Rauniar, and Bob Bignall, Monash University, Churchill, Australia

**Tuesday, August 3, 1999**

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**Intelligent Computation and Multimedia Systems (ICMS) Stream**

**14:00 - 16:00**

**ICMS. Technical Session 3:**

**Session Chair: Paola Salomoni, Univ.di Bologna, Italy**

**Language Identification in Multilingual Documents**

by Chew Lim Tan, Peck Yoke Leong, and Shoujie He, National University of Singapore, Singapore

**Using Relevance Feedback for Vector Spaced Image Model (VSIM)**

by Santosh Kulkarni, Bala Srinivasan and M.V. Ramakrishna, Monash University, Australia

**A Retrieval System for Coats of Arms**

by Christian Breitender, University of Vienna, Vienna, Austria,  
and Horst Eidenberger, Ministry of Science & Transport, Vienna, Austria

**A Study on Face Recognition Using View-Based Eigenspace Pyramids**

by Ok-Kyoung Moon, Il-Jeong Kim, Sun-Suk Kim, and Eui-Young Cha,  
Pusan National University and Dongseo University, Pusan, Korea

**16:30 - 18:00**

**ICMS. Technical Session 4:**

**Session Chair: Satoru Morita, I.S.I., Utrecht, Netherland**

**Utility Model for Goal-Directed Planner**

by Kuo-Di Jian and Kendall E. Nygard, North Dakota State University, Fargo, ND, USA

**An Effective Item Selection Method by Using AI Approach**

by Koun-Tem Sun, National Tainan Teachers College, Tainan, Taiwan

**Listen to Your Data: Model-Based Sonification for Data Analysis**

by Thomas Hermann and Helge Ritter, University of Bielefeld, Germany

**Tuesday, August 3, 1999**

**Symposium on Intelligent Multimedia and Distance Education**

Chairs: Syed M. Rahman and Orlando R. Baiocchi, North Dakota State University, Fargo, North Dakota

**Multimedia and Distance Education (MMDE) Stream**

**08:30 - 10:30**

**MMDE Technical Session 1:**

**Session Chair: Tatiana Gavrilova, St. Petersburg State Technical University, Russia**

**Hydro Turbine Design in a VR Environment**

by E. Goede, A. Kaps, A. Ruprecht, and U. Woessner,  
University of Stuttgart, Stuttgart, Germany

**Developing Visualizations for AI Course Use**

by Paul Juell, North Dakota State University, Fargo, ND, USA

**Teaching Computer Graphics with Java 3D**

by Ingmar Peter and Stefan Gumhold,  
University of Tübingen, Tübingen, Germany

**Taking Computer Graphics into the Next Millennium of Education**

by Judith R. Brown, University of Iowa, USA,  
Steve Cunningham, California State University, Stanislaus, USA,  
Dena E. Eber, Bowling Green State University, OH, USA,  
Werner Hansmann, University Hamburg, Germany,  
Michael B. McGrath, Colorado School of Mines, USA,  
and José C. Teixeira, University de Coimbra, Portugal

**11:00 - 12:30**

**MMDE Technical Session 2:**

**Session Chair: Tracy Kwei-Liang Ho, Taipei Municipal Teachers College, Taipei, Taiwan**

**Technology is the Classroom: Using Internet Media to Deliver a Journalism Course to Swaziland**

by Tamara L. Gillis and Prof. Robert C. Moore, Elizabethtown College, PA, USA

**The Technology-Enhanced Learning Circle: A Faculty Development Model for On-Line Instruction**

by Nancy Olson, Elizabeth Smith, Nancy Lilleberg, and Sandy Sprafka,  
North Dakota State University, Fargo, ND, USA

**Framework for On-Line Distance Learning on Multimedia Network**

by Hook-San Sng, Nanyang Technological University, Singapore

**Tuesday, August 3, 1999**

**Symposium on Intelligent Multimedia and Distance Education**

Chairs: Syed M. Rahman and Orlando R. Baiocchi, North Dakota State University, Fargo, North Dakota

**Multimedia and Distance Education (MMDE) Stream**

**14:00 - 16:00**

**MMDE Technical Session 3:**

**Session Chair: Paul Juell, North Dakota State University, Fargo, ND, USA**

**Lecture Supporting Automatic Web Site Construction System Using Remote Execution Techniques**

by Jaeil Kim, Munkyeong College, Kyung Buk, South Korea, and Kyubaek Song, Intaek Leem, and Chong-Gun Kim, Yeungnam University, Kyong Buk, South Korea

**Using Patterns to Create Tests for Web-Based Training**

by F. Graf, Fraunhofer Institute for Computer Graphics,  
and M. Schnaider, Technical University Darmstadt, Darmstadt, Germany

**Evolution of a Web Course: A Case Study**

by Orlando Baiocchi, James Landrum, Jerry Olson, and Nancy Olson,  
North Dakota State University, Fargo, ND, USA

**The Use of Narrative in an Internet-Based Distance Education Course**

by M. J. Weller, The Open University, Milton Keynes, UK

**16:30 - 18:00**

**MMDE Technical Session 4: Panel Discussion**

**Panel Chair: Nancy Olson, North Dakota State University, Fargo, USA**

**Topic: Issues in Distance education**

**Panel Members:**

Malcolm Campbell, Deakin University, Clayton, Australia

Liang Chen, Utsunomiya University, Utsunomiya, Japan

Terry Cornall, Monash University, Melbourne, Australia

Tatiana Gavrilova, St. Petersburg State Technical University, St. Petersburg, Russia

Albert Goodman, Deakin University, Clayton, Australia

F. Jakab, Technical University of Košice, Bratislava, Slovakia

Oo Tang, Chin-Long Lau, and Mun-Wei Lee, Nanyang Technological University, Singapore

L. Samuelis, Technical University of Košice, Bratislava, Slovakia

M. J. Weller, The Open University, Milton Keynes, UK

Issues related to distance education such as assessment, delivery platforms, instructional strategies for particular content, faculty development, course or lesson re-design, or any others of interest will be discussed. Discussion will be informal and problem-centered; panelists will attempt to address particular concerns and share possible solutions. A demonstration of the on-line Japan-English translation tutoring system will be presented. Individuals are encouraged to bring specific pedagogical or technical issues/problems they have encountered in delivering mediated instruction.

**Tuesday, August 3, 1999**

**Symposium on Intelligent Multimedia and Distance Education**

Chairs: Syed M. Rahman and Orlando R. Baiocchi, North Dakota State University, Fargo, North Dakota

**8:30 - 12:30**

**Intelligent Computation and Multimedia Systems (ICMS) Stream**  
**ICMS. Poster Session 1:**

**A Multimodal Video Retrieval Scheme Using Image, Visualized Sound, and Movement Index**

by Katsunobu Fushikida, Yoshitsugu Hiwatari and Hideyo Waki, T.A.O., Tokyo, Japan

**Performance of Channel Access Protocols for a Mobile Multimedia Terminal in a Multihop Network**

by Carlos A. Pomalaza-Raez and Mohammad S. Alam, Purdue University, Fort Wayne, IN, USA

**Thin Photorefractive Crystal Based Joint Transform Processor**

by Md. S. Alam, Eric Kurtzweg, Purdue University, Fort Wayne, IN, USA  
and Syed M. Rahman, North Dakota State University

**A New Adaptive Sorting Algorithm on the Reconfigurable Mesh: An Image Understanding Architecture**

by M. Manzur Murshed, The Australian National University, Canberra, Australia,  
and Richard P. Brent, Oxford University, Oxford, UK

**Multimedia and Distance Education (MMDE) Stream**  
**MMDE. Poster Session 1:**

**Distance Education for Interactive Experiments on Electric Circuits Over the Web**

by Hiroshi Nakano, Katsutoshi Iwahashi, Shiro Kashimoto, Susumu Matsuo,  
and Masahiro Mori, Nagoya University, Nagoya, Japan

**Development of a Signal Integrity Curriculum for Distance Education**

by Joel Jorgenson, North Dakota State University, Fargo, ND, USA,  
and M. Susan Tweeton, Rockwell Collins, Cedar Rapids, Iowa, USA

**Personalised Remote Learning**

by Matija Marolt and Marko Privošnik, University of Ljubljana, Ljubljana, Slovenia

**New Educational Paradigms in Distance Education**

by Mahesh S. Raisinghani, University of Dallas, Irving, TX, USA,  
Syed M. Rahman, North Dakota State University, Fargo, ND, USA

**Wednesday, August 4, 1999**

**Symposium on Intelligent Multimedia and Distance Education**

Chairs: Syed M. Rahman and Orlando R. Baiocchi, North Dakota State University, Fargo, North Dakota

**Intelligent Computation and Multimedia Systems (ICMS) Stream**

**8:30 - 10:30**

**ICMS. Technical Session 5:**

**Session Chair: Kam W. Ng, The Chinese University of Hong Kong, Hong Kong, China**

**A Novel Scheme of Transporting Pre-Stored MPEG Video to Support VoD Services**

by L. Zhang, L.W. Yu, and H.R. Fu, Nanyang Technological University, Singapore

**PRTP: A Partially Reliable Transport Protocol for Multimedia Applications**

by Sean Schneyer, Johan Garcia, Anna Brunstrom, and Katarina Asplund, Karlstad University, Karlstad, Sweden

**A Spatiotemporal Modelling Language for Multimedia Applications**

by Rosanne Price, Bala Srinivasan, and Kotagiri Ramamohanarao, Monash University, Australia

**A Multimedia Presentation Model Supporting Temporal and Spatial Synchronization Based on PST**

by Sook-Young Choi, Woosuk Univ., Dr. Hae-Gill Choi, Hannam Univ., and Kwan-Jong Yoo, Chungnam National University, Korea

**11:00 - 12:30**

**ICMS. Technical Session 6:**

**Session Chair: Anna Brunstrom, Karlstad University, Sweden**

**Remote 3D Visualization Using Image-Streaming Techniques**

by K. Engel, C. Ernst and T. Ertl, Universität Erlangen-Nürnberg, Germany

**Towards Automating the Distance Training Documents for Streaming Multimedia Presentation**

by Peiya Liu, Liang H. Hsu, and Young Francis Day, Siemens Corporate Research, Inc., Princeton, NJ, USA

**A Multimedia Tool for Internet Applications**

by Sam Yuan Sung, National University of Singapore, Singapore, and Shoujie He, University of Houston, Victoria, Texas, USA

**Wednesday, August 4, 1999**

**Symposium on Intelligent Multimedia and Distance Education**

Chairs: Syed M. Rahman and Orlando R. Baiocchi, North Dakota State University, Fargo, North Dakota

**Intelligent Computation and Multimedia Systems (ICMS) Stream**

**14:00 - 16:00**

**ICMS. Technical Session 7:**

**Session Chair: Terry Cornall, Monash University, Australia**

**Multi-Scale Representation Based Edge Detection**

by Liya Chen, Eam Khwang Teoh, Nanyang Technological University, Singapore

**Edge Loss or Error Due to Convolution**

by Magdi M. Abbas, Scientific Research Academy, Cairo, Egypt,  
and David C. Farden, North Dakota State University, Fargo, ND, USA

**Image Compression using a Modified SPHIT Algorithm and Linear Prediction**

by Torsten Radtke and Volker Zerbe, Techn. University of Ilmenau, Germany

**Generating Interpolative Images by Determining Elasticity of Active Contour Model**

by Satoru Morita, I.S.I., Utrecht, Netherland

**16:30 - 18:00**

**ICMS. Technical Session 8:**

**Session Chair: Katsunobu Fushikida, NEC Informatec Systems Ltd, Japan.**

**A Multi-Agents Architecture for Cooperative Authors**

by Kam W. Ng, The Chinese University of Hong Kong, Shatin, N.T., China

**Multitarget Tracking by Distributed Cooperative Processing**

by Liang Chen and Naoyuki Tokuda, Utsunomiya University, Utsunomiya, Japan

**Collaborative Working with Stand-Alone Applets**

by Dipl. Ing. Abdulmotaleb El-Saddik, Oguzhan Karaduman, Stephan Fischer, and Ralf Steinmetz,  
Darmstadt University of Technology and GMD IPSI, Darmstadt, Germany

**Wednesday, August 4, 1999**

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**Multimedia and Distance Education (MMDE) Stream**

**8:30 - 10:30**

**MMDE Technical Session 5:**

**Session Chair: Werner Hansmann, University Hamburg, Germany**

**Web/CD Title Enhanced Teaching in Primary School Education**

by Tracy Kwei-Liang Ho, Taipei Municipal Teachers College, Taipei, Taiwan

**Continuing Professional Development Based on Networked Videoconferencing Sites**

by A. \_i\_már, Dipl. Ing. F. Jakab and L. Samuelis, Technical University of Košice,  
and M. \_irko, Slovak Telecommunications, Bratislava, Slovakia

**Tools for Web-Based Lectures**

by Oo Tang, Chin-Long Lau, and Mun-Wei Lee, Nanyang Technological University, Singapore

**Developing Appropriate Administrative Support for Online Teaching with an Online Unit Evaluation System**

by Albert Goodman and Malcolm Campbell, Deakin University, Clayton, Australia

**11:00 - 12:30**

**MMDE Technical Session 6:**

**Session Chair: Naoyuki Tokuda, Utsunomiya University, Utsunomiya, Japan**

**Multimedia Virtual Campus: An Approach to New Research in Tele-Formation and Tele-Working**

by José Luis González-Sánchez, Alfonso Gazo Cervero, José Luis Gordo-Rivera,  
and Marisel Sanchez Alonso, Universidad de Extremadura, Cáceres, Spain

**Digital Media Library Project: Video on Demand for Schools**

by Terry Cornall, Brett Pentland, and Greg Egan, Monash University, Melbourne, Australia

**VLTS – A Virtual Lecture Theatre System**

by Kam W. Ng, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong, China

**Wednesday, August 4, 1999**

**Symposium on Intelligent Multimedia and Distance Education**

Chairs: Syed M. Rahman and Orlando R. Baiocchi, North Dakota State University, Fargo, North Dakota

**Multimedia and Distance Education (MMDE) Stream**

**14:00 - 16:00**

**MMDE Technical Session 7:**

**Session Chair: Albert Goodman and Malcolm Campbell, Deakin University, Australia**

**Distance Education for Interactive Experiments on  $\beta$ -Ray Radiation Over the Web**

by Hiroshi Nakano, Katsutoshi Iwahashi, Shiro Kashimoto, Susumu Matsuo,  
and Masahiro Mori, Nagoya University, Nagoya, Japan

**Specification and Development of a Physics Video Based Laboratory for High School Level**

by Fernando Gamboa Rodriguez, José Luis Pérez Silva, Felipe Lara Rosano,  
Andrea Miranda, Francisco Caviedes Contreras, Rosalba Juárez Garduño,  
Nicolás Kemper Valverde, Center for Instrumentation Research,  
National Autonomous University of Mexico, Mexico D.F., Mexico

**Remote Lesson System for Japanese Calligraphy with Force Feedback**

by Masayasu Sakuma, Susumu Masamori, Tetsuya Harada, Jörg Sahrhage,  
Science University of Tokyo, Chiba, Japan,  
and Jens Blauert, Ruhr-University, Bochum, Germany

**The Delivery of Project in Distance Education Model**

by Iwona Miliszewska and John Horwood, Victoria University of Technology, Melbourne City, MC,  
Australia

**16:30 - 18:00**

**MMDE Technical Session 8:**

**Session Chair: L. Samuelis, Technical University of Košice, Bratislava, Slovakia**

**Template-Based Online Intelligent Tutoring System for Language Translation**

by Naoyuki Tokuda, Liang Chen, Liang Huang, and Akira Nagai,  
Utsunomiya University, Utsunomiya, Japan

**Student Modeling as a Key to Flexible Learning**

by Tatiana Gavrilova, Alexander Voinov, and Ekaterina Vasilyeva,  
St. Petersburg State Technical University, St. Petersburg, Russia

**Multimedia Textbook of Photographic Exposure Theory**

by Toma\_Ho\_i\_, Vito Komac, and Franc Solina,  
University of Ljubljana, Ljubljana, Slovenia

**Field Screen Research Project: A Progress Report**

by Gilbert Riedelbauch, John Reid, and Malcolm Pettigrove,  
The Australian National University, Canberra, A.C.T., Australia

**Thursday, August 5, 1999**

**Symposium on Intelligent Multimedia and Distance Education**

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**8:30 - 12:30**

**Intelligent Computation and Multimedia Systems (ICMS) Stream**  
**ICMS. Poster Session 2:**

**Using the Hyper Text Transfer Protocol for Multimedia Streaming**

by Vasile-Marian Scuturici and Serge Miguët, Université Lyon 2, Lyon, France

**An Integrated Visual Workbench for Sensor Signal Analysis**

by Scott Obowa and Khan Iftekharuddin, North Dakota State University, Fargo, ND, USA

**Rapid Shot Detection on Fully Decompressed Video**

by Rong Zhu, Dong Xie, Leo Y. Liu, IBM Research Lab, Beijing, China

**Codebook Generation in Vector Quantization Used for Image Retrieval**

by Shyhwei Teng and Guojun Lu, Monash University, Churchill, Vic., Australia

**Multimedia and Distance Education (MMDE) Stream**  
**MMDE. Poster Session 2:**

**Developing a Hypertext Tutorial Platform for Microcomputer Maintenance and Troubleshooting**

by Kamel H. Rahouma, Minia University, Minia, Egypt,  
Hermann Astleitner, and Peter Zinterhof, University of Salzburg, Austria

**Hand Activity in a Collaborative Virtual Educational Environment**

by Mike Edwards, University of Melbourne, Parkville, Australia

**A Template for Virtual Laboratories**

by Barry Richardson, Andrew Brown, Dianne Wullemmin, and Sue Burney,  
Monash University, Churchill, Vic., Australia