

## **Thirty-Fourth Southeastern International Conference on Combinatorics, Graph Theory, & Computing\***

Registration for the Thirty-fourth Southeastern Conference began on Monday, March 3. The conference was notable for many new attendees, along with many longtime regulars. And the attendees were welcomed by the new President of the University, as his first official act, since he had just been appointed that morning. The Monday evening reception was held in the Visual Arts Patio. On Tuesday evening, there was a reception in Baldwin House, a magnificent mansion that serves as the President's residence, but that is also large enough to have many conference rooms and facilities for state occasions. The conference banquet on Wednesday was held as usual in the Renaissance Hotel. The food was excellent, as always. Thursday evening was the occasion for food and drinks at Wackadoo's in the University Center. Friday evening was a chance for survivors to relax and chat at the traditional survivor's party, with the usual great food and drinks. This party has traditionally been at the home of Aaron Meyerowitz and Andrea Schuver; however, this year, Aaron is on sabbatical and so the party took place around the pool and in the conference room of the Windwood Clubhouse.

The invited talks were of very high quality and excited much interest. There was a wide variety of contributed talks and many of the new graduate students showed great promise. Professor Ronald Mullin, President of the ICA, presided at a special ICA session on Wednesday morning at which an Euler medal was presented to Spyros Magliveras and a Hall Medal to Alfred Menezes. An Euler medal was also presented to Richard Brualdi, in absentia. The room was filled with members of the ICA and guests for the presentations, and the applause was hearty. After the presentations, Professor Ralph Stanton, Registrar of the ICA, announced the winners of the 2002 Euler, Hall, and Kirkman Medals.

We have listed all the talks that were scheduled to be given, although a few of the original speakers were not able to attend. Some people could not come because of travel problems, and Gayla Domke had to stay at home since she was having a child. One of the invited speakers, Richard Brualdi, was ill and could not travel. His spot in the programme was taken by Professor Ralph Stanton who, with only one day's notice, delivered an outstanding plenary lecture on tricovering problems.

A special vote of thanks for this very successful conference is owed to Fred Hoffman, Steven Locke, and all their colleagues at Florida Atlantic University. They will be welcoming us back next year, on March 8, for the Thirty-fifth Southeastern Conference.

\* reported by Ernie Ruet d'Auteuil

Invited speakers:

Spyros Magliveras *Something Euler would have liked*

Joan Hutchinson *Extending precolorings of graphs*

Joan Hutchinson *On visibility graphs*

Richard Brualdi *My favorite classes of matrices: Some recent developments*

Alfred Menezes *Curves and cryptography (2 lectures)*

Ralph Stanton *The minimal Tricovering Numbers  $g^{(4)}(v)$*

Contributed talks: speakers are indicated by an asterisk \*

Zhongyuan Che\* and Karen L. Collins *Retracts of Cartesian products of  $(2k+1)$ -angulated graphs and construction of cores*

Larry Cummings *Divisibility exponents and the Zimin recursion*

Catharine Baker\* and Ben Seamone *Skolem labelling of generalized windmills*

Daniela Ferrero *Some properties of the directed path graph operator*

Ward Heilman *The twisted torus, the tangled torus and toughness*

H. Tapia-Recillas *Some binary bent function arising from functions over  $\mathbb{Z}_4$*

Dionysios Kountanis and Satyapurnadevi Padala\* *Weighted Steiner tree on the rectilinear space*

Leroy B. Beasley\* and Cora Neal *Properties of 2-primitive tournament digraphs*

Glenn Chappell, John Gimbel\* and Chris Hartman *Bounds on the metric and partition dimension of a graph*

Lyndsey Van Wormer\* and Aklilu Zeleke *On  $\alpha$ -type matrices*

Dionysios Kountanis and Sathya Priya Durairaju\* *Reducing congestion probability using deviation index as a metric*

Reinhard Laue *A database of visualizations of graphs*

D.G. Hoffman and S.H. Holliday\* *On resolvable decompositions of complete multipartite graphs minus a one-factor into uniform cycles*

Dan Schwegler\* and Aklilu Zeleke *On roots of generalized Fibonacci polynomials*

Dionysios Kountanis\* and Konstantinos Kokkinos *Load balancing and congestion avoidance routing*

Frithjof Lutscher, Jenny McNulty, Joy Morris\* and Karen Seyffarth *Stitching images back together*

Michael Albertson\*, Glenn Chappell, H.A. Kierstead, André Kündgen and Radhika Ramamurthi *Coloring with no 2-colored  $P_4$ 's*

D.J. Ashe\*, H.L. Fu and C.A. Rodger *All 2-regular leaves of partial 6-cycle systems*

Gagan Jain\* and Carla Purdy *The analysis of experiments on heuristic algorithms: Improving the state of the art*

Joanna A. Ellis-Monaghan\* and Paul Gutwin *Graph theoretical problems in next generation chip design*

Michal Tkáč and Heinz-Jürgen Voss\* *On  $k$ -trestles in chordal polyhedral graphs*

Richard Anstee\* and Attila Sali *Small forbidden configurations*

- O. Favaron, G.H. Fricke\*, D. Skaggs, W. Goddard, S.M. Hedetniemi, S.T. Hedetniemi, R.C. Laskar and R. Kristiansen *Offensive alliances in graphs*
- Yuyin Chen\*, Eddie Cheng and Serge G. Kruk *Routing in unidirectional alternating group graphs and split-stars*
- Michael J. Pelsmayer\* and Douglas B. West *A short proof of a characterization of strongly chordal graphs*
- S. Costa, N.J. Finizio\* and B.J. Travers  *$(t,12)$   $GWhD(12n+1)$ -existence results for  $t=2,3,4$*
- Eddie Cheng, Serge Kruk\* and Marc Lipman *Approximation algorithms for the student scheduling problem*
- Narsingh Deo and Zoran Nikoloski\* *Cops-and-robbers on cyber graphs*
- Thor Whalen *Ore conditions, path-systems, and linkages in graphs*
- Mikhail Klin and Sven Reichard\* *On partial linear spaces with a pseudo-geometric  $GQ(s+1, s-1)$  point graph*
- William Edelson\*, Michael L. Gargano, Paul Meisinger and Paul Benjamin *Evolving efficient security systems under budget constraints using genetic algorithms*
- M. Bartha *Deciding the deterministic property of soliton graphs in linear time*
- Roger Eggleton\* and H. Calkins *Congruent decompositions of complete graphs*
- Hiroaki Uchida *Metering schemes based on polynomials over finite fields*
- Joseph DeCicco\*, Michael Gargano and William Edelson *Analysis of the sensitivity of a time dependent minimal node base directed communication*
- Wayne Goddard, S.M. Hedetniemi, S.T. Hedetniemi and Renu Laskar\* *Generalized matchings in graphs*
- Yukiyasu Mutoh *An Asymptotic existence theorem of a BIB design with nested rows and columns*
- Alastair Farrugia *Vertex-partitioning into additive induced-hereditary properties is NP-hard*
- Jay Bagga\*, R. Balakrishnan, R. Sampathkumar and N. Thillaigovindan *Some properties of triangle graphs*
- Kazuhiro Ozawa *Construction for BIBRC not having completely balanced property*
- Andrew C. Lee *On an application of graph theory in formal learning theory*
- Steven J. Winters *Cycle decomposition numbers of graphs*
- Hanno Lefmann *Sparse parity check matrices over finite fields*
- Michael Gargano\* and Louis Quintas *Complementary arithmetic sequences*
- Henry Liu *Discrete isoperimetric inequalities: A survey*
- Malcolm Greig *Designs from discrete log tables*
- Eddie Cheng\*, J.W. Grossman and M.J. Lipman *Influence digraphs induced by time-stamped graphs*
- John J. Watkins *A miscellany of chessboard problems*
- K.J. Noble\* and T.D. Smotzer *Some extremal subfamilies of some extremal families of nearly strongly regular graphs*

- John L. Pfalz *Discrete antimatroid topology*
- Balázs Montágh *Some anti-Ramsey numbers of large double stars*
- Heiko Harborth *Independence on triangular hexagon boards*
- A. Kelmans *On packing subgraphs in a graph*
- Matt Edmonds\* and Jennifer McNulty *The fractional flow number of rank 3 orientable matroids*
- Saharon Shelah and Alexander Soifer\* *Axiom of choice and chromatic number of the plane*
- Kenneth Bogart *Teaching introductory combinatorics by guided discovery*
- Michael Gilpin *The orders of  $GL(k, \mathbb{Z}_n)$  and  $SL(k, \mathbb{Z}_n)$*
- W. Gu, X. Jia\* and J. Shen *On perfect independent dominating sets in graphs*
- Matthieu Dufour and Jean M. Turgeon\* *Two theorems pertaining to the coloring of the edges of a graph*
- Robert Jamison and Natalie Lochner\* *Tiling fringed chessboards with dominoes*
- Gera Raluca\*, Ping Zhang and Varapom Saenpholphat *Divisor graphs*
- Larry Langley\* and Sarah Merz *The number of minimum  $\alpha$ -dominating sets in tournaments*
- V. Voloshin *Coloring mixed hypergraphs: Theory, algorithms and applications*
- Ian Anderson and D.A. Preece\* *Some narcissistic half-and-half power-sequence  $\mathbb{Z}_p$  terraces with segments of different lengths*
- Geoffrey Exoo *Cages and voltage graphs*
- Sarah Merz\* and Dustin Stewart *Gallai-type theorems and domination parameters in digraphs*
- R.D. Morris *Upper bounds for Erdos-Rado numbers*
- H. Martini *Generalized convexity notions and combinatorial geometry*
- C.E. Ealy, Jr *On the genus of finite categories*
- James D. Factor *Partial domination graphs of extended regular tournaments: Chords and cycles*
- Gary Chartrand, Ping Zhang\* and Ebrahim Salehi *Local colorings of graphs*
- David Erwin\* and Frank Harary *Destroying automorphisms by fixing points*
- Wayne Goddard, Sandra Hedetniemi, Stephen Hedetniemi, John Harris and Douglas Rall\* *Broadcast chromatic numbers of graphs*
- David E. Brown and J. Richard Lundgren *Some characterizations of unit interval bigraphs*
- Tamara Burton and Melissa Matthews\* *1-spy and domination critical graphs: A preliminary report*
- Ellen Gethner\* and William M. Springer *How false is Kempe's proof of the four color theorem?*
- David E. Brown\* and J. Richard Lundgren *Relationship among varieties of interval graphs, probe interval graphs, and  $(0,1)$ -matrices*
- Tamara Burton\* and Melissa Matthews *Dot critical vs. idot critical - the hazards of  $i$ : A preliminary report*
- Michael Plantholt *A combined logarithmic bound on the chromatic index of*

*multigraphs*

- Linda Eroh\*, John Koker, Kevin McDougal, Hosien Moghadam and Steve Winters *Average edge-deleted eccentricity*
- Dustin Stewart *Quadrangular tournaments and orthogonal matrices*
- Victor Kostyuk\*, Darren A. Narayan and Victoria A. Shults *Color distribution in minimal  $k$ -rankings*
- David R. Berman and Douglas D. Smith\* *Towards minimal-violations rankings for whist tournaments*
- Sandra R. Kingan *On matroid generation*
- Victor Kostyuk, Darren Narayan\* and Victoria A. Shults *Minimal  $k$ -rankings and the  $A$ -rank number of a path*
- Brenda J. Latka *No maximal antichain of tournaments with 3 elements*
- Nolan B. McMurray, Jr *On largest circuits and cocircuits in matroids*
- G. Bullington\*, L. Eroh, J. Koker, K. McDougal, H. Moghadam, S. Winters and S. Stalder *Forbidden subgraph edge colorings*
- Robert Hochberg\* and Matthias F.M. Stallmann *Linear arrangement of trees*
- Salar Y. Alsardary *An upper bound on the basis number of the powers of the complete graphs*
- Olof Heden *On the faces problem for perfect codes*
- Hemant Balakrishnan *Radiocolorings*
- Ruth Haas\*, David Orden, Francisco Santos, Günter Rote, Brigitte Servatius, Hermann Servatius, Diane Souvaine, Ileana Streinu and Walter Whiteley *Planar minimally rigid graphs and pseudo-triangulations*
- George J. Davis, Gayla S. Domke\* and Charles R. Garner, Jr *Ranks of graph complements*
- Vassil Yorgov *New optimal self-dual codes of length 106*
- Khurram H. Shafique\* and Ronald D. Dutton *Maximum alliance-free and minimum alliance-cover sets*
- Gary Chartrand, Ping Zhang and John Frederick Fink\* *The Hull number of an oriented graph*
- Michelle R. DeDeo *Generalized Kloosterman sums over rings of order  $2^r$  and their association to graphs*
- Silvia Heubach\* and Ralph Grimaldi *Binary strings without odd runs of zeros*
- N. Deo and P. Micikevicius\* *One-factorization-based collective communication on a cluster of workstations*
- Brendan McKay, Alison Meynert and Wendy Myrvold\* *Counting small latin squares*
- Michael Ferrara\*, Yoshihara Kohayakawa and Vojtech Rödl *Spacing numbers of graphs*
- Phyllis Chinn\* and Silvia Heubach *Compositions with no occurrence of a particular number*
- Ying Zhang\* and N. Deo *Computing the diameter of random connected graph*
- Richard Bean\* and Ian Wanless *Subsquare-rich latin squares and their critical*

sets

- Cara L. Cocking\* and Kim A.S. Factor *Domination graphs of symmetric digraphs I: Stable forms of complete biorientations of disconnected, complete, bipartite, and tripartite graphs*
- John Ganci and Douglas B. West\* *The smallest  $k$ -regular  $h$ -edge-connected graphs without 1-factors*
- Pankaj Gupta\* and Narsingh Deo *Expected value of the diameter of a random graph and its implications for the web graph*
- Emine Sule Yazici *The metamorphosis of 2-fold 4-cycle systems into 2-fold 6-cycle systems*
- Kim A.S. Factor *Domination graphs of symmetric digraphs II: Unipathic digraphs as biorientations of trees*
- Gary E. Stevens\* and Robert E. Jamison *Isomorphic factorizations of some linearly recursive trees*
- H. Harutyunyan\* and B. Shao  *$k$ -broadcast time of tree networks*
- D.G. Hoffman and C.C. Lindner\* *Two-fold maximum packing  $C_3$  to  $C_4$  metamorphoses*
- Peter D. Johnson, Robert R. Rubalcaba\* and Matt P. Walsh *Fractional domination and packing in graphs*
- Garth Isaak *Large Hamiltonicity of digraphs for universal cycles of permutation*
- John C. Wierman and Dora Naor\* *Desirable properties of universal formulas for percolation thresholds*
- Pengfei Xiang\* and John Wierman *Limit theory of the domination number for the class cover catch digraphs*
- Sin-Min Lee\* and Alexander Nien-Tsu Lee *On super edge-magic graphs with many odd cycles*
- William D. May\* and John C. Wierman *Improved methods for computing rigorous bounds on percolation thresholds*
- Elizabeth J. Billington *Metamorphosis of lambda-fold designs with block size four into 3-stars: The final case*
- Renu Laskar, Alica McRae and Charles Wallis\* *Domination in triangulated chessboard graphs*
- Debra Boutin *Convex geometric graphs with no short self-intersecting paths*
- Ben Pak Ching Li *Constructing resolvable  $(n, 3, 3, 2)$  lotto designs using resolvable covering designs and Kirkman triple systems*
- Mark Anderson\*, Jay Yellen and Robert Brigham *Two classes of extremal graph*
- Stephen E. Shauger\* and Bin Zheng *Algorithmic advances in finding  $(a \bmod 5)$ -cycles in graphs*
- L.T. Pebody *Combinatorial reconstruction using polynomial invariants*
- Xu Xiaodong, Xie Zheng and Stanislaw P. Radziszowski *A constructive approach for the lower bounds on the Ramsey numbers  $R(s, t)$*
- Amfried Kemnitz *Large  $[r, s, t]$ -colorings of graphs*
- Alica McRae\*, Dec Parks and Kelly Wise *Coloring paired graphs*

- Wen-jin Woan *Bijections of combinatorial objects*
- Peter Blanchard *On pseudo-arithmetic Ramsey numbers*
- Larry Dunning *Yet another algorithm for generating the Gray code*
- Matt Cropper and Pete Johnson\* *More on Hall  $t$ -chromatic graphs*
- Raph P. Grimaldi *Binary strings with no isolated 1's in even positions*
- Oleg Pikhurko *Size Ramsey numbers and linear programming*
- Ping-Tsai Chung *Combinatorial algorithms for computing aggregate functions in probabilistic relational databases*
- M.M. Cropper\*, A.J.W. Hilton and P.D. Johnson  *$k$ -fold coloring even cycles with Hall's condition*
- Charles Moore *A simple generating function for some generalized random walk*
- Vince Grolmusz *From Ramsey-graphs to fast matrix multiplication*
- Yuejian Peng\* and Cheng Zhao *On incomparable and uncomplemented families of sets*
- Izak Broere, Samantha Dorfling and Elizabeth Jonck\* *Generalized chromatic numbers and additive hereditary properties of graphs*
- K. Humphreys\* and H. Niederhausen *Counting infinite step set lattice paths using umbral calculus*
- Jens-P. Bode *Mosaic graph Ramsey numbers*
- L. Kazmierczak\*, F. Boesch, C. Suffel and D. Gross *Forbidden subgraph conditions on the complements of a graph that insure a strong network design*
- Seyoum Getu *Lattice paths on parallel planes*
- Alice Hubenko\*, A. Gyarfas and J. Solymosi *Large cliques in  $C_4$ -free graphs*
- Nathan Kahl *Reliability,  $T$ -optimal graphs, and the multigraph conjecture*
- Dave Hough and Louis Shapiro\* *Lattice polynomials*
- E.J. Cockayne and S. Finbow\* *Generalised irredundance in graphs: Nordhaus-Gaddum bounds*
- Gennady Bachman and Ebrahim Salehi\* *Nonmagic and  $K$ -nonmagic graphs*
- Matt Walsh *Competition chromatic numbers of graphs*
- Dave Hough\* and Louis Shapiro *Noncrossing trees*
- Gary Chartrand\*, Todd Thomas, Ping Zhang and Varaporn Saenpholphat *A new look at Hamiltonian walks*
- Timothy A. Redl *Graceful graphs and graceful labelings: Two mathematical programming formulations and some other new results*
- Stefan Krause *Ramsey numbers for circulant colorings*
- Mahendra Jani\* and M. Zeleke  *$k$ -trees, Catalan identities and applications Part I*
- Gary Chartrand, Todd Thomas\*, Ping Zhang and Varaporn Saenpholphat *A new look at hamiltonian Walks II*
- B. Hartnell\* and D. Rall *Edge labeling and deletion games*
- Ingo Schiermeyer *Large rainbow colourings*
- M. and Melkamu Zeleke\*  *$k$ -trees, Catalan identities and applications Part II*
- A. Gregory Starling\*, Jacob Kier and Joseph B. Klerlein *Generating cycles in the digraph  $P(n,k)$ : An algorithm*

- Sin-Min Lee, Ling Wang\* and Yihui Wen *On the edge-magic cubic graphs and multigraphs*
- Robert E. Jamison *On extremal rankings of graphs*
- Asamoah Nkwanta *Two more Fibonacci walks*
- David A. Pike *On a conjecture of Bermond*
- Sin-Min Lee and Yung-Chin (Jack) Wang\* *On super edge-magicness of chain graphs whose blocks are complete graphs*
- Seog-Jin Kim\*, Alexandr Kostochka and Kittikorn Nakprasit *On the chromatic number of intersection graphs of convex sets in the plane*
- Heinrich Niederhausen *An algebraic approach to counting random walks in quadrants and octants*
- Krystyna T. Balinska, Michael L. Gargano and Louis V. Quintas\* *Hamilton paths in graphs whose vertices are graphs*
- Geir Agnarsson\* and Agust Egilsson *On vertex coloring simple genetic digraph*
- Lynnell S. Matthews *Enumeration of disjoint Motzkin path systems*
- Stephen Curran *Enumeration of Hamilton paths in Cayley digraphs*
- Dean G. Hoffman and Sally A. Clark\* *Edge-color balance in  $K_n$*
- Junichiro Fukuyama *On the topology of the hamming distance between set systems*
- Elizabeth Duea, Kim Overbay, Casey Parks\* and Jill Rhyne *Grundy coloring of chessboard graphs*
- Barbara Tankersley *The determinant sequence of Hankel matrices*
- Eric Gottlieb *A lexicographical shelling for a new lattice of partitions*
- D.V. Chopra *Further contributions to balanced arrays*
- Vadim E. Levit\* and Eugen Mandrescu *A family of well-covered graphs with unimodal independence polynomials*
- Ke Qiu *Interesting sequences in star graphs*
- Michael Raines *Extended 5-cycle systems having a prescribed number of idempotent elements*
- Tao-Ming Wang *On line graph with a unique set of cliques which covers all edges*
- Jay Bagga, John Emert\* and Michael McGrew *Visibility graphs on the sphere*
- H. Era, S. Iwai, K. Ogawa and M. Tsuchiya\* *A note on hereditary double bound graphs*
- Rommel Barbosa\* and Domingos Cardoso *On a subclass of well-covered graphs*
- Alica M. Dean\* and Natalia Veytsel *Unit bar-visibility graphs*
- Ermelinda DeLaVina and Bill Waller\* *Independence, radius and path coverings in trees*
- Erika L.C. King *Characterizing a subclass of well-covered graphs*
- H. Moghadam\*, L. Eroh, J. Koker, S. Winters and S. Stalder *Classifying trees with edge deleted central appendage number 2*
- Bradford A. Pyle *Abdiff-tolerance edge clique cover numbers*
- P. Luo\*, Y. Peng and C. Zhao *A generalized graph partitioning problem*

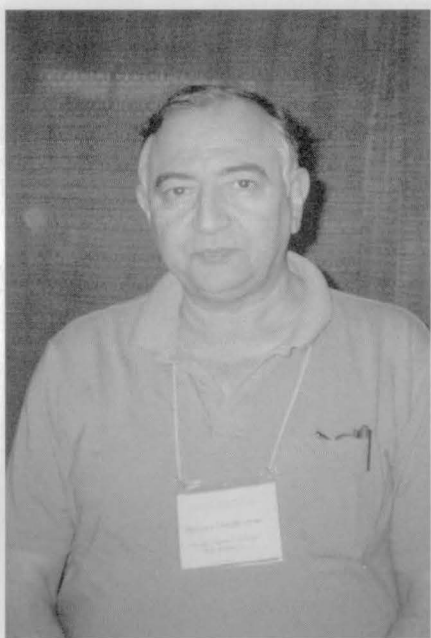




President Ron Mullin presents  
the 2001 Euler Medal to Spyros Magliveras

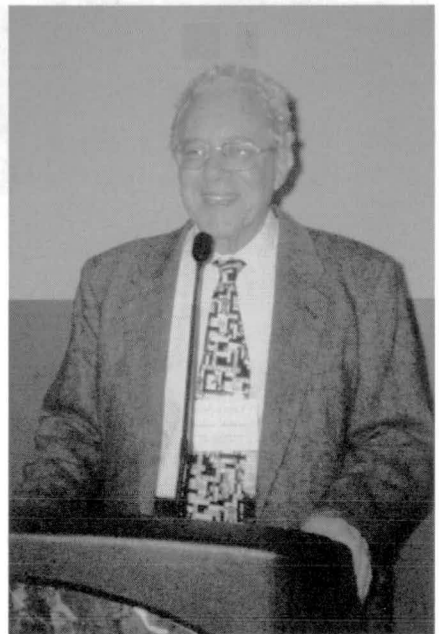
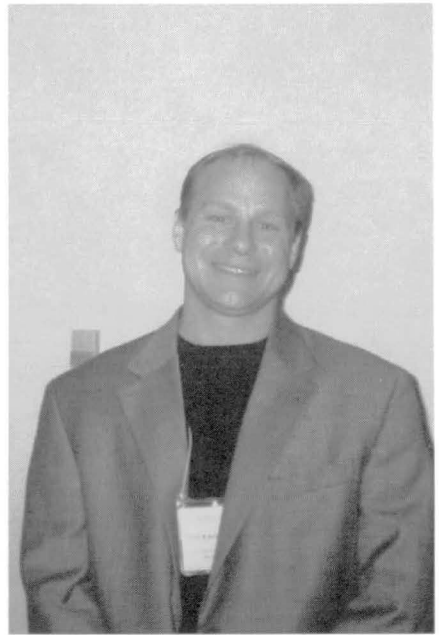


Secretary Wal Wallis presents  
the 2001 Hall Medal to Alfred Menezes



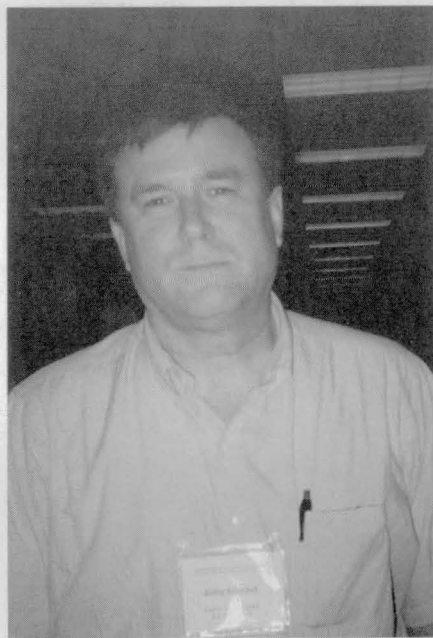
upper left: Alex Rosa  
lower left: Spyros Magliveras

upper right: Michelle DeDeo  
lower right: Matt Cropper



upper left: Doug West  
lower left: Anne Krause

upper right: Bill Kazmierczak  
lower right: Fred Hoffman



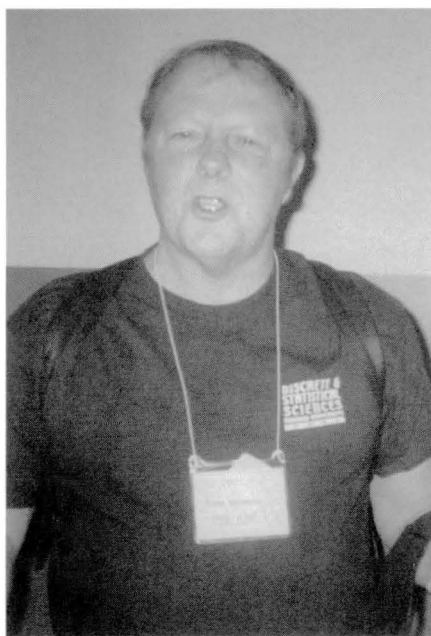
upper left: Michael Raines  
lower left: Lou Shapiro

upper right: Charles Suffel  
lower right: John Gimbel



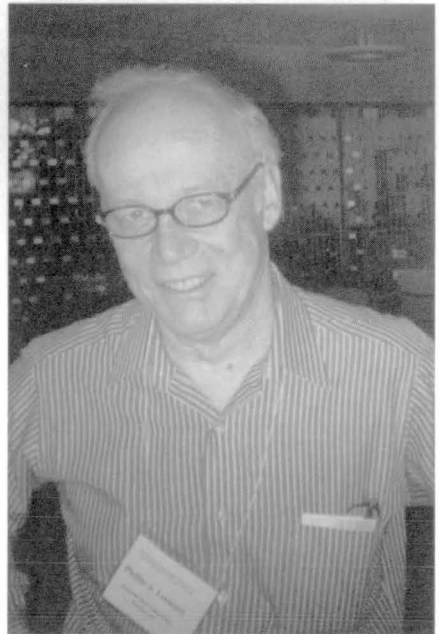
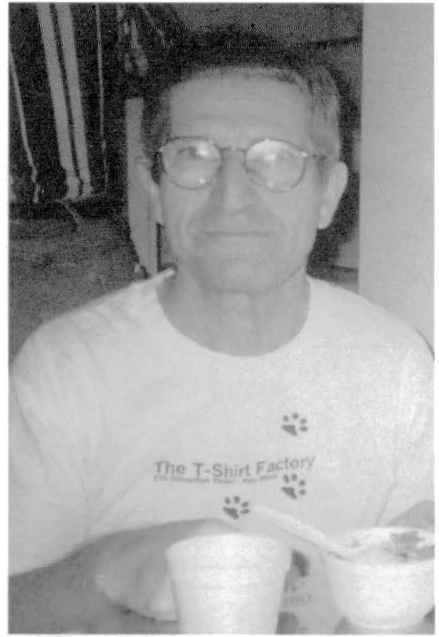
upper left: Charles Wallis  
lower left: Ping-Tsai Chung

upper right: Nathan Kahl  
lower right: Yuejian Peng



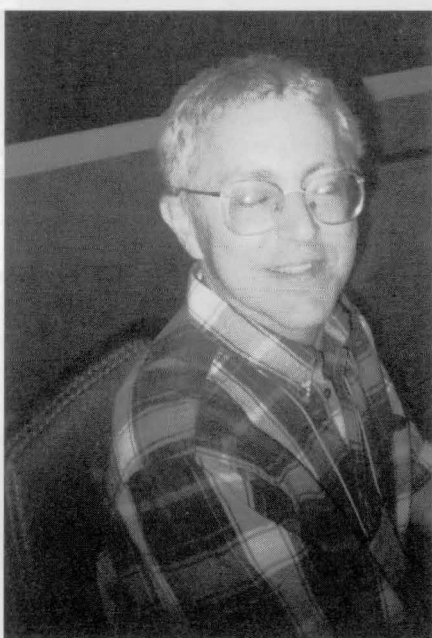
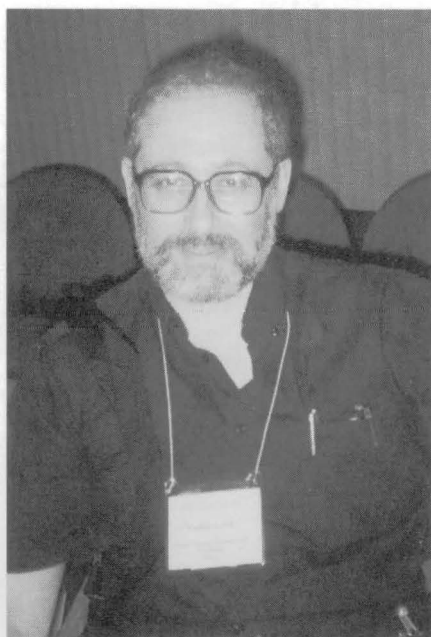
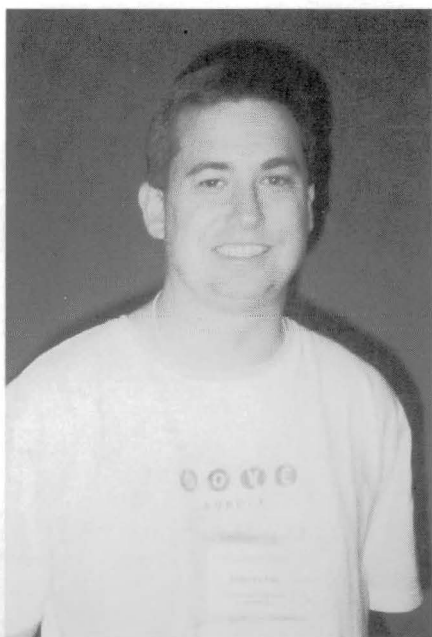
upper left: Gary Stevens  
lower left: Joan Hutchinson

upper right: Ralph Stanton  
lower right: Pete Johnson



upper left: Garth Isaak  
lower left: Geir Agnarsson

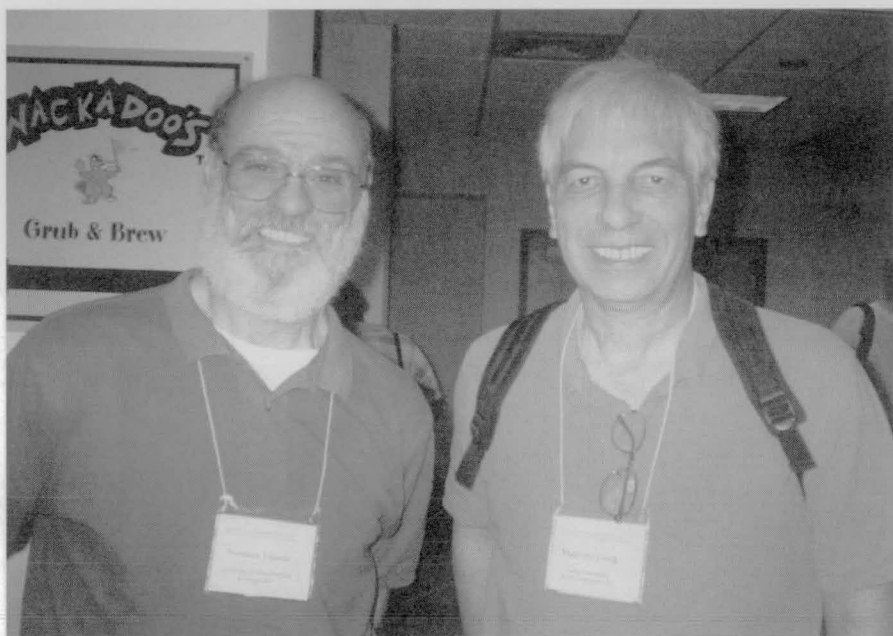
upper right: Alexander Kelmans  
lower right: Phil Leonard



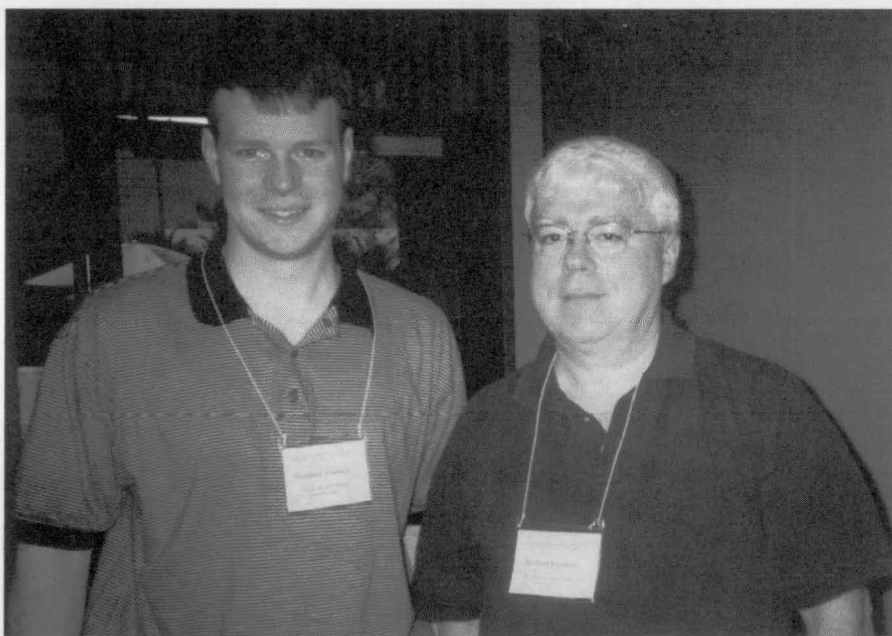
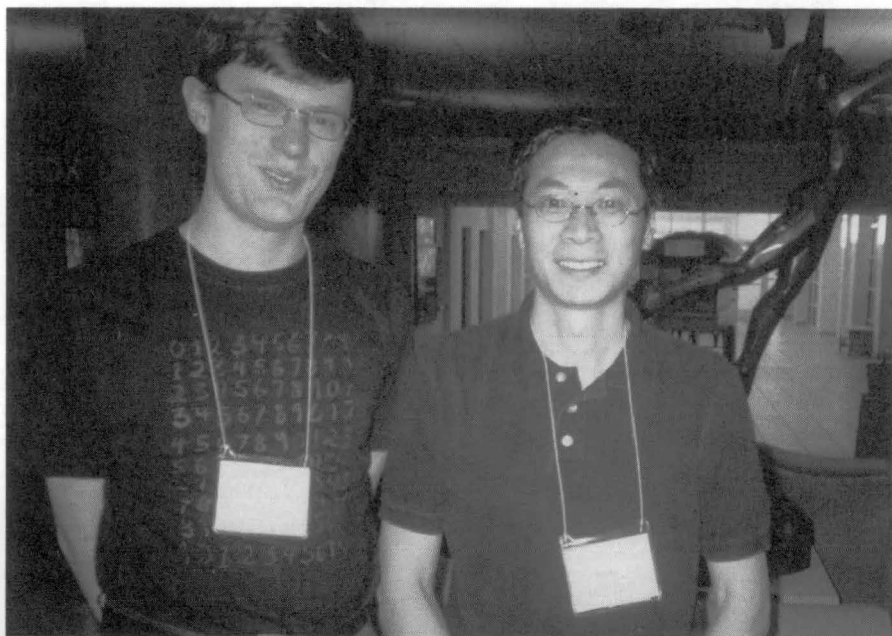
upper left: Mike LeVan  
lower left: David Berman

upper right: Vadim Levit  
lower right: Reinhard Laue

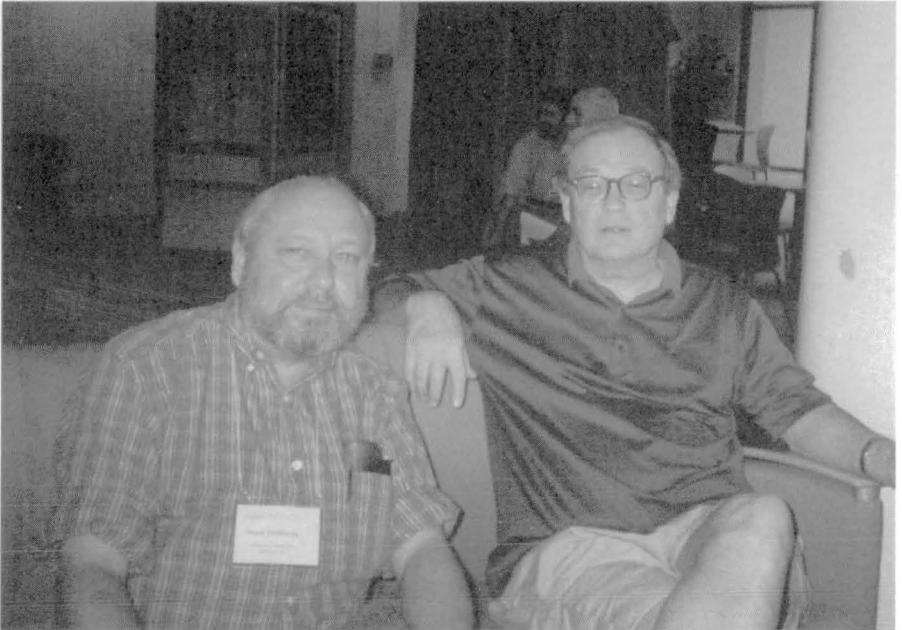
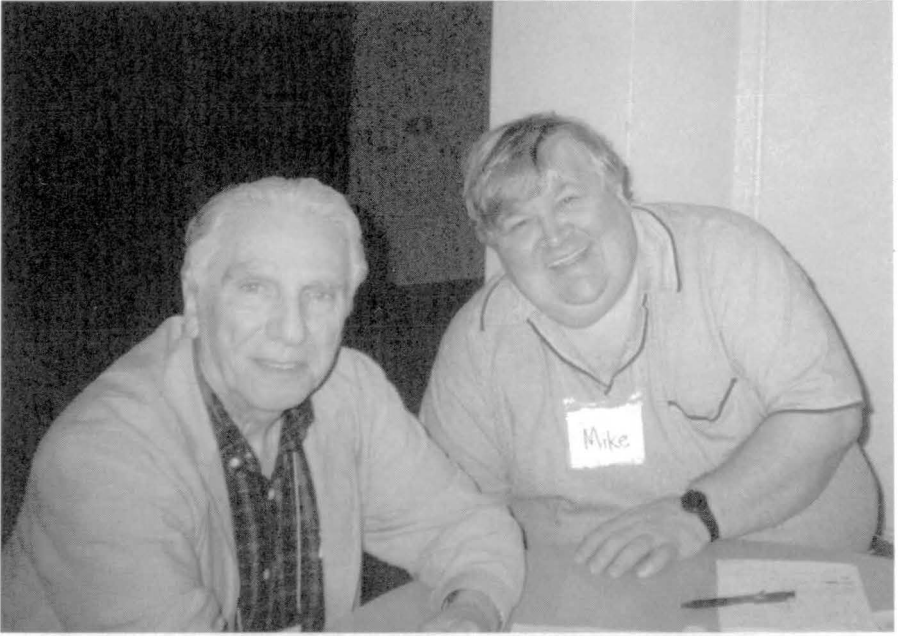




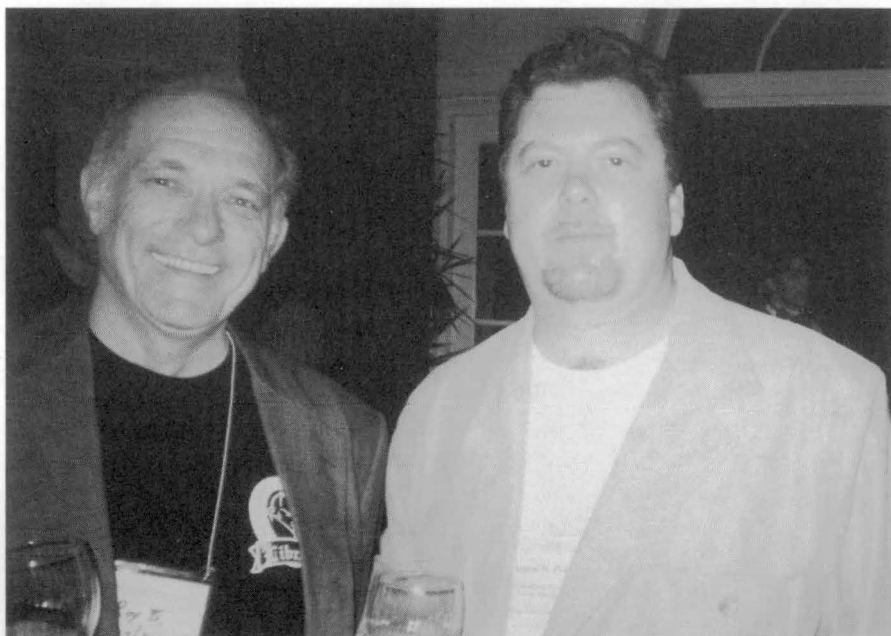
upper: Stefan Krause and Jens P. Bode  
lower: Norm Finizio and Malcolm Greig



upper: Richard Bean and Ben Li  
lower: Stephen Finbow and Art Finbow



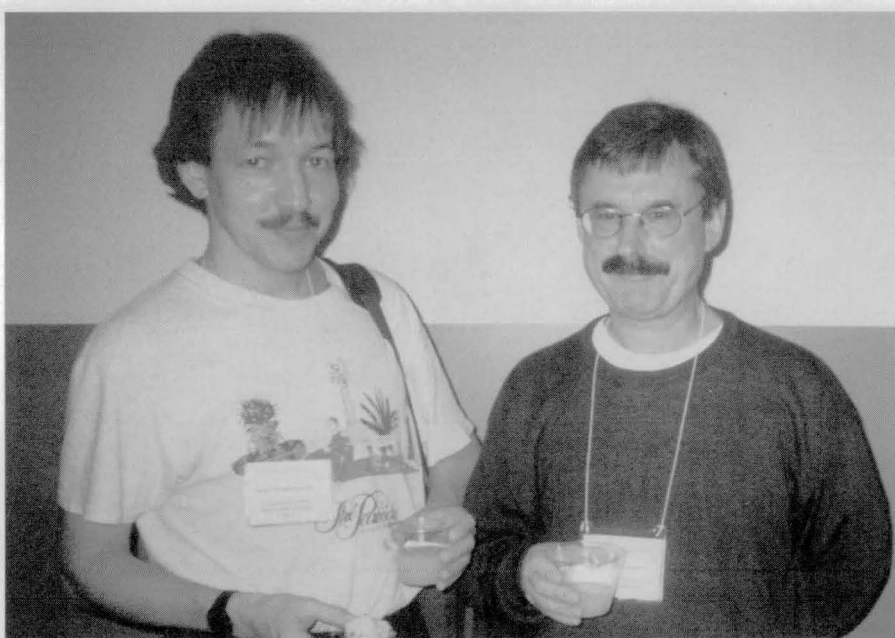
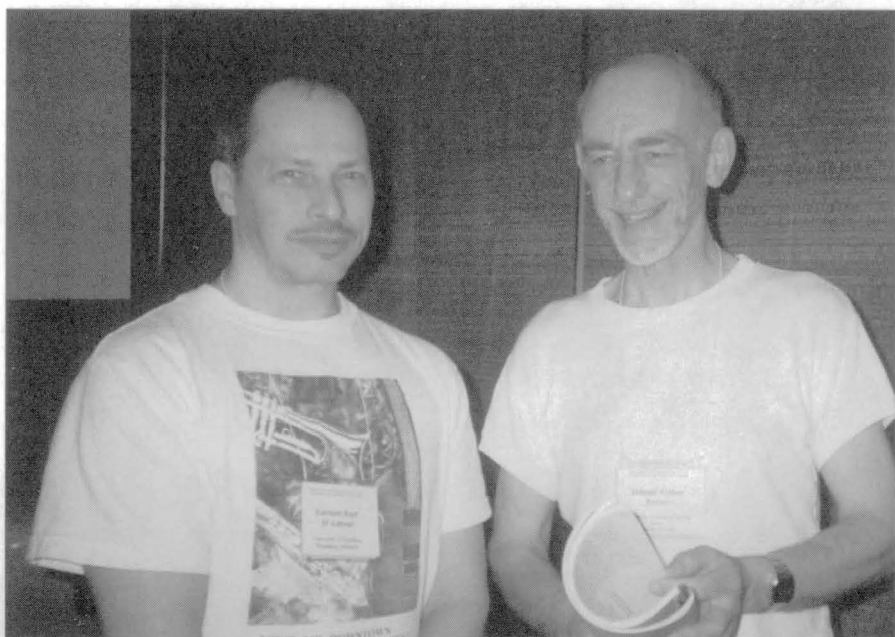
upper: Lou Quintas and Mike Gargano  
lower: Dean Hoffman and Curt Lindner



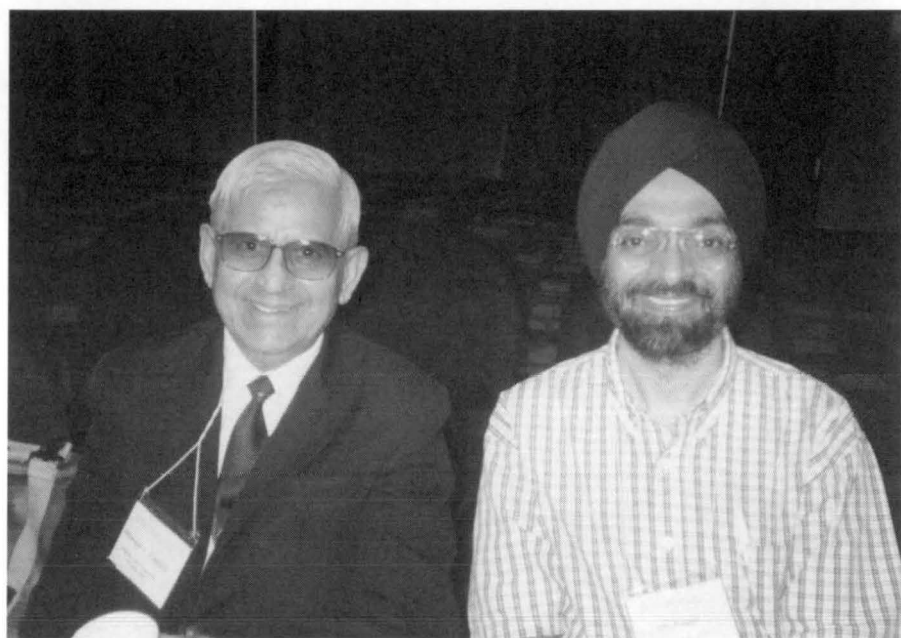
upper: Leroy Beasley and Tom Porter  
lower: Ping Zhang and Gary Chartrand



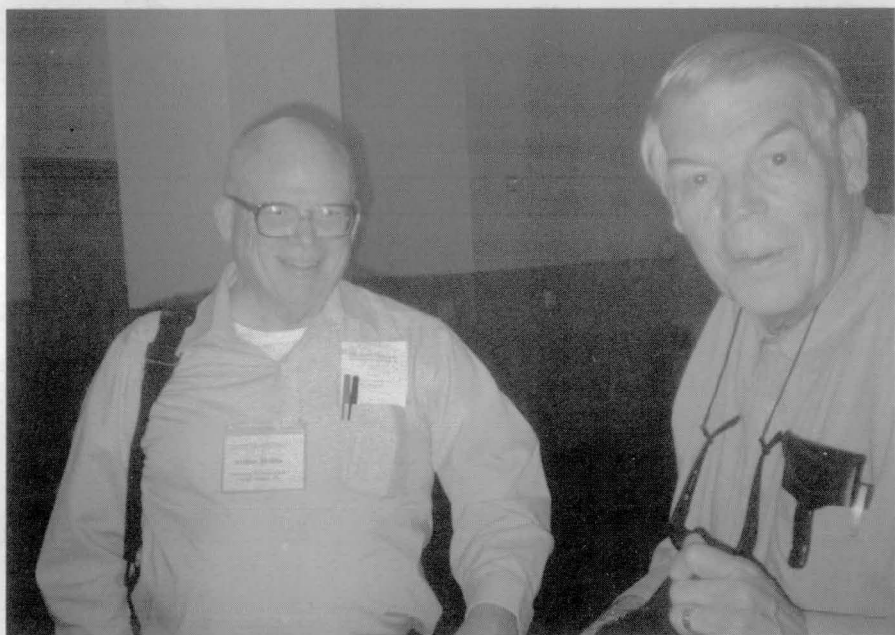
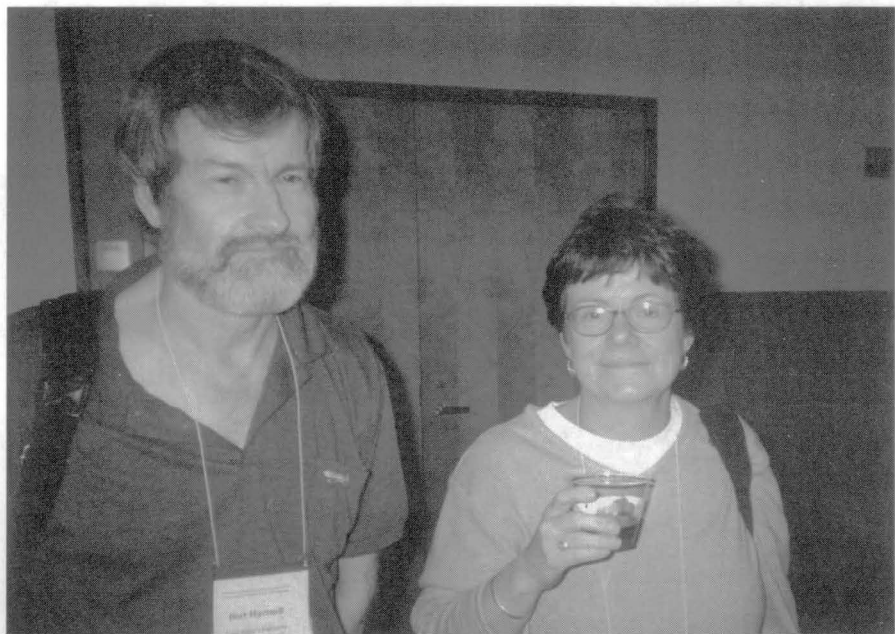
upper: Jim Factor and Kim Factor  
lower: Jean Turgeon and Richard Anstee



upper: Ernie Ruet D'Auteuil and Donald Preece  
lower: Ingo Schiermeyer and Arnfried Kemnitz



upper: Ralph Grimaldi and Wendy Myrvold  
lower: Dharam Chopra and Jay Bagga



upper: Bert Hartnell and Cathy Baker  
lower: Art Hobbs and Ron Mullin