Contents

PREFACE v

LIST OF ATTENDEES xiii

SECTION I Invited Presentations 1

- "Opening Remarks"
  Peter Freeman 3
- "Software Engineering Education in IBM"
  Al Peitrasanta 5
- "A Post–Mortem Analysis of the Software Engineering Programs at Wang Institute of Graduate Studies"
  Richard E. Fairley 19

SECTION II Refereed Papers 37

PART 1 Undergraduate Software Engineering Education 39

- Synopsis of Presentation by Ray Buhr 41
- Questions for Ray Buhr 43
- "Undoing The Sequential Mindset: The Sofware–CAD Approach"
  Ray Buhr 45
- "Adding Reviews, Prototyping, and Frequent Deliveries to Software Engineering Projects"
  Connie U. Smith and Charles R. Martin 64
- "Producing Software Using Tools in a Workstation Environment"
  Mark Sherman and Robert L. Drysdale III 93

- "A First Course in Computer Science: Mathematical Principles for Software Engineering"
  H.D. Mills, V.R. Basili, J.D. Gannon, and R.G. Hamlet 120
- "A Support Tool for Teaching Computer Programming"
  Marvin V. Zelkowitz, Bonnie Kowalchack, David Itkin and Laurence Herman 139
- "Stalking The Typical Undergraduate Software Engineering Course: Results from a Survey"
  Laura Marie Leventhal and Barbee T. Mynatt 168

PART 2 Teaching Project Courses 197

- Synopsis of Presentation by Tom Nute 199
- Synopsis of Presentation by Ed Robertson 201
- Synopsis of Presentation by Walt Scacchi 203
- Synopsis of Presentation by John Brackett 205
- On the Project Panel Course Questions and Answers 207
- "Some Observations on Teaching a Software Project Course"
  James R. Comer, Tom Nute, and David J. Rodjak 215
- "Two Complementary Course Sequences on The Design and Implementation of Software Products"
  James E. Burns and Ed Robertson 230
- "The System Factory Approach to Software Engineering Education"
  Walt Scacchi 246
- "Performing Requirements Analysis Project Courses for External Customers"
  John W. Brackett 276

- "An Academic Environment for Undergraduate Software Engineering Projects"
  Michael A. Erlinger and Wing C. Tam 286
- "A Project-Based Software Course: The Myth of The 'Real-World'"
  Pierre–N. Robillard 297

PART 3 Graduate Level Software Engineering Education ... 309

- Synopsis of Presentation by Caroline M. Eastman 311
- Questions for Caroline M. Eastman 313
- "Education for Research in Software Engineering"
  Caroline M. Eastman 314
- "Accommodating the Software Engineering Evolution in Education"
  William Lively and Sallie Sheppard 324
- "The Evolution of Wang Institute's Master of Software Engineering Program"
  Mark A. Ardis 346
- "Teaching a Software Design Methodology"
  David M. Weiss 363
- "Software Engineering at Monmouth College"
  Harris Drucker, Richard A. Kuntz, and G. Boyd Swartz 385

PART 4 Industrial Education and Training 397

- "A Synergy of Industrial and Academic Education"
  D.J. Besemer, K.S. Decker, D.W. Politi, and J.F. Schnoor 399

- "IAI Corporate Software Engineering Training and Education Program"
  Jonah Z. Lavi(Loeb), Moshe I. Ben–Porat, and Amram Ben–David 414
- "Software Engineering: Industry Meets Academia"
  R.A. Radice and R.W. Phillips 440
- "The Computer Science Education Program at AT&T Bell Laboratories, Merrimack Valley"
  J.C. Cleaveland and R.W. MacDonald 475
- "Formal Education Within The Software Life Cycle"
  Nancy Hall and John Miklos 494
- "The Challenge of Technology Transfer"
  John E. Gibson and Vicki K. Heilig 515

SECTION III Panel Sessions 525

Part 1 Four Models of Industry/Academia Interfaces 527

- Panel Discussion on Four Models of Industry/Academia Interfaces 529
- Questions and Answers on the Industry/Academia Panel 559

Part 2 Ada in Software Engineering Education 565

- Panel Sessions on Ada in Education 567