Introductory Statement

New Frontiers in Chemical Engineering Education is a series of workshops whose aim is to specify an undergraduate chemical engineering curriculum that

- builds on our unique position in engineering
- attracts the best and brightest students
- is valued by industry
- contains a good supply of examples, contributed from the wide community of chemical engineering
- uses the best available practices for instruction

The series is funded by the National Science Foundation and conducted under the auspices of the Council for Chemical Research.

Workshop III was held at the Ocean Edge Resort and Golf Club, in Brewster MA on Cape Cod, during 2003 June 11-13. The participants were

Nick Abbott	Wisconsin
Bob Armstrong	MIT
Lisa Bullard	NC State
Manny Cano	Shell
Rebecca Carrier	Pfizer
Eldred Chimowitz	Rochester
David DiBiasio	WPI
Tom Edgar	Texas
Scott Fogler	Michigan
Christos Georgakis	Polytechnic U.
Charles Glatz	Iowa State
Bill Green	MIT
David Hackleman	Oregon State
Kenneth Hall	Texas A&M
Duane Johnson	Alabama
Cammy Kao	Stanford
Tonya Klein	Alabama
Harold Kung	Northwestern
Henry Lamb	NC State
Kuyen Li	Lamar U.
Lance Lobban	Oklahoma
Vasilios Manousiouthakis	UCLA
Tony McHugh	Lehigh
Greg McRae	MIT
Bill Olbricht	Cornell
Marc Ostermeier	Johns Hopkins
Bob Parker	Pittsburgh
Henrik Pedersen	Rutgers

Bob Powell	UC Davis
Michael Prudich	Ohio
Helen Qammar	Akron
Jim Rawlings	Wisconsin
Bridget Rogers	Vanderbilt
Ron Rousseau	Georgia Tech
Howard Saltsburg	Tufts
Jim Schneider	Carnegie Mellon
Suresh Sureshkumar	Washington U.
Michael Thien	Merck Research Lab
Carlos Valenzuela	Air Products
Ted Watson	Colorado State
Fred Weber	Tennessee
Phillip Westmoreland	Massachusetts
Ted Wiesner	Texas Tech
John Wiest	Alabama
Andrew Zydney	Penn State

The meeting Facilitator was Jeannette Gerzon of Belmont MA; additional planning and support were provided by Barry Johnston and Melanie Miller of MIT. Guest speaker was Prof. Dean Whitla of Harvard University.

Workshop III was charged to develop instruction modules that would support a curriculum based on 3 organizing principles, as developed in Workshop II:

- molecular processes
- multiscale analysis
- systems analysis and synthesis

In addition, participants considered methods of curriculum delivery and instructional methods. Finally, next steps were identified for continuing the work begun in these three workshops.

The Proceedings for Workshop III comprise

- Overview by Armstrong
- Session 1: instructional modules, including presentations by Sureshkumar, Edgar, and Westmoreland
- Session 2: teaching and delivery of the curriculum, including presentations by Whitla, Fogler, and DiBiasio
- Session 3: further definition of the curriculum
- Session 4: planning
- Summary by Green, Rawlings, and Thein