intercept and coordinate flight paths between aircraft in complex airspace. The projects described range from the development of a national virtual observatory for astrophysical research to a national institute of health funding program for major multi-institutional medical research, from the deployment of a cyberinfrastructure to connect experts in earthquake engineering to partnerships between developed and developing countries in AIDS research. The chapter authors speak frankly about the problems these projects encountered as well as the successes they achieved. The book strikes a useful balance between presenting the real stories of collaborations and developing a scientific approach to conceiving, designing, implementing, and evaluating such projects. It points to a future of scientific collaborations that build successfully on aspects from multiple disciplines. Contributors Mark S. Ackerman, Paul Avery, Matthew Blair, Jeremy F. Borenstein, Matthew Bos, Geoffrey C. Boxer, Randal Barker, David Conz, Eric Cook, Dan Cosner, Jonathan Cummings, Erik Dahl, Mark Gilmore, Ichael Favel, Thomas A. Filieut, Ian Foster, Jeffery S. Grote, Edward A. Hyatt, Robert J. Harisch, Lidby Hemphill, Tony Hey, Eric C. Holder, Mark James, Carl Kesselman, Sara Kosler, Timothy L. Killeen, Xing Lu, Kelly O., Meganough, Chris Maritza, Shawn Millett, William H. McNerney, James O., Vardys, Martha Milos, Michael Nalcent, Gary M., Olson, Judith G. Olson, James Ofman, Andrew Parker, John W. Parker, Mary Pau, David Reden, Kathleen Rocker, Diana Rifen, Michael E. Rogers, Titus Schleyer, Diane H. Sonnenwald, Jr., F. Spencer, Mark S. Stein, Anne Trethehun, Robert B. Waide, Mary C. Whitton, William Wulf, Jason Yerkie, Ann Zimmerman.

Current Developments in Biotechnology and Bioengineering: Production, Isolation and Purification of Industrial Products provides extensive coverage of new developments, state-of-the-art technologies, and potential future trends, focusing on industrial biotechnology and biomolecular engineering practices for the production of pharmaceuticals, enzymes, and other products. The book is divided into five parts: Part I deals with the management of fermentation processes, part II addresses the isolation of products from fermentation media, part III presents various processes for purifying fermentation products, part IV provides a complete picture of the current state-of-the-art in molecular biology and genetic and metabolic engineering and its impact on production processes, and part V covers the future prospects for industrial biotechnology and bioengineering. The book is a comprehensive guide to the current status and future directions of industrial biotechnology and bioengineering, providing state-of-the-art information on industrial bioprocesses for the production of microbial products by fermentation. It includes separation and purification processes of fermentation products, mathematical models for microbial growth under aerobic and anaerobic conditions, and the role of industrial biotechnology in the future of bioprocesses.