Acknowledgements

The Engineering Research Centers (ERC) Program owes a great deal to the vision of the members of a distinguished panel of the National Academy of Engineering (NAE) for structuring the guiding goals and objectives for the Program.[1] These guidelines have stood the test of time well and produced a set of 26 highly productive and creative ERCs which have proven to be of significant value to their industrial partners.

As participants in the ERC Program, we are grateful to Erich Bloch, the former Director of the National Science Foundation (NSF), and Nam P. Suh, the former Assistant Director for Engineering, both of whom served in dual roles for the ERC Program--first, as creators of the concept while serving on the NAE Panel, and second, as "mentors" to the ERC Program while they served at NSF. Dr. Carl Hall, the Acting Assistant Director for Engineering at the time of initiation of the Program in 1984-85, led an NSF team in developing the first program announcement. He and Nam Suh laid down a pathway in the Foundation that would permit the interdisciplinary nature of the program to emerge and gave it the freedom to develop new methods and procedures to fulfill its goals. In 1984, Pete Mayfield and Lynn Preston were selected to initiate and manage the Program because of their experience in developing interdisciplinary research programs focused on important emerging technology areas. Mayfield and Preston together developed the defining characteristics of an ERC and spearheaded the development of the Program from concept to reality. Mr. Mayfield led the ERC Program and the then-Engineering Centers Division[2] until his retirement in 1988; Ms. Preston was his deputy in both roles. Preston developed the NSF management systems as well as the post-award oversight and performance evaluation system for the Program. Upon Mayfield's retirement, she assumed the Program leadership role and Dr. Marshall Lih became Division Director. Under the leadership of Lih and Preston the ERC Program expanded significantly in budget and scope, deepened its partnership with industry, increased its emphasis on education within the centers, and developed strategies to encourage self-sufficiency of mature ERCs. The human resources development aspects of the Program were expanded in scope through the leadership of Dr. John White, Assistant Director for Engineering from 1990 to 1992. Dr. Joseph Bordogna, the present Assistant Director for Engineering, helped the Program develop its strategy for ensuring continued contributions in the next decade through a new generation of ERCs.

To the NSF ERC Program Directors we owe a debt of gratitude for taking on a complex and challenging role--a combination of mediator, arbitrator, and mentor--between NSF, industry, and academe; and for helping to guide and develop new ERCs and steer older ones toward self-sufficiency. The position is an exciting and demanding one, requiring interdisciplinary breadth, knowledge of management and technology transfer, and a commitment to integrating research and education. The ERC Program Directors would undoubtedly wish us also to thank, on their behalf, their colleagues in other divisions of NSF who have supported them in this role. (Appendix B lists ERC Program officers and staff at the time the original Manual was placed online, in 1999.)

We must thank and also congratulate university administrators at more than thirty universities--from presidents to deans of engineering to department chairs--for accepting the risk that the ERCs represent, with their challenge to traditional academic practices, and for supporting the centers in their efforts to change the culture of academic engineering research and education. The Program would not be succeeding without their foresight in sharing its vision.

It should be noted that the challenges of the ERC Program have produced a new cadre of academic leaders at all levels. We have center directors who have grown in their capacity to lead faculty to fulfill a shared vision; a cohort of administrative managers who have developed a new culture of administrative and financial management on campuses across the country; a new group of industrial liaison specialists who serve as a bridge between academe and industry; and a group of highly dedicated education program coordinators who have a special devotion to mentoring and developing young engineers. As the older centers move on to self-sufficiency, a new generation of ERCs is now beginning the process of developing strong centers based on the experience of the first generation.

We extend our wholehearted appreciation to U.S. industry--to the more than 1,000 companies that have welcomed the ERC concept enthusiastically and joined in partnership with the centers. Their representatives to the ERCs have demonstrated great energy and commitment, working with faculty and in many cases with their industrial competitors to advance the technological strength and economic future of the Nation. In a very real sense, they too are pioneers of the ERC Program.

Finally, to our own colleagues--the members of all the ERC teams--we offer our gratitude and our congratulations. Together

we have taken on the challenges of this novel program and achieved notable successes in the advancement of knowledge, the development of new technology, the education of a new breed of engineers, and the development of highly productive partnerships with industry. It has not been easy, and we have broken much new ground. This Manual attempts to capture much of the knowledge and experience inherent in that long effort, and again we thank you for participating so enthusiastically in its preparation.

NOTES

[1] NAE. 1984. Guidelines for Engineering Research Centers. NAE Panel on Engineering Research Centers. Washington, DC: National Academy Press.

[2] Now the Engineering Education and Centers Division.

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