CONTENTS

1. Decoding the Disciplines: A Model for Helping Students Learn Disciplinary Ways of Thinking
   Joan Middendorf, David Pace
   The Decoding the Disciplines model provides a series of steps that help faculty to articulate the kinds of cognitive operations that are fundamental to their disciplines, teach those operations to their students, assess the results, and share them with others.

2. Decoding the Reading of History: An Example of the Process
   David Pace
   The steps in the Decoding the Disciplines model are illustrated using the example of teaching students in a history course how to read historical texts.

3. Decoding Genetics and Molecular Biology: Sharing the Movies in Our Heads
   Miriam Zolan, Susan Strome, Roger Innes
   Three biology faculty use modeling and other active learning techniques to help their students visualize biological processes.

4. Decoding Astronomical Concepts
   Richard H. Durisen, Catherine A. Pilachowski
   The difficulties that these faculty face in conveying complex astrophysical concepts to their students are overcome using the Decoding the Disciplines model.

5. Decoding the Humanities
   Tony Ardizzone, Fritz Breithaupt, Paul C. Gutjahr
   Faculty in literature and creative writing courses model how to analyze literary texts and to shift from an expository to a creative mode of writing; they also assess their students' learning.

6. Learning to Use Evidence in the Study of History
   Valerie Grim, David Pace, Leah Shopkow
   These history faculty took different approaches to help their students overcome the bottleneck of how to use evidence to support an argument the way historians do.

7. Decoding Applied Data in Professional Schools
   Barry M. Rubin, Shanher Krishnan
   The Decoding the Disciplines model provides strategies that help students learn fundamental principles of statistics and marketing and apply these principles to real-world situations.
8. Using Collaborative Learning Teams to Decode Disciplines: Physiology and History
Whitney M. Schlegel, David Pace
These faculty describe how collaborative learning can be incorporated into the Decoding the Disciplines model and illustrate how the effects of teamwork on students' learning can be assessed.

9. Decoding the Assessment of Student Learning
Lisa Kurz, Trudy W. Banta
This chapter outlines the process of assessing student learning in the Decoding the Disciplines model and defines some principles for encouraging the use of assessment by faculty.

10. Facilitating a Faculty Learning Community Using the Decoding the Disciplines Model
Joan Middendorf
The Decoding the Disciplines model has grown out of Indiana University's Faculty Learning Community; the principles that guide that community are described here.

11. Future of Decoding the Disciplines
Joan Middendorf, David Pace
The authors envision the future directions of the Decoding the Disciplines model and its potential effects on the academy.

INDEX

FROM THE SERIES EDITOR

About This Publication. Since 1980, New Directions (NDTL) has brought a unique blend of leaders in postsecondary education. NDTL solid substance but also for timeliness, context, and direction.

The series has four goals: to inform new directions in teaching and learning in postsecondary education, to nudge the context that shapes these new directions, to illustrate through examples from real settings which these new directions can be incorporated.

This publication reflects the view that research conducted not only by researchers who report results in journals but also by practitioners who share disciplinary knowledge are needed. Contributors to NDTL approach questions related to teaching and learning in higher education from research and theory to practice and back again. They deal not only with pedagogical issues in the social context in which these issues arise but also with theory and research and on the other hand, the academic community as experts in our fields sometimes have been trained to think differently. An issue reports the results of an institution-wide faculty project in which faculty used a common model to uncommon thinking strategies inherent in the

MARILLA D. SVINICKI is director of the Center for Teaching and Learning at the University of Texas at Austin.