CONTENTS

Preface XIII
Acknowledgments XV

Chapter 1  An Introduction to Color Study
The Experience of Color  1
Color Awareness  3
The Uses of Color  6
Color-Order Systems  9
Color Study  13

Chapter 2  A Little Light on the Subject
Light  16
Additive Color: Mixing Light  19
Lamps  20
Lamp Types  22
Special Purpose Lamps  25
False Promise: Full-Spectrum Lighting 26
Lighting Level 26
Vision 27
The Illuminant Mode of Vision 27
The Object Mode of Vision 28
Modifying Light: Colorants 28
Lamps and Color Rendition 31
The Color Rendering Index 32
Metamerism and Matching 32
Modifying Light: Surface 33
Transparent, Opaque, and Translucent 36
Iridescence 37
Luminosity 38
Indirect Light, Indirect Color 38
Filters 40

Chapter 3  The Human Element

The Sensation of Color 43
Threshold 44
Intervals 45
The Perception of Color 48
Physiology: Responding to Light 50
Healing and Color 53
Synaesthesia 53
Psychology: Responding to Light 54
Naming Colors 55
Color As Language: From Name to Meaning 56
Impressional Color 60
Color As Words Alone 61
Chapter 4  The Vocabulary of Color

Hue 64
The Artists’ Spectrum 66
Primary, Secondary, and Intermediate Colors 67
Saturated Color 68
Other Spectrums, Other Primaries 68
Chromatic Scales 70
Complementary Colors 70
Cool and Warm Colors 72
Analogous Colors 73
Tertiary Colors: Chromatic Neutrals 74
Black, White, and Gray 75
Value 75
Pure Hues and Value 76
Tints and Shades 76
Monochromatic Value Scales 77
Comparing Value in Different Hues 79
Line 80
Value and Image 80
Transposing Image 82
Saturation 83
Saturation: Diluting Hues with Gray 85
Saturation: Diluting Hues with the Complement 86
Theoretical Gray 87
Tone 89

Chapter 5  The Instability of Colors

The Instability of Colors 91
Color Composition 92
Ground and Carried Colors 93
Placement and Color Change 95
Equilibrium 95
Simultaneous Contrast 96
Afterimage and Contrast Reversal 98
Complementary Contrast 100
Ground Subtraction 102
Color and Area: Small, Medium, Large 106

Chapter 6  **Illusion and Impression**
Color Illusions 108
The Illusion of Depth 108
Spatial Effects of Colors 111
Transparence Illusion 115
Fluting 117
Vibration 118
Vanishing Boundaries 120
Luminosity 120
Bezold Effect 122
Optical Mixes 122

Chapter 7  **Color Theory: A Brief History**
Setting the Stage 126
The Beginnings of Color Theory 127
Color and Controversy 132
The Scientific Model: Color Gets Organized 134
Color by the Numbers 138
A New Perspective 141

Chapter 8  **Color Harmony**
In Search of Beauty 145
Intervals and Harmony 147
Hue and Harmony 149
Major and Minor Themes 150
Value and Harmony 151
Saturation and Harmony 153
On Beyond Harmony: Dissonant Colors 156
The X-tra Factor: Surface and Harmony 157
Some Harmonious Conclusions 159

**Chapter 9** **Tools of the Trade: Color in Product and Print**

It's the Real Thing: Color in Product and Print 162
Design Media 166
Artists' Media 166
Subtractive Mixing: Pure Hues 169
Subtractive Mixing: Muted Hues 171
Tinting Strength 172
Color Printing: Process Colors 172
Color Printing: Spot Colors 176
Screen and Block Printing 177

**Chapter 10** **The Medium of Light**

Images of Light 180
Lost in Translation 181
The Screen Display 183
Color Display Modes 186
Color Management 189
Color on the Web 195
Web Color Coding 197
Emerging Media: E-Ink 201

**Chapter 11** **The Business of Color**

The Color Industries 204
Colorants 205
Color Sampling 205
Color Forecasting 206
Color Consulting 208
Color and Product Identity 209
Palettes 211
Traditional Colors, Document Colors 212
Palettes and the Past 214
Color Becomes Fashion 215
Color Cycles: A Modern History 216
Today and Tomorrow 218

Glossary 221
Bibliography 237
Index 243