

Contents

Preface ix

Chapter 1 Introduction

- 1.1 Principles of Effective Graphics 3
- 1.2 Automatic Graphs from SAS Procedures 10
- 1.3 Graph Template Language 11
- 1.4 Statistical Graphics Procedures 11
- 1.5 Organization of This Book 12
- 1.6 Data Sets and Custom Styles 14
- 1.7 Color and Gray-Scale Graphs 14
- 1.8 Effective Graphics and the Use of Decorative Skins 15
- 1.9 SAS 9.2 and SAS 9.3 Features 15

Chapter 2 Statistical Graphics Procedures

- 2.1 Key Concepts 19
- 2.2 SGPLOT Procedure 22
- 2.3 SGPANEL Procedure 24
- 2.4 Combining Statements 29
- 2.5 SGSCATTER Procedure 30
- 2.6 Styles and Their Usage 32
- 2.7 Template-Based Graphics vs. Device-Based Graphics 33

Chapter 3 Common Graphs

- 3.1 Introduction 37
- 3.2 Single-Cell Graphs 38
- 3.3 Classification Panels 55
- 3.4 Comparative and Matrix Graphs 57

Chapter 4 Basic Plots

- 4.1 Introduction 61
- 4.2 SGPLOT Procedure 62
- 4.3 Plot Roles and Options 63
- 4.4 Scatter Plot 64
- 4.5 Scatter Plots with Data Labels 74

- 4.6 Series Plot 78
- 4.7 Step Plot 84
- 4.8 Band Plot 89
- 4.9 Needle Plot 94
- 4.10 Vector Plot 97
- 4.11 VBarParm and HBarParm Plots (9.3) 100
- 4.12 Bubble Plot (9.3) 105
- 4.13 HighLow Plot (9.3) 108
- 4.14 Reference Lines 112
- 4.15 Parametric Line Plot (9.3) 115
- 4.16 Waterfall Chart (9.3) 117
- 4.17 Combining the Plots 120

Chapter 5 Fit and Confidence Plots

- 5.1 Introduction 129
- 5.2 Fit Plot Roles and Options 130
- 5.3 Regression Plot 131
- 5.4 Loess Plot 138
- 5.5 Penalized B-Spline Plot 145
- 5.6 Ellipse Plot 152
- 5.7 Combining the Plots 157

Chapter 6 Distribution Plots

- 6.1 Introduction 161
- 6.2 Histogram 162
- 6.3 Density Plot 166
- 6.4 Vertical Box Plot 169
- 6.5 Horizontal Box Plot 174
- 6.6 Combining the Plots 177

Chapter 7 Categorization Plots

- 7.1 Introduction 181
- 7.2 Categorization Plot Roles and Common Options 182
- 7.3 Vertical Bar Charts 183
- 7.4 Horizontal Bar Charts 191
- 7.5 Vertical Line Charts 198
- 7.6 Horizontal Line Charts 205

- 7.7 Dot Plots 212
- 7.8 Combining the Plots 218

Chapter 8 Axes, Legends, and Insets

- 8.1 Introduction 221
- 8.2 Linear Axis 223
- 8.3 Log Axis 225
- 8.4 Time Axis 227
- 8.5 Discrete Axis 229
- 8.6 Legends 230
- 8.7 Insets 232

Chapter 9 Annotation and Attribute Maps (SAS 9.3)

- 9.1 Annotation 235
- 9.2 Attribute Maps (9.3) 251

Chapter 10 Classification Panels

- 10.1 Introduction 257
- 10.2 SG PANEL Procedure 258
- 10.3 PANELBY Statement 259
- 10.4 Classification Panels 261
- 10.5 Paging of Large Panels 266

Chapter 11 Comparative and Matrix Plots

- 11.1 Introduction 269
- 11.2 SG SCATTER Procedure 269
- 11.3 PLOT Statement 270
- 11.4 COMPARE Statement 276
- 11.5 MATRIX Statement 281

Chapter 12 Health and Life Sciences Graphs

- 12.1 Introduction 287
- 12.2 Forest Plot 288
- 12.3 Forest Plot (9.3) 289
- 12.4 Survival Plot 290
- 12.5 Adverse Event Timeline 291
- 12.6 Adverse Event Timeline (9.3) 292

- 12.7 Maximum LFT Values by Treatment (9.3) 293
- 12.8 Median of Lipid Profile over Time by Treatment (9.3) 294
- 12.9 QTc Change from Baseline over Time by Treatment (9.3) 295
- 12.10 QTc Change Graph with Annotated “At Risk” Values (9.3) 296
- 12.11 QTc Change from Baseline over Time by Treatment 297
- 12.12 LFT Safety Panel, Baseline vs. Study 298
- 12.13 Immunology Profile by Treatment 299
- 12.14 Most Frequent On-Therapy Adverse Events by Frequency 300
- 12.15 LFT Patient Profile 301
- 12.16 Panel of LFT Values 302
- 12.17 Distribution of Eye Irritation Using PROC SGPANEL (9.3) 303
- 12.18 Distribution of Eye Irritation Using PROC SGPLOT (9.3) 304
- 12.19 Vital Signs by Time Point Name 305
- 12.20 Concomitant Medications 306
- 12.21 Creating a 2 x 2 Cell Graph Using PROC SGPLOT 307

Chapter 13 Business Graphs

- 13.1 Introduction 311
- 13.2 Stock Price and Volume Chart 312
- 13.3 Financial Trend and Bond Maturity Graph (9.3) 313
- 13.4 Danger of High P/E Ratios 314
- 13.5 Oil Consumption Trend by Country 315
- 13.6 Product Sales and Target Graph (9.3) 316
- 13.7 Social Network (9.3) 317

Chapter 14 Styles

- 14.1 Introduction 321
- 14.2 Using Styles 321
- 14.3 Style Elements 321
- 14.4 Using Style Elements 324
- 14.5 Style Element Usage Precedence 324

Chapter 15 ODS Destination and ODS Graphics Options

- 15.1 Introduction 327
- 15.2 ODS Destination Options 327
- 15.3 ODS Graphics Options 328

Chapter 16 Tips for Graph Output

- 16.1 Introduction 333
- 16.2 Creating Small Graphs for Use in Documents 333
- 16.3 Creating Large Graphs for Use in Presentations 334
- 16.4 Combining Graph Size and DPI 336
- 16.5 Impact of Graph Size on System Resources 336

