## **Contents**

-	tributors	ix
1	Experimental Analysis of Receptor Kinase Phosphorylation	1
2	Quantitative Measurement of Phosphopeptides and Proteins via Stable Isotope Labeling in <i>Arabidopsis</i> and Functional Phosphoproteomic Strategies	17
3	Identification of O-linked β-D-N-acetylglucosamine-Modified Proteins from Arabidopsis.  Shou-Ling Xu, Robert J. Chalkley, Zhi-Yong Wang, and Alma L. Burlingame	33
4	Quantitative Analysis of Protein Phosphorylation Using Two-Dimensional Difference Gel Electrophoresis	47
5	Quantitative Analysis of Plasma Membrane Proteome Using Two-Dimensional Difference Gel Electrophoresis	67
6	Identification and Verification of Redox-Sensitive Proteins in Arabidopsis thaliana	83
7	Small-Molecule Dissection of Brassinosteroid Signaling	95
8	A Chemical Genetics Method to Uncover Small Molecules for Dissecting the Mechanism of ABA Responses in <i>Arabidopsis</i> Seed Germination	107
9	Activation Tagging	117
10	Rho GTPase Activity Analysis in Plant Cells	135
11	Analysis of In Vivo ROP GTPase Activity at the Subcellular Level by Fluorescence Resonance Energy Transfer Microscopy	145
12	In Vivo Ubiquitination Assay by Agroinfiltration	153
13	In Vitro Protein Ubiquitination Assay	163

## Contents

14	Genome-Wide Identification of Transcription Factor-Binding Sites in Plants Using Chromatin Immunoprecipitation Followed by Microarray	
	(ChIP-chip) or Sequencing (ChIP-seq)  Jia-Ying Zhu, Yu Sun, and Zhi-Yong Wang	173
15	Smart Pooling of mRNA Samples for Efficient Transcript Profiling	189
16	Transient Expression Assays for Quantifying Signaling Output	195
17	Genome-Wide Profiling of Uncapped mRNA  Yuling Jiao and José Luis Riechmann	207
18	Computational Tools for Quantitative Analysis of Cell Growth Patterns and Morphogenesis in Actively Developing Plant Stem Cell Niches	217
Ind	!ex	229