
Contents

<i>Preface</i>	<i>v</i>
<i>Contributors</i>	<i>xi</i>
PART I FUNDAMENTALS	
1 Primer on Ontologies <i>Janna Hastings</i>	3
2 The Gene Ontology and the Meaning of Biological Function <i>Paul D. Thomas</i>	15
3 Primer on the Gene Ontology <i>Pascale Gaudet, Nives Škunca, James C. Hu, and Christophe Dessimoz</i>	25
PART II MAKING GENE ONTOLOGY ANNOTATIONS	
4 Best Practices in Manual Annotation with the Gene Ontology <i>Sylvain Poux and Pascale Gaudet</i>	41
5 Computational Methods for Annotation Transfers from Sequence <i>Domenico Cozzetto and David T. Jones</i>	55
6 Text Mining to Support Gene Ontology Curation and Vice Versa <i>Patrick Ruch</i>	69
7 How Does the Scientific Community Contribute to Gene Ontology? <i>Ruth C. Lovering</i>	85
PART III EVALUATING GENE ONTOLOGY ANNOTATIONS	
8 Evaluating Computational Gene Ontology Annotations <i>Nives Škunca, Richard J. Roberts, and Martin Steffen</i>	97
9 Evaluating Functional Annotations of Enzymes Using the Gene Ontology <i>Gemma L. Holliday, Rebecca Davidson, Eyal Akiva, and Patricia C. Babbitt</i>	111
10 Community-Wide Evaluation of Computational Function Prediction <i>Iddo Friedberg and Predrag Radivojac</i>	133
PART IV USING THE GENE ONTOLOGY	
11 Get GO! Retrieving GO Data Using AmiGO, QuickGO, API, Files, and Tools <i>Monica Munoz-Torres and Seth Carbon</i>	149
12 Semantic Similarity in the Gene Ontology <i>Catia Pesquita</i>	161

13	Gene-Category Analysis	175
	<i>Sebastian Bauer</i>	
14	Gene Ontology: Pitfalls, Biases, and Remedies.	189
	<i>Pascale Gaudet and Christophe Dessimoz</i>	
15	Visualizing GO Annotations	207
	<i>Fran Supek and Nives Škunca</i>	
16	A Gene Ontology Tutorial in Python	221
	<i>Alex Warwick Vesztrocy and Christophe Dessimoz</i>	
PART V ADVANCED GENE ONTOLOGY TOPICS		
17	Annotation Extensions	233
	<i>Rachael P. Huntley and Ruth C. Lovering</i>	
18	The Evidence and Conclusion Ontology (ECO): Supporting GO Annotations	245
	<i>Marcus C. Chibucos, Deborah A. Siegele, James C. Hu, and Michelle Giglio</i>	
PART VI BEYOND THE GENE ONTOLOGY		
19	Complementary Sources of Protein Functional Information: The Far Side of GO	263
	<i>Nicholas Furnham</i>	
20	Integrating Bio-ontologies and Controlled Clinical Terminologies: From Base Pairs to Bedside Phenotypes.	275
	<i>Spiros C. Denaxas</i>	
PART VII CONCLUSION		
21	The Vision and Challenges of the Gene Ontology	291
	<i>Suzanna E. Lewis</i>	
	<i>Index</i>	303

The Gene Ontology Handbook

Dessimoz, C.; Škunca, N. (Eds.)

2017, XII, 305 p. 56 illus., 50 illus. in color., Hardcover

ISBN: 978-1-4939-3741-7

A product of Humana Press