Little did Isaac Newton, Charles Darwin and other 'gentlemen scientists' know, when they were making their scientific discoveries, that some centuries later they would inspire a new field of scientific practice and innovation, called citizen science. The current growth and availability of citizen science projects and relevant applications to support citizen involvement is massive; every citizen has an opportunity to become a scientist and contribute to a scientific discipline, without having any professional qualifications.

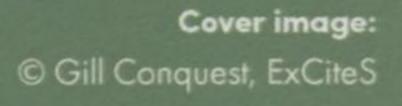
Geographic Citizen Science Design takes an anthropological and Human-Computer Interaction (HCI) stance to provide the theoretical and methodological foundations to support the design, development and evaluation of citizen science projects and their user-friendly applications. Through a careful selection of case studies in the urban and non-urban contexts of the Global North and South, the chapters provide insights into the design and interaction barriers, as well as on the lessons learned from the engagement of a diverse set of participants.

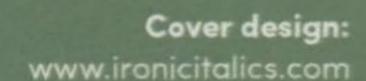
Looking at the field through the lenses of specific case studies, the book captures the current state of the art in research and development of geographic citizen science and provides critical insight to inform technological innovation and future research in this area.

Artemis Skarlatidou is Senior Research Associate in the Extreme Citizen Science (ExCiteS) group at UCL. Her research interests include Risk Communication and Human–Computer Interaction (HCI) and User Experience aspects (e.g. usability, aesthetics, trust) of citizen science applications, geospatial technologies and their spatial representations for expert and public use.

Muki Haklay is Professor of Geographic Information Science at UCL. His research interests include public access, use, and creation of environmental information; and citizen science He is the co-director of UCL Extreme Citizen Science group (ExCiteS) and co-founder of the social enterprise Mapping for Change.









	List of figures	xiii
	List of tables	xxi
	List of contributors	xxiii
	Foreword by Jennifer Preece	xxix
	Acknowledgements	xxxiii
Int	troduction	
	Geographic citizen science design: no one left behind Artemis Skarlatidou and Muki Haklay	3
PA	RT I Theoretical and methodological principles	
1	Geographic citizen science: an overview Muki Haklay	15
2	Design and development of geographic citizen science: technological perspectives and considerations Vyron Antoniou and Chryssy Potsiou	38
3	Design approaches and human–computer interaction methods to support user involvement in citizen science Artemis Skarlatidou and Carol Iglesias Otero	55
4	Methods in anthropology to support the design and implementation of geographic citizen science Raffaella Fryer-Moreira and Jerome Lewis	87

PART II Interacting with geographic citizen science in the Global North

5	Geographic expertise and citizen science: planning and co-design implications Robert Feick and Colin Robertson	107
6	Citizen science mobile apps for soundscape research and public spaces studies: lessons from the Hush City project Antonella Radicchi	130
7	Using mixed methods to enhance user experience: developing Global Forest Watch Jamie Gibson	149
8	Path of least resistance: using geo-games and crowdsourced data to map cycling frictions Diego Pajarito Grajales, Suzanne Maas, Mara Attard and Michael Gould	165
9	Geographic citizen science in citizen–government communication and collaboration: lessons learned from the ImproveMyCity application Ioannis Tsampoulatidis, Spiros Nikolopoulos, Ioannis Kompatsiaris and Nicos Komninos	186
PA	RT III Geographic citizen science with indigenous commun	ities
10	Developing a referrals management tool with First Nations in northern Canada: an iterative programming approach Jon Corbett and Aaron Derrickson	209
11	Lessons from recording Traditional Ecological Knowledge in the Congo Basin <i>Michalis Vitos</i>	228
12	Co-designing extreme citizen science projects in Cameroon: biodiversity conservation led by local values and indigenous knowledge Simon Hoyte	247
13	Community monitoring of illegal logging and forest resources using smartphones and the Prey Lang application in Cambodia Ida Theilade, Søren Brofeldt, Nerea Turreira-García and Dimitris Argyriou	266

14	Representing a fish for fishers: geographic citizen science in the Pantanal wetland, Brazil Rafael Morais Chiaravalloti	282
15	Digital technology in the jungle: a case study from the Brazilian Amazon Carolina Comandulli	302
16	Community mapping as a means and an end: how mapping helped Peruvian students to explore gender equality Peter Ward and Rebecca Firth	317
Syı	nthesis and epilogue	
	Geographic citizen science design: no one left behind – an overview and synthesis of methodological, technological and interaction design recommendations Artemis Skarlatidou and Muki Haklay	339
	Index	355