

Cambridge Elements

Elements in the Philosophy of Science

edited by

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MODELING SCIENTIFIC COMMUNITIES

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Cambridge University Press & Assessment
978-1-009-45408-7 — Modelling Scientific Communities
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Frontmatter
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Shaftesbury Road, Cambridge CB2 8EA, United Kingdom

One Liberty Plaza, 20th Floor, New York, NY 10006, USA

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314–321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre,
New Delhi – 110025, India

103 Penang Road, #05–06/07, Visioncrest Commercial, Singapore 238467

Cambridge University Press is part of Cambridge University Press & Assessment,
a department of the University of Cambridge.

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education, learning and research at the highest international levels of excellence.

www.cambridge.org

Information on this title: www.cambridge.org/9781009454087

DOI: 10.1017/9781009359535

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First published 2023

A catalogue record for this publication is available from the British Library.

ISBN 978-1-009-45408-7 Hardback

ISBN 978-1-009-35954-2 Paperback

ISSN 2517-7273 (online)

ISSN 2517-7265 (print)

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Modeling Scientific Communities

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DOI: 10.1017/9781009359535

First published online: November 2023

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Abstract: This Element will overview research using models to understand scientific practice. Models are useful for reasoning about groups and processes that are complicated and distributed across time and space, that is, those that are difficult to study using empirical methods alone. Science fits this picture. For this reason, it is no surprise that researchers have turned to models over the last few decades to study various features of science. The different sections of the Element are mostly organized around different modeling approaches. The models described in this Element sometimes yield takeaways that are straightforward, and at other times more nuanced. The Element ultimately argues that while these models are epistemically useful, the best way to employ most of them to understand and improve science is in combination with empirical methods and other sorts of theorizing.

Keywords: scientific communities, philosophy of science, models, metascience, agent-based modeling

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ISBNs: 9781009454087 (HB), 9781009359542 (PB), 9781009359535 (OC)

ISSNs: 2517-7273 (online), 2517-7265 (print)

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