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Nota di contenuto	Part 1 -- 1 . Introduction to cell migration.Anke Brüning-Richardson, A., Department of Biological and Geographical Sciences, University of Huddersfield, Queensgate, UK -- 2 . Cell migration in Development. Sabine Knipp. University of Huddersfield, Queensgate, HD1 3DH, UK. Universitätsklinikum Hamburg-Eppendorf, Microscopy Imaging Facility, Hamburg, Germany -- 3 . Cell migration in wound healing. Jessica J. Senior, University of Huddersfield, Queensgate, UK -- 4 . Cell migration in immune responses Giuliana Clemente, School of Biochemistry, University of Bristol, Bristol, UK -- 5 . Cell migration in cancer; cell migration in 2D and 3D. Anke Brüning-Richardson and Catherine Kirby, Department of Biological and Geographical Sciences, University of

Huddersfield, Queensgate, UK -- 6 . Biophysical and biochemical foundations of cell migration. Jonathan E. Dawson, Engineering and Physics Department, Whitworth University, USA and Abdul N. Malmi-Kakkada, Department of Chemistry and Physics, Augusta University 1201 Goss Ln, GA, USA.-Part 2 -- 7 . Methods to investigate cell migration. Anke Brüning-Richardson, Department of Biological and Geographical Sciences, University of Huddersfield, UK and Sean Lawler, Department of Pathology and Laboratory Medicine, Brown University, Providence, USA -- 8 . 3D bioprinting of cell migration. Jessica J. Senior. University of Huddersfield, Queensgate, UK -- 9 . Using high resolution imaging to investigate cell migration in vitro. Michelle Peckham, School of Molecular and Cellular Biology, Faculty of Biological Sciences, University of Leeds, Leeds, UK -- 10 . Mathematical and Computational Modelling of Immune Cell Responses in Cell Migration. Temitope O. Benson. Institute for Computational and Data Sciences, University at Buffalo, State University of New York, USA -- 11 . Computational modelling of cell migration.Roman Bauer, University of Surrey, Guildford, UK -- 12 . Software applications for analysis of cell migration.Arndt Rohwedder, Johannes Kepler University Linz, Linz, Austria -- 13 . Pharmacological strategies for targeting cancer cell migration and invasion. Roger M Phillips. School of Applied Sciences, University of Huddersfield, Queensgate, UK -- 14 . Oncolytic viral therapy for targeting cell migration.Anke Brüning-Richardson, A., Department of Biological and Geographical Sciences, University of Huddersfield, Queensgate, UK -- 15 . In vivo models of cell migration. Kannan Govindaraj, Developmental Bioengineering, Technical Medical Centre, University of Twente, Enschede, The Netherlands and Prasanna Padmanaban, Vascularization Lab, Biomechanical Engineering Department, Technical Medical Centre, University of Twente, Enschede, The Netherlands and European Molecular Biology Laboratory, Barcelona, Spain.

Sommario/riassunto

This textbook gives an insight into the importance of cell migration in health during development, wound healing and immune responses as well as in disease with particular focus on cancer. The reader will learn about the different ways cells migrate to allow cellular changes during development to occur, as well as responses to injury and threat by foreign invaders. Cell migration is a driver of invasion and ultimately metastasis in cancer and as such we will give examples from highly aggressive cancer such as brain tumours. The book also includes an introduction to mathematical modelling to predict cell migration, information on the development of software for analysis of data generated in 2D and 3D as well as recent developments in the investigations into cell migration using 3D bioprinting. This textbook will be a great learning tool for advanced undergraduate students and Master students with the relevant science degrees such as in cell biology, developmental biology, cancer research, and tumour biology.