CONTENTS

vii Preface: Releasing the Global Innovation Index 2019: Creating Healthy Lives—The Future of Medical Innovation
By Soumitra Dutta, SC Johnson College of Business, Cornell University; Francis Gurry, World Intellectual Property Organization (WIPO); and Bruno Lanvin, INSEAD

ix Foreword: Innovating for a Healthy Nation
By Chandrajit Banerjee, Director General, Confederation of Indian Industry (CII)

xi Foreword: Health in the Age of Experience
By Bernard Charlès, Chief Executive Officer and the Vice-Chairman of the Board of Directors of Dassault Systèmes

xiii Foreword: Innovation in Health and Medicine: New Possibilities for Brazil
By Robson Braga de Andrade, President of CNI, Director of SESI, and President of SENAI’s National Council; and Carlos Melles, President of SEBRAE.

KEY FINDINGS

xvi Key Findings 2019

RANKINGS

xxxiv Global Innovation Index 2019 rankings

xlii Contributors to the Report

xliv Advisory Board to the Global Innovation Index
CHAPTERS

1  Chapter 1: The Global Innovation Index 2019
   By Soumitra Dutta, Rafael Escalona Reynoso, and Antanina Garanasvili, SC Johnson College of Business, Cornell University; Bruno Lanvin, INSEAD; Sacha Wunsch-Vincent, Lorena Rivera León, Francesca Guadagno* and Cashelle Hardman, World Intellectual Property Organization (WIPO)

41  Theme Section: Creating Healthy Lives—The Future of Medical Innovation
   By Soumitra Dutta, and Rafael Escalona Reynoso, SC Johnson College of Business, Cornell University; Sacha Wunsch-Vincent, Lorena Rivera León and Cashelle Hardman, World Intellectual Property Organization (WIPO)

61  Special Section: Cluster Rankings
   Identifying and Ranking the World’s Largest Science and Technology Clusters
   By Kyle Bergquist and Carsten Fink, World Intellectual Property Organization (WIPO)

81  Chapter 2: The Economics of Health Innovation: Looking Back and Looking Forward
   By Bhaven Sampat, Columbia University

87  Chapter 3: Trends in Healthcare and Medical Innovation
   By Pratap Khedkar & Dharmendra Sahay, ZS Associates

95  Chapter 4: Ten Opportunities for Biomedical Innovation over the Next Ten Years
   By Francis Collins, National Institutes of Health (NIH)

103  Chapter 5: Application of Artificial Intelligence and Big Data in China’s Healthcare Services
   By Ma Huateng, Tencent

111  Chapter 6: Reaching New Frontiers for Alzheimer’s through Research and Innovation
   By David Ricks and Brandy Matthews, Eli Lilly and Company

121  Chapter 7: Improving Patient Healthcare through Virtual Platforms
   By Claire Biot, Patrick Johnson, Sébastien Massart, & Nicolas Pécuchet, Dassault Systemes

129  Chapter 8: How Data will Improve Healthcare without Adding Staff or Beds
   By Kieran Murphy, GE Healthcare

135  Chapter 9: Case of iamYiam—Innovating in Preventive Health Delivery
   By Lorena Puica, iamYiam; and Jack Bauersachs, University of Applied Sciences Deggendorf

141  Chapter 10: How Particle Physics Research at CERN Contributes to Medical Innovation
   By Giovanni Anelli, Manuela Cirilli and Anais Rassat, European Organization for Nuclear Research (CERN)

149  Chapter 11: Overcoming Barriers to Medical Innovation for Low Resource Settings
   By David C. Kaslow, PATH

157  Chapter 12: Life is too Short with HCV and NCDs—100 Million Healthy Lives Initiative
APPENDICES

163 Chapter 13: Innovations in Healthcare Affordability and Delivery – An Indian Perspective
By Devi Shetty, Narayana Health

169 Chapter 14: A Brazilian Outlook on Health and Medical Innovation
By Robson Braga de Andrade, National Confederation of Industry Brazil (CN) of Brazil; and Carlos Melles, Brazilian Micro and Small Business Support Service (SEBRAE)

177 Chapter 15: Integration of Health and Medical Innovations in Rwanda to Promote Health Equity
By Parfait Uwaliraye, Patrick Ndimubanzi, Andrew Muhire and Valencia Lyle, Ministry of Health, Rwanda

185 Chapter 16: Iran’s Experience in Developing High-tech Medical Innovations and the Path Ahead
By Kiarash Fartash, Shahid Beheshti University; and Mahdi Elyasi, Allameh Tabataba’i University

195 Chapter 17: Social and Economic Aspects of Health and Medical Innovation in Thailand
By Krithpaka Boonfueng and Chaiyatorn Limapornvanich, National Innovation Agency (NIA) Thailand; and Thanaphan Suksaard, Ministry of Public Health, Thailand.

205 Appendix I: The Global Innovation Index Conceptual Framework

213 Appendix II: Economy Profiles & Data Tables

349 Appendix III: Sources and Definitions

367 Appendix IV: Adjustments to the Global Innovation Index Framework, Year-on-Year Comparability of Results, and Technical Notes

375 Appendix V: Joint Research Centre Statistical Audit of the Global Innovation Index 2019
By Michaela Saisana, Marcos Álvarez-Díaz, Marcos Dominguez-Torreiro and Daniel Vertesy, European Commission, Joint Research Centre (JRC), Ispra, Italy.

391 Appendix VI: About the Authors