1. Record Nr. UNINA9910500586503321

Autore	Trump Benjamin D
Titolo	Emerging Threats of Synthetic Biology and Biotechnology : Addressing Security and Resilience Issues / / edited by Benjamin D. Trump, Marie-Valentine Florin, Edward Perkins, Igor Linkov
Pubbl/distr/stampa	Dordrecht : , : Springer Netherlands : , : Imprint : Springer, , 2021
ISBN	94-024-2086-X
Edizione	[1st ed. 2021.]
Descrizione fisica	1 online resource (233 p.)
Collana	NATO Science for Peace and Security Series C: Environmental Security, , 1874-6543
Altri autori (Persone)	FlorinMarie-Valentine PerkinsEdward LinkovIgor
Disciplina	358.38
Soggetti	Biotechnology Environmental engineering Bioremediation Security, International Criminology Environmental Law Environmental Engineering/Biotechnology International Security Studies Crime Control and Security
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	Chapter 1: Biosecurity for Synthetic Biology and Emerging Biotechnologies: Critical Challenges for Governance -- Chapter 2: Emerging Biosecurity Threats and Responses: A Review of Published and Gray Literature -- Chapter 3: Opportunities, Challenges, and Future Considerations for Top-Down Governance for Biosecurity and Synthetic Biology -- Chapter 4: Biological standards and biosecurity: The unexplored link -- Chapter 5: Responsible Governance of Biosecurity in Armenia -- Chapter 6: Addressing Emerging Synthetic Biology Threats: The Role of Education and Outreach in Fostering Effective Bottom-Up Grassroots Governance -- Chapter 7: Cybersecurity and Public Health in the Age of COVID-19 -- Chapter 8:

Synthetic Biology Brings New Challenges to Managing Biosecurity and Biosafety -- Chapter 9: Emerging Biotechnology and Information Hazards -- Chapter 10: Technical Aspects of Biosecurity: Screening Guidance, Attribution, and Traceability -- Chapter 11: The Soil Habitat and Considerations for Synthetic Biology -- Chapter 12: Foresight in Synthetic Biology and Biotechnology Threats -- Chapter 13: Predicting Biosecurity Threats: Deployment and Detection of Biological Weapons -- Chapter 14: Promoting Effective Biosecurity Governance: Using Tripwires to Anticipate and Ameliorate Potentially Harmful Development Trends. .

Sommario/riassunto

Synthetic biology is a field of biotechnology that is rapidly growing in various applications, such as in medicine, environmental sustainability, and energy production. However these technologies also have unforeseen risks and applications to humans and the environment. This open access book presents discussions on risks and mitigation strategies for these technologies including biosecurity, or the potential of synthetic biology technologies and processes to be deliberately misused for nefarious purposes. The book presents strategies to prevent, mitigate, and recover from ‘dual-use concern’ biosecurity challenges that may be raised by individuals, rogue states, or non-state actors. Several key topics are explored including opportunities to develop more coherent and scalable approaches to govern biosecurity from a laboratory perspective up to the international scale and strategies to prevent potential health and environmental hazards posed by deliberate misuse of synthetic biology without stifling innovation. The book brings together the expertise of top scholars in synthetic biology and biotechnology risk assessment, management, and communication to discuss potential biosecurity governing strategies and offer perspectives for collaboration in oversight and future regulatory guidance.