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Autore	Geiger Roger L. <1943->
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Nota di contenuto	Intro -- Contents -- 1. The Shaping of the American Research University, 1865-1920 -- 1. Toward a National System of Universities -- 2. Academic Disciplines -- 3. The Wealth of Universities -- 2. The Conditions of University Research, 1900-1920 -- 1. The Research System in 1900 and the Founding of Independent Research Institutions -- 2. Resources for University Research: The Treatment of Faculty -- 3. Resources for University Research: Capital and Project Funds -- 3. Research Universities from World War I to 1930 -- 1. Science and the University Go to War -- 2. Growth and Differentiation -- 3. The Collegiate Syndrome -- 4. Who Shall Go to College? -- 4. Foundations and University Research -- 1. Ways and Means: Defining the Foundations' Role -- 2. Foundations and Universities: The Social Sciences -- 3. Foundations and Universities: The Natural Sciences -- 4. Common Goals and Cross-purposes -- 5. The Privately Funded University Research System -- 1. Business and University Research -- 2. Institutional Patterns of University Research -- 3. Students,

Professors, and Research -- 4. The Ascendancy of American Science -- 5. The Intellectual Migration -- 6. The Research Universities in the 1930s -- 1. Effects of the Depression -- 2. The Federal Government and University Research -- 3. Retrospect and Prospect -- APPENDIX -- NOTES -- INDEX.

Sommario/riassunto

American scientific supremacy was built upon the strength of our research universities. This book shows how these universities laid the foundation for the ascendancy of American science in the first half of this century, when they went from being provincial outposts of international science to being the equal of the best European centers of learning. This is a rich social history that tells much not only about the growth of American higher education but also about American intellectual life in general and the politics of scientific research in education. How did research come to be a mojor function of universities? How did universities reconcile the demands of an active research program with their other institutional commitments? To answer these questions, Geiger ranges over a broad spectrum of topics, from the adoption of a selective admissions policy and the development of graduate schools to the continuing vitality of liberal arts colleges within university settings. The book includes fascinating sections on the bizarre attempt to militarize college campuses during World War I and on the backlash of the 1920's, when many major campuses became more concerned with social life than intellectual matters. One remarkable feature of the development of research universities, Geiger points out, was that it was largely accomplished through private resources. Individual philanthropy was responsible for establishing the wealth of the private research universities, and played a key role at several state universities as well. Foundations and corporations were also highly significant in developing the institutions' research capabilities. Geiger describes how each university resolved in its own way the conflict between the research role and other institutional commitments. The major research institutions he deals with are Harvard, Yale, Princeton, MIT,
Columbia, Cornell, Pennsylvania, Stanford, the University of Chicago, Johns Hopkins, the California Institute of Technology, and the Universities of Michigan, Illinois, Wisconsin, Minnesota, and California. About the Author: Roger L. Geiger is Associate Research Scientist at the Institution for Social and Policy Studies at Yale University..

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Nota di contenuto	Cover -- Half Title -- Title Page -- Copyright Page -- Table of Contents -- Foreword -- Chapter 1- Energy and the Environment -- The Book -- Our Wonderful World -- Let There Be Energy... -- The Big Bang -- Today's Energy Basics -- Power Generation -- Conventional Power Generators -- The Renewable Energies -- Electric Power Distribution -- The Environment -- Chapter 2-Fossil Energy Sources -- The Fossil Fuels -- Coal -- Other Uses of Coal -- Coal Mines -- Mine Planning -- Coal Fired Powered Plants -- Crude Oil -- Oil Transport -- Crude Oil Processing -- Natural Gas -- Natural Gas Production -- Natural Gas Refining and Processing -- Natural Gas Production and Use -- Power Generation -- The Fossil Alternatives -- Chapter 3-The Other Energy Sources -- Nuclear Power -- Nuclear Power Plants -- Nuclear Plant Operation -- The Issues -- Nuclear Power Use -- Environmental Impact -- Hydro Power -- Types of Hydroelectric Plants --

Hydroelectric Power Use -- Hydrogen Energy -- Fuel Cells -- Tidal and Wave Power -- Geothermal Power -- Bio-Energy Sources -- Biomass -- Firewood -- Biofuels -- Biogas -- Environmental Effects -- Appendix A-Periodic Table of Elements -- Appendix B-History of US Nuclear Energy -- Chapter 4-Renewable Energy Sources -- The Renewables -- Solar Energy -- Solar Thermal Power Generation -- CSP Technologies -- PV Technologies -- Silicon PV Technology -- Crystalline-Si PV Modules -- PV Modules Certification and Field Tests -- Thin Film Photovoltaics -- The Developing Thin Film Technologies -- Test Results, Issues and Developments -- Concentrating PV Technology -- Hybrid PV Technologies -- Solar Power Fields -- The Installation Phase -- Operation and Maintenance Phase -- PV Technologies Future -- Renewable, Green, and Safe? -- The Solar Industry Today and Tomorrow -- Wind Power -- Energy Storage.
Appendix A-Brief History of Solar and PV Power Generation -- Chapter 5-The Environment Today -- Our Wonderfully Made (Delicate) Environment -- Environmental Considerations -- The Natural Events -- The Not-so-natural Events -- The Lessons... -- Present-day Global Environmental Status -- The U.S. Environmental History -- Energy-Related Environmental Facts -- Coal -- Crude Oil -- Natural Gas -- Methane Hydrates -- Nuclear Power -- Hydropower -- Ocean Power -- Solar Power -- Wind Power -- Biomass -- Power Plant Specifics -- Renewables' Challenges -- Environmental Update -- Appendix A -- Appendix B -- Appendix C -- Appendix D -- Chapter 6-Political and Regulatory Aspects of Energy and Environment -- U.S. Energy Politics -- The Fossil Energy Sources -- Coal -- Crude Oil -- Natural Gas -- The Renewable Energy Sources -- Solar Power -- Wind Power -- Hydropower -- Nuclear Power -- Nuclear Waste Issues -- Geothermal -- Biomass and Biofuels -- Ocean Power -- Regulatory Aspects of Power Generation -- U.S. Environmental Regulations -- The Politics of Energy and Environment -- The World Energy and Environment -- Appendix A -- Chapter 7-Economic and Legal Aspects of Power Generation and the Environment -- Energy Economics -- Coal -- Crude Oil -- Natural Gas -- Nuclear Power -- Biofuels -- Types of Biofuels -- Solar Energy -- Wind Power -- Hydro Power -- Geothermal -- Energy Storage -- Legal Aspects of Energy and Environment -- Chapter 8-Energy and Environmental Markets -- The Energy Markets -- Fossil Energy Markets -- Natural Gas -- Crude Oil -- Nuclear Power -- Methane Hydrate -- Renewable Energy Markets -- The Most Promising Solar Technologies -- Wind Energy Markets -- Equipment Manufacturing Markets -- Energy Storage -- The Utilities -- Energy Finance and Legal Markets -- The Environmental Markets -- U.S. Energy and Environmental Status.
The Great Gas Guzzlers and Polluters -- The World Energy and Environmental Status -- Chapter 9-Future Power Generation and the Environment -- End of the World-Part 1 -- End of the World-Part 2 -- End of the World-Part 3 -- End of the World-21st Century -- The Fossils' Future -- Coal -- Natural Gas -- Crude Oil -- Nuclear Power -- Hydropower -- Solar Power -- Wind Power -- Biomass and Biofuels -- Future Technologies -- The Utilities -- Our Energy Future -- Climate vs. Power Generation -- Our Environmental Future -- Environmental Challenges Today -- The Solution(s) -- Summary -- Appendices -- Index.

Sommario/riassunto

Natural and man-made changes in the environment create a very complex picture. This book analyzes this picture and provides snapshots of different areas of interest and to make suggestions for future work on cleaning and stabilizing the Earth's environment. Starting with conventional energy generation and moving on to

renewable energies, this book analyzes and calculates their environmental impact and the lesser known aspects of their "cradle-to-grave" life cycle such as the irreversible environmental damage done during the manufacturing of solar and wind equipment and during the installation, operation, and decommissioning of large scale hydro, solar, and wind power plants.