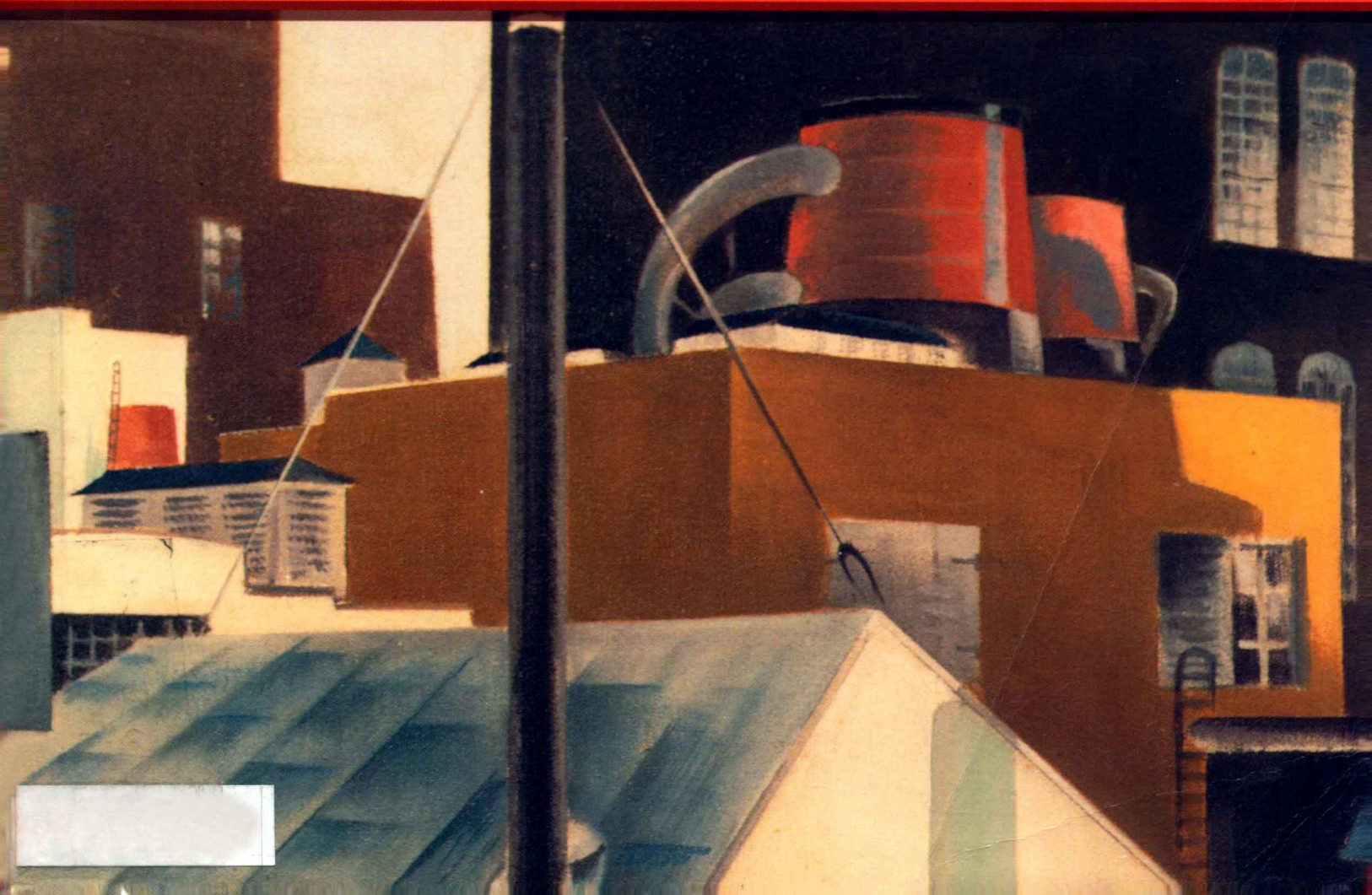
PAULINE MAIER, MERRITT ROE SMITH, ALEXANDER KEYSSAR, & DANIEL J. KEVLES

A History of the United States

INVENTING AMERICA

Volume 2



Inventing America

A HISTORY OF THE UNITED STATES

VOLUME 2: FROM 1865

PAULINE MAIER

MERRITT ROE SMITH

ALEXANDER KEYSSAR

DANIEL J. KEVLES

W. W. NORTON & COMPANY
NEW YORK LONDON

Printed in the United States of America.
First Edition

The text of this book is composed in Minion, with the display set in Frutiger, Copperplate 31, and Texas Hero.
Composition by UG / GGS Information Services, Inc.
Cartography by maps.com
Manufacturing by the Courier Companies, Inc.
Book design by Joan Greenfield
Cover designer: Brenda McManus/Skouras Design
Page layout: Alice Bennett Dates
Editor: Steve Forman
Manuscript editor: Susan Gaustad
Production manager/project editor: JoAnn Simony
Photo researchers: Ede Rothaus, Neil Hoos, Nathan Odell
Editorial assistants: Lory Frenkel, Julia Paolitto

The Library of Congress has cataloged the one-volume edition as follows:

Inventing America: a history of the United States/Pauline Maier . . . [et al.].
p. cm.
Includes bibliographical references and index.
ISBN 0-393-97434-0
1. United States—History. I. Maier, Pauline, 1938–

E178.1.I58 2002
973—dc21

2001044648

ISBN 0-393-97762-5 (pbk.)
W. W. Norton & Company, Inc., 500 Fifth Avenue, New York, NY 10110
www.wwnorton.com

W. W. Norton & Company Ltd., Castle House, 75/76 Wells Street, London, W1T 3QT
2 3 4 5 6 7 8 9 0

INVENTING AMERICA

Physical/Political Map of the United States


CANADA
CANADIAN SHIELD
LAURENTIDE SCARP
Gulf of St. Lawren
James Bay
Albany R.
Missinaibi R.
Assiniboine R.
Winnipeg
Lake of the Woods
Red R. of the North
International Falls
Isle Royale
Lake Superior
Sault Ste. Marie
Québec
St. John R.
Frederic
NORTH DAKOTA
Bismarck
Fargo
James R.
MINNESOTA
Duluth
Upper Peninsula
Lake Michigan
Lake Huron
Georgian Bay
Ottawa R.
Ottawa
Montréal
St. Lawrence R.
Penobscot R.
MAINE
Bangor
Kennebec R.
Augusta
Lake Champlain
Burlington
White Mts
Montpelier
Portland
Gulf of Maine
SOUTH DAKOTA
Cheyenne R.
Pierre
Huron
Minneapolis
St. Paul
Minnesota R.
Mississippi R.
WISCONSIN
Green Bay
Traverse City
Lower Peninsula
Adirondack Mountains
Watertown
NH
VT
Concord
Connecticut R.
Toronto
Lake Ontario
NEW YORK
Albany
Boston
MASS.
Cape Cod
Oshkosh
Lake Winebago
Niagara Falls
Buffalo
Hudson R.
Sioux Falls
Wisconsin R.
Madison
Milwaukee
MICHIGAN
Lansing
Lake St. Clair
Detroit
Port Huron
Delaware R.
Hartford
New Haven
RHODE ISLAND
Niobrara R.
Sioux City
Lake Erie
Erie
Long Island
Newark
New York
CONNECTICU
IOWA
Cedar Rapids
Chicago
Gary
Toledo
Cleveland
PENNSYLVANIA
Trenton
NEBRASKA
Des Moines
Fort Wayne
Akron
Philadelphia
NEW JERSEY
Loup R.
Omaha
Missouri R.
Illinois R.
Harrisburg
Pittsburgh
Atlantic City
Platte R.
Lincoln
Peoria
Wabash R.
OHIO
Columbus
Ohio R.
Baltimore
Dover
Annapolis
Delaware Bay
Springfield
Indianapolis
Washington, D.C.
DELAWARE
MARYLAND
Hannibal
ILLINOIS
INDIANA
Cincinnati
WEST VIRGINIA
VIRGINIA
Kansas R.
Kansas City
Topeka
Independence
Charleston
Richmond
KANSAS
MISSOURI
St. Louis
Jefferson City
Louisville
Frankfort
Lexington
Ohio R.
Roanoke
Great Dismal Swamp
Norfolk
Osage R.
Wichita
Lake of the Ozarks
KENTUCKY
Cumberland R.
Roanoke R.
Springfield Plateau
Raleigh
Cape Hatteras
Tulsa
Nashville
Knoxville
Asheville
Charlotte
NORTH CAROLINA
Cape Lookout
OKLAHOMA
Oklahoma City
Arkansas R.
White R.
Jonesboro
TENNESSEE
Great Smoky Mountains
Tennessee R.
Wilmington
Amarillo
Memphis
Chattanooga
Pee Dee R.
Cape Fear
ARKANSAS
Little Rock
Mississippi R.
Columbia
SOUTH CAROLINA
Tupelo
Atlanta
Red R.
Birmingham
GEORGIA
Savannah R.
Charleston
Texarkana
Macon
Brazos R.
Ouachita R.
ALABAMA
Tombigbee R.
Fort Worth
Dallas
Columbus
Savannah
Abilene
Sabine R.
Shreveport
Montgomery
Chattahoochee R.
Altamaha R.
Jackson
Alabama R.
Colorado R.
Waco
Natchitoches
MISSISSIPPI
Okefenokee Swamp
TEXAS
LOUISIANA
Mobile
Tallahassee
Jacksonville
Edwards Plateau
Baton Rouge
Lake Pontchartrain
Biloxi
Pensacola
FLORIDA
St. John's R.
Austin
Beaumont
Lafayette
New Orleans
Apalachee Bay
Houston
Byrton Sound
Cape San Blas
San Antonio
Galveston
Galveston Bay
Atchafalaya Bay
Cape Canaveral
Orlando
Rio Grande
Mississippi River Delta
Tampa
Corpus Christi
Laredo
Nuevo Laredo
Gulf of Mexico
Lake Okeechobee
Fort Lauderdale
Miami
The Everglades
Nassau
Cape Sable
Florida Keys
Key West
BAHAMAS
Monterrey
Matamoros
Brownsville
Atlantic Ocean


Political Map of the World
Scale at equator
0 750 1,500 mi
0 750 1,500 km
Arctic Ocean
Ellesmere Island
Queen Elizabeth Islands
GREENLAND (DENMARK)
Banks Island
Victoria Island
Beaufort Sea
Amundsen Gulf
Baffin Bay
Baffin Island
Foxe Basin
Hudson Strait
Hudson Bay
Labrador Sea
Denmark Strait
Jan Mayen (Norway)
ICELAND
Reykjavik
Faroe Islands (Denmark)
Chukchi Sea
ALASKA (U.S.)
Gulf of Alaska
CANADA
Aleutian Islands
North Atlantic Ocean
IRELAND
London
Celtic Sea
English Channel
Ottawa
Montréal
Toronto
Chicago
UNITED STATES
New York
Washington, D.C.
San Francisco
Los Angeles
Dallas
PORTUGAL
Lisbon
SPAIN
Madrid
Azores (Por.)
Madeira Islands (Por.)
Rabat
Canary Islands (Sp.)
MOROCCO
WESTERN SAHARA (MOR.)
Nouakchott
MAURITANIA
CAPE VERDE
SENEGAL
GAMBIA
GUINEA-BISSAU
GUINEA
SIERRA LEONE
LIBERIA
CÔTE D'IVOIRE (IVORY COAST)
Gulf of Guinea
EQUATOR
SÃO TOMÉ AND PR
Bermuda (U.K.)
North Pacific Ocean
Gulf of Mexico
Nassau
BAHAMAS
MEXICO
Havana
CUBA
HAITI
DOMINICAN REPUBLIC
Puerto Rico (U.S.)
Mexico City
BELIZE
ST. KITTS AND NEVIS
DOMINICA
JAMAICA
ST. LUCIA
Caribbean Sea
ST. VINCENT AND THE GRENADINES
BARBADOS
GUATEMALA
EL SALVADOR
HONDURAS
NICARAGUA
COSTA RICA
PANAMA
TRINIDAD AND TOBAGO
Caracas
VENEZUELA
GUYANA
FRENCH GUIANA (FR.)
Bogotá
COLOMBIA
SURINAME
Quito
ECUADOR
Galapagos Islands (Ecuador)
HAWAII (U.S.)
Kiritimati (Kiribati)
KIRIBATI
Marquesas Islands (Fr.)
PERU
Lima
BRAZIL
Ascension (U.K.)
SAMOA
Apia
Pago Pago
Papeete
Cook Islands
French Polynesia (Fr.)
South Pacific Ocean
La Paz
BOLIVIA
Brasília
St. Helena (U.K.)
Pitcairn Islands (U.K.)
Adamstown
Easter Island (Chile)
PARAGUAY
Asunción
Rio de Janeiro
South Atlantic Ocean
Juan Fernandez Archipelago (Chile)
Santiago
Buenos Aires
URUGUAY
Montevideo
CHILE
ARGENTINA
Tristan Da Cunha Group (U.K.)
Falkland Islands (U.K.)
South Georgia
South Sandwich Islands
Scotia Sea
South Shetland Islands
South Orkney Islands
The Poles
SOUTH AMERICA
ANTARCTICA
Atlantic Ocean
Southern Ocean
Pacific Ocean
Indian Ocean
NORTH AMERICA
ASIA
EUROPE
Arctic Ocean
0 1,500 mi
0 1,500 km


Arctic Ocean
Franz Josef Land
Severnaya Zemlya
Svalbard (Norway)
Novaya Zemlya
Kara Sea
Barents Sea
Laptev Sea
New Siberian Islands
East Siberian Sea
Wrangel Island
Bering Sea
Sea of Okhotsk
Aleutian Islands
Kuril Islands
North Pacific Ocean
RUSSIA
FINLAND
SWEDEN
NORWAY
Oslo
Stockholm
ESTONIA
LATVIA
LITHUANIA
Moscow
BELARUS
POLAND
GERMANY
CZECH REP.
UKRAINE
SLOVAKIA
MOLDOVA
AUSTRIA
HUNGARY
ROMANIA
CROATIA
SLOVENIA
BULGARIA
ITALY
Rome
ALBANIA
GREECE
Black Sea
GEORGIA
ARMENIA
AZERBAIJAN
TURKEY
Caspian Sea
KAZAKHSTAN
Astana
Aral Sea
Lake Balkhash
Lake Baikal
MONGOLIA
Ulan Bator
UZBEKISTAN
TURKMENISTAN
KYRGYZSTAN
TAJIKISTAN
CHINA
Beijing
NORTH KOREA
SOUTH KOREA
Seoul
Sea of Japan
JAPAN
Tokyo
Yellow Sea
East China Sea
Mediterranean Sea
Tripoli
Cairo
CYPRUS
LEBANON
ISRAEL
SYRIA
IRAQ
IRAN
Tehrān
Kabul
AFGHANISTAN
Islamabad
PAKISTAN
New Delhi
BHUTAN
Kathmandu
Thimphu
NEPAL
Dhaka
BANGLADESH
INDIA
JORDAN
KUWAIT
BAHRAIN
QATAR
UNITED ARAB EMIRATES
SAUDI ARABIA
Muscat
OMAN
Persian Gulf
Red Sea
LIBYA
EGYPT
MYANMAR
LAOS
THAILAND
TAIWAN
Bay of Bengal
Andaman Islands (India)
South China Sea
Philippine Sea
Manila
VIETNAM
CAMBODIA
PHILIPPINES
Guam (U.S.)
Northern Mariana Islands (U.S.)
MARSHALL ISLANDS
FEDERATED STATES OF MICRONESIA
PALAU
Gulf of Thailand
BRUNEI
MALAYSIA
SINGAPORE
Celebes Sea
Sumatra
Jakarta
Java Sea
Java
INDONESIA
Timor
Arafura Sea
Timor Sea
PAPUA NEW GUINEA
NAURU
KIRIBATI
SOLOMON ISLANDS
TUVALU
Coral Sea
FIJI
VANUATU
New Caledonia (Fr.)
South Pacific Ocean
Norfolk Island (Aus.)
Kermadec Islands (N.Z.)
Tasman Sea
AUSTRALIA
Sydney
Canberra, A.C.T.
Great Australian Bight
NEW ZEALAND
North Island
South Island
Arabian Sea
Socotra (Yemen)
YEMEN
ERITREA
DJIBOUTI
Gulf of Aden
Khartoum
SUDAN
CHAD
NIGER
N'Djamena
Adis Ababa
ETHIOPIA
SOMALIA
Mogadishu
CENTRAL AFRICAN REP.
CAMEROON
GABON
CONGO
UGANDA
KENYA
Nairobi
RWANDA
DEMOCRATIC REP. OF CONGO
BURUNDI
TANZANIA
Dar es Salaam
SEYCHELLES
Chagos Archipelago (U.K.)
Diego Garcia
MALDIVES
SRI LANKA
Indian Ocean
Luanda
ANGOLA
ZAMBIA
MALAWI
COMOROS
Mozambique Channel
MOZAMBIQUE
Antananarivo
MADAGASCAR
MAURITIUS
Réunion (Fr.)
ZIMBABWE
NAMIBIA
Windhoek
BOTSWANA
Gaborone
Pretoria
Johannesburg
SWAZILAND
Maseru
LESOTHO
SOUTH AFRICA
Cape Town
Prince Edward Islands (So. Africa)
Crozet Islands
French Southern and Antarctic Lands (Fr.)
Kerguélen Islands
Heard Island and McDonald Islands (Aus.)
Southern Ocean

For Eleanor Smith Fox (1908–2001), mother, guiding light, friend. —Merritt Roe Smith

For Anne Kevles, who so much wanted to cast her vote in the next election; Eric F. Goldman, who shepherded a young physicist into American history; Bettyann, partner in all things; and Jonathan, Beth, David, and their children here and to come, shapers of the new century. —Daniel J. Kevles

To the memory of my parents, Alexander and Grace Atkinson Keyssar, who made many things possible. —Alexander Keyssar

For my parents, Irvin L. and Charlotte Rose Rubbelke; my children, Andrea, Nicholas, and Jessica, and also Corinne Maier (b. 2000), who will help make American history in the twenty-first century. —Pauline Maier

Preface

Inventing America is a new history of the United States whose unifying theme is innovation. It aims to integrate into a compelling narrative the persistent inventiveness of Americans in devising new political institutions and practices, economic arrangements, social relations and cultural motifs, adaptations to the natural environment, and exploitations of science and technology.

Americans have repeatedly resorted to experiment in the face of changing circumstances, drawing on ideas and practices from abroad or from native soil. They have long considered this penchant for innovation a distinguishing feature of their culture and history. The willingness of Americans to remake their world has run from the adaptations the colonists made to survive in an unfamiliar environment to the New Deal's try-anything response to the Depression; from the adoption of a radically redesigned corporation as a distinctive and powerful economic institution to the establishment of regulations intended to bind industry to the public interest; from the forging of an African American culture by slaves to the resourceful efforts of women to find ways of combining family and career. And since the late nineteenth century, Americans have sought to remake their position in the world, mixing pragmatism with evangelism, drawing from the experience of failure as well as success.

Our text is concerned throughout with the bold experiment in popular self-government that characterized the birth of the United States and continues in our politics and society. While writing a national narrative, we weave together numerous stories on the ground, tales of regions, institutions, businesses, social groups, and individual men and women. We place renewed emphasis on national and state governments; both have often acted as powerful agents of social and economic change, and the states have provided laboratories of political innovation. We also recount the transforming dynamism of business enterprise and its effects throughout society.

We are acutely aware that a good deal of the American story does not merit celebration. It has entailed retreat as well as advance, conflict as well as consensus, and the use of government to block change as well as to advance it. We probe the gap—originally wide and, in many respects, ongoing—between the promise of the United States and the reality of its practices, including slavery, the brutal treatment of Native Americans, the discrimination against women, immigrants and minorities, political and economic inequities, and the degradation of the environment. Yet we are also concerned with how Americans have narrowed that gap by enlarging the scope and meaning of the nation's founding ideas and ideals.

The most original aim of this text is the treatment of science and technology as integral elements of American history. Technical innovation has been important from earliest times, when, in a remarkable feat of plant breeding, pre-Columbian peoples cultivated primitive grains into maize. With the arrival of Europeans, Americans began importing knowledge, technology, plants, and animals from abroad, a process that mirrored the import of capital, people, and culture, and they established themselves as members of a global exchange. They adapted the imports to their own needs while developing an indigenous capacity for innovation that produced its own, increasingly transforming effects. The activities of naturalists and scientific societies in eighteenth-century America contributed to the creation of an American identity. The technological and organizational innovations of the nineteenth century changed the ways Americans worked, lived, and spent their leisure. And at least since the nation's centennial, in 1876, science and technology have been crucial to its security, economy, health, and quality of life.

Despite the enormous importance of technology and science in American history, most texts do not come to grips with it. Our book seeks to remedy that neglect, while refraining from giving technological change undue weight in the overall narrative. We have introduced science and technology as parts of mainstream history, recounting their broad social and economic consequences—how electricity lit up the urban night, for example, or how domestic innovations changed the daily lives of women. At the opening of the twenty-first century, the enormous impact of science and technology on the world is beyond dispute. Our text seeks to explain to students how they came to exercise so much influence and power in the United States, emphasizing that both are the products of human agency rather than of forces beyond human control. We have found that such a

focus provides students in survey courses with a recognizable bridge to periods in the past when science and technology were also transforming the world. Students respond to accounts of these changes and readily acknowledge their importance.

Readers will find that the integration of science and technology into the story enriches and, in certain respects, reconfigures our understanding of familiar events. For example, antebellum reform movements take on new meaning when seen as intersecting with the technological changes that were helping to spread their messages. In the late nineteenth century, inventors, entrepreneurs, and then corporations began drawing on the boundless frontier of scientific laboratory knowledge to supplement the resources of the closing physical frontier. In the nineteenth and twentieth centuries, technologies such as moving conveyor belts and electrically driven cutting tools made industrial production more efficient but also fostered unrest among workers. And advances in communications such as radio contributed to the emergence of the United States as a world power, as did the new understanding of yellow fever, which protected the crews building the Panama Canal.

Our attention to science and technology sheds new light on the impact of war on U.S. history. War and preparedness have incubated or accelerated social, economic, and technological change. The War of 1812, for example, emerges as a watershed in American economic history. It created the conditions in which entrepreneurs were able to establish the first successful integrated textile factory—at Waltham, Massachusetts. Moreover, as a direct result of the war, the U.S. Army collaborated with arms manufacturers to pioneer the development of interchangeable parts. Both developments were critical to the nation's early industrialization.

Before World War I, the armed services encouraged the new technologies of radio and aircraft, and their development was whirled ahead by mobilization for the conflict. World War I also opened new opportunities for women and blacks and other minorities, and so even more dramatically did World War II, which also stimulated vast migrations across regions and fueled economic recovery and expansion around the country. Further, World War II established the federal government as the dominant patron of scientific research and produced the atomic bomb, microwave radar, electronic computers, jet aircraft, and antibiotics. Under the goad of the Cold War, federal patronage stimulated comparable innovations and provided industry with the knowledge that, in the last quarter of the twentieth century, made possible the creation of biotechnology, personal computers, and the information economy.

Each of the coauthors took responsibility for drafting different sections of the text: Maier, Chapters 1–8; Smith, Chapters 9–16; Keyssar, Chapters 17–22 and 24; Kevles, Chapters 25–33; and Kevles, Maier, and Smith, Chapter 23. However, all of us fully collaborated from the beginning of the project, jointly developing its themes and an outline of the book, and then reading and critiquing each other's chapters with the aim of achieving consistency in approach throughout.

We have made every effort to produce a history that is fully accessible to students, including those who are new to American history. We consider it essential to guide students through the discussions, taking care to facilitate their understanding of the material. We use anecdote and vignette to bring the narrative to life. We also include boxed inserts of primary source materials throughout. Called "American Journal," this feature is intended to illustrate commonplace life as it was shaped by science and technology. Under titles such as "What's for Dinner?" and "What if You Get Sick?," the Journal entries speak directly to the broader themes of the text, and, perhaps more important, are fun to read.

The design and pedagogy of the text are also meant to support student readers throughout. Each chapter opens with a Chapter Outline and a set of Focus Questions on the key subjects that students need to address. The Focus Questions then reappear in the running heads of the chapter to help students keep sight of the main issues in play. The chapters end with Chronologies and brief lists of further readings. (More extensive lists of the sources on which the book rests are provided in the Bibliography on the Norton website for the text.)

With innovation as our main theme, we saw an opportunity to introduce a new dimension to the traditional survey book. Even the most vital prose falls short of conveying, say, the din of the weave room at the Lowell mills when the machinery was operating at full speed, but a palpable, sensory experience of history can be gained from archival audio and visual materials. Digital technology has for some time promised the integration of audio and video materials with print text, and with the support of the Alfred P. Sloan Foundation, *Inventing America* at-

tempts to achieve that goal. Packaged with each new copy of the print text is a CD-ROM (two with the hardcover edition) that contains archival and original multimedia materials designed to enhance the discussion in the text itself. (Icons in the print text signal the corresponding multimedia materials on the CD.) Students reading about the Lewis and Clark expedition, for instance, will be able to listen to audio readings from their journals recorded by studio professionals. The CD includes a wealth of materials ranging from readings from the court records of the Salem witch trials through recordings of slave spirituals to a video of Franklin Roosevelt's "Day of Infamy" speech. It also contains multimedia teaching/research units on the following subjects: slavery and Washington's Mount Vernon, the Lowell mills, Ellis Island, and the Hanford Nuclear Reservation on the Columbia River. The CD was researched and composed by Robert Martello, of Olin College. We hope that the combination of CD and print text makes *Inventing America* a valuable innovation in the survey course.

DJK
AK
PM
MRS
April 2002

Acknowledgments

The authors of this text have accrued many debts in writing it, and they take pleasure in thanking those who helped. Daniel J. Kevles is grateful to John L. Heilbron for helping to point the way to this book; to Ellen Chesler and James Hershberg for early advice; to William Deverell and Peter Westwick for comments on chapters; to Michelle Brattain and Richard Kim for research reports on particular subjects; and to Frederick M. Hodges for aid with the proofs. He is greatly indebted to Wendy Wall for her research during the project's start-up phase and for her insights in a jointly taught course on recent America. His debt is immeasurable to Karen Dunn-Haley, who lived with this project almost as long as he did, unflaggingly providing material and analyses, historiographical assessments, critical commentary, and encouragement. He is also grateful for the assistance of the Division of the Humanities and Social Sciences at the California Institute of Technology, especially John Ledyard, Susan Davis, Marion Lawrence, and Michelle Reinschmidt; and of the Department of History of Yale University, particularly Jon Butler, Jean Cherniavsky, Carolyn Fitzgerald, and Michael Margonis. And he wishes to thank the Andrew W. Mellon Foundation, whose support enabled him to spend more time on the writing.

Alexander Keyssar would like to thank D'arcy Brissman, Elisa Slattery, Eve Sterne, Nicole Perrygo, Andrew Neather, Noeleen McIlvenna, Daniel Levison Wilk, and especially Paul Husbands for their labors in gathering materials for this book. He is also grateful to the many undergraduates in his introductory U.S. history courses on whom he first tried out much of the material in his chapters. He would like to acknowledge the valuable and cheerful support of the History Department staff at Duke University, especially Vivian Jackson, Andrea Long, and Caroline Keeton.

Merritt Roe Smith is grateful for help with research from Karin Ellison, Greg Galer, Rebecca Herzig, Hannah Landecker, David Mindell, Jennifer Mnookin, Russell Olwell, and Tim Wolters. He also thanks Charles Dew, who undertook some of the revisions of Chapters 14–16 at a crucial stage. Pauline Maier is indebted to Meg Jacobs, Karen Ordahl Kupperman, Mary Beth Norton, and Harriet Ritvo for their generous, expert help on parts of her chapters. Both Maier and Smith are happy to express their gratitude to Greg Clancey and Rob Martello for the research assistance they provided; Victor McElheny for the excellent substantive and stylistic comments that arose from his reading of their chapters; and the students in their team-taught course on American history to 1865, whose responses to their draft chapters led to several improvements. Both greatly appreciate the support of the staff in the MIT Department of Science, Technology, and Society, especially Judy Spitzer, Debbie Meinbresse, and Christine Bates.

The coauthors collectively are grateful for the critical comments provided by the readers of their manuscript:

Robert Angevine, George Mason University
James Axtell, College of William and Mary
Michael Barnhart, State University of New York at Stony Brook
Mark V. Barrow Jr., Virginia Tech
Amy Bix, Iowa State University
Angela Boswell, Henderson State University
Albert S. Broussard, Texas A & M University
Anthony Carey, Auburn University
Paul G. E. Clemens, Rutgers University
Charles B. Dew, Williams College
Glen Gendzel, Tulane University
A. W. Giebelhaus, Georgia Institute of Technology
Larry Gragg, University of Missouri at Rolla
Michael G. Hall, University of Texas at Austin
Dwight Henderson, University of Texas at San Antonio
Richard R. John, University of Illinois at Chicago
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Daniel Lewis, California Polytechnic State University, Pomona
Eric T. L. Love, University of Colorado, Boulder
David S. Lux, Bryant College
William M. McBride, United States Naval Academy
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James Mohr, University of Oregon
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Chris Rasmussen, University of Nevada at Las Vegas
Jan Reiff, University of California at Los Angeles
Susan Rugh, Brigham Young University
Andrew Schocket, Bowling Green State University

Ron Schultz, University of Wyoming
Bryant Simon, University of Georgia
Robert Stoddard, University of British Columbia
David Tanenhaus, University of Nevada at Las Vegas
Stanley J. Underdal, San Jose State University
Helen M. Wall, Pomona College
Wendy Wall, Colgate University
Jessica Wang, University of California at Los Angeles
Kenneth Winkle, University of Nebraska

The authors are deeply indebted for generous support of the project to the Alfred P. Sloan Foundation, especially to Arthur Singer for his decisive early interest, and Doron Weber for his ongoing enthusiasm. They are very grateful to W. W. Norton for the care it has taken in producing the book—in particular, to Steve Forman, their editor, for his patience, advice, and critical readings; and to Susan Gaustad for her skilled copyediting of the manuscript. At Norton they owe many thanks also to JoAnn Simony, Lory Frenkel, Julia Paolitto, Sarah Hadley, Neil Hoos, Nathan Odell, Ede Rothaus, and Alice Bennett Dates for keeping this big project on the rails. Rob Martello conceived, researched, and drew together the digital materials on the CD. The efforts of Steve Hoge at Norton were critical in bringing the digital history component to fruition. Finally, the authors wish to thank Karen Dunn-Haley for digging up the materials for the "American Journal" entries and parts of the CD.

About the Authors

PAULINE MAIER is William R. Kenan Jr. Professor of American History at the Massachusetts Institute of Technology. Her specialty is the period of the American Revolution, on which she has published extensively, including *From Resistance to Revolution: Colonial Radicals and the Development of American Opposition to Britain, 1765–1776* and *The Old Revolutionaries: Political Lives in the Age of Samuel Adams.* Her most recent book is *American Scripture: Making the Declaration of Independence.*

MERRITT ROE SMITH is Leverett and William Cutten Professor of the History of Technology at the Massachusetts Institute of Technology. Roe's research focuses on the history of technological innovation and social change. His publications include *Harpers Ferry Armory and the New Technology* and *Military Enterprise and Technological Change.* He is a fellow of the American Academy of Arts and Sciences.

ALEXANDER KEYSSAR is Matthew W. Stirling Jr. Professor of History and Social Policy, John F. Kennedy School of Government, Harvard University. His specialty is the social and political history of the late nineteenth and early twentieth centuries. Alex's first book was *Out of Work: The First Century of Unemployment in Massachusetts.* His most recent book is *The Right to Vote: The Contested History of Democracy in the United States.*

DANIEL J. KEVLES is Stanley Woodward Professor of History at Yale University. Dan has published extensively on the history of science and the intersections of politics, science, and technology in the twentieth century. His works include *The Physicists: The History of a Scientific Community in Modern America* and *In the Name of Eugenics: Genetics and the Uses of Human Heredity.* His most recent book is *The Baltimore Case: A Trial of Politics, Science, and Character.*

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