The National Academies Press Spring 2025 Rights Guide





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EDUCATION: MATH AND SCIENCE EDUCATION



April 2025 6 x 9, 400 pages Paperback: 978-0-309-72602-3 \$28.00 Ebook Available: \$22.99

Scaling and Sustaining Pre-K-12 STEM Education Innovations: Systemic Challenges, Systemic Responses

In the modern history of the United States, investment in the teaching of science, technology, engineering and mathematics has resulted in a rich variety of education innovations (programs, practices, models, and technologies). Although a number of these innovations have had the potential to impact learners on a broad scale, that potential often remains unrealized. Efforts vary in their success in widescale implementation and sustainability across different educational contexts - leaving questions about how to achieve the major improvements to STEM education that many policy leaders seek.

Scaling and Sustaining Pre-K-12 STEM Education Innovations: Systemic Challenges, Systemic Responses examines the interconnected factors at local, regional, and national levels that foster or hinder the widespread implementation of promising, evidence-based Pre-K-12 STEM education innovations. This book identifies gaps in the research and provides guidance on how to address barriers to implementation. Scaling and Sustaining Pre-K-12 Education Innovations includes a compendium of 50 successful, evidence-based education innovations. It also identifies factors that can constrain innovations' ability to scale.

Christine M. Massey and Amy Stephens, Editors | Committee on PreK–12 STEM Education Innovations | National Academies of Sciences, Engineering, and Medicine

"Overall, investments in innovations in STEM education have resulted in numerous promising programs. However, only a limited number of students routinely experience the benefits of many of these efforts. We need to activate and expand the best of what has been discovered and created." - Christine Massey, chair of the authoring committee and a senior researcher at the University of California, Los Angeles.

EDUCATION: EDUCATION RESEARCH AND THEORY



Adult Learning in the Military Context

September 2025 6 x 9, 352 pages Paperback: 978-0-309-72643-6 \$32.00 Ebook Available: \$25.99

Adult Learning in the Military Context

The military operates in an complex and increasingly unpredictable operational landscape across land, sea, air, cyberspace, and space. Because of this, continuous learning is vital for military success. Military learners must acquire diverse skills, from communication to using advanced technology, and retain those skills for use when necessary. Success in learning - and the ability to retain and transfer what is learned to military missions - is directly linked with military innovation, operational success, and the success of our nation.

Adult Learning in the Military Context examines motivations shaping learning, contextual and equity factors, emerging learning technologies, effective approaches to assessment, and provides a research agenda. This book highlights that adult learners are most motivated when learning aligns with personal goals but notes that military structures may limit autonomy, potentially impeding motivation. Adult Learning in the Military Context finds that effective learning contexts are active, interactive, and adaptable, but the use of systematic needs assessments in the military are unevenly implemented. Different stress responses, factors associated with diversity, equity, inclusion, and instructor support can affect learning and performance meaningfully. Technologyenabled learning has established principles that can enhance learning outcomes at scale, but a holistic systems approach is needed rather than treating each learning experience in isolation, even as new technologies such as generative AI create additional opportunities. This book also considers the role of unbiased assessments for evaluating competencies that may be increasingly important in the future, such as adaptability and creativity.

Margaret E. Beier and Emily A.Vargas, Editors | Committee on Adult Learning in the Military Context | National Academies of Sciences, Engineering, and Medicine

EDUCATION: SCIENCE EDUCATION



March 2025 6 x 9, 434 pages Paperback: 978-0-309-69950-1 \$45.00 Ebook Available: \$34.99

Equity in K-12 STEM Education Framing Decisions for the Future

Science, technology, engineering, and mathematics (STEM) live in the American imagination as promising tools for solving pressing global challenges and enhancing quality of life. Despite the importance of the STEM disciplines in the landscape of U.S. political, economic, and social priorities, STEM learning opportunities are unevenly distributed, and the experiences an individual has in STEM education are likely to vary tremendously based on their race, ethnicity, socio-economic class, gender, and a myriad of other factors.

Equity in K-12 STEM Education: Framing Decisions for the Future approaches equity in STEM education not as a singular goal but as an ongoing process that requires intentional decision-making and action toward addressing and disrupting existing inequities and envisioning a more just future. Stakeholders at all levels of the education system - including state, district, and school leaders and classroom teachers - have roles as decision-makers who can advance equity. This consensus study provides five equity frames as a guide to help decision-makers articulate short- and long-term goals for equity and make decisions about policy and practice.

Committee on Equity in PreK-12 STEM Education | Eileen R. Parsons, Kenne A. Dibner, and Heidi Schweingruber, Editors | National Academies of Sciences, Engineering, and Medicine

"One specific takeaway from the report is imperative: Everyone has a role in making STEM education more equitable," said Eileen Carlton Parsons, professor emerita at the University of North Carolina at Chapel Hill and chair of the committee that wrote the report. "Anyone interested or anyone invested in creating a more equitable education system in their community can find propositions to explore in our recommendations."

POLICY FOR SCIENCE AND TECHNOLOGY



September 2025 6 x 9, 408 pages Paperback: 978-0-309-72395-4 \$34.00 Ebook Available: \$27.99

Understanding and Addressing Misinformation About Science

Our current information ecosystem makes it easier for misinformation about science to spread and harder for people to figure out what is scientifically accurate. Proactive solutions are needed to address misinformation about science, an issue of public concern given its potential to cause harm at individual, community, and societal levels. Improving access to high-quality scientific information can fill information voids that exist for topics of interest to people, reducing the likelihood of exposure to and uptake of misinformation about science. Misinformation is commonly perceived as a matter of bad actors maliciously misleading the public, but misinformation about science arises both intentionally and inadvertently and from a wide range of sources.

Understanding and Addressing Misinformation About Science characterizes the nature, scope, and impacts of this phenomenon, and provides guidance on interventions, policies, and future research. This book is a comprehensive assessment of the available evidence and reflects a systems view of the problem given the broader historical and contemporary contexts that shape the lived experiences of people and their relationships to information. Understanding and Addressing Misinformation About Science aims to illuminate the impacts of misinformation about science and potential solutions across a diversity of individual peoples, communities, and societies.

K.Viswanath, Tiffany E. Taylor, and Holly G. Rhodes, Editors | Committee on Understanding and Addressing Misinformation About Science | National Academies of Sciences, Engineering, and Medicine

POLICY FOR SCIENCE AND TECHNOLOGY

Reference Manual on Scientific Evidence, 4th Edition

July 2025 6 x9, 2,000 pages Two-Volume Paperback Set 978-0-309-70123-5 \$125.00 Ebook Available: \$99.99

Reference Manual on Scientific Evidence, 4th Edition

Reference Manual on Scientific Evidence is a primary reference source for federal judges on questions of science in litigation. This resource assists judges in managing cases involving complex scientific and technical evidence by describing the basic tenets of key scientific fields from which legal evidence is typically derived and by providing examples of cases in which that evidence has been used. It offers judges advice on how to manage expert testimony, discusses emerging problems with expert testimony, and provides information on the methodology of areas of science that often present difficult issues when introduced in the form of expert testimony.

First published in 1994 by the Federal Judicial Center, *Reference Manual on Scientific Evidence* has been relied upon in the legal and academic communities and is often cited by various courts and others. Judges faced with disputes over the admissibility of scientific and technical evidence refer to the manual to help them better understand and evaluate the relevance, reliability and usefulness of the evidence being proffered. The manual is not intended to tell judges what is good science and what is not. Instead, it serves to help judges identify issues on which experts are likely to differ and to guide the inquiry of the court in seeking an informed resolution of the conflict.

The 4th edition updates the topics covered in the 2011 3rd Edition with the latest science and expands to discuss many new topics, identifying issues that will be useful to judges and others in the legal profession. This valuable reference examines pivotal issues in the areas of science most often subject to dispute, discussing assessment of a case's needs and evaluating experts and data. *Reference Manual on Scientific Evidence* will support judges and other legal professions to ensure that science presented in the courtroom can be understood in the lens of the scientific method and reasoning.

National Academies of Sciences, Engineering, and Medicine

COMPUTERS AND INFORMATION TECHNOLOGY: INFORMATION TECHNOLOGY



September 2025 8.5 x 11, 190 pages Paperback: 978-0-309-71714-4 \$24.00 Ebook Available: \$19.99

Artificial Intelligence and the Future of Work

Interest in how advances in artificial intelligence -AI - will affect workers has been growing in recent years, especially with the recent rapid increase in capabilities and adoption of large language model-based chatbots such as ChatGPT and other generative AI tools. Today, the speed of technological progress of AI is not just reshaping tools, but also the fabric of the workforce and societal structures. The effects of AI have expanded at an unprecedented rate, permeating various facets of daily life and significantly altering the workforce terrain. Policymakers, executives, and industry leaders are rightfully eager to understand these advances, as the implications are multifaceted, impacting productivity, the workforce, education, and society at large.

Artificial Intelligence and the Future of Work describes the current state and capabilities of AI as they relate to the workforce and offers insights that prepare us for the challenges ahead and opportunities that will arise. The trajectories that AI-enabled futures might take can lead to outcomes of profound benefit or significant disruption. Artificial Intelligence and the Future of Work identifies key open questions and describes research opportunities and needs.

Committee on Automation and the U.S. Workforce: An Update | National Academies of Sciences, Engineering, and Medicine

"Al is a powerful tool, but it is still a tool to be directed by humans. Collectively, we — as citizens, businesses, nonprofits, researchers, workers, and government — have agency over the type of society we want to be a part of and how we choose to use Al. Our ability to make informed choices, to prepare for the changes ahead, and to build flexible strategies and policies requires major improvements to our capacity to sense, analyze, and respond to Al-related developments rapidly." - Erik Brynjolfsson, director of the Stanford Digital Economy Lab and co-chair of the authoring committee.

SPACE AND AERONAUTICS: SPACE EXPLORATION AND DEVELOPMENT



Consensus Study Report

April 2024 8.5 x 11, 792 pages Paperback: 978-0-309-72555-2 \$85.00 Ebook Available: \$69.99

The Next Decade of Discovery in Solar and Space Physics Exploring and Safeguarding Humanity's Home in Space

Groundbreaking advances in solar and space physics have provided key insights into the dynamic physical processes on the Sun and its influence on Earth, the near-Earth space environment, other planets in our solar system, and beyond. As we look to the next decade, future discoveries in the field will expand our knowledge of the cosmos and better prepare us for the impact of space weather events on critical systems and humanity. *The Next Decade of Discovery in Solar and Space Physics: Exploring and Safeguarding Humanity's Home in Space*, a National Academies' decadal survey, presents a prioritized strategy for basic and applied research to advance scientific understanding of the heliosphere and the origins of space weather, the Sun's interactions with other bodies in the solar system, and the interplanetary and interstellar mediums.

Committee on a Decadal Survey for Solar and Space Physics (Heliophysics) 2024–2033 | National Academies of Sciences, Engineering, and Medicine

"The solar and space physics field is at a pivotal point right now, and we have the opportunity in the coming years to pursue some really exciting science — both for science's sake and to achieve major improvements to our understanding of things like space weather. Researching this system of systems is increasingly important for society, and our infrastructure and health, and will have real impacts here on Earth and on our efforts to explore the solar system." - Robyn Millan, the Margaret Anne and Edward Leede '49 Distinguished Professor of Physics and Astronomy at Dartmouth College, and co-chair of the authoring committee

BIOLOGY AND LIFE SCIENCES: GENETICS



July 2024 7 x10, 260 pages Paperback: 978-0-309-70695-7 \$40.00 Ebook Available: \$29.99

Charting a Future for Sequencing RNA and its Modifications A New Era for Biology and Medicine

Ribonucleic acid (RNA) modifications play essential roles in the cell, and their dysfunction has implications in health and disease. Despite their importance, and even with a growing field of research and technology to understand RNA modifications, much remains unknown. An investment in epitranscriptomics – the direct sequencing of RNA modifications – can fundamentally impact the trajectory of cancer research, vaccine development, and personalized medicine.

Charting a Future for Sequencing RNA and its Modifications presents a roadmap to guide the development of tools, technologies, and infrastructure that are needed to realize the capability of sequencing any RNA, including all of its modifications, in a robust and accessible way. This book defines the science and technology roadmap; identifies scientific, technical, computational, policy, infrastructure, and workforce needs; and makes actional recommendations toward achievement of direct sequencing of RNA modifications.

Charting a Future for Sequencing RNA and its Modifications provides guidelines and sets goals that will foster the technology and infrastructure needed to enable, for any cell type of any organism, the complete end-to-end sequencing of its epitranscriptome – the chemical modifications that occur throughout all RNAs in a cell or sample of interest.

Toward Sequencing and Mapping of RNA Modifications Committee | National Academies of Sciences, Engineering, and Medicine

"The past several decades have included a remarkable trend toward precision medicine, driven by groundbreaking efforts such as the sequencing and mapping of the human genome, but we now know that our genetic code alone doesn't tell the whole story. Understanding RNA modifications and harnessing this knowledge holds immense potential — not only for human health and medicine but also for shaping all living systems and the products and technologies stemming from them." - Victor J. Dzau, president of the National Academy of Medicine

BIOLOGY AND LIFE SCIENCES: BIODIVERSITY



A Vision for Continental– Scale Biology Research Across Multiple Scales

July 2025 7 x10, 138 pages Paperback: 978-0-309-71135-7 \$25.00 Ebook Available: \$20.99

A Vision for Continental-Scale Biology Research Across Multiple Scales

Our planet is facing many complex environmental challenges, including the loss of biodiversity and rapidly changing climate conditions, driven by intensifying human-nature interactions worldwide. Dramatic advances in the biological sciences over recent years are made possible by new tools to study life at many scales, from identifying mutations in a single gene to monitoring changes in plants, animals, and microbes over an entire continent. These tools have the potential to usher in a new era of continental-scale biology (CSB) in which researchers can combine data from various realms across organizational, spatial, and temporal scales, addressing questions on biological processes and patterns that cannot be answered by observations at either small or large scales alone.

This book, prepared at the request of the National Science Foundation, sets out a vision for the development of CSB and identifies the research areas that could most benefit from multi-scale approaches. Advancing the use of CSB to address a wide range of biological and societal challenges will require the development of integrated conceptual frameworks and theories to guide research, deployment of emerging technologies, and development of a skilled workforce to synthesize the vast amounts of data from various sources.

Committee on Research at Multiple Scales: A Vision for Continental Scale Biology | National Academies of Sciences, Engineering, and Medicine

HEALTH AND MEDICINE: AGING



March 2025 6 x 9, 490 pages Paperback: 978-0-309-73151-5 \$36.00 Ebook Available: \$28.99

Preventing and Treating Dementia Research Priorities to Accelerate Progress

Alzheimer's disease and related dementias (AD/ADRD), a collection of neurodegenerative conditions, take a heavy physical, emotional, and financial toll on individuals, families, and communities. Developing effective strategies for preventing and treating these conditions, which impact millions of people in the United States, is one of the most pressing needs in biomedical research today. The National Institutes of Health has invested billions of dollars in this research, which has led to numerous scientific advances over the last decade. However, the pace of progress has not kept up with the growing needs of people living with AD/ADRD and those at risk.

This book examines and assesses the current state of biomedical research and recommends research priorities to advance the prevention and treatment of AD/ADRD. *Preventing and Treating Dementia* outlines these research priorities and recommends strategies to overcome barriers to progress. This book identifies 11 research priorities and associated near- and medium-term scientific questions that should be a focus of NIH-funded AD/ADRD biomedical research, as well as nine complementary recommendations focused on overcoming crosscutting barriers to progress on the recommended research priorities.

Tia Powell, Autumn Downey, and Olivia C.Yost, Editors | Board on Health Sciences Policy | National Academies of Sciences, Engineering, and Medicine

"A new emphasis on collaboration and breaking down legacy silos in Alzheimer's and dementia research are important next steps for agencies and organizations leading this work. Making changes now in the way research is conducted will help us realize the hope that this decade will bring breakthroughs and make all the difference for patients and their families." - Victor J. Dzau, president of the National Academy of Medicine.

HEALTH AND MEDICINE: HEALTH SCIENCES



March 2025 6 x 9, 270 pages Paperback: 978-0-309-72463-0 \$36.00 Ebook Available: \$28.99

Rethinking Race and Ethnicity in Biomedical Research

Biomedical research spans human health and disease — from laboratory studies of animal tissue that improve our understanding of human biology, to clinical trials for new medical treatments. Race and ethnicity are used widely in biomedicine. However, racial and ethnic categories are often used inappropriately in biomedical research as proxies for biology — or as poor substitutes for factors such as genetics or environmental exposures — despite there being no genetic or biological basis for race. In some discrete cases, their use can be appropriate, for example in identifying health disparities.

Rethinking Race and Ethnicity in Biomedical Research calls for comprehensive evaluation from biomedical researchers to assess trade-offs based on the populations and health outcomes involved in their research, which has the potential to improve the scientific rigor of biomedical research, mitigate bias that continues to affect research and health care, and build lasting trust between the scientific community and different racial and ethnic communities. This book outlines a decision-making process that researchers can use to determine whether and how to use race in medicine, and move toward thoughtful use of race and ethnicity in research and clinical applications in the future.

M. Roy Wilson, Sarah H. Beachy, and Samantha N. Schumm, Editors | Committee on the Use of Race and Ethnicity in Biomedical Research | National Academies of Sciences, Engingeering, and Medicine

"Racial identity is complex, dynamic, and personal, and it is influenced by our perceptions of ourselves, and the perceptions others have of us. Science, on the other hand, tends toward reductionism and categorical thinking. In order to better serve society, biomedical research methods must close this gap to better represent what race means in people's lives — and produce accurate and useful scientific results." - M. Roy Wilson, chair of the authoring committee and president emeritus of Wayne State University

EDUCATION: HIGHER EDUCATION



Transforming Undergraduate STEM Education Supporting Equitable and Effective Teaching Consensus Study Report

September 2025 6 x 9, 400 pages Paperback: 978-0-309-72998-7 \$40.00 Ebook Available: \$34.99

Transforming Undergraduate STEM Education Supporting Equitable and Effective Teaching

Undergraduate science, technology, engineering, and mathematics (STEM) education occurs in many types of institutions of varying sizes, with varying priorities and budgets, but all these types of institutions share a responsibility for providing high-quality STEM learning experiences for students. However, many longstanding policies and practices in undergraduate STEM education have produced, perpetuated, and exacerbated differences in opportunities, experiences and outcomes among post-secondary STEM students.

Transforming Undergraduate STEM Education examines research on learning, teaching, and institutional change to provide guidance for undergraduate STEM educators and institutions. This book's seven principles for equitable and effective teaching, conclusions, recommendations, and research agenda together provide a structure by which stakeholders across post-secondary education can converse and plan in order to work towards a system where all students at all institutions of higher education can experience student-centered, equitable, and effective STEM learning experiences on improving undergraduate instruction and addressing existing disparities in STEM education.

Archie Holmes, Kerry Brenner, and Janet Gao, Editors | Committee on Equitable and Effective Teaching in Undergraduate STEM Education: A Framework for Institutions, Educators, and Disciplines | National Academies of Sciences, Engineering, and Medicine

POLICY FOR SCIENCE AND TECHNOLOGY: RESEARCH AND DATA



August 2025 6 x 9, 300 pages Paperback: 978-0-309-73441-7 \$45.00 Ebook Available: \$34.99

Research and Application in Team Science

Modern scientific research frequently involves collaborative efforts, with teams tackling intricate problems that require the integration of theories and methodologies from multiple scientific perspectives. These scientific teams often also reflect a wide range of demographic and geographic perspectives. Moreover, the challenges of managing large and complex teams, as well as growing interest in translating research findings for nonscientists, often means that the teams include individuals who may not identify as scientists, such as administrators, funders, and community stakeholders. The nascent field of the science of team science (SciTS) aims to generate and build on the empirical evidence base and translate that knowledge to enhance the effectiveness of team science in practice.

Research and Application in Team Science explores the state of the science of team science in light of its growing relevance and changing landscape in contemporary scientific endeavors. This consensus study explores the relationship between team science and diversity, equity, inclusion, and accessibility, including best practices, barriers, impacts, and the role of virtual and hybrid environments; develops a contemporary understanding of best practices in team science; evaluates the growing role of virtual and hybrid teams; identifies gaps in resources and training for team science; and explores how to best measure the effectiveness of teams. *Research and Application in Team Science* presents forward-looking research recommendations (research gaps and infrastructure needs) and suggested applications and/or best practices for a variety of settings and scales to prepare a workforce that can effectively work in team science.

Committee on Research and Application in Team Science | National Academies of Sciences, Engineering, and Medicine

HEALTH AND MEDICINE: PUBLIC HEALTH AND PREVENTION



October 2024 6 x 9, 250 pages Paperback: 978-0-309-71801-1 \$40.00 Ebook Available: \$39.99

Living with ALS

Amyotrophic lateral sclerosis (ALS) is a rapidly progressive, invariably fatal neurological disease for which there are no treatments that stop or reverse disease progression. At least 31,000 individuals in the United States have a diagnosis of ALS at any given time. No two people living with ALS will experience the disease in the same way or have their disease progress at the same rate. Some people living with ALS have symptoms that progress slowly, while others progress rapidly.

Living with ALS identifies and recommends actions for the public, private, and nonprofit sectors to undertake that would make ALS a livable disease within a decade. The recommendations of this study promote a multidisciplinary care system for ALS patients, support for caregivers, and additional research on the genetic and external risk factors for this disease.

Committee on Amyotrophic Lateral Sclerosis: Accelerating Treatments and Improving Quality of Life | Alan I. Leshner, Rebecca A. English, Lyle Carrera, and Joe Alper, Rapporteurs | National Academies of Sciences, Engineering, and Medicine

"Receiving a diagnosis of ALS is devastating for the individual, their family, and their caregivers," said Alan Leshner, chief executive officer emeritus, American Association for the Advancement of Science, and chair of the committee that wrote the report. "Dealing with this illness requires a complex array of medical and support service interventions, and the intensity of care required increases exponentially over time. Implementing the vision laid out in our report would go a long way toward achieving the goal set in the committee's charge of making ALS a livable disease within a decade."

EARTH SCIENCES: OCEAN STUDIES



April 2025 8.5 x 11, 202 pages Paperback: 978-0-309-72222-3 \$35.00 Ebook Available: \$29.99

Forecasting the Ocean The 2025-2035 Decade of Ocean Science

Understanding and anticipating change in the ocean, and how it will affect marine ecosystems and humans, has never been more urgent. Over recent years, basic and applied research in ocean science has developed more accurate forecasts of ocean and seafloor processes that have helped communities adapt to changing conditions. Examples include research on air-sea interaction and surface wave dynamics that have dramatically improved forecasting of the path and intensity of hurricanes, helping to save lives and reduce economic loss. Similarly, research on how ocean species impact processes such as carbon sequestration and the absorption of heat in the surface ocean have helped predict shifts in ecosystem resilience. Other advances include improved abilities to forecast potentially damaging El Niño events; the discovery of comb jelly biomolecules that could help slow the progression of neurodegenerative diseases like Alzheimer's; and informed new efforts to conserve, restore, and future-proof coral reefs.

Forecasting the Ocean provides advice on how to meet national and global ocean challenges in the coming decade and beyond, and in doing so, enhance national security, scientific leadership, and economic competitiveness through a thriving blue economy. To respond to our changing ocean, major investments in research and infrastructure are needed. This book prioritizes basic and applied research needs and sets out an overarching challenge for the research community to establish a new paradigm for forecasting the state of the ocean at scales relevant to human well-being in the next decade.

Committee on the 2025-2035 Decadal Survey of Ocean Sciences for the National Science Foundation | National Academies of Sciences, Engineering, and Medicine

"Understanding and anticipating change in the ocean, and how it will affect marine ecosystems and humans, has never been more urgent. Our report lays out a challenge for the research community to establish a new paradigm for ocean research that will provide forecasts to save lives and sustain livelihoods in the next decade." - H. Tuba Özkan-Haller, dean and professor at Oregon State University's College of Earth, Ocean, and Atmospheric Sciences, and co-chair of the committee that wrote the report

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BIOLOGY AND LIFE SCIENCES: BIOTECHNOLOGY

NATIONAL ACADEMIES Medicine

Heritable Genetic Modification in Food Animals



May 2025 8.5 x 11, 200 pages Paperback: 978-0-309-71843-1 \$25.00 Ebook Available: \$19.99

Heritable Genetic Modification in Food Animals

Over the past century, worldwide consumption of food animal products such as meat, milk, and eggs has steadily grown due to increases in global population and per capita income that fuel demand for high-quality, protein-rich diets. The U.S. Department of Agriculture Economic Research Service predicts that as the world population grows to a projected 9.7 billion people in 2050, global agricultural production will have to increase almost 50 percent from 2011 levels. Faced with constraints in land, water, and other inputs that limit agricultural expansion, plus increasing levels of socioeconomic status globally, food animal producers are trying to meet the demand for food animal products by improving the productivity of animals using scientific insights into the biological characteristics associated with animal productivity and health, knowledge about the genetic basis of beneficial traits and variations, and novel tools to assist in developing food animal populations that carry those traits.

At the request of Congress, *Heritable Genetic Modification in Food Animals* identifies the biological basis of health risks relevant to the regulation of heritable genetic information in food animals. This includes the identification of genetic and other molecular mechanisms that could present risks to human and animal health and wellbeing based on heritable genetic information (natural, induced, intended, or designed) in food animal species. This book also identifies key knowledge gaps and recommends areas of research for the near and medium term (3-10 years) that should be pursued to fill gaps and strengthen regulatory science.

Committee on Heritable Genetic Modification in Food Animals | National Academies of Sciences, Engineering, and Medicine

HEALTH AND MEDICINE: HEALTH SCIENCES

Charting a Path Toward New Treatments for Lyme Infection-Associated Chronic Illnesses



July 2025 6 x 9, 300 pages Paperback: 978-0-309-73098-3 \$40.00 Ebook Available: \$29.99

Charting a Path for New Treatments for Lyme Infection-Associated Chronic Illnesses

Approximately 10-20% of the 476,00 individuals who develop Lyme disease each year following the bite of a tick infected with Borrelia burgdorferi go on to develop Lyme infection-associated chronic illnesses (Lyme IACI). This disease can lead to debilitating physical symptoms including chronic fatigue, recurring pain, cognitive dysfunction such as "brain fog", and sleep disturbances.

While there are standardized diagnosis and treatment for Lyme disease, there are gaps in understanding the cause of and no available diagnosis and treatment for the persistent symptoms associated with Lyme IACI. Despite the need to better understand the disease, it is clear that Lyme IACI are real and often debilitating to individual health and well-being. There is an urgent need for research that will provide safe and effective treatments for Lyme IACI that address the symptoms that affect the functionality and quality of life of those living with the condition.

Charting a Path for New Treatments for Lyme Infection-Associated Chronic Illnesses assesses the current evidence base for treatment of Lyme IACI and identifies priorities and new opportunities to advance treatment and diagnosis of this syndrome. The recommendations of this book seek to address gaps in the evidence base for Lyme IACI treatments and diagnosis, encompassing four themes: centering the patient experience, shifting to treatment research that focuses on addressing symptoms, broadening the evidence base to systematically draw learnings from similar syndromes, and developing a unifying vision for future research.

Committee on The Evidence Base for Lyme Infection-Associated Chronic Illnesses Treatment | Kent Kester, Julie Liao, Andrew March, Editors | National Academies of Sciences, Engineering, and Medicine

AGRICULTURE: ANIMAL HEALTH AND NUTRITION

Nutrient Requirements of Poultry: 10th Revised Edition

August 2025 8.5 x 11, 1,000 pages Hardcover: 978-0-309-49052-8 \$149.95 Ebook Available: \$99.99

Nutrient Requirements of Poultry 10th Revised Edition

The Nutrient Requirements of Poultry series has been a benchmark publication for the research, judicial and regulatory communities since the first published edition in 1944. This resource has been a valuable reference for feed producers, the poultry scientific community, and poultry producers, both in the U.S. and internationally. The tenth revised edition of the Nutrient Requirements of Poultry builds on the previous edition published by in 1994.

Nutrient Requirements of Poultry: 10th Revised Edition contains new recommendations for the increased performance of different types of poultry, including broilers, turkeys, laying hens, and ducks, as well as other breeds. This book presents an in-depth analysis of recent research on new research on the amounts of energy, amino acids, lipids, minerals, vitamins, lipids, and water needed by poultry; a summary of the composition of feed ingredients, mineral supplements, and feed additives routinely fed to poultry; information about variability in feed ingredients sourced from different regions; and information about feed ingredients from the biofuels industry and other new ingredients. The book also explores the effects of feeding on the nutritional quality of poultry meat and eggs; the effects of the environment, feed management, and other production aspects on nutrient requirements, including antibiotics and their alternatives; and new information on bioavailability of various nutrients.

A great deal of new research has been published since the publication of the ninth edition of this series. This new edition represents a comprehensive review of the most recent information available on poultry nutrition and ingredient composition that will allow efficient, profitable, and environmentally conscious poultry production.

Committee on the Nutrient Requirements of Poultry, 10th Revised Edition | National Academies of Sciences, Engineering, and Medicine



