

STEM READY AMERICA

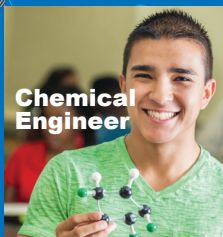
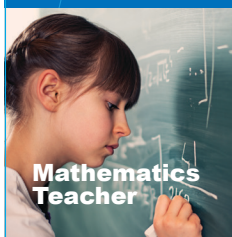
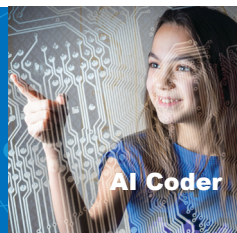
Inspiring and Preparing
Students for Success
With Afterschool and
Summer Learning

This collection of articles is excerpted from a new resource, *STEM Ready America: Inspiring and Preparing Students for Success with Afterschool and Summer Learning*. In this volume, Executive Editor Ron Ottinger and Contributing Editors Cary Sneider and Ian Hickox have collected expert perspectives on the state of the field of STEM learning—especially in afterschool and summer learning opportunities.

Collectively, these writings from more than 40 thought leaders highlight how young people are developing STEM knowledge and skills that will prepare them to be successful in school today and the workforce tomorrow.

The articles provide persuasive evidence and real-world examples to inform effective partnerships, policies, and actions to bring quality STEM learning to children and youth across the nation. This volume is focused in three key sections:

- **The Evidence for STEM**
- **Partnerships for STEM Learning**
- **Ensuring Access to Quality STEM Learning**



Developed by STEM Next with support from the Charles Stewart Mott Foundation, *STEM Ready America* builds on the award-winning 2013 publication *Expanding Minds and Opportunities: Leveraging the Power of Afterschool and Summer Learning for Student Success* edited by Terry K. Peterson, Ph.D., which made the definitive case for the power and effectiveness of afterschool programs and summer learning.

For more information about STEM Ready America and to download articles visit: www.stemreadyamerica.org.



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Evidence and examples on how young
people are developing STEM knowledge and
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www.STEMReadyAmerica.org

Preface

Ridgway H. White, President, Charles Stewart Mott Foundation
Pendred (Penny) Noyce, M.D., Co-founding Trustee, Noyce Foundation
and Educator and Writer, Tumblehome Learning

Ronald Ottinger, Executive Editor
STEM Next | Charles Stewart Mott Foundation



It's with a sense of excitement and urgency that we introduce *STEM Ready America*, a new collection of scholarly yet practical articles that illustrate the power of afterschool and summer learning programs to engage more K-12 students in the study of science, technology, engineering, and mathematics (STEM). In this publication, more than 40 authors—including educators, business leaders, scientists, and policymakers—offer compelling evidence and practical advice as to why and how afterschool programs must be part of the STEM education solution.

We know the skills and knowledge learned through STEM are critical to the success of young people today. Through new evaluations, we're learning that afterschool programs help young people develop confidence in and commitment to STEM subjects. A growing body of evidence also confirms that, when we invest in quality programs, students thrive. Yet, because too many of our children and young people lack exposure to these critical subjects, they are losing interest in STEM fields by middle school or earlier.

Programs that connect with and support in-school learning not only provide the time for hands-on opportunities to explore ideas, but also enhance a student's natural curiosity and encourage creativity. When a young person develops the confidence to feel that she is good at science and can imagine becoming a scientist, we see future cures for diseases emerging. When a young person solves a difficult problem and declares he wants to be a computer coder, we see future technologies invented. When boys and girls learn how to persist through failed experiments, they learn the perseverance that is essential to their success in any career they may pursue.

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The Charles Stewart Mott Foundation and STEM Next (previously the Noyce Foundation) share the goal of ensuring that every child has an opportunity to pursue STEM learning, regardless of his or her background, gender or socio-economic status. We are pleased to be able to combine our respective areas of focus—afterschool programs and science learning—in an effort to scale up STEM afterschool programs across the nation.

This compendium of articles illustrates how people from different sectors are coming together to help make STEM programming available for more and more young people. It highlights communities crafting solutions that work and offering pathways for others to pursue.

As you will see in *STEM Ready America*, efforts to innovate practice, increase access, and improve and evaluate the quality of STEM programming are gaining strength across the country. We hope the content in this compendium will be helpful to educators, school districts, and policymakers who believe a solid STEM education will help students and communities flourish in the future.

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About the Authors



Ridgway H. White is president of the Charles Stewart Mott Foundation, headquartered in Flint, Michigan. He began his career at Mott as an intern in 2002 and was hired as a program assistant two years later. After working his way up through the program ranks, he served as the Foundation's vice president for special projects and chair of its management working group from 2011 until he became president in January 2015. White has been a driving force behind public-private partnerships aimed at revitalizing Flint. He was instrumental in bringing the city's health and wellness district to fruition, and he played a key role in helping Flint return to the Detroit water system. On the state level, he is focused on advancing clean-energy solutions in Michigan. Nationally, he is working to promote quality afterschool programs for all children. He also is committed to advancing community education and local philanthropy, both locally and globally.



Pendred (Penny) Noyce was Co-Principal Investigator of the NSF-funded Massachusetts State Systemic Initiative Program and of PALMS, a \$16 million NSF-funded State Systemic Initiative to improve mathematics, science, and technology education in Massachusetts. Noyce chairs the board of the Rennie Center for Education Research and Policy in Massachusetts and serves on the boards of the Concord Consortium, the Consortium for Mathematics and its Applications (COMAP), TERC, and the Libra Foundation. She was a co-founding trustee of the Noyce Foundation.