

# Human Capital and the Sub- BA STEM Workforce

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# Problems in US Skilled Technical Workforce: Long-Standing

- See National Academies of Science report, 2017
- Evidence of Difficulty: Labor Shortages, Lack of Diversity
- Can Slow Implementation and Diffusion of Technical Innovations, Hurt Their Quality
- Also Generates Inequality and Limiting Upward Mobility

# What Has Caused Shortfall of Skilled Technical Workforce in US?

- Ongoing factors for decades
- More recent developments

# Ongoing Difficulties in Building Skilled Technical Workforce: K-12 Math/Science Education

- US Students and Math Education: Perform Relatively Better on Reading (13<sup>th</sup> out of 79) than Math (36<sup>th</sup> out of 79, behind most other industrialized nations)
- Fewer Students Choose STEM majors at community colleges
- Gender Issues – Females now nearly 60% of US undergrads
- Race and Class Issues – Esp. for Men

# Ongoing Difficulties: Career-Technical Education/Work-Based Learning

- CTE: Historically Weaker Academically; Race/Class Tracking and Stigmatization
- Progress in Improving Quality in Last Few Decades But Enrollments Remain Low
- Pathways to Community College – Does It Divert 4-Year Enrollment?
- Work-Based Learning – e.g., Apprenticeship – Under-Developed in the US relative to EU Countries – Low Employer Participation

# Ongoing Difficulties: Community Colleges/Workforce Programs

- Weak Outcomes: Low Completion Rates, Enrollments in Low Value Fields, Debt
- Why? Under-Financed, Under-Incentivized, Under-Structured and Under-Supported (Very Little Guidance)
- For Credit v. Not for Credit: Latter are Nimble but Not Well-Funded (Per Scholas)
- Competition from the For-Profits
- Other Workforce Development (WIOA): Little Funding, Weak Results

# New Developments

- Pandemic: Decline in Academic Performance, Rising Inequality
- Dropping Enrollments in Higher Education
- Tight Labor Markets – Exacerbate Shortages

# Some Promising New Developments

- CTE: Career Academies, Technical (Hybrid) High Schools, P-Tech
- Apprenticeships – Renewed Interest and Growth
- Community Colleges – Evidence on Strong Support Programs
- Sector-Based Training – Large and Lasting Impacts of these Programs  
– Project Quest, Per Scholas, Year Up, Wisconsin Regional Training Partnership

# Some Policy Implications

- Improve Math/Science Instruction in HS – Financial incentives for high-quality teachers where most needed
- CTE/Work-Based Learning – More support for effective models
- Community Colleges – Financial aid to students but also to institutions; supports/guidance and accountability
- Scale the Best Sector-Based Training
- Remediating the Losses of the Pandemic