

Managing Up:

EMPOWERING HIGH-POTENTIAL STEM TALENT
TO TAKE ON LEADERSHIP ROLES

Featuring interviews from senior leaders at:



Why Use This SlideShare Deck?

To learn more about
STEM workforce
development and talent
management

To gain insights into
the priorities of global
VP- to CLO-level
leaders at
AT&T, IBM, and SAP

To plot a course for
success as a STEM
manager and leader



Who Did We Interview?

To execute the “Managing Up” thought leadership series, we interviewed a series of industry leaders. They include:

Public-Private Partnerships



STANLEY LITOW

VP for Corporate Citizenship and Corporate Affairs;
President of the IBM International Foundation



Millennials



ANN ROSENBERG

VP, University Alliances



Diversity



MARK COLLINS

SVP, Mobility Sales and
Service Operations



FLORIAN MICHAELSEN

Diversity and Inclusion Lead



Enterprise Learning & Talent Development



KERRY BROWN

VP, Enablement



JENNY DEARBORN

SVP and CLO



PAMELA SEFLOW

VP and Global Head, Career and
Talent Management



SHARON RUDDOCK

CLO, SAP Global Customer Organization



Let's Get Started

Ready to learn more about STEM talent development?

Turn the page...

Executive Summary



The Media Is Covering One Issue...

STEM jobs

are exploding at the very time there is a global shortage of talent.



Today's enterprises

are keenly focused on wooing – and keeping –
STEM experts, who typically experience
relentless recruitment during their careers.



However, there is another less-noticed imperative that should be on the C-level agenda:

STEM leaders need an opportunity to develop “soft” skills to become effective managers.

Companies need to develop a **strong STEM management team** who can anticipate industry disruption and lead companies through constant change.

Innovative **enterprise learning and talent management strategies**

can help companies win, develop, and retain STEM leaders.

Higher Education Can Play an Important Role in Addressing These Needs

Business and executive **education** can help companies build their management bench by providing **STEM talent** with the **opportunity** to fast-track knowledge, skills, and network building.

The Growing STEM Shortage Meets Diversity and Inclusion Priorities

STEM Jobs Are Growing Faster Than the Market Can Supply...

BY 2020, THERE WILL BE 8.5 MILLION STEM JOBS

ALL
OCCUPATIONS
ARE GROWING AT
10%

STEM JOBS
ARE GROWING BY
19%



11%
Engineers



15%
Physical
Scientists



22%
Computer &
Mathematics

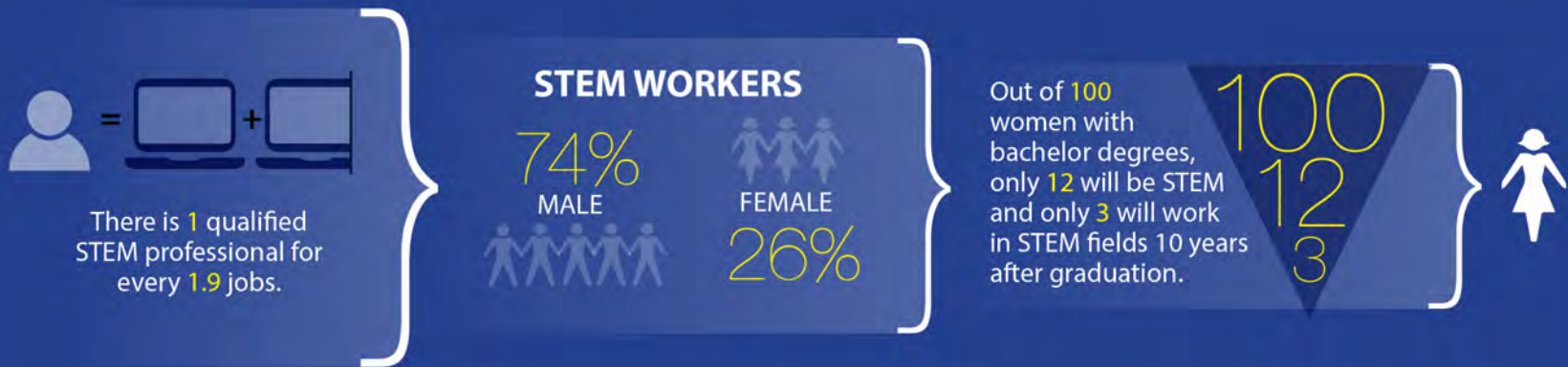


29%
Life Science

THERE ARE
97
STEM
OCCUPATIONS

Sources: TATA Consultancy Services, Accenture, Bureau of Labor and Statistics. Please see white paper for full citations.

...But Women Are Not Well-Represented in STEM Workforces



Sources: ADECCO, TATA Consultancy Services. Please see white paper for full citations.

Minorities Have Also Been Left Behind – and the Market Cannot Afford this Loss



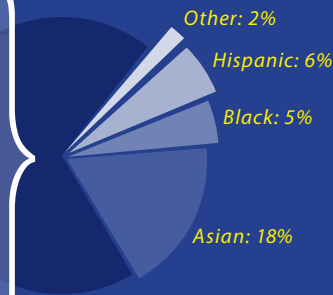
THE “SILVER TSUNAMI”

will hit companies hard. More than 50% of all civil, mechanical, and industrial engineers are over the age of 45. When they retire, they will take their knowledge with them.

UNDERREPRESENTED

Minority men and women hold only 31% of all science and engineering jobs, and have the highest unemployment rates across all racial and ethnic groups.

(Data on LGBT and disabled STEM workers as unavailable.)



“THERE IS A
FRENZIED
GRAB
FOR TALENT.”

– Accenture

Sources: Kelly, National Science Foundation, Accenture. Please see white paper for full citations.

Company Leaders Say a Lack of Diversity Is Not Acceptable in Today's Workforce

Our experts said that building a diverse and inclusive STEM talent base matters to... ***the nation:***

“ If we don't do something radically different, the U.S. will not be competitive.
It's at a crisis level. ”

- Stanley Litow, IBM

Company Leaders Say a Lack of Diversity Is Not Acceptable in Today's Workforce

Our experts said that building a diverse and inclusive STEM talent base matters to...
the market and companies:

“ It's one of those great things where doing **what's good for society is also good for the marketplace and good for shareholders**, because it raises the talent level of the workforce that you need to carry corporate assets and capabilities into the next century and beyond.”

- Mark Collins, AT&T

Company Leaders Say a Lack of Diversity Is Not Acceptable in Today's Workforce

Our experts said that building a diverse and inclusive STEM talent base matters to... **customers:**

“Diversity is only an **intermediate step** to the ultimate goal of customer success.”

- Florian Michaelsen, SAP

What Are Some Solutions?

Leverage

Public-Private
Partnerships to
Build Capacity



*Read our industry POV,
featuring an interview with
IBM's Stanley Litow.*

Build

a Diverse and
Inclusive Culture



*Read our industry POV,
featuring an interview with
AT&T's Mark Collins.*

Target

New Populations
for Inclusion

“There are many
untapped
populations
with differently
abled workers.”

– Florian Michaelsen, SAP

*SAP will hire 700 autistic
individuals as coders and
other workers by 2020.*

Developing Diverse and Inclusive STEM Workforces Takes a Multi-Faceted Approach

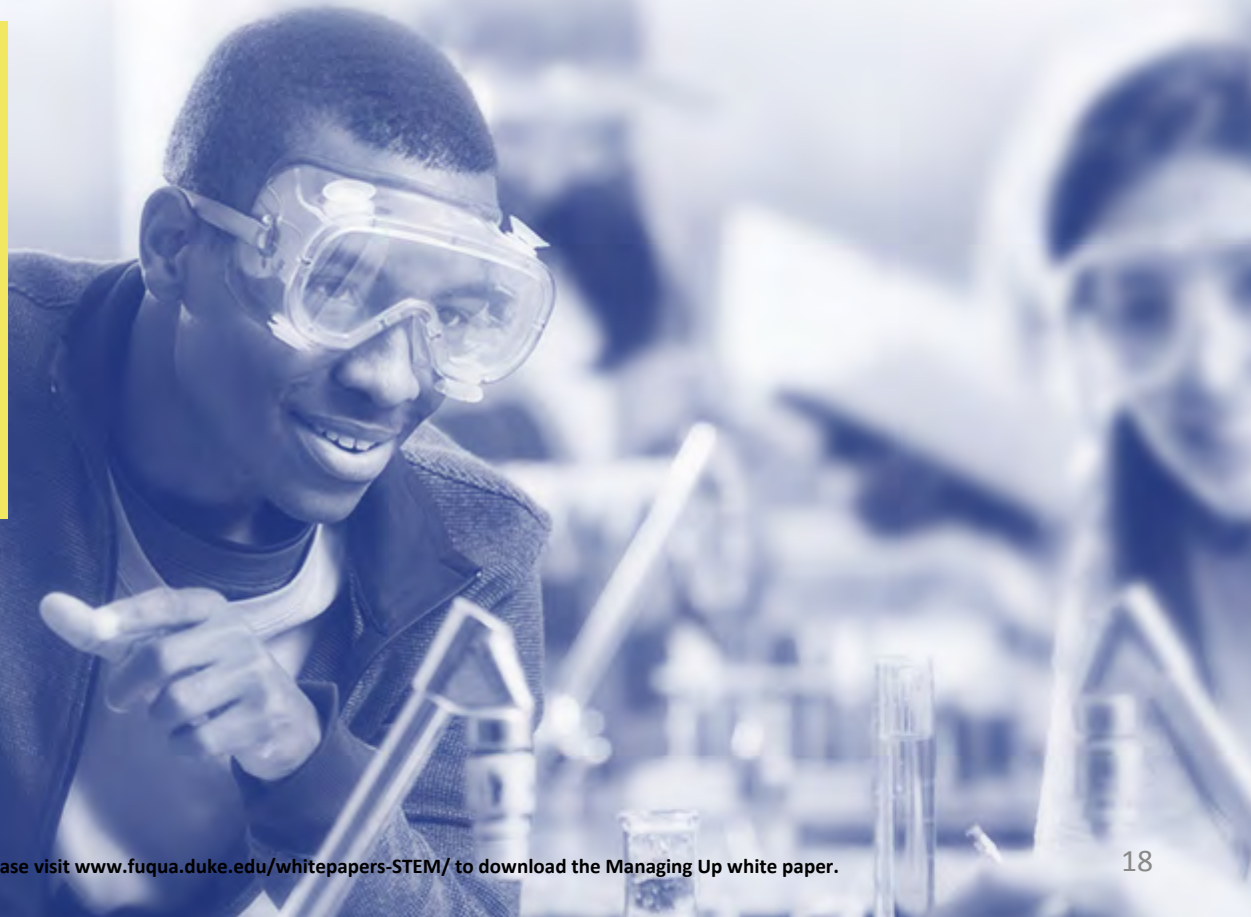
Start Early

- Technical academies
- STEM education
- Camps and contests

Developing Diverse and Inclusive STEM Workforces Takes a Multi-Faceted Approach

Prioritize Advanced Education

- Research grants
- Fellowships
- University partnerships



Developing Diverse and Inclusive STEM Workforces Takes a Multi-Faceted Approach

Recruit and Retain

- Industry internships
- Broad-based recruitment
- Special interest networks

Developing Diverse and Inclusive STEM Workforces Takes a Multi-Faceted Approach

Develop

- Holistic diversity and inclusion strategies
- Continuous learning
- Leadership training
- Mentors and sponsors



Diverse and Inclusive Workforces Fuel Corporate Competitiveness and Innovation

“People bring **special talents** to the table. That talent might be enriched by their gender, personal ethnicity, culture, religion, affinity, or special ability. That all actually contributes to creating a workforce which is truly diverse and inclusive. It’s one where many opinions can find voice, and workers’ **unique capabilities** can flourish.”

- Florian Michaelsen, SAP

The STEM Management Imperative



Today's C-Level Executives Increasingly Have STEM Backgrounds



Satya Nadella,
B.S, MSCS, MBA
CEO, Microsoft



Ursula Burns
B.S. and MS,
Mechanical
Engineering
Chairman and
CEO, Xerox



Tim Cook
B.S. Industrial
Engineering,
MBA
CEO, Apple



Roger Ferguson
B.A. and Ph.D.,
Economics; J.D.
President and CEO,
TIAA-CREF



Jeff Immelt
BA, Applied
Mathematics,
MBA
Chairman and
CEO, GE



Sheryl Sandberg
BA, Economics,*
MBA
COO, Facebook

AND MOST HOLD STEM AND BUSINESS DEGREES.

**Economics is considered a STEM discipline by government agencies.*

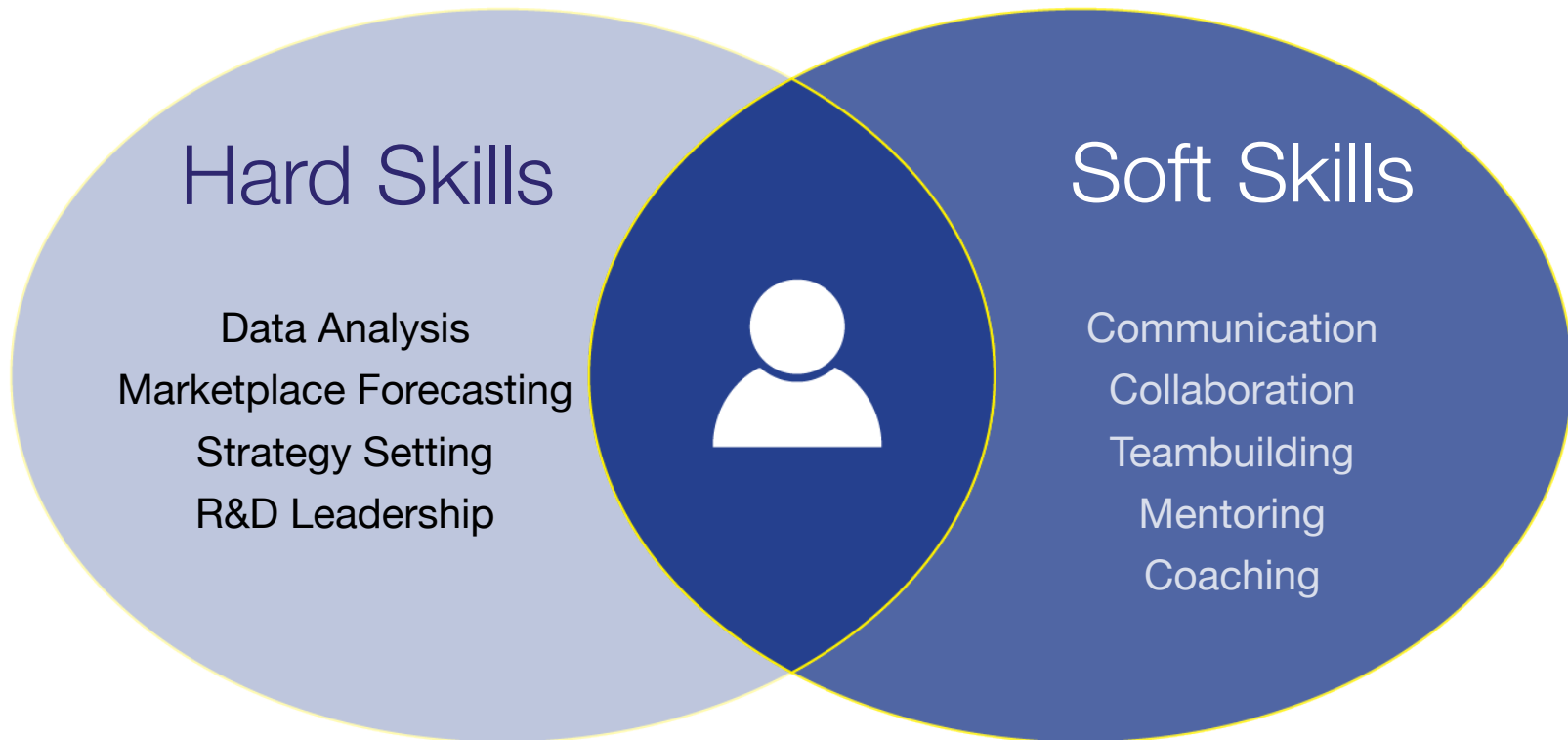
STEM Skills Are Needed by Managers at All Levels

Global enterprises need managers who can connect the dots between data, processes, and marketplace opportunities.

Managers will make decisions based on hard science, rather than intuition and risk-taking.

However, these leaders also need “soft skills” to manage projects, teams, and businesses.

We Believe STEM Leaders Need Both Hard and Soft Skills



The Time to Build a STEM Management Talent Pool Is Now

“Everyone with backgrounds in the STEM disciplines can be and should be a corporate leader. A **STEM-aware CEO** will simply set the stage for those people to succeed.”

- Wick Moorman, Chairman and CEO, Norfolk Southern Corporation

Source: 100 CEO Leaders in STEM, STEMconnector publication. See white paper for full citation.

How Employees Want to Progress Their Careers



How Employees Want to Advance Professionally

HERE'S HOW **ALL EMPLOYEES** SAY THEY **WANT** TO DEVELOP KEY SKILLS:



Source: 2013 Kelly Global Workforce Index. Please see white paper for full citation.

How Companies Are Facilitating Talent Development

Enterprises have moved from:

“Push” training	“Pull” learning
Learning is one-time	Learning is continuous
Lines of business own budget	Resources available for all
Talking heads	Interactive experiences
Single voice of wisdom	Crowdsourcing and sharing
One size fits all	Personalization
Multi-day sessions	Micro-content
Face-to-face	Multi-format and mobile

What Are Some Solutions?

Use New Learning Models to Drive Change

Read our industry POV, featuring interviews with SAP's Jenny Dearborn and Sharon Ruddock.



Give Millennials Early Leadership Opportunities

Read our industry POV, featuring an interview with SAP's Ann Rosenberg.

How Companies Are Facilitating Talent Development

“ How do we make learning part of the cultural DNA and take advantage of all the different ways and opportunities to learn?
It's an opportunity and a challenge,
but largely it's an opportunity. ”

- Sharon Ruddock, SAP

Big Data Rules

SAP collects and measures

110 to 140 data points

per employee to identify high-potential talent for new challenges and help workers who may be floundering in their roles.

Employees Are Their Own Best Advocates

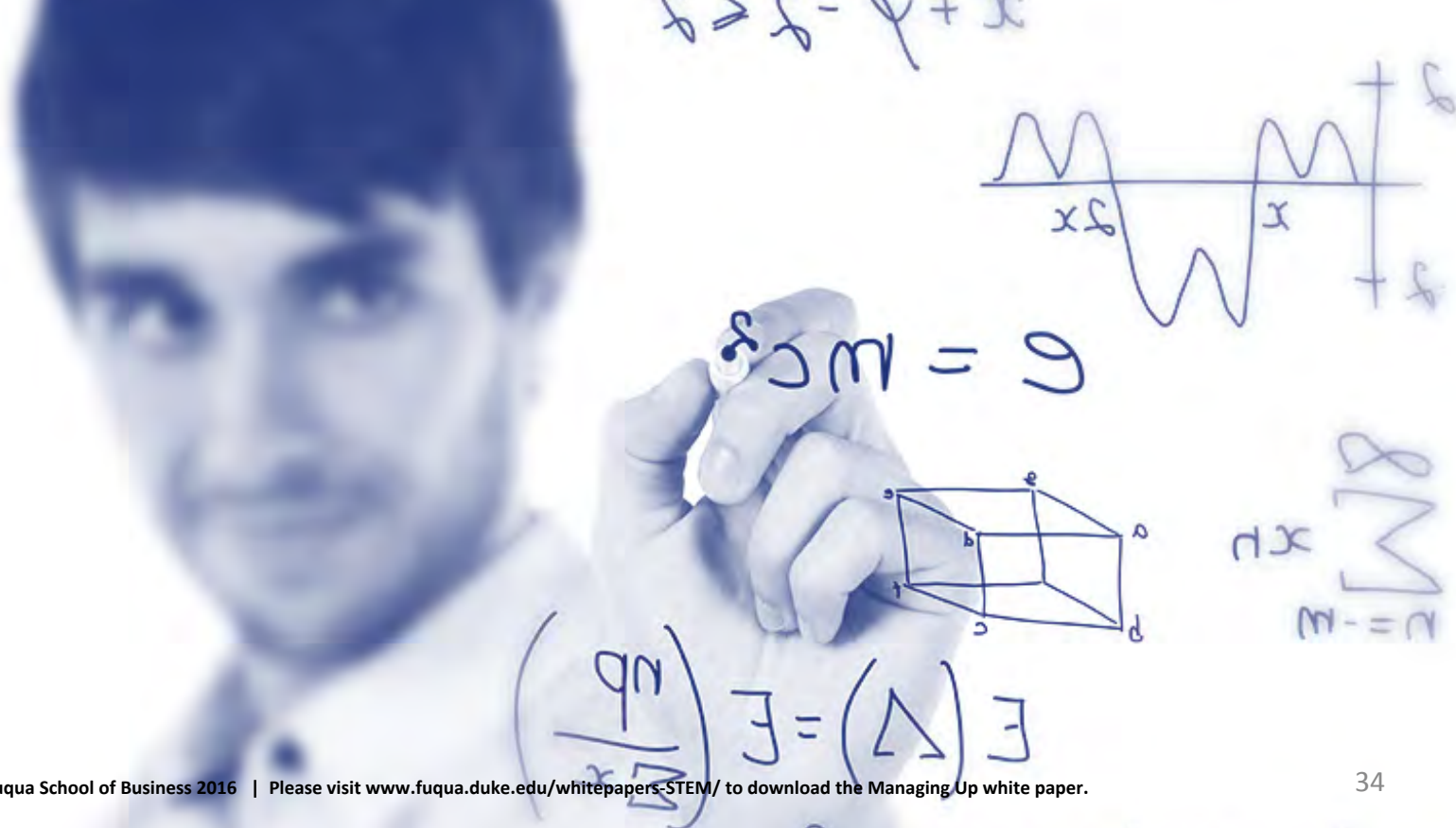
“ **Everyone brings unique talents to the table.**
We think about talent management as the sweet spot
of capability, ability, opportunity, and desire. ”

-Pamela Seplow, SAP

“ **You have to dedicate yourself to the idea of
being a student of the game and
being a lifelong learner.** ”

-Mark Collins, AT&T

Developing STEM Managers at **All Levels**



Develop Your STEM Employees' Management Skills

“ Everyone is a teacher, everyone is a learner, and there's this flat sharing of knowledge and information, which fuels collaboration.”

- Jenny Dearborn, SAP

Fill the pipeline:

Identify talent and communicate a clear path for advancement. Provide critical input on a regular basis.

Have a defined strategy:

Develop and articulate a STEM talent management strategy that leverages learning, education, mentoring, and progressively more responsible work assignments in different environments.

Develop Your STEM Employees' Management Skills

Create a culture of continuous development:

Provide employees with the time, resources, and encouragement to invest in their own careers.

Empower line managers:

Give line managers the tools, messages, and motivation they need to develop STEM teams.

“Who is the most influential person when it comes to the employee retaining knowledge they've learned in a training class? Is it the fantastic instructor or the highly motivated employee? Actually, it's the manager.”

- Jenny Dearborn, SAP

Develop Your STEM Employees' Management Skills

“ I think the combination of a STEM background with business skills is really powerful. ”

- Sharon Ruddock, SAP

Ensure regular interaction:

Make sure STEM employees have day-to-day interactions and opportunities for two-way communication with their managers and direct reports.

Encourage nonlinear thinking:

Help STEM employees learn to seek others' input, through brainstorming and joint decision making.

Develop Your STEM Employees' Management Skills

Provide regular stretch assignments:

Provide challenging assignments that test STEM employees' technical expertise – and stretch their soft skills.

Leverage external education:

Partner with business schools to help employees get both an academic and real-world perspective on industry disruption – and how to lead through change.

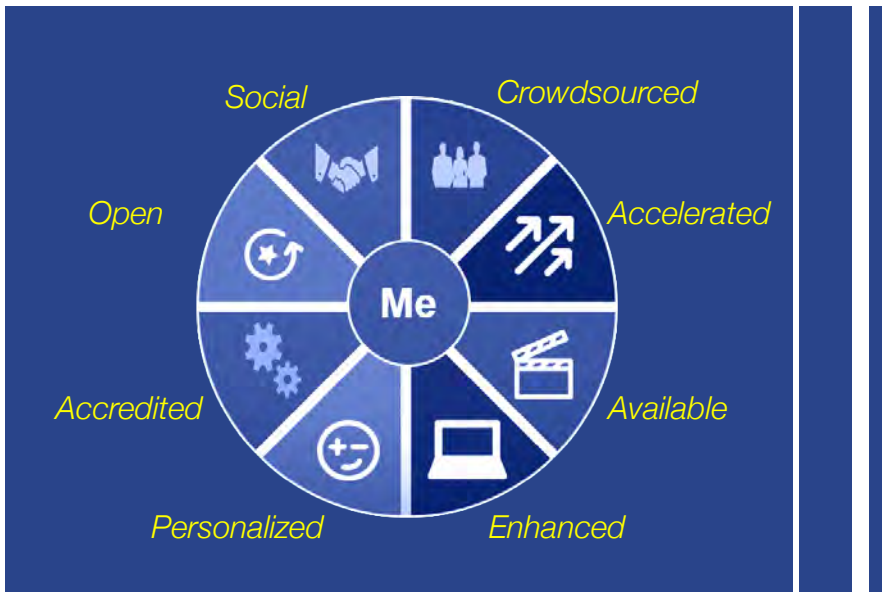


“Salary and benefits are table stakes. You have to offer professional development opportunities to retain your talent and stay competitive in the marketplace.”

- Pamela Seplow, SAP

Develop Your STEM Employees' Management Skills

360-Degree View of Enterprise Learning:



Embrace enterprise learning best practices:

Offer education in a variety of formats and avoid over-relying on web training. Enterprise learning is now social, collaborative, and continuous.

Source: Kerry Brown, SAP.

Develop Your STEM Employees' Management Skills

1/3 of
U.S. workers
have a
younger boss

Create a virtuous loop
of collaboration:

Honor employees' desire to work where they live.
Use collaboration technologies and other tools
to help STEM managers lead from afar.

Offer leadership opportunities:

Enable STEM talent at all levels to lead projects
and teams to gain visibility for their efforts and
prepare to take on more challenging assignments.

*Source: Forbes. Please see white
paper for full citation.*

Develop Your STEM Employees' Management Skills

Men are 42% more likely than women to have a high-powered sponsor smoothing the path for their career progression.

Embed mentoring in your company's DNA:

Pair STEM talent with mentors who offer insight and exposure into skills and opportunities several levels ahead. Allow Millennials to share wisdom and expertise with Boomers.

Promote diversity and inclusion with real action:

Provide underrepresented groups with key supports for career advancement, such as mentoring, sponsorship, training, and access to professional networks.

Source: Sylvia Ann Hewitt. Please see white paper for full citation.

Develop Your STEM Employees' Management Skills

“ Employee resource groups enable staff to organize in **advocacy groups** with specific missions. ”

- Mark Collins, AT&T

Access the power of the group:

Encourage STEM talent to participate in professional associations, such as technology networks, female executive forums, and minority leader groups.

Focus on retention:

Empower STEM talent with the ability to serve as innovation champions, progress against defined career paths, and participate in blended teams. Honor different work styles and needs.

External Partners Can Help Build STEM Workforce Management Skills

Companies can't solve the STEM crisis, build a skilled workforce, develop managers, and enhance their skills on their own.

Partnering with education organizations at all levels is absolutely vital.

Public school systems and universities can help build the STEM pipeline.

Higher education can provide STEM talent with targeted, intensive opportunities to enhance their skills.

The Business Case for Targeted Education

Business and executive education programs can enable STEM leaders to:

Gain a **global perspective** about marketplace opportunities that enriches their own

Take on **challenging assignments** with diverse peer groups

Share perspectives with business colleagues

Build **soft skills** needed for management roles

Develop robust **international networks** they can leverage in the future

About The Fuqua School of Business



In its relatively short history, The Fuqua School of Business at Duke University in Durham, North Carolina, has established itself as one of the leading business schools in the world. With talented faculty and renowned research centers, the school sits among top-ranked U.S. business schools.

Website: <http://www.fuqua.duke.edu/>

Enrollment: More than 1,500

DEGREE PROGRAMS:

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- The Duke MBA—Cross Continent
- The Duke MBA—Global Executive
- The Duke MBA—Weekend Executive
- Master of Management Studies (MMS): Foundations of Business
- Master of Management Studies (MMS): Duke Kunshan University
- The PhD Program in Business Administration

EXECUTIVE EDUCATION:

- Duke Leadership Program
- Duke Management Program
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- Navigating Health Care Trends
- Communication for Leaders
- Business Negotiation Skills
- Financial Analysis for Sales Executives
- Global Leadership Workshop