

NICE Webinar Series

NATIONAL INITIATIVE FOR CYBERSECURITY EDUCATION



Building a Career Pathways System for Cybersecurity

March 15, 2017

THE POWER AND PROMISE OF PATHWAYS

*Hans Meeder,
President &
Founder*

NC³T
NATIONAL CENTER
FOR COLLEGE & CAREER TRANSITIONS

The NC3T vision



Every learner
with a dream
and a plan.

Every community
with a capable,
ready workforce.

the weekly blog www.Pathwayssherpa.com

The Pathways Sherpa

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I'm Hans Meeder,
your Pathways
Sherpa. I am here to
guide and help you
succeed on your
journey to develop the most
effective college and career
pathways programs and systems.



Latest Posts



The Two Most Frequently Asked Questions About Pathways

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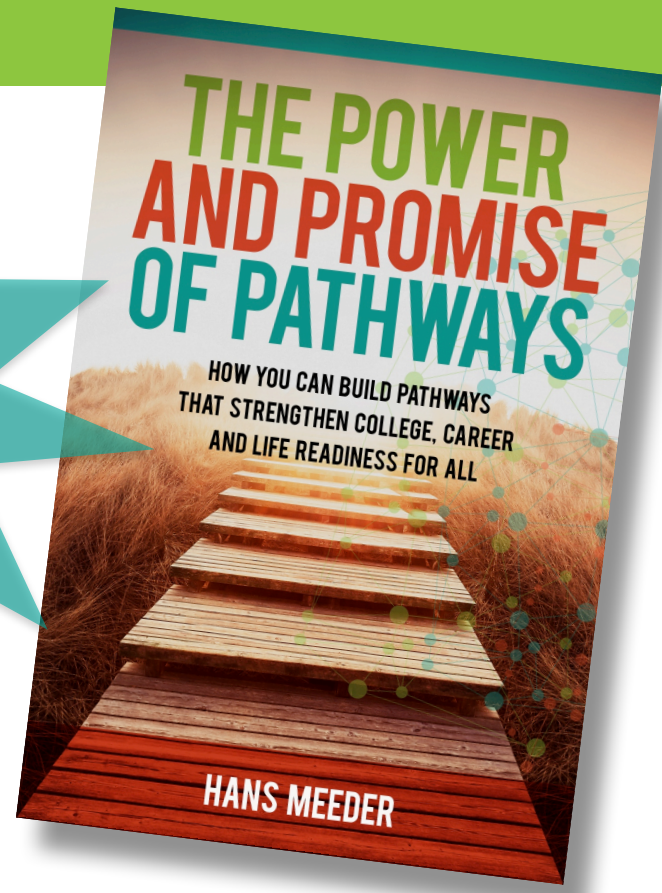


Services

NC3T advances its mission for college and career transitions by concentrating its efforts in the following areas:

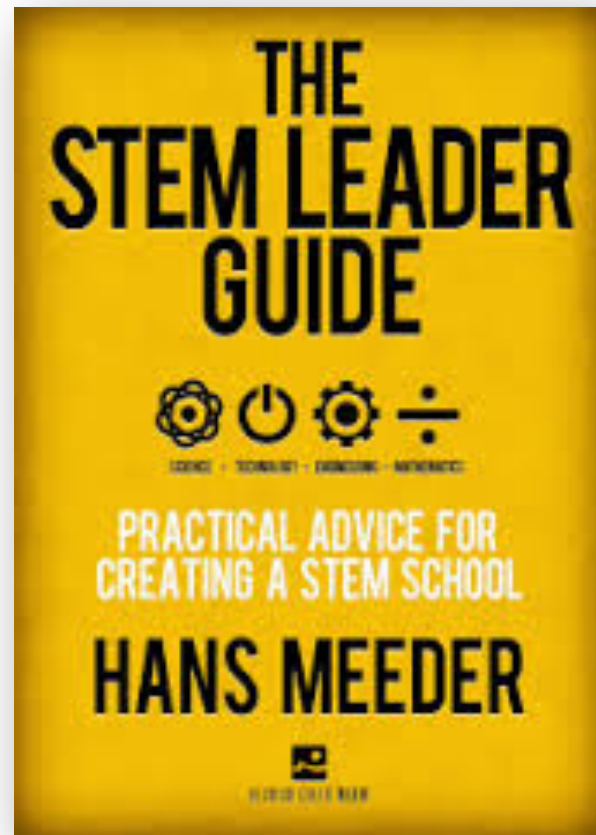
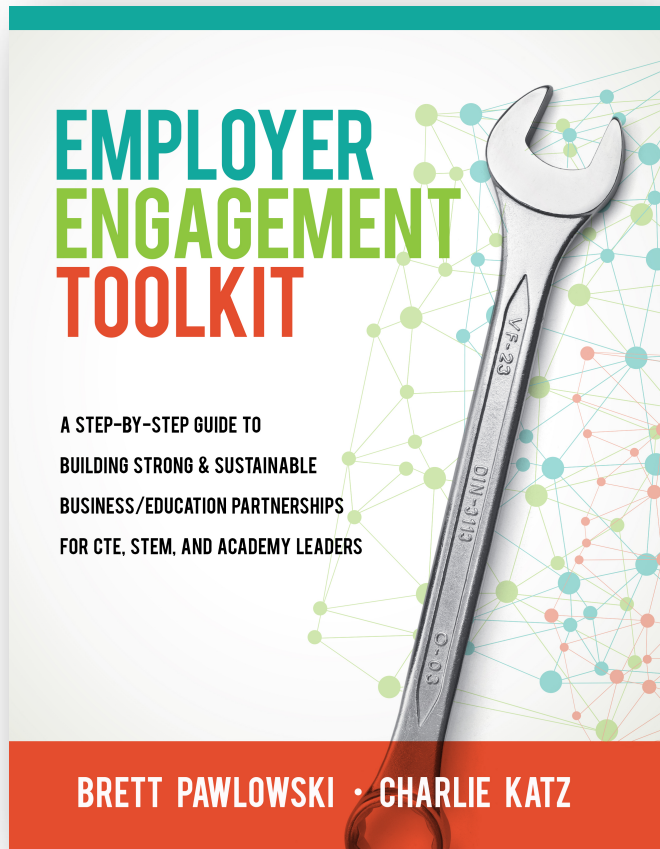
- **Keynotes and Workshops** – NC3T expert speakers and professional development consultants are available to keynote events or lead workshops on several topics related to pathways and partnerships.
- **Pathways System Design** – Through its coaching services, NC3T helps school districts, communities, regions, and states design and build high quality Pathway Programs and Comprehensive Pathway Systems. We can help you develop your vision, build needed community relationships, and implement your plans.
- **Employer Engagement – Tools and Training** – There is a great need for businesses and schools to connect; NC3T's resources, workshops, and coaching can help.

AVAILABLE
NOW



2 sites:
powerandpromiseofpathways.com
& Amazon.com

NC3T Publications

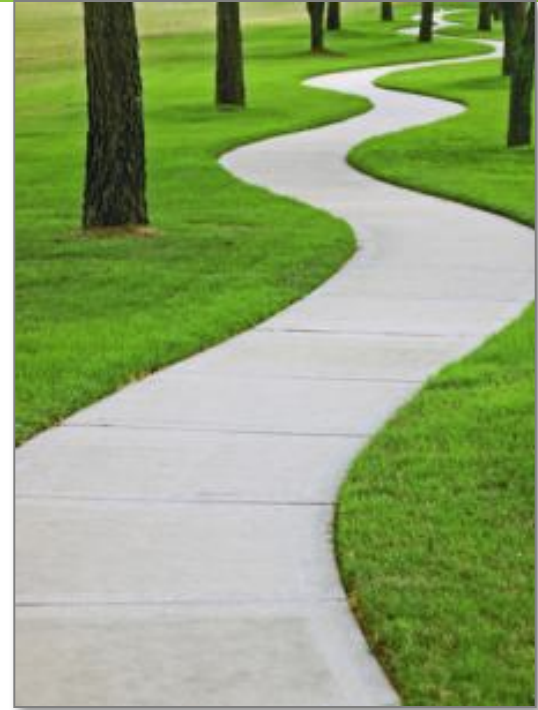


Today's Agenda

- Why and what of pathways
- Key components of pathway program
- Advisory board management
- A systems approach

Part 1.

The Why and What of pathways?



Definitions



“A ***career pathway*** is the occupational experience of an individual as he or she enters a career field, hold jobs within that career field, gains knowledge, skills and work experience, and advances to jobs with higher levels of responsibility and earnings.”

Definitions

*A **Pathways Program** is a program of interconnected academic and elective classes revolving around a career or subject theme.*

It is integrated with experiential learning (work-based) and close connections between secondary and postsecondary education, training, and apprenticeship.

The program is designed to support the development of Career and Life Readiness for the learner, so that the individual can successfully enter and advance in a career path.

Definitions



A Pathways System is the coordinated interaction of key components – career development, pathway programs, dynamic teaching and learning, employer and community engagement, and cross-sector partnerships.

The Pathways System is designed to develop a high level of career and life readiness among youths and adults in schools, colleges, workforce programs and the across the broader community, resulting in enhanced workforce competitiveness and community prosperity.

Why pathways?

The Skills Gap: Too Few Skilled Workers and Slow Growth

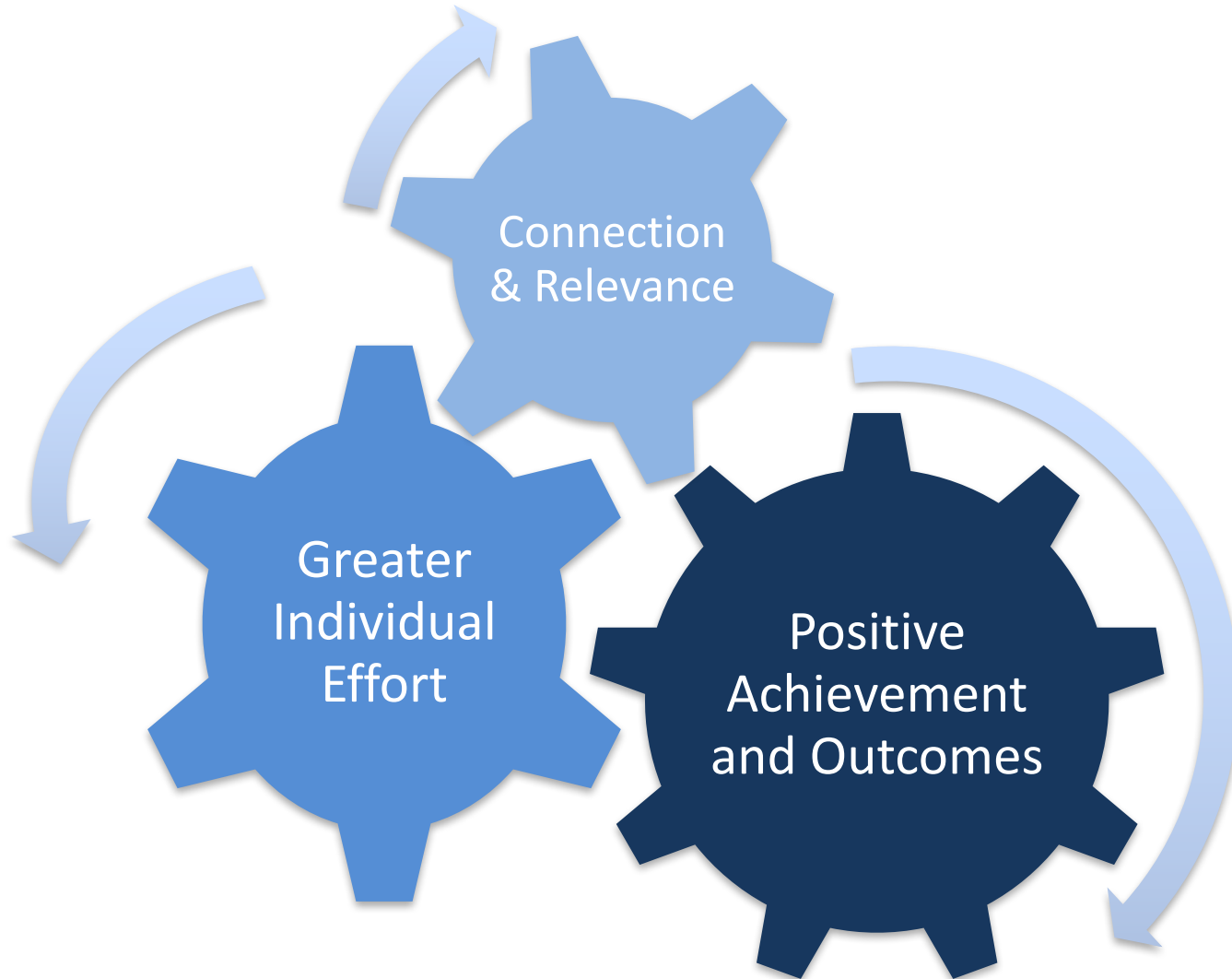


Why pathways?

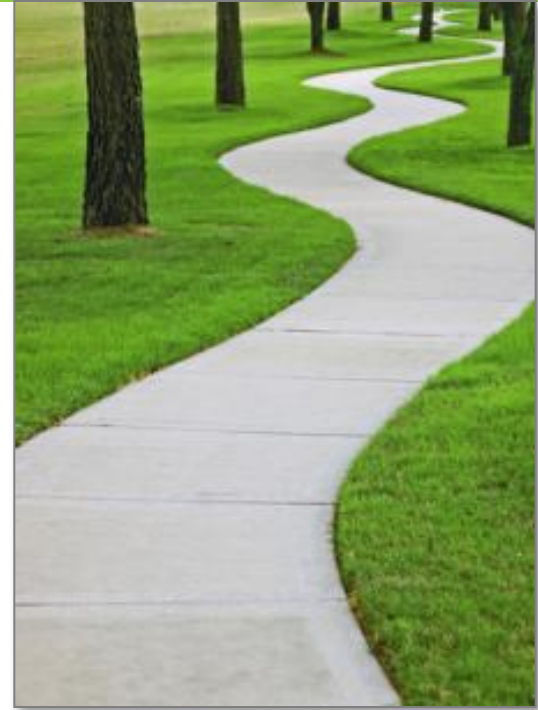
- academic achievement
- rigorous academic course taking
- high school graduation rates
- postsecondary retention-completion
- career readiness skills
- long-term earnings



Connection & Relevance Matters

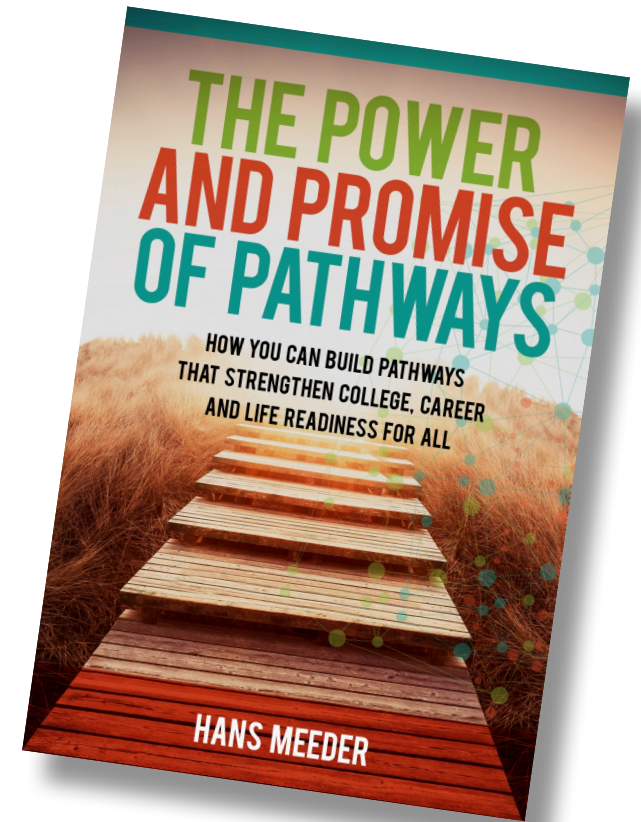


Part 2. Key Components of Pathways



Pathway Programs

12 Components to Consider



12 Components of a Pathway Program

PATHWAY PROGRAM – STRUCTURE

1. ***Pathway program interconnected sequence***
2. *Student access*
3. *Student cohort scheduling*

PATHWAY PROGRAM – LEADERSHIP

4. ***Pathway program advisory committee***
5. *Pathway program instructional team*

PATHWAY PROGRAM - ALIGNMENT

6. ***Alignment with workforce needs and Opportunities***
7. *Alignment with standards*

8. *Alignment across courses.*
9. ***Alignment with industry-based credentials, certifications, and technical skills assessments***

PATHWAY PROGRAM - CONNECTIONS

10. ***Work-based learning, community-based experience, and student leadership***
11. ***Seamless connections with postsecondary institutions and regional career and technical centers***
12. *Articulation, dual enrollment and early college agreements*

Sample Academy & Pathway Structure

(Each school will have some, but NOT all, academies and pathways)

Agriculture & Natural Resources

- Agriculture & Food Systems
- Environmental Resources

Human Services

- Education & Training
- Government & Public Administration
- Hospitality & Tourism
- Human Services
- Law, Public Safety, Corrections & Security

Arts & Communications

- Audio and Video Tech & Film
- Printing Tech & Graphic
- Communications Tech
- Performing Arts
- Journalism & Broadcasting
- Telecommunications

Career Clusters & Pathways

Engineering & Industrial Technology

- Architecture and Construction
- Manufacturing
- Transportation, Distribution and Logistics

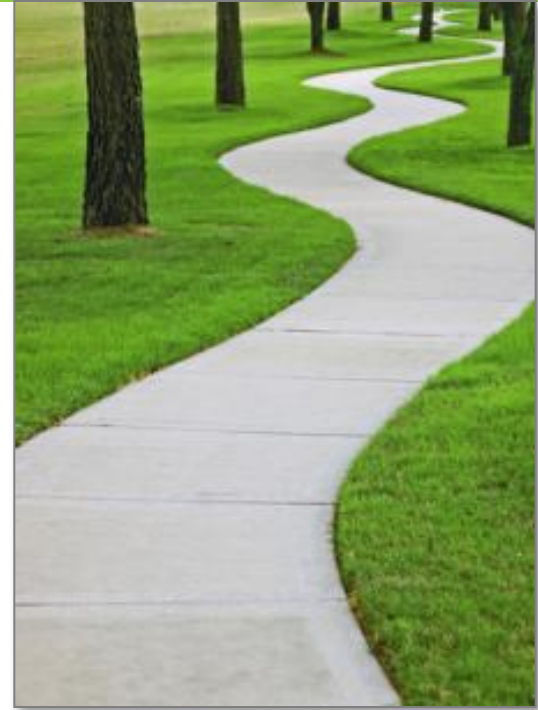
Business Finance & Information Technology

- Business Mgmt. & Administration
- Finance
- Information Technology
- Marketing

Health Sciences

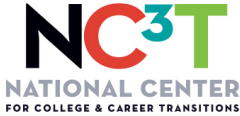
- Health & Biomedical Science
- Allied Health Professions

Part 3. A Systems Approach



Pathways Systems Framework

PATHWAYS SYSTEM FRAMEWORK™



Career & Life Readiness

The unifying goal of all partners is to develop individuals who are career and life ready. Partners develop and communicate a shared definition.



Career & Life Readiness

INTEGRATED DEFINITION



- applied knowledge
- relational skills and personal attributes
- executive and communications skills
- career navigation skills
- post-sec transition knowledge & skills
- financial literacy
- civic engagement

Cross-sector Partnerships

By forming a pathways partnership, multiple stakeholders provide strategic guidance, advocacy, and perspective for the pathways system.

**PATHWAYS
SYSTEM
FRAMEWORK™**

**CROSS
SECTOR
PARTNERSHIPS**



Career Development

Pathway partners implement career development (with postsecondary planning) across all all grade levels, with clear roles and responsibilities of stakeholders.

**PATHWAYS
SYSTEM
FRAMEWORK™**

CROSS
SECTOR
PARTNERSHIPS

Career
& Life
Readiness

CAREER
DEVELOPMENT



Pathways Programs

Pathway Programs (sequenced courses, themed-based, experiential learning, connected to postsecondary and credentials) address a variety of career opportunities in the region or state.

**PATHWAYS
SYSTEM
FRAMEWORK™**

CROSS
SECTOR
PARTNERSHIPS

Career
& Life
Readiness

CAREER
DEVELOPMENT

PATHWAY
PROGRAMS



Dynamic Teaching & Learning

Teachers and school leaders implement evidenced-based instructional practices to deeply engage students in learning and application.



Employer & Community Engagement

The Pathway Partners engage business and community members to connect with students and teachers in meaningful ways.



PATHWAYS SYSTEM FRAMEWORK™



Poll Question – Our Approach to Pathways

Q&A/Sharing

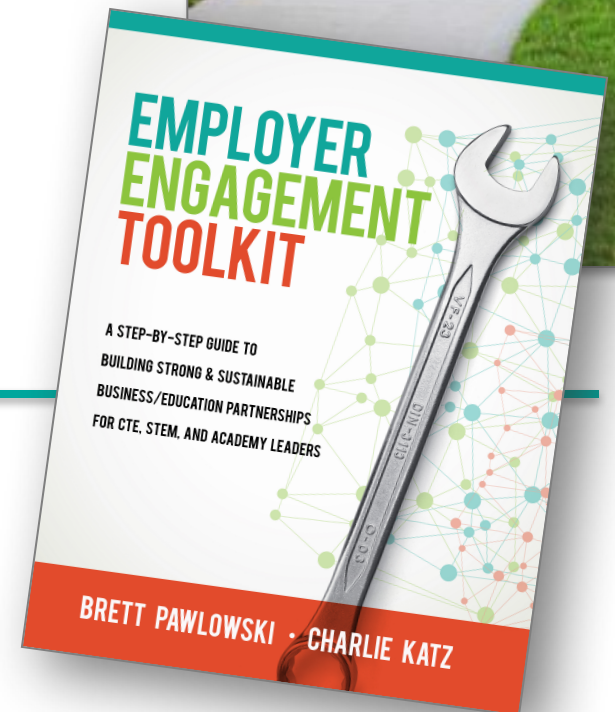
What do you want to know about pathways?

What are your biggest successes?

What are your challenges?



Part 4. Advisory Boards That Matter



Research Summary – Education and Employers

Education
AND
Employers
TASKFORCE

What is to be gained through partnership?
Exploring the value of education-employer relationships

Anthony Mann with Desiree Lopez and Julian Stanley

Second edition

October 2010

Supported by



Students Benefit from Employer Engagement

1. Making learning more enjoyable and interesting
2. Increasing motivation to do well at school
3. Doing better in exams
4. Going into better paying jobs
5. Becoming more employable, getting access to better opportunities
6. Making better career decisions
7. Increasing aspirations
8. Enhancing social mobility

Source: “What is to be gained through partnership? Exploring the value of education–employer relationships. Education and Employers Task Force, October 2010, EdComs

Thinking Return on Investment

ROI-360

Our philosophy is that – for all these stakeholders to get and stay engaged in improving education – there needs to be sense of ROI-360.

360 degrees of Return on Investment.

What is the benefit for each stakeholder?



What Do Stakeholders Need?

Students?

Parents?

Educators?

Employers?

Citizens and civic
organizations?



Why an Advisory Board?

Help you focus on the right outcomes

Bring training expertise to the table

Secure resources for your program

Provide students – and staff – with
new opportunities

Connect you with the larger
community

Advocacy



Poll Question

Building Your Board

What To Look For In a Member

Knowledge

Experience

Network

Resources

Interpersonal skills

Time

Passion

Responsibility

Fills one of three key roles;

Strategic thinker, Manager, Doer



How to Find Members

Use your existing connections

Follow up with past students

Identify established
professional networks

Build on your
program's
existing
relationships



Making “The Ask”

- Detail the value and importance of your work
- Written description of the board role
- Visit at their place of work
- Make the offer, specifying benefits and responsibilities
- Ideally, go with your board chair or other board leader



Managing a Productive Board

- Tie it back to the big picture
- Set clear expectations
- Build in lead time
- Establish standards
- Offer continuous education
- Be accountable
- Focus on ROI

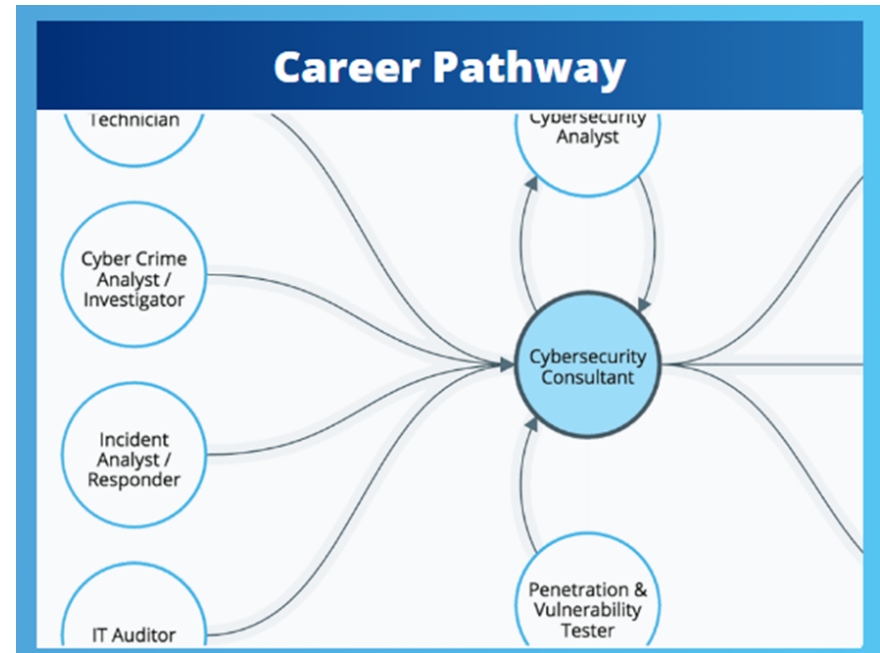
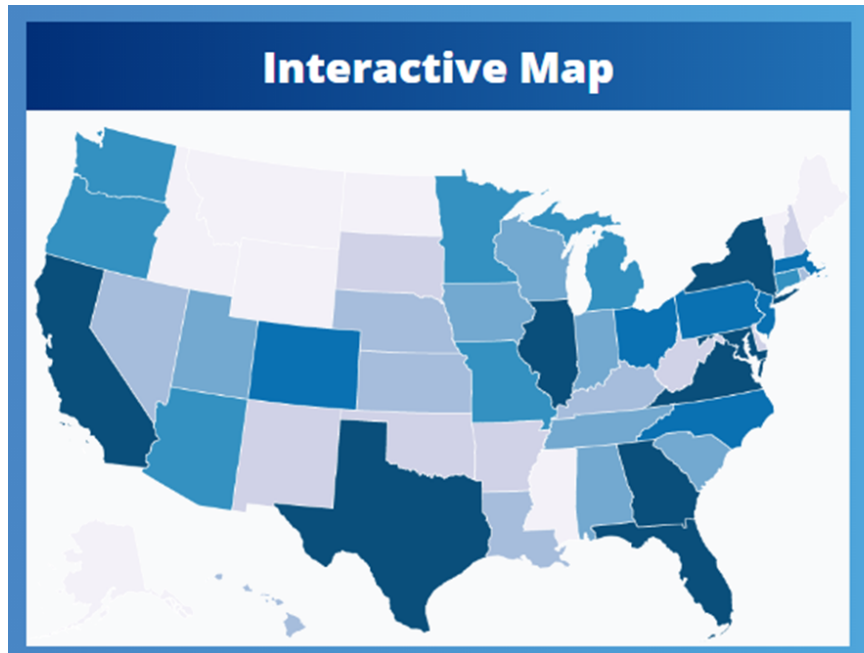


Questions about employer engagement?

Type questions directly into chat box.



Deciphering the Cybersecurity Job Market with CyberSeek.org



Cybersecurity Pathways Help to Solve Critical Workforce Challenges



Educators & Career Counselors



How can I prepare students for careers in cybersecurity?



Employers



How can I build the cybersecurity workforce I need?



Students



How can I prepare for a career in cybersecurity?



Job Seekers & Current Workers



How can I advance my career in cybersecurity?



Policy Makers



How can I help build the cybersecurity workforce in my community?

Mapping the Cybersecurity Career Pathway

The cybersecurity career pathway in CyberSeek was informed by three key sources:



Skill and credential requirements in job postings



Real-world transitions listed in resumes

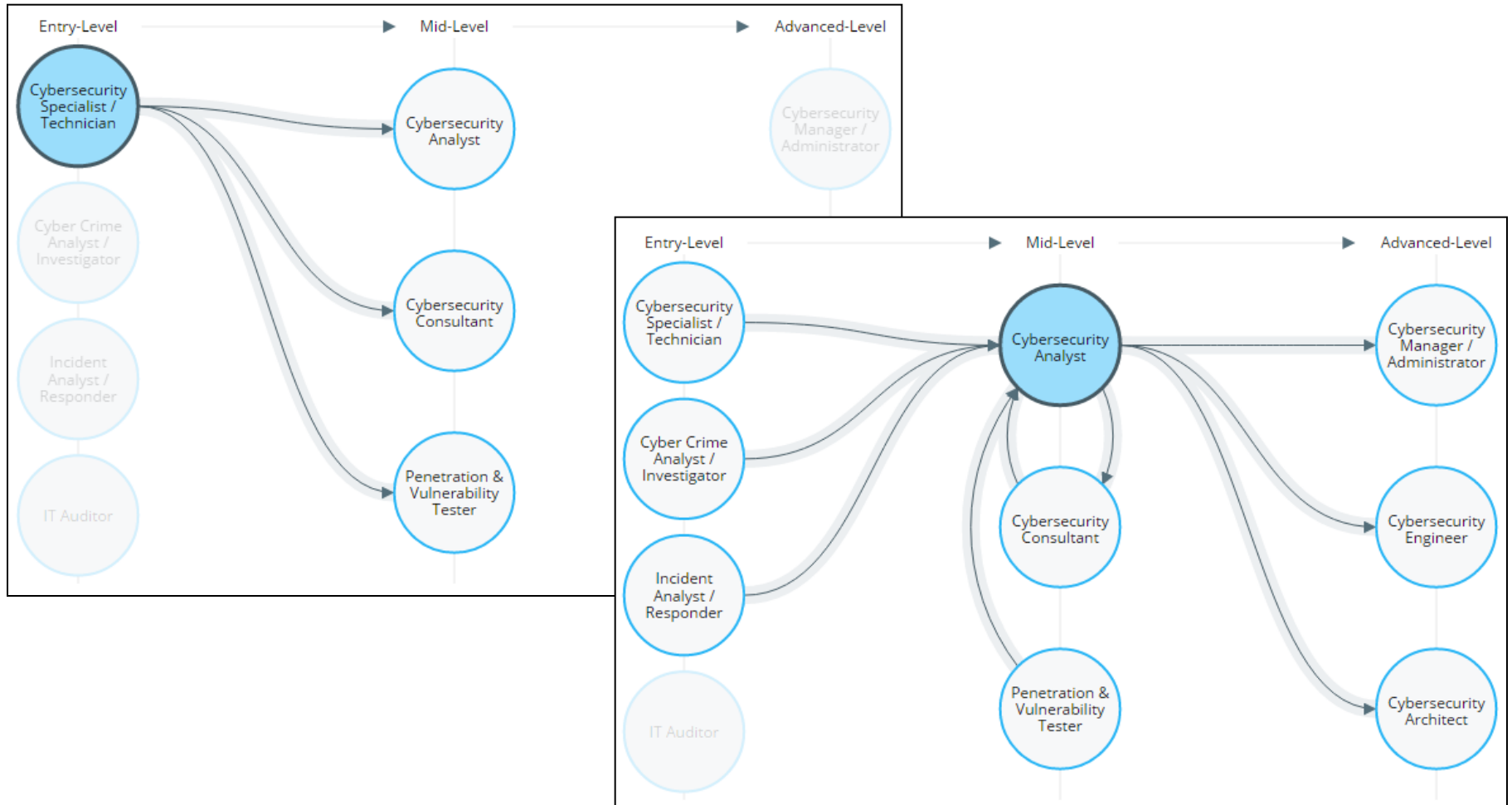


Expert validation

What Jobs Live in the Cybersecurity Ecosystem?



Cybersecurity Engineers Must Come from Somewhere

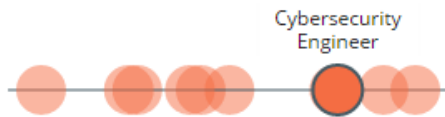


Workers Can't Prepare for a Job They Don't Know

Cybersecurity Engineer

AVERAGE SALARY ⓘ

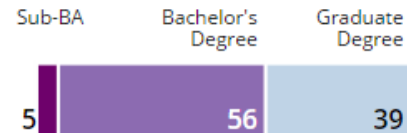
\$107,705



COMMON JOB TITLES ⓘ

- Security Engineer
- Network Security Engineer
- Information Security Engineer
- Senior Security Engineer
- Cyber Security Engineer

REQUESTED EDUCATION (%) ⓘ



TOP SKILLS REQUESTED ⓘ

- 1 Information Security
- 2 Network Security
- 3 LINUX
- 4 Information Systems
- 5 Cisco
- 6 Cryptography
- 7 UNIX
- 8 Project Management
- 9 Transmission Control Protocol / Internet Protocol (TCP / IP)

TOTAL JOB OPENINGS ⓘ

45,549



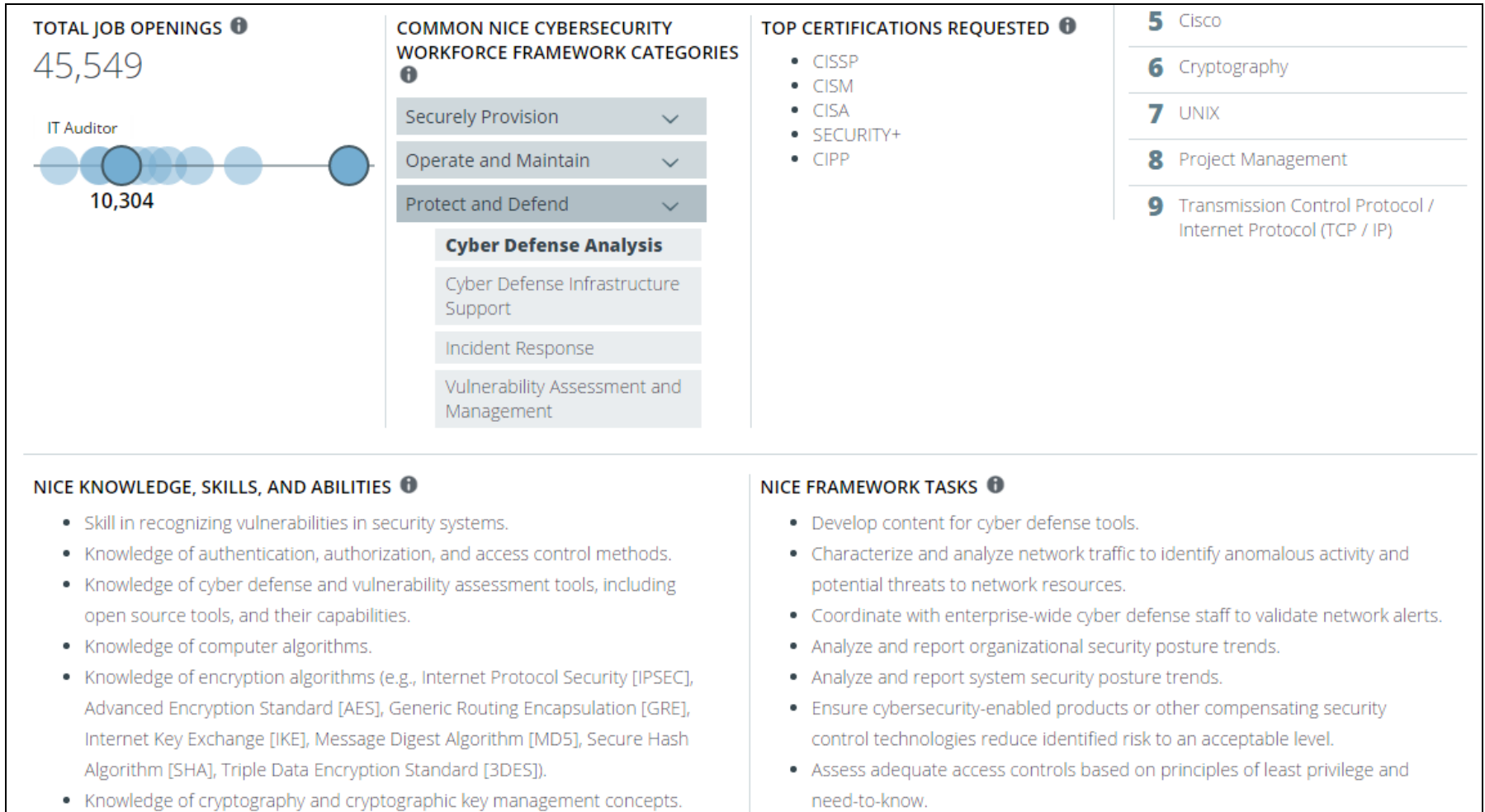
COMMON NICE CYBERSECURITY WORKFORCE FRAMEWORK CATEGORIES ⓘ

- Securely Provision
- Operate and Maintain
- Protect and Defend

TOP CERTIFICATIONS REQUESTED ⓘ

- CISSP
- CISM
- CISA
- SECURITY+
- CIPP

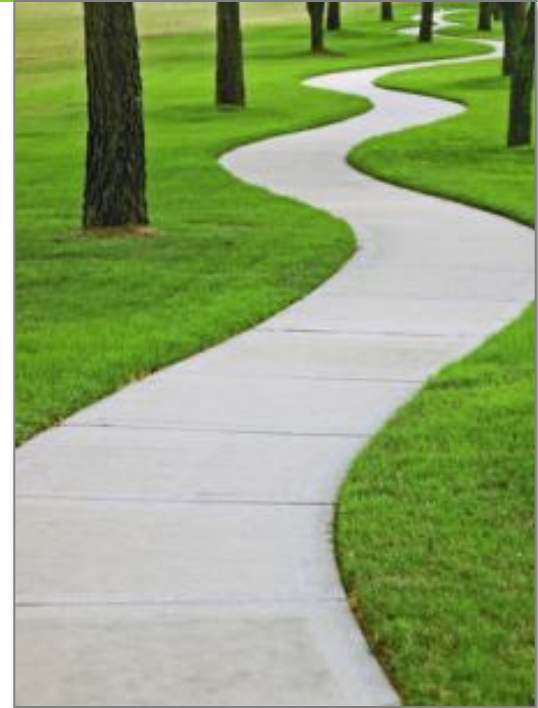
Workers Can't Prepare for a Job They Don't Know



Questions?



Re-Cap: Developing the pathways system



pathways system development cycle



getting started

- ✓ pathways system exploration group
- ✓ pathways system framework
- ✓ initial core message – elevator speech
- ✓ create “asset analysis”
- ✓ study best practices
- ✓ pathways partnership team



getting started

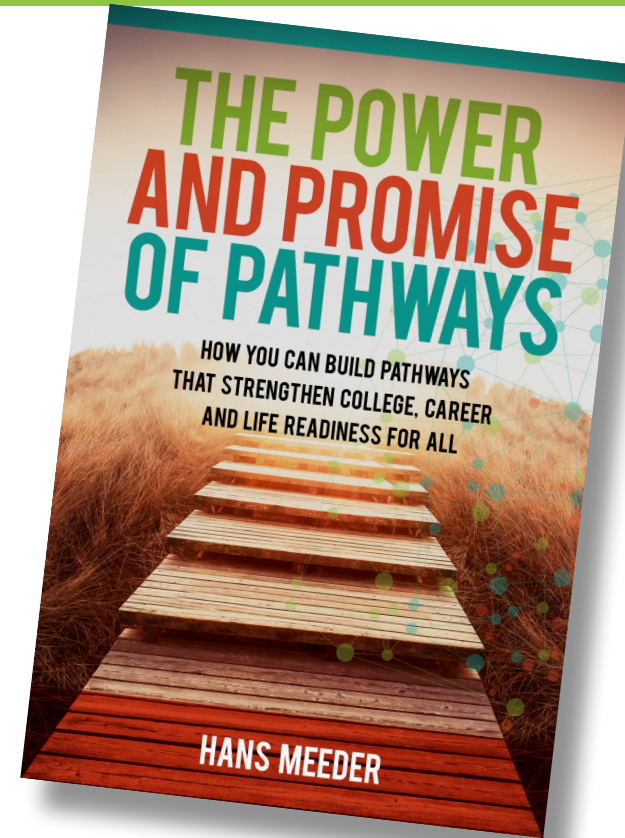
- ✓ immediate action and short-term “wins”!
- ✓ local pathways plans (5 year timeframe)
- ✓ Begin 5-7 year implementation
- ✓ Get technical assistance and to accelerate the work.



Thank You!

Hans Meeder

Hans@NC3T.com



www.powerandpromiseofpathways.com

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Thank You for Joining Us!

Upcoming Webinar: “Rethinking Credentials for Cybersecurity Careers”

When: Wednesday, April 19, 2017 at 2:00pm EST

Register: <https://nist-nice.adobeconnect.com/webinar-apr2017/event/registration.html>

nist.gov/nice/webinars