



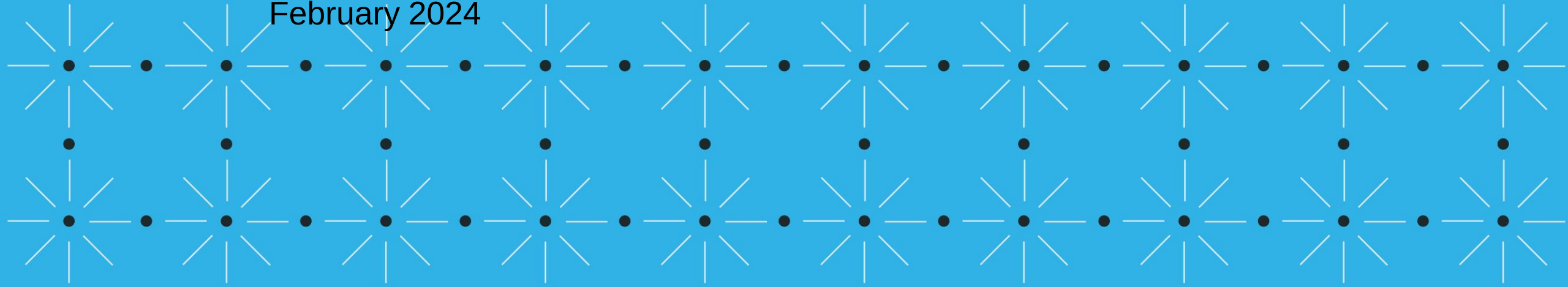
inhub

National Academies of Sciences, Engineering & Medicine

The Evolving State of K-12 STEM Education in the United States

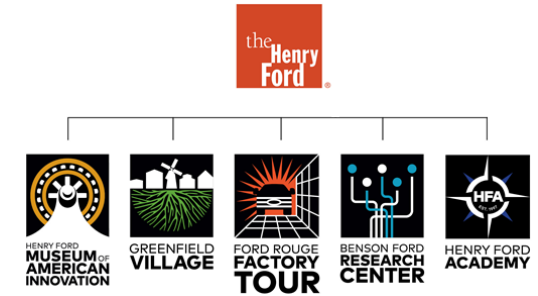
Lucie Howell, Chief Learning Officer, The Henry Ford

February 2024



Our Challenge and Opportunity

Innovation Opportunity Gap – The Henry Ford & Innovation Atlas



**250 acres of
innovation**

**300 years of
history**

**26 million
artifacts**

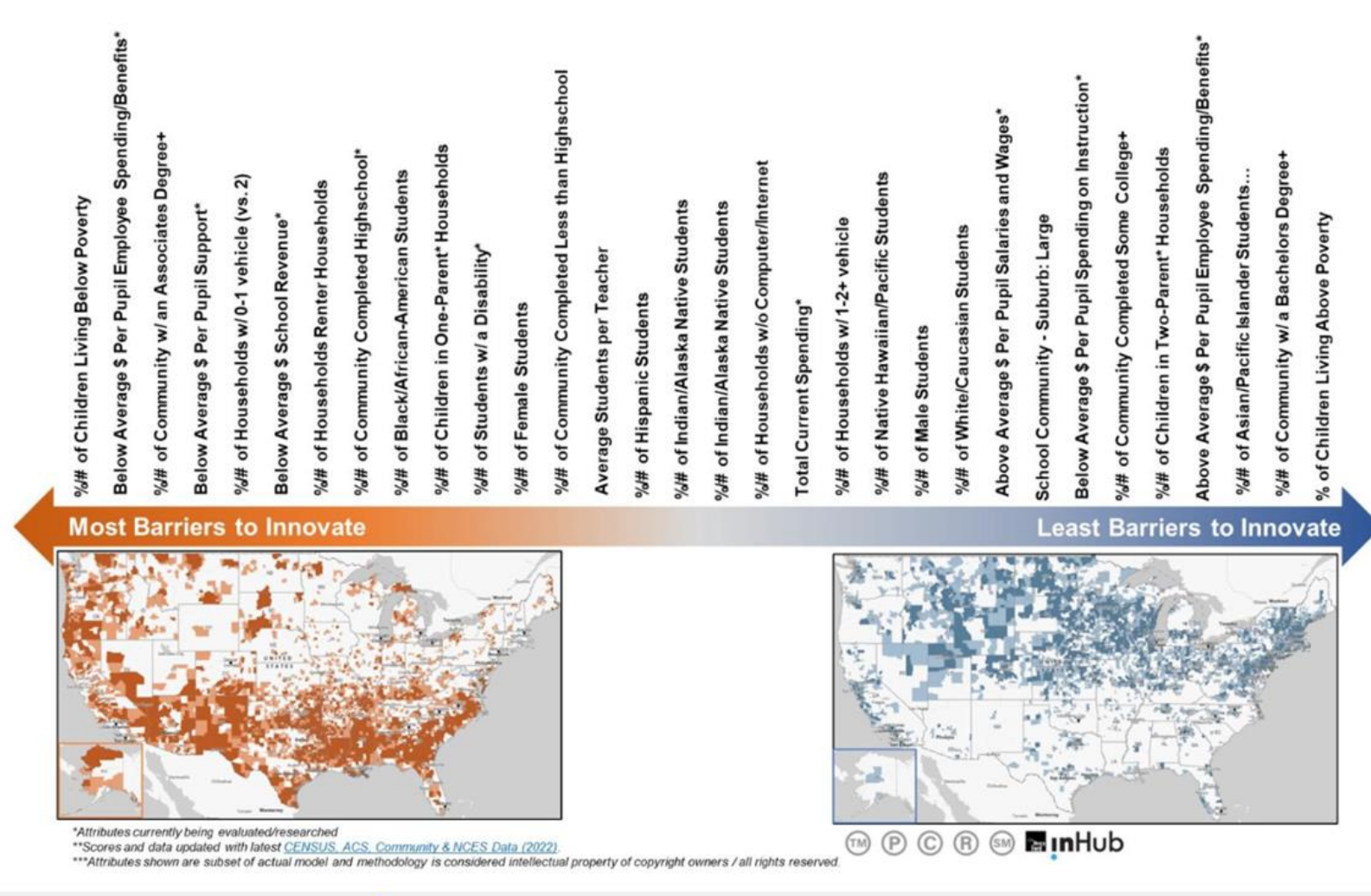
Lost Einsteins'

Opportunities Insights Research (2017)

**“Creativity is broadly distributed.
Opportunity is *not*.”**

Steve Case
Former CEO & Chairman, America On-line

Innovation Atlas



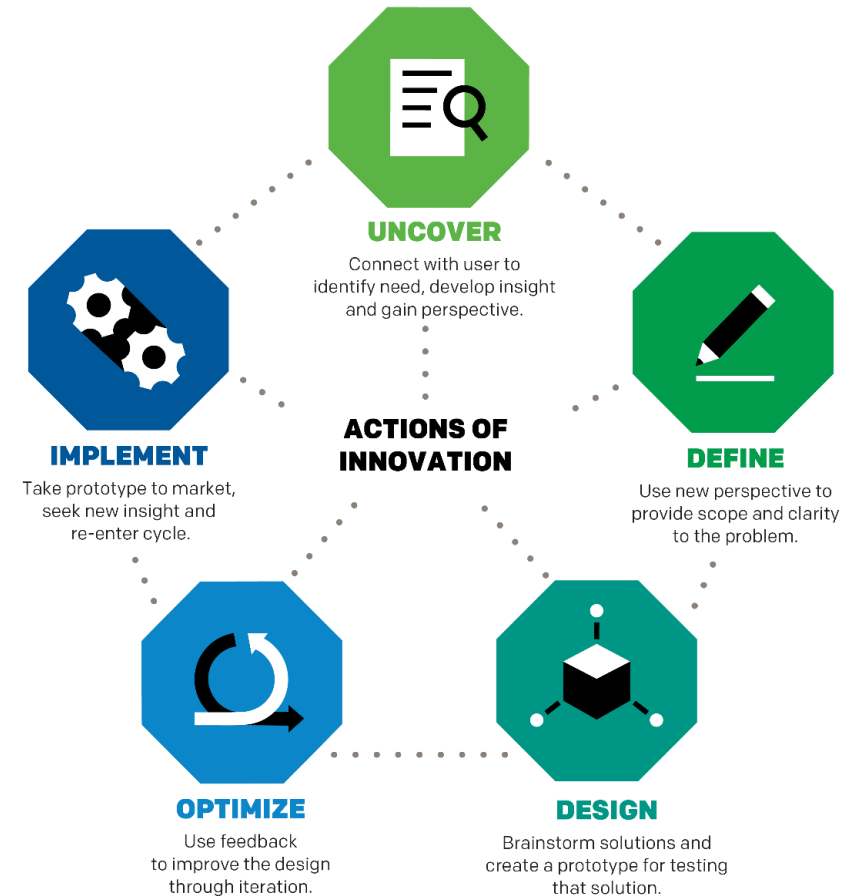
Transdisciplinary Learning

Convergence Education

Powered by Perspective

Model i Framework

A transdisciplinary, social-emotional learning framework that's designed to inspire students to unleash their innovative, creative, and inventive potential.





Innovation Journeys

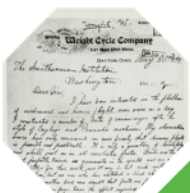
THE WRIGHT BROTHERS

COLLABORATE

Brothers Orville and Wilbur Wright were exceptionally close. They lived, played and worked together.

STAY CURIOUS

A rubber-band flying toy from their father stimulated their first interest in flying machines.



UNCOVER

The Wrights searched libraries for everything related to flight. They even wrote a letter to the Smithsonian Institution, requesting more information.

STAY CURIOUS

While observing birds, Wilbur had a breakthrough moment. He imagined a set of airplane wings being twisted in flight, just like a bird's wings.

TAKE RISKS

The brothers tested their gliders by riding on them themselves.

OPTIMIZE LEARN FROM FAILURE

In 1900, the Wright brothers tested a glider at Kitty Hawk, North Carolina, but the wings failed to produce enough lift. The brothers made changes and tried again, but the second glider performed even worse.

DESIGN

The Wrights constructed a wind tunnel and used it to collect their own data on wing shape and lift.

OPTIMIZE

Using the data they'd gathered, the Wrights built a new glider and returned to Kitty Hawk in 1902. This third glider performed brilliantly.

DESIGN

COLLABORATE

The Wrights worked with a mechanic to build a lightweight, four-cylinder gasoline engine to provide propulsion.

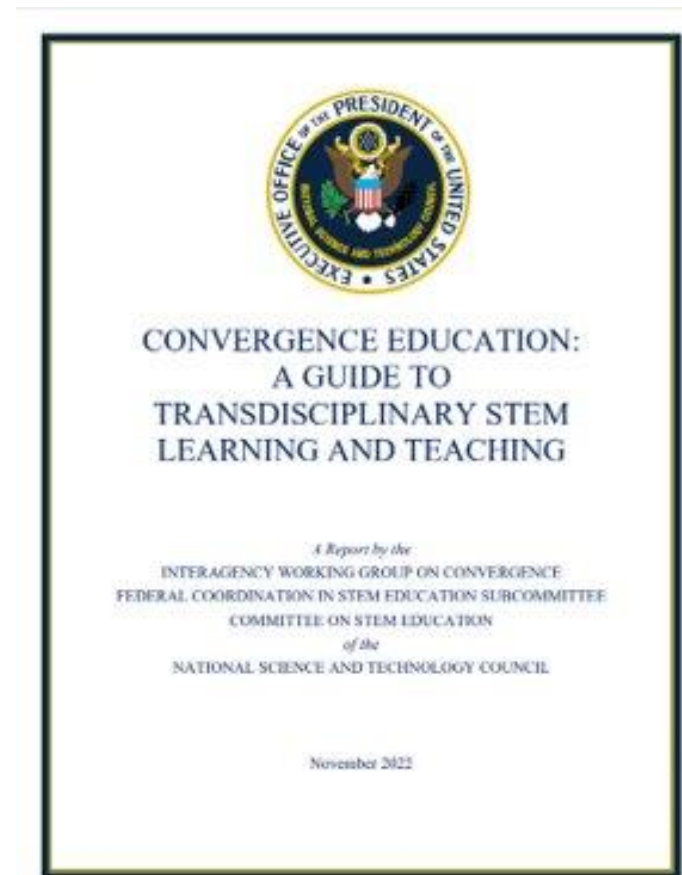
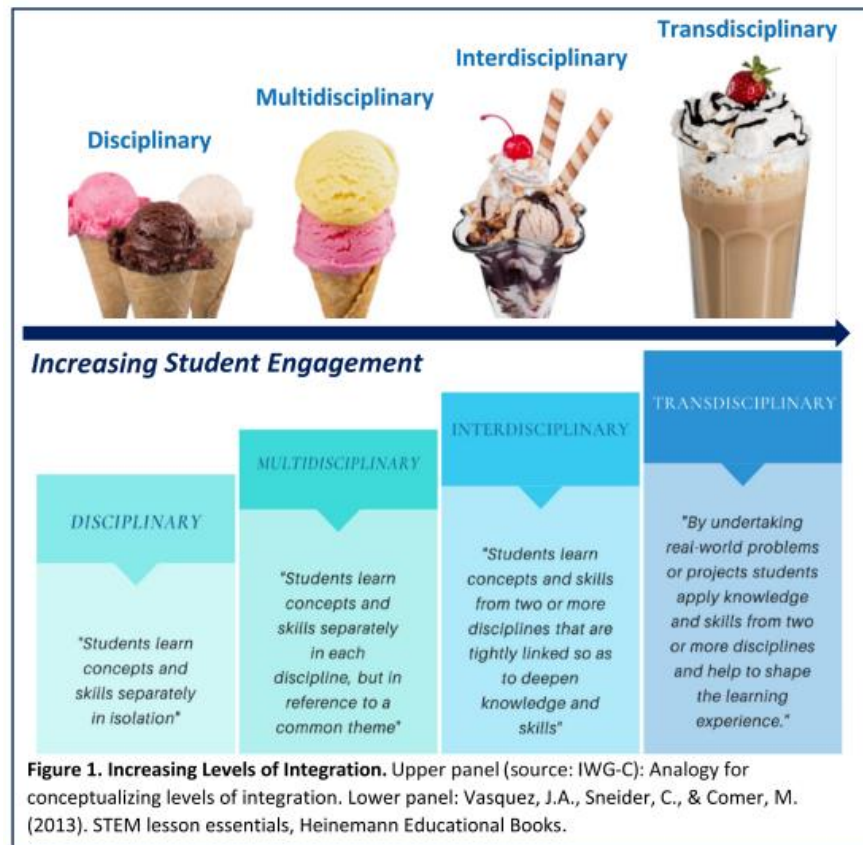
DEFINE TAKE RISKS

The Wrights recognized that a successful flight required three things: lift, propulsion and a system to control the aircraft.

IMPLEMENT

In 1903, Orville became the first person to fly a controlled, powered airplane. His first flight lasted just 12 seconds and covered 120 feet.

Innovation Learning & Convergence Education

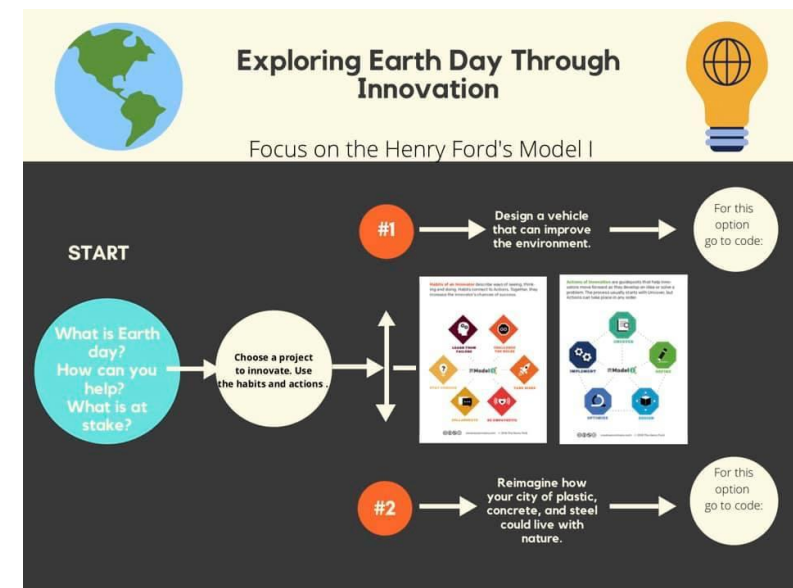


Rachel and Steven Lamb

Teacher Innovator Awardees



inhub.thehenryford.org/professional-development/teacher-innovator-awards



WE ARE TEACHERS

Ideas and inspiration for reaching the next generation.

Classroom Ideas

Life & Wellbeing

Free Printables

Giveaways

Get Our Newsletters!

Get 250+ Would You Rather Questions For Kids!

DOWNLOAD HERE →

EDUCATION NEWS & RESEARCH

EDUCATION RESOURCES

INSPIRATION

I Teach Innovation in the Elementary Classroom, and You Can Too!

"When one of my lessons is an epic failure, that's where true innovation comes from."



Talent Identification, Cultivation, Development & Recognition

Applied to the Real World

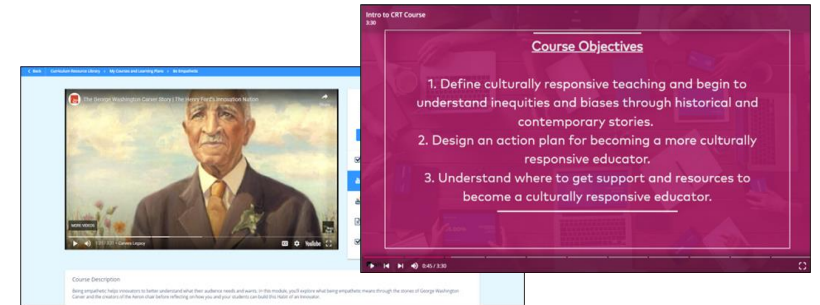
Educator Engagement & Professional Development

Inspiring Learning to unleash innovative potential

Educators-in-Residence



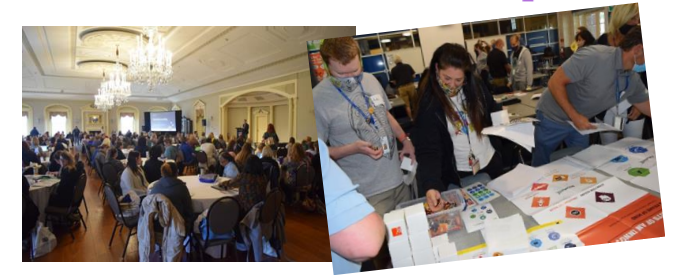
Online Courses



Teacher Innovator Awards



Custom Workshops



Invention Convention Worldwide

Shared Equitably by All

Invention Convention Worldwide Impact 2022-23 School Year



Learning applied
to the real world*

170,000

YOUNG INVENTORS

14,700

EDUCATORS

3
AFFILIATE &
EDUCATION PARTNERS



Powered by
perspective

185,314

TOTAL COMMUNITY
ENGAGEMENTS

Learning shared
equitably by all ^

57%
FEMALE
42%
1%
MALE
Z

44%
TITLE 1
SCHOOLS
33%
MOST BARRIERS
TO INNOVATE

24%
ASIAN
AMERICAN
49%
5%
AFRICAN
AMERICAN
5%
WHITE
2%
LATIN
DESCENT
7%
ARAB
AMERICAN
8%
MULTI
RACIAL
OTHER



* Reflects total worldwide participation in ICW programming

^ Reflects demographic participation at IC US Nationals competition

INVENTION CONVENTION WORLDWIDE

the Henry
Ford®



Build
problem-solving
skills



Create
your own
prototype



Take it
to market



inhub.thehenryford.org/icw/home



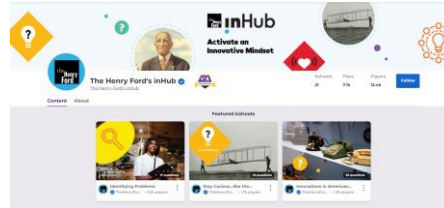
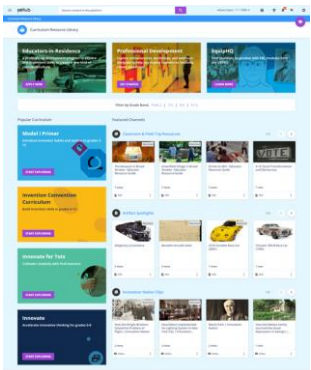
Questions?

Appendix

Inspiring Learning
We unleash our innovative potential



Learning Curriculum Resources



Youth & Family Engagement

Tinkering
for Tots



**Detroit Public Schools
Community District**
Cultural Passport Field Trips

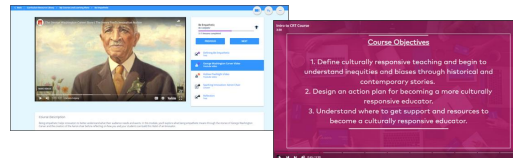
Educator Engagement & Professional Development

Educators-in-Residence



Development

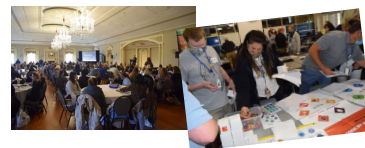
Online Courses



Teacher Innovator Awards
Powered by RTX



Custom Workshops



Invention Convention Educational Programming

**iNVENTION
CONVENTION
WORLDWIDE**

**Affiliate Educational
Programming**

**Event Assessment
- Judging**



**Independent Inventor Program
& Youth Inventor Connects**

Alumni Engagement Program

MICHIGAN
**iNVENTION
CONVENTION**
Presented by **DELTA DENTAL**