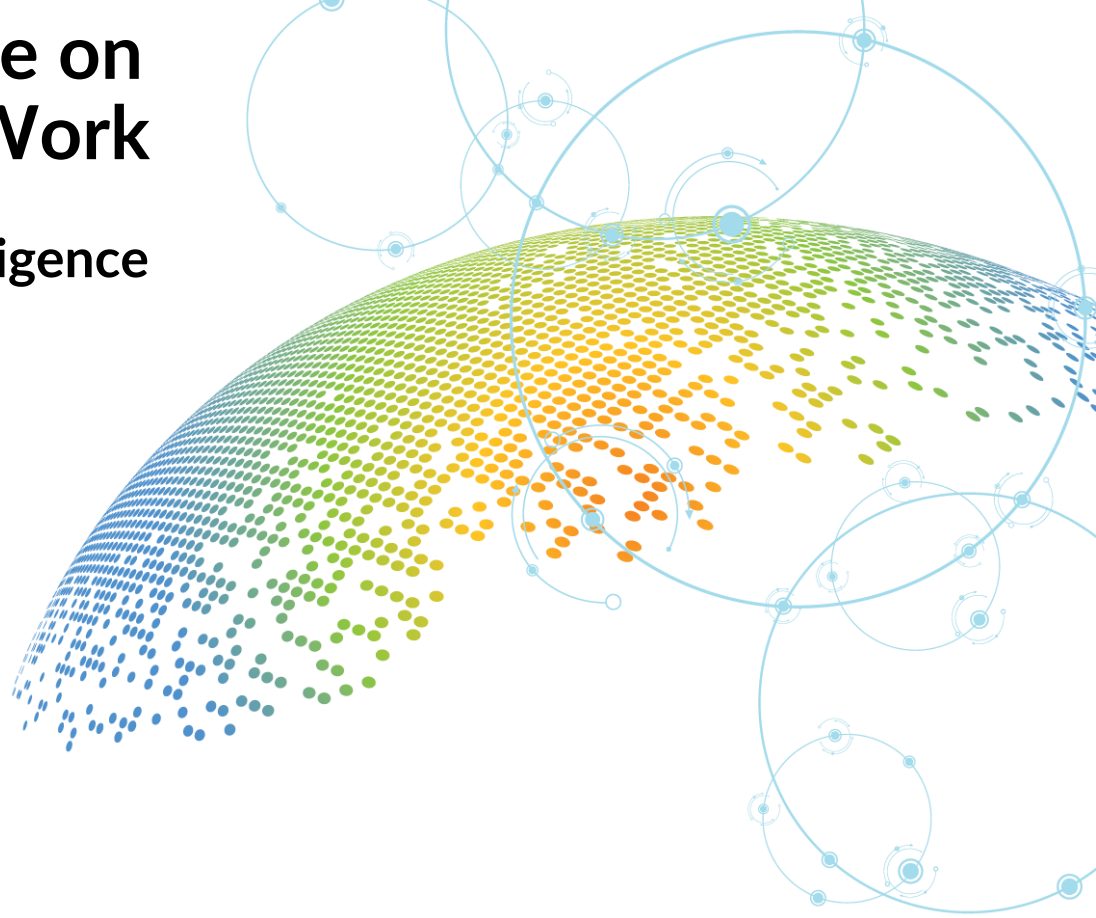


A Research Perspective on AI and The Future of Work

GUIRR Meeting: Artificial Intelligence at the Nexus of Collaboration, Competition, and Change

Edward Preble
Director, Data Science
RTI Center for Data Science and A.I.

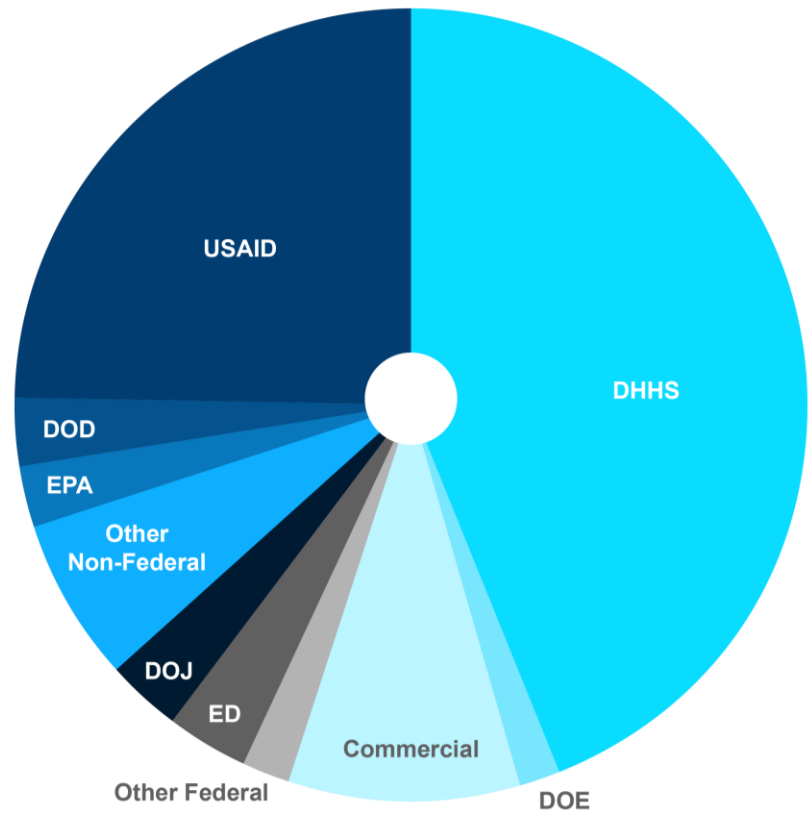


RTI International - Independent, nonprofit research institute

 **\$1.194B**
FY2022 Revenue

 **1,156**
FY2022 Clients

 **3,916**
FY2022 Projects

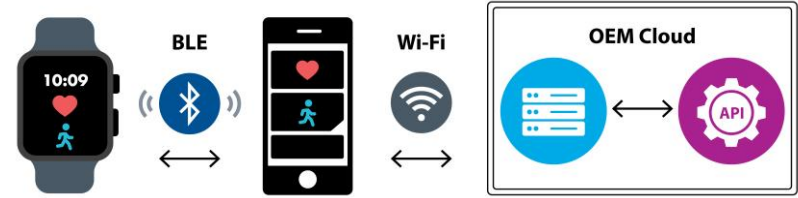


 **5,960**
Staff Worldwide

 **106**
Nationalities

 **80**
Languages

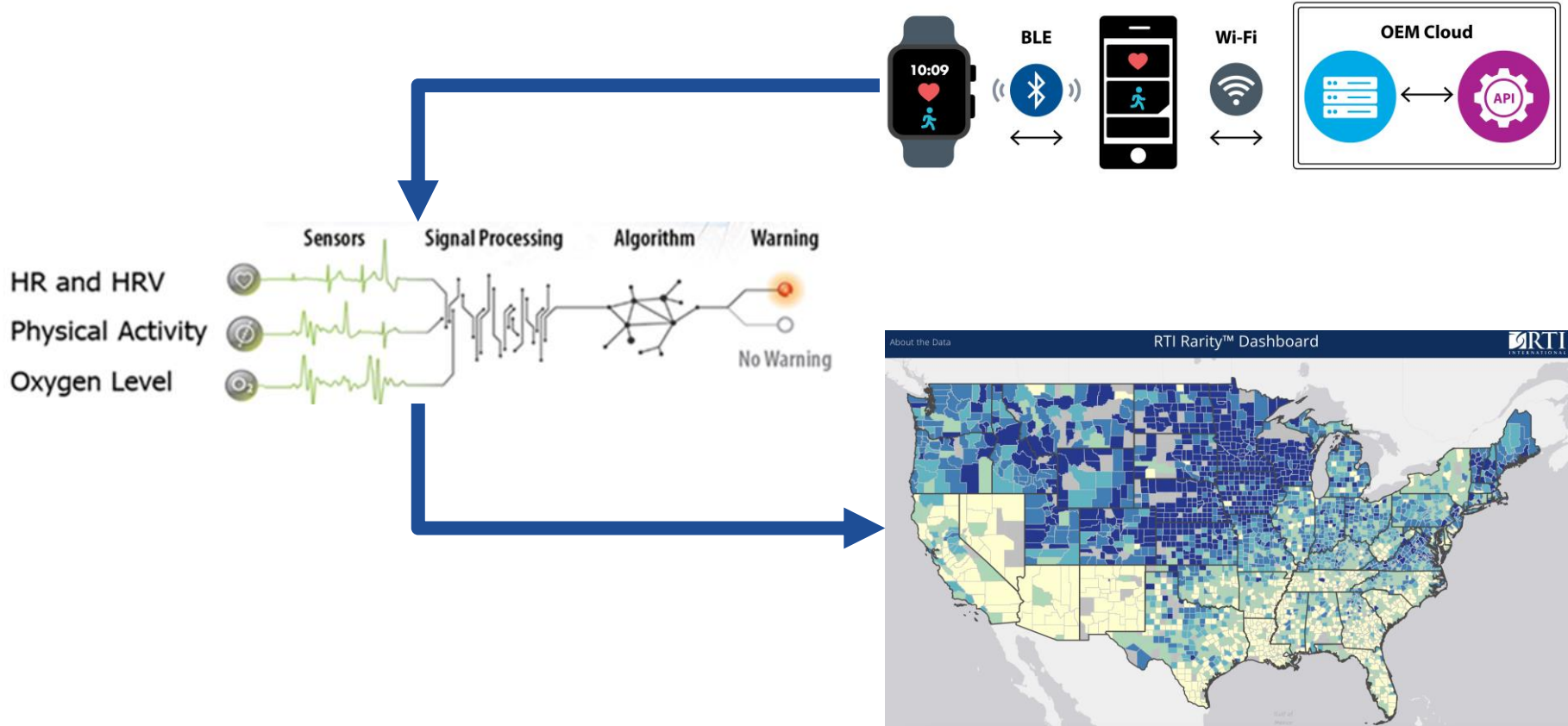
RTI International – Multi-Domain AI Perspective



RTI International – Multi-Domain AI Perspective



RTI International – Multi-Domain AI Perspective



RTI Workforce AI Skills

- RTI's research work requires
 - Diverse, well integrated teams
 - Subject matter experts with adjacent AI knowledge
 - AI experts with adjacent subject matter knowledge

RTI Workforce AI Skills

- RTI's research work requires
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 - AI experts with adjacent subject matter knowledge
- As an example, my background
 - Semiconductor industry experience
 - Client facing soft skills experience
 - Data science generalist degree

AI Perspective – there are very rapid changes right now

- 2012-2018: Image processing breakthroughs (CNNs, Inception v3 etc.)

Niche

- 2018-2020: Text processing breakthroughs (Transformers, BERT etc.)

Niche

- 2022-2023: Large Language Models (Generative AI, ChatGPT etc.)

Broad

Niche vs. Broad models

- Niche models – narrow scope
 - One model trained for translation
 - One model trained for auto-complete
 - One model trained for spam detection

Niche vs. Broad models

- Niche models – narrow scope
 - One model trained for translation
 - One model trained for auto-complete
 - One model trained for grammar correction
- More general models – more scope, more flexibility
 - ChatGPT (as-is) used for translation, auto-completion, and grammar
 - ChatGPT (as-is) used for chatbots
 - ChatGPT (as-is) used to generate synthetic data
 - ChatGPT (as-is) used to summarize documents

The Importance of AI has Changed

- It's not possible to compete with broad scope AI using manual labor or dozens of niche models
- Using these tools will be critical



Generative AI Impacts

- Threats

- Data provenance issues
 - Internet sourced – What generated that content?
 - Sub-contractors – What does your contract allow/disallow?
 - Interviewee work product source – self-generated?

Generative AI Impacts

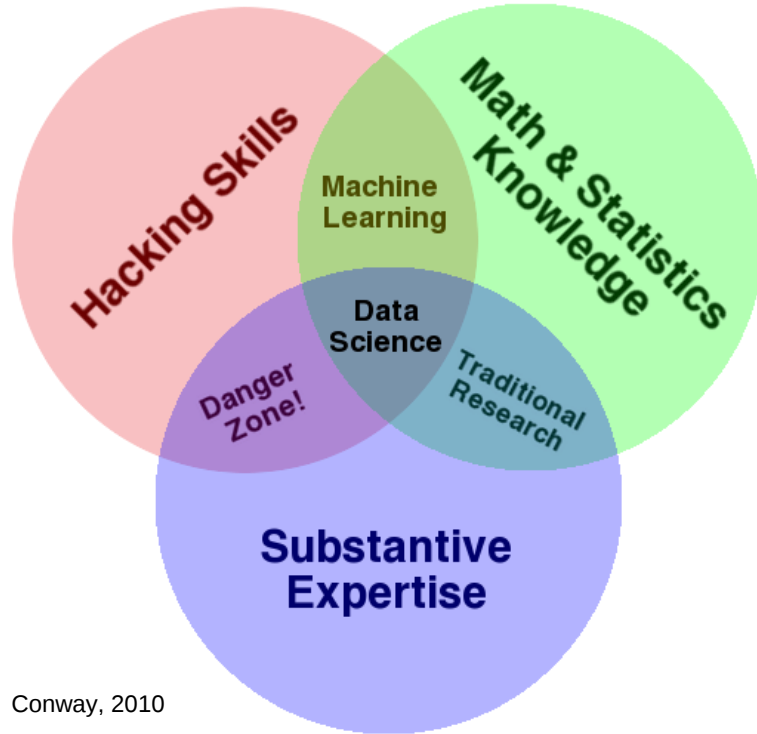
○ Threats

- Data provenance issues
 - Internet sourced – What generated that content?
 - Sub-contractors – What does your contract allow/disallow?
 - Interviewee work product source – self-generated?

○ Opportunities

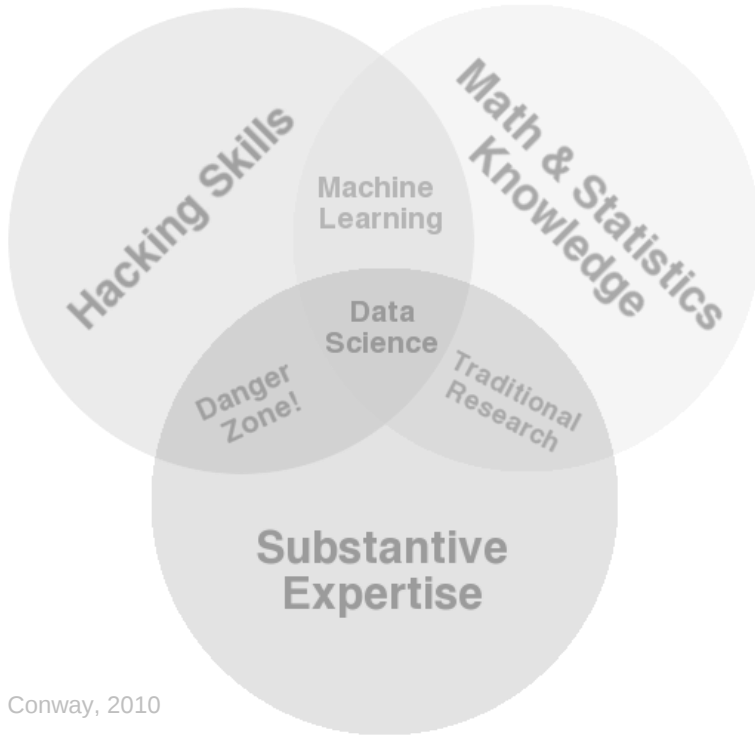
- Complex code development acceleration
- Long form language tasks
- Improved image generation (Dall-E 3)

Data Science (and AI) Skills Shift

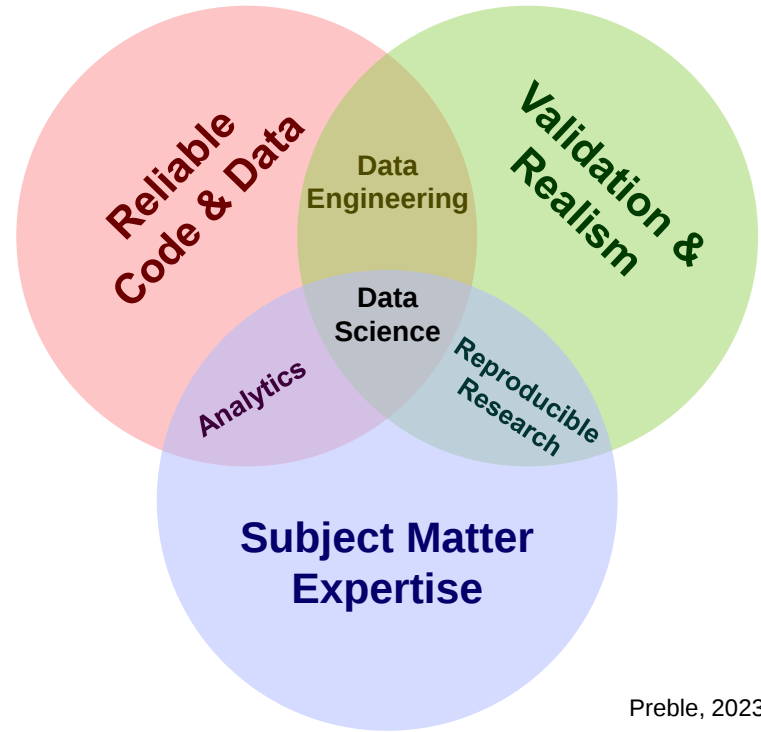


Conway, 2010

Data Science (and AI) Skills Shift



Conway, 2010



Preble, 2023

Few individuals have all these skills, but your team must!



Thank you

Contact: Edward Preble | email: epreble@rti.org