Secrets of Highly Productive Data Science Teams

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North Carolina State University

PhUSE US2018: The Clinical Data Science Conference
Raleigh, North Carolina
June 5, 2017

Feeling ill, a person walks into a health clinic.

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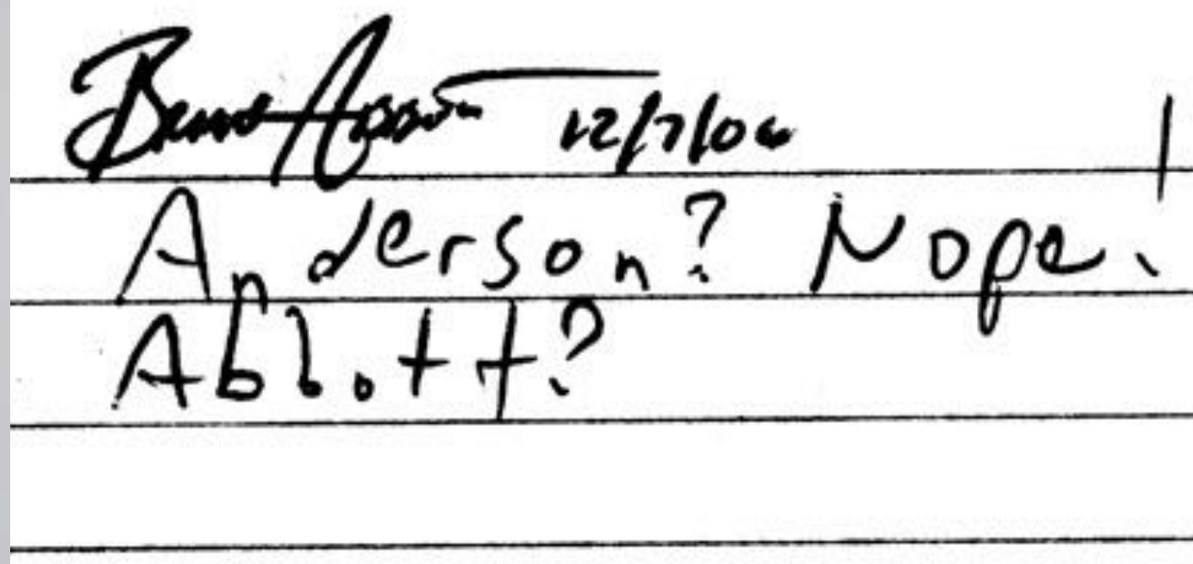

Person of Interest

MARRIAGE LICENSE
APPLICATION
Personal Information

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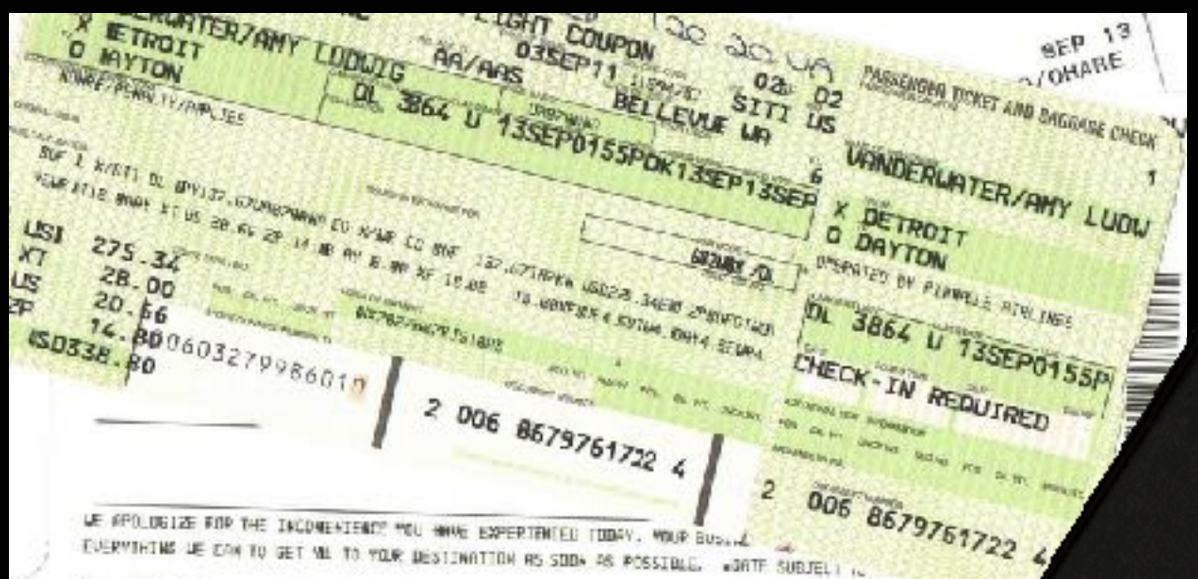
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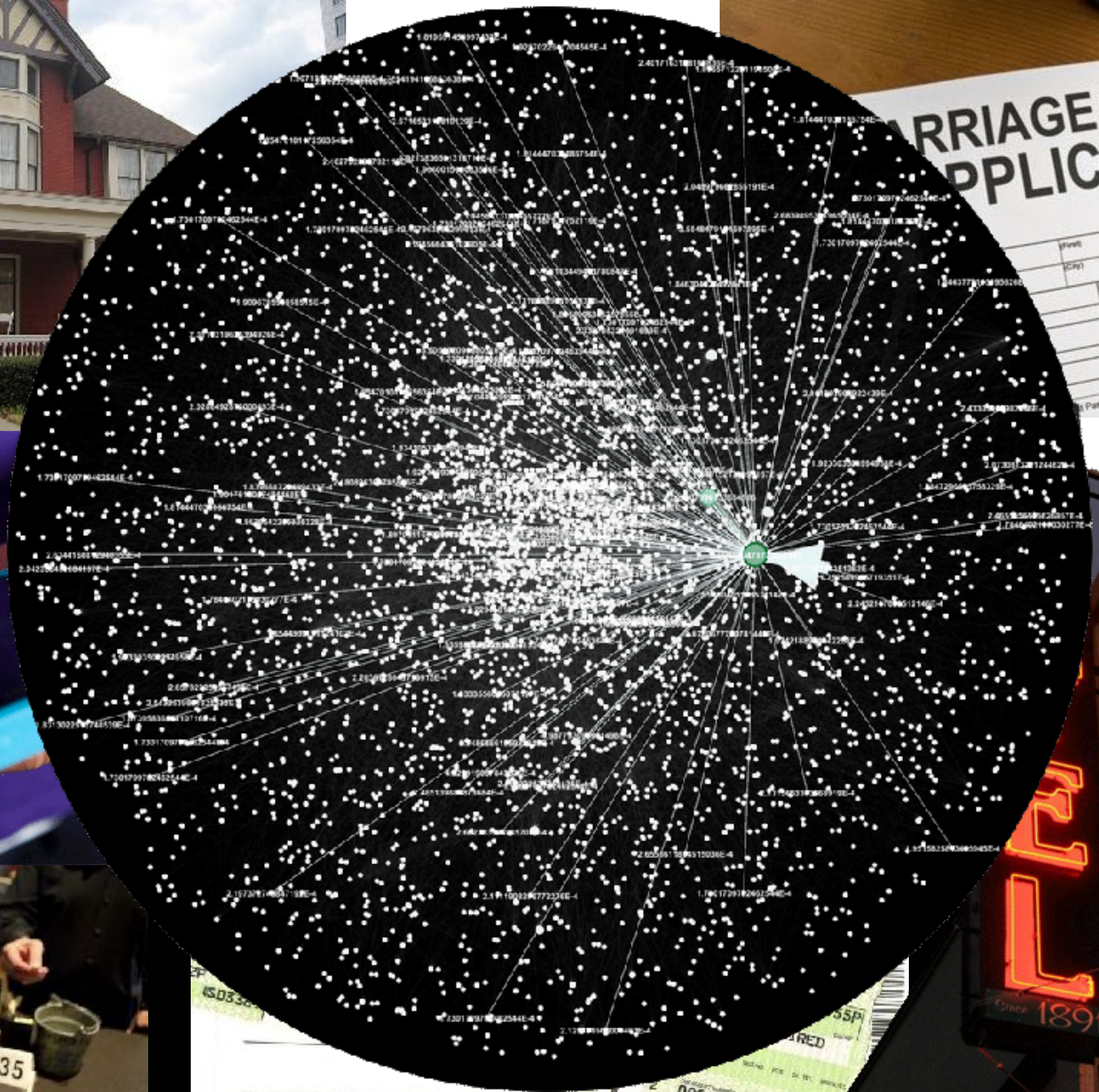
GRAND CANYON
HOTEL
Since 1891
VACANCY

RRIAGE LICENSE
PPLICATION



1891
VACANCY

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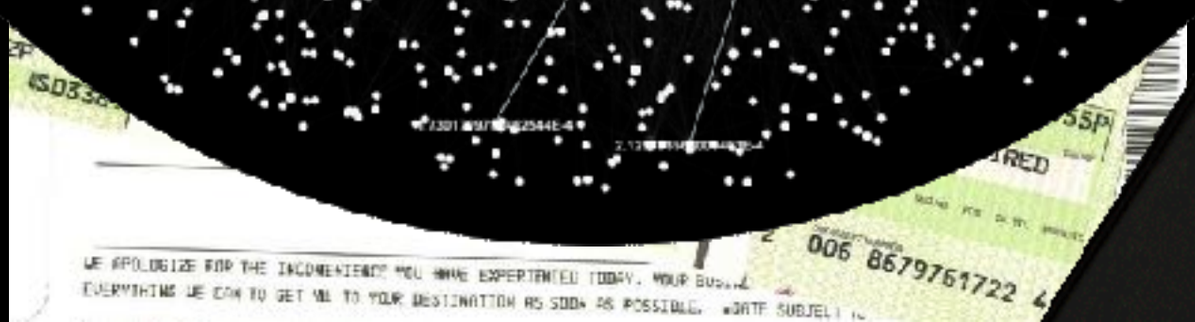
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IDENTITY DISCOVERY CHALLENGE

Special Cyber Operations Research and Engineering (SCORE) Interagency Working Group

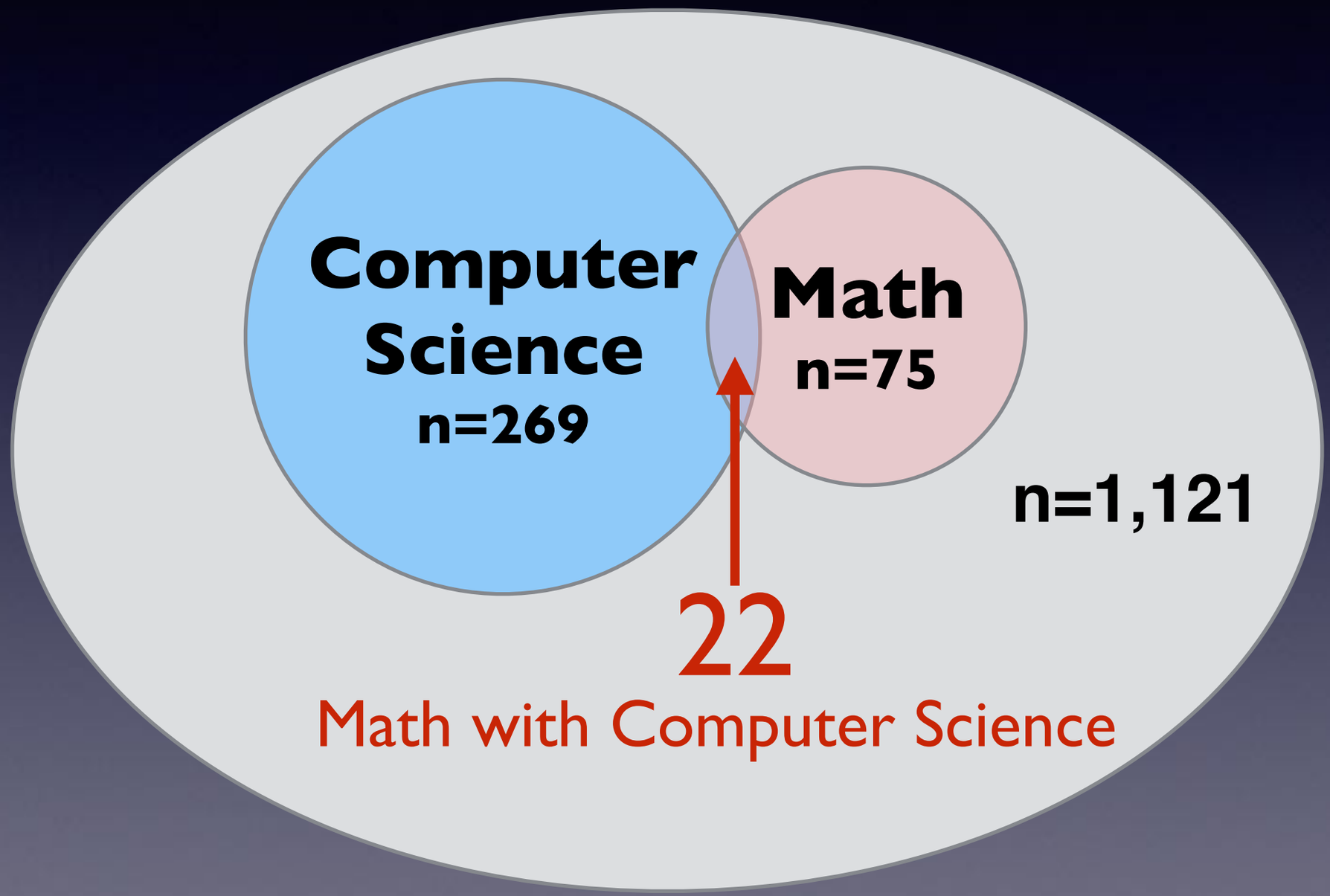
DATA SCIENCE

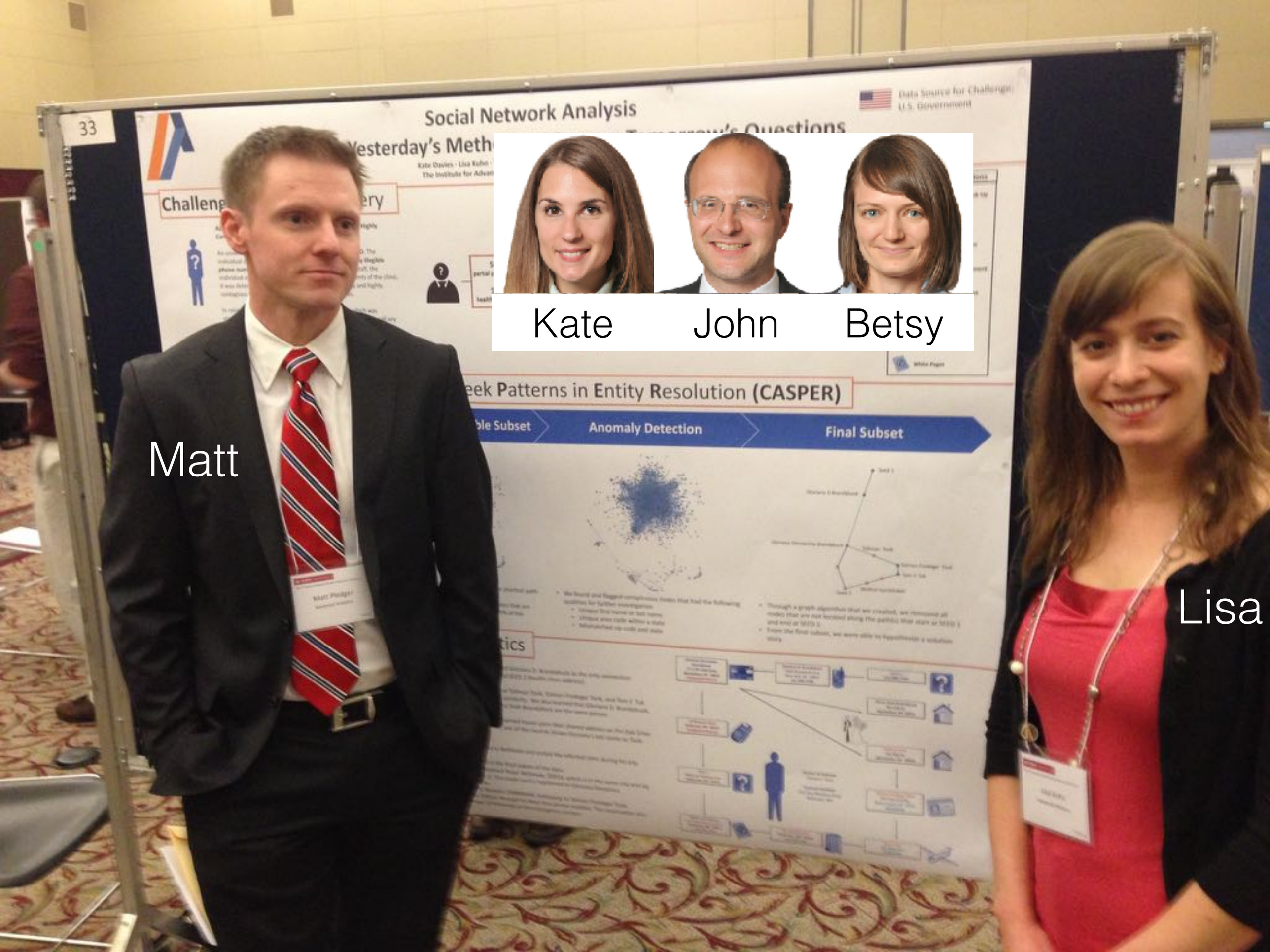
1. Messy data
2. Disparate sources / formats
3. Large volume
4. Velocity
5. Novelty

Require diverse skills
and knowledge domains

MCMXVI
MASSACHVSETTS INSTITVTE OF TECHNOLOGY

M.I.T BACHELOR DEGREES AWARDED
2016-2017

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Social Network Analysis
Data Source for Challenge: U.S. Government
Anomaly Detection
Final Subset
Kate
John
Betsy
Matt
Lisa

CHARACTERISTICS OF HIGHLY PRODUCTIVE TEAMS

HIGHLY PRODUCTIVE TEAMS

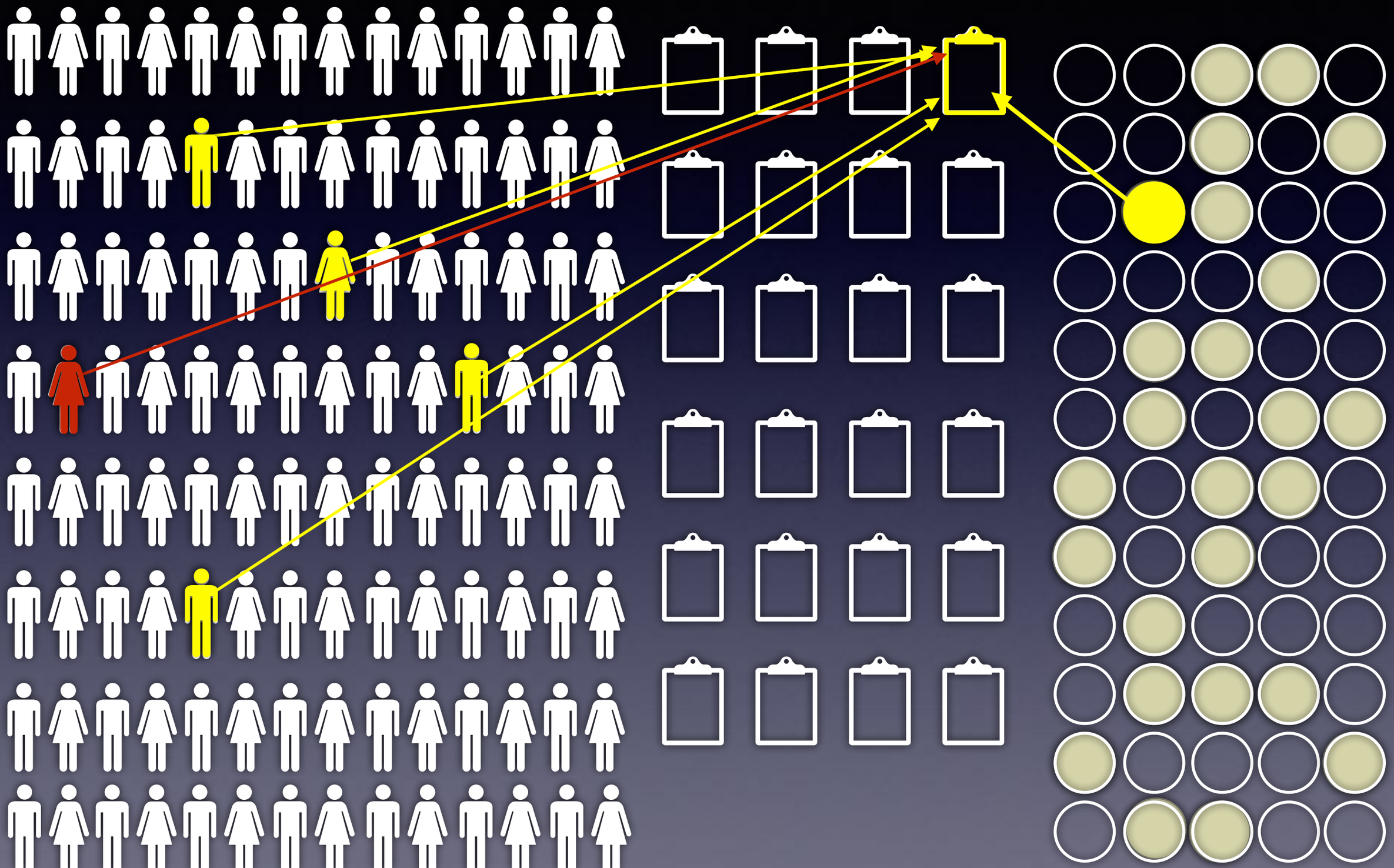
ARE ARTFULLY CRAFTED

Elevate
Elevate
Elevate
Elevate
Elevate
Elevate

120 students

24 teams

60 proposals



HIGHLY PRODUCTIVE TEAMS

ARE PROCESS DRIVEN

TRUTH IN NUMBERS
RMS
TRUST IN PEOPLE
TAMPA
PARIS
SINGAPORE
TOKYO

THE PROCESS

1. Understand the problem
2. Build analytical framework
3. Wrangle data
4. Modeling
5. Draw insights
6. Communicate results

Adherence $\Longrightarrow$ confidence

HIGHLY PRODUCTIVE TEAMS

ARE RESOURCEFUL

RESOURCEFULNESS MEANS…

1. Being proactive learners
2. Knowing how to engage experts
3. Being persistent

HIGHLY PRODUCTIVE TEAMS

WORK AS A TEAM

Nashville
MUSIC CITY
WELCOME
VISITOR
INFO

TEAMWORK MEANS…

1. Understanding your role
2. Playing to your strengths
3. Learning from each other
4. Following direction
5. Doing the hard work
6. Being professional

KYLE
CHARLIE
WADE
LAURIE
ALICIA
TARA
SHANNON
CLYDE
EDDIE
CHARLOTTE
WARREN
PATRICK
FRANCISCA
BETTY
CATHERINE
RENEE
SUSAN

HIGHLY PRODUCTIVE TEAMS

HAVE CAPABLE LEADERS

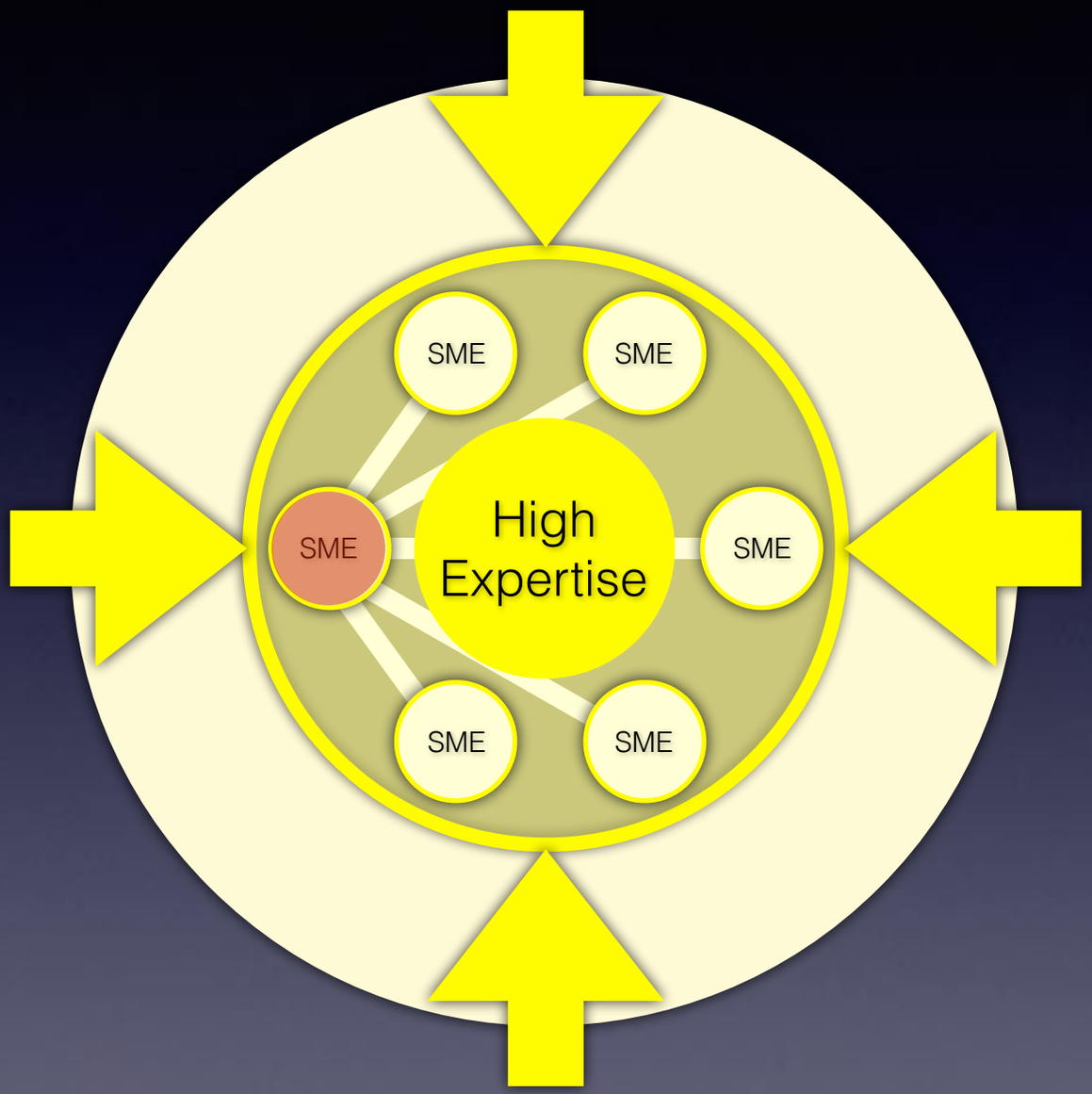
CAPABLE LEADERS…

1. Highly organized
2. Clear communicators
3. Understand personalities
4. Keep the focus on goals
5. Reinforce professionalism
6. Are themselves (authentic)

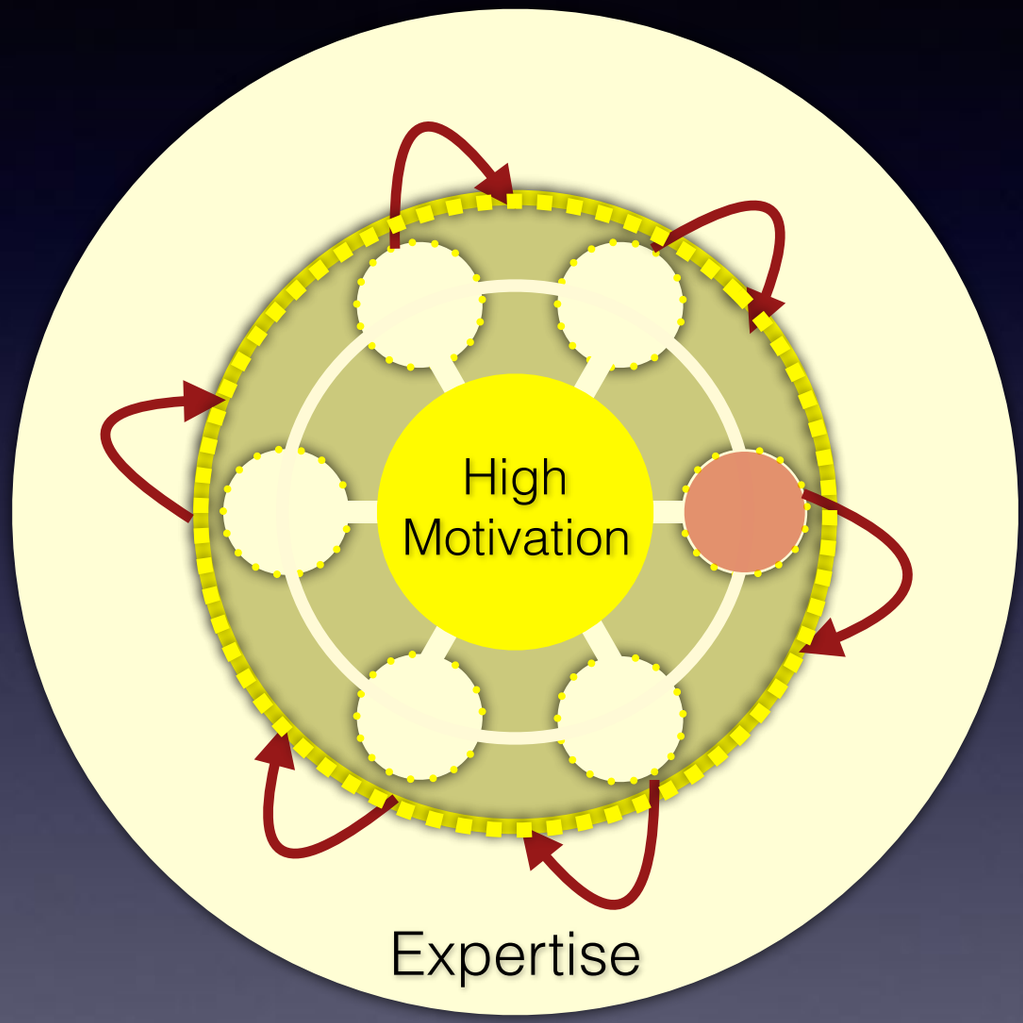
HIGHLY PRODUCTIVE TEAMS

1. Follow the process
2. Are resourceful
3. Work well as a team
4. Prioritize leadership skill and motivation over expertise

HIGHLY PRODUCTIVE TEAMS



Conventional



Unconventional

Institute for Advanced Analytics

MASTER OF SCIENCE IN ANALYTICS

- **Intensive** – accelerating the learning curve through the intensity;
- **Interactive** – leveraging peer-to-peer learning through teamwork;
- **Immersive** – learning by doing, by engaging in practical problems, and being totally immersed in the subject.

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