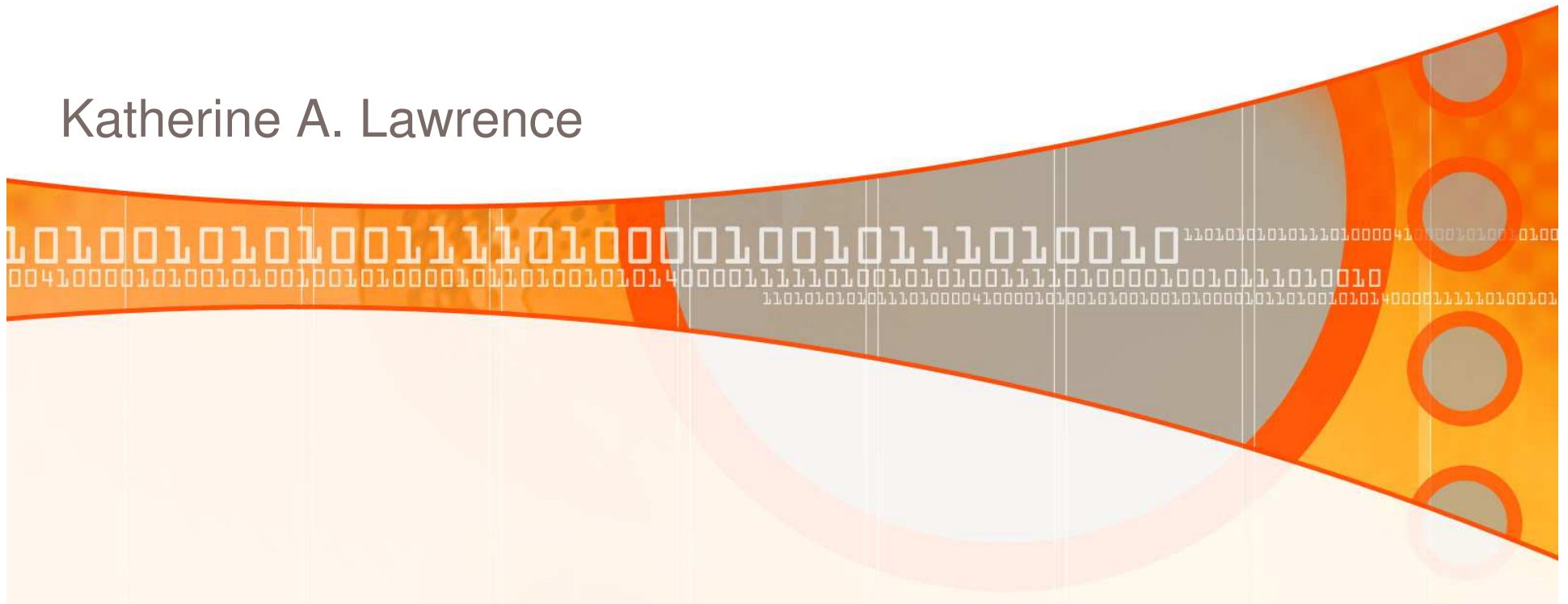# Putting It Together...Bit by Bit:

Interpersonal Collaboration in

Software Development

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Outline of Presentation

- Background
- Collaboration in pairing
  - Likes and dislikes
  - Best practices
  - Pitfalls
- How we learn to collaborate
  - One-on-one
  - Organizational culture
- Lessons learned

Research Question

How do collaborators encourage each other to contribute to their joint work?

Background

- Building theory from real-world evidence
- Research methods
  - Qualitative data collection
  - 11 months of observation and interviews
  - Documents and publications
  - Attending MXPE meetings
- Iterative analysis process
  - Data coding
  - Thematic analysis

Pairing: Likes & Dislikes

- Different experience from solo programming
- Liked
  - Better use of time—focused and productive
  - Not stuck for as long
  - Extra pair of eyes (code review)
  - Cross-training and communication
- Disliked
  - Intense and exhausting
  - Status differences
  - No time to explore on own
  - Difficult partners

Best Practices: The Big Picture

- Supplying

- Gathering

- Complying

- Optimizing

- Equalizing

- Refraining

Pitfalls: When Moves Don't Work

- Being insulted
- Feeling uncomfortable
- Working counterproductively
  - Ineffective use of time
  - Creating practical problems
  - Feeling personally constrained

Encouraging Moves

- **Supplying**
  - "Thinking out loud"
  - Offering opinions or ideas
  - Providing knowledge

- **Gathering**
  - Asking questions
  - Accepting suggestions

- **Complying**
  - Honoring agreed practices
  - Considering future issues

- **Optimizing**
  - Keeping focused and on task
  - Paying attention to pace and timing
  - Maintaining light, positive atmosphere

- **Equalizing**
  - Sharing the keyboard
  - Welcoming debate

- **Refraining**
  - Knowing not to distract
  - Giving the benefit of the doubt

Why Are Moves So Inconsistent?

- Different interpretations of the meaning
- Interpretation affects success
- We use bits and pieces of understanding about our work relationships to provide a context for our experience
  - Two sources:
    - Attentiveness ➔ Pair's qualities
    - Socialization ➔ Organizational culture

The Pair's Qualities

- Attentiveness to preferences, habits, aptitudes, and experience, in terms of…
  - Similarities
  - Differences
  - Vibes

- For example...
  - Task objectives and approach
  - Definitions of success
  - Thoughts about standard practices
  - Disputes
  - Dispositions and moods

Organizational Culture

- Make your partner look good
- Eliminate "towers of knowledge" through "social engineering"
- Make mistakes faster
- Overall effectiveness over individual efficiency
- Communication is a continuous rather than a scheduled event

Lessons Learned: Why Moves Work

- **Caring**

  = a feeling of authentic interest in, regard for, or liking of a person or thing

  - Positive ➔ expanding resources

- **Linking**

  = interdependence and connectedness inherent in a pair's work process

  - Connections ➔ creativity and well-being

Practical Implications

- Important to hire and cultivate people with these skills
- Consider other aspects of being a "professional"
- Offers diagnostics for collaboration success and failure
- Recognize the pitfalls of collaborative work

- Any others?