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# **Standards Education At Pitt**

**Michael B. Spring  
Information Science and Technology  
School of Information Sciences  
University of Pittsburgh  
spring@pitt.edu**

# What we did

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- **Twenty years at Pitt**
  - **Twelve Offerings**
  - **250 Masters and Phd Students**
- **Three different approaches**
  - **1989-1990: Coming to grips**
  - **1990-1999: Intensely focused on standardization with active research**
  - **2006-2009: Intensely focused on the Web**
- **Successful as measured by:**
  - **Student satisfaction and self-report learning: positive**
  - **Alumni feedback: positive**
  - **Articles published: 15 articles 6 book chapters**
  - **Public Service: OTA Boards, X3SPC, NRC Overview ITL**
  - **Research conducted: about \$700,000**

# Pedagogical

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- **A pure standards course is great (especially for research)**
  - **Standards and the standardization process**
    - Models
    - Research
    - Organizations
    - Processes
  - **Families of standards**
    - Communication Standards
    - Data Interchange Standards
    - Operating System Standards
    - Human-computer Interaction Standards
  - **OSI application standards**
    - ANS1,BER, Presentation and Session Levels
    - X.400, X.500, and FTAM.
  - **Broader context**
    - Electronic enterprise
    - Legal and Regulatory Issues
    - Globalization

# Pedagogical 2

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- **An embedded course may be better (for student gut comprehension)**
  - **Standards and the standardization process**
    - **Models**
    - **Research**
    - **Organizations**
    - **Processes**
  - **Web standards**
    - **http, URL, html, xhtml**
    - **DOM0, DOM1, DOM2, DOM3**
    - **XML , Schema, Namespaces, data types**
    - **XPATH, XSLT, XQuery**
    - **SVG, RSS, RDF, OWL, Atom, GRDDL and SPARQL**
  - **Broader context**
    - **Electronic enterprise**
    - **Legal and Regulatory Issues**
    - **Globalization**

# What the experience suggests

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- **While a disciplinary approach is possible, a multi-disciplinary process is ideal (load on instructor)**
- **Standardization is an evolving process, so we should focus on the essentials which will likely stay true**
- **Standardization is messy, students need to understand how RSS, VHS, and QWERTY came about**
- **Graduates are more likely to have to implement a standards than they are to write one.**
- **Standardization is a mix of business imperatives, government policy, and technological choice. The third is the most difficult to understand.**