Session 13: 
Professionalism in Project Management

The Project Management Institute 
The Software Engineering Institute 
Certification programs 
Reference material 
Chicago-area opportunities

The Project Management Institute (PMI)
- Founded 1969, Philadelphia 
- Initial emphasis on construction & civil engineering projects 
- Open membership (~1,000,000 members) 
- Activities
  - Conducts conferences
  - Administers certification programs (PMP, etc.)
  - Publishes reference material (PMBOK)
- http://www.pmi.org

PMI Local Chapters
- Many hold regular meetings
  - Speaker on an interesting topic
  - Opportunity to converse with fellow professionals
- Chicago chapter
  - Monthly dinner meetings and other events
    - http://www.pmi-chicagoland.org
  - Courses, seminars, examinations, etc.
- Other chapters worldwide
  - www.pmi.org/GetInvolved/Pages/PMI-Chapters.aspx

Project Management Body of Knowledge (PMBOK)
- Comprehensive guidebook for project managers
  - Developed through voluntary contributions from PMI members
  - Definitive study guide for PMP certification
- Status (per PMI website, 2013)
  - Fifth edition, $50 to members, $65 to others
- More than most of us need for a software development project.
Example of *too much* knowledge in the PMBOK
- **Predecessor-successor** relation can be specified as:
  a. **Finish to start**: Task B may not start until Task A ends.
  b. **Start to start**: Task B may not start until task A is underway.
  c. **Start to finish**: Task B can’t be completed until task A is underway.
  d. **Finish to finish**: Task B can’t be completed until task A is finished.
- When would a software development project need anything other than a? Why?

Another example
- You can specify *three* estimates for each task:
  - optimistic estimate
  - pessimistic estimate
  - realistic (best) estimate
- This is useful
  - for very large projects
  - for preparing fixed cost, fixed target date proposal
- PMS will aggregate the totals
  - Critical path may be different under different assumptions

The SoftwareEngineering Institute (SEI)
- Led by Watts Humphrey, former IBM VP, colleague of Fred Brooks during OS/360 development project.
- Proposed **Capability Maturity Model** (CMM) for software-development organizations.

```
http://www.sei.cmu.edu
```

Capability Maturity Model
- According to SEI a software development organization's methodology ("processes") is characterized by one of these levels:
  1. **Initial**: (chaotic, ad hoc, every project on its own)
  2. **Repeatable**: (some processes yield consistent results.)
  3. **Defined**: (most projects follow documented standards)
  4. **Managed**: (all projects subject to metrics that control their performance)
  5. **Optimized**: (continuous process improvement)
- SEI representatives and contractors audit and certify.
Possible conflict of interest?

a. SEI maintains a roster of knowledgeable people who can be hired to audit an organization's project methodology and certify it as meeting a specified maturity level.

b. Some of those individuals work for companies that provide consulting services aimed at raising the client organization's maturity level.

More general computing technology societies

- ACM
  [http://www.chicagoacm.org](http://www.chicagoacm.org)
  The oldest (1947) professional organization for computer people

- IEEE C.S.
  [http://www.computer.org](http://www.computer.org)

- C-SPIN
  [http://www.c-spin.net](http://www.c-spin.net)

- Also see various tool-specific groups (often under meetup)