Web Content

Web content is unlike other forms of writing.

Immediate – people don’t usually print your page for later perusal

Interactive – good hyperlinks can improve your message

Visual – Possible to use graphics and color in an economical manner not (yet) available on paper
Using Extensions and Other Features

• Probably okay if supported by 3 or more browsers

• Provide for user who has a feature switched off, such as images
  
  \(<\text{IMG SRC}="\text{icons/right-arrow.gif}\"
  \ A\text{LT} = \"\text{Right-pointing arrow}\" >\)

• Provide for the Visually Impaired
  • http://www.mardiros.net/visual-impaired.html
  • http://informationr.net/ir/8-4/paper156.html
Sign and Date Your Documents

Might give your name, formatted as a link to a page with contact and other info

Make dates unambiguous

4 March 2009
09.03.04?
03/04/09?
Give Your Documents Status and Context

Status
- Work in progress
- Revision of earlier document
- Likely to change or not?

Context
- Links to containing document, citation, project, organization
- Include a short, meaningful title
Mechanics

- Don’t skip heading levels, don’t use them for text styling
- Use logical styles; use CSS for appearance
- Avoid inline images for text elements
- Keep HTML pages between 1/2 and 5 printed pages
- Don’t be afraid of white space
- Provide a linear path
  - multiple parallel paths are confusing for screen-readers
Links

Include prose about links

Let the reader know what kind of link

(Definition of Pareto optimal)
(Recent articles on Pareto optimality)
Organization

Choose a metaphor for your site
- book: pages of a document
- building: spatial organization, floors and rooms
- branching

Have a clear ordering of info
- Consistent navigational style
- Main route vs. scenic path
Printability

Consider the reader who wants printed copy:

Make text stand alone as a printable document

[click here](http://example.com) is not useful on paper

Include URL in printable version:

I teach [CS 569](http://www.cs.pdx.edu/class/cs569)

CSS rules (@media print, @media screen) allow appearance to depend on the medium.

Consider providing a version for printing:

- a single html page without frames and graphical layout, or
- a version in pdf.
Examples

http://research.microsoft.com/en-us/people/simonpj/
http://haskell.org/haskellwiki/Simonpj/Talk:Papers

http://gracelang.org/applications/

http://alliance.seas.upenn.edu/~plclub/cgi-bin/poplmark/index.php?title=The_POPLmark_Challenge

http://www.scala-lang.org/

http://queuea9.wordpress.com/

http://web.cecs.pdx.edu/~fliu/

http://llvm.org/

http://lambda-the-ultimate.org

http://www.cs.washington.edu/education/courses/cse120/11wi/
Writing a Research Proposal
What’s a Research Proposal?

An attempt to persuade someone to expend resources (usually dollars) on your behalf.

Understand the funder’s motivation (because they have to sell their programs to their bosses)

- General advancement of the state of knowledge
- Growth of knowledge in a specific area
- Training of new researchers, attracting exiting researchers into a new area
- Development of technology with commercial application
- Solution of particular problem — not always scientific
- Revolutionary approaches to problems
Three Key Ingredients

• Important Problem (important to the funder)
• Credible Approach
• Competence
Catchy Start

For which proposal would you most like to read the next sentence?

Proposal A "As the Internet expands, and more and more devices of ever wider-ranges of power connect to it, control of quality of service becomes increasingly important."

Proposal B "Imagine you are landing the space shuttle, and all communication fails except for your cell phone."
Important Problem

In some cases, might be stipulated by the sponsor

If not, helps to “zoom in” on it, picking (most) important subarea at each step.
Example Zoom

1. As the frequency of natural disasters increases, so does the importance of survivable information systems.

2. True survivability requires computing capabilities that can operate effectively when isolated from other infrastructure, such as the Internet and the electrical power grid.

3. Among approaches to infrastructure-independent computing, the most valuable are those that are generic, because such approaches can be applied wherever functionality is needed, be it application, system, or network.

4. Hence, our work on steam-powered universal Turing machines is essential to information system survivability.
Important Problem 2

Need to indicate that it is inadequately solved.

Why is a solution valuable?
   Ask yourself “If this project were wildly successful, what difference would it make?”

Are there shortcomings of current approaches or proposed solutions?
Risk vs. Payoff

Risky research is okay if it has high payoff. Low payoff research isn't worth funding even if there is zero risk.

1. If our implicit subroutine detector approach can be improved to less than $O(2^{n^2})$ time complexity, we should be able to realize up to a 3% reduction in runtime on random programs of 512K statements or larger.

2. If our hyperion quantum-ionizer functions as predicted, the repulsive forces could be used to drive rivers back upstream, thus running the same water many times through the same hydropower dam, solving our energy crisis at the same time as saving the salmon.
Credible Approach

Best evidence of feasibility of approach is preliminary results.

Okay to spend significant part of proposal on progress to date.

Can you articulate success criteria — is there any way to tell if you’ve succeeded?

Plan specific milestones & research questions and call out: item 1, item 2 ...

Okay to say what you won’t do.

Is the cost reasonable? Student, % of faculty, capital, travel, facilities support
Competence

Is the research team competent to carry out the work?

• Experience of investigators
  – vita
  – prior work in proposed area

• Knowledge of related work
  If you don’t know about others’ work, you could reinvent it.

• Track record of team
  - What did you do with the last money you got?
  - Have you trained people in the past?
  - Does anyone use or reference your previous work?
Competence 2

• How is your existing technology base?
  - hardware
  - software
  - expertise with technologies
Other Items

Follow guidelines

- especially length — get permission before exceeding length specification

Is there a means to get initial guidance?

- white paper: informal, ~ 5 p overview, outline of proposed research
- proposers’ meeting
- abstracts of funded proposals – usually available online
- visit to sponsor – arrange with enough notice.

Effort on a proposal is comparable to effort on a journal publication.
Other Items 2

Grant vs. Contract vs. Gift

A grant (such as from NSF) usually does not contain a requirement that you proceed exactly as you propose.

A contract (such as from DARPA) often has specific deliverables and a technical monitor.

A gift comes with no strings (but there may be expectations).

Economies of Scale

One person can write one grant for $100k in 1 month.

Two people can write two grants, each for $200k, in 1 month.