CS519 — Dietterich's Laws of English — Fall 1996

1. Avoid "use". Try "apply", "employ", "select", "perform", "execute", "choose", "evaluate", etc.

2. "Utilize" should refer only to resources ("...fully utilize memory bandwidth..."

3. Avoid contractions.

4. Use English equivalents of Latin phrases outside of parentheses.
Replace "etc." with "and so on", "i.e." with "that is", "e.g." with "for example", and "vs." with "versus".

5. Obey parallel form: "The project seeks to develop new methods and to implement them."
Parallelize on infinitives ("to develop", "to implement"), on noun phrases ("seeks to develop new algorithms, new implementations, and new results"), on relative clauses ("a new method that will optimize productivity, that will account for computation requirements, and that will minimize communication costs.") and on prepositional phrases (see this sentence itself).

6. Catch common word problems.

6.1 "affect" (verb) versus "effect" (noun).

6.2 "that" (introduces restrictive relative clause) versus "which" (introduces unrestrictive relative clause). Example: "The first iteration that finds a non-null element causes an error message to be displayed." The phrase "that finds a non-null element" helps identify the iteration in question. If we omit this phrase, the meaning is lost.

However, consider "Our Meiko CS-2, which was funded by a grant from NSF, has sixteen high-speed processors." The phrase "which was funded by a grant from NSF" tells us something incidental to the main clause. It can be deleted without creating confusion about the identity of the subject of the sentence.

6.3 "between" (relates 2 things) versus "among" (relates > 2 things).

6.4 Possessive pronouns. Compare "it's" and "its", "who's" and "whose". The possessive forms are "its" and "whose". The others are contractions ("it's" means "it is", "who's" means "who is").

6.5 Use "or" only when you mean it. Often "and" is clearer.

6.6 "led" is the past tense of "lead". "lead" (pronounced like "led") is a chemical element with a rather low melting point.

7. Common syntax problems.

7.1 A colon must be preceded by a complete clause.
"There are three methods: walking, running, and flying." is correct.
"The three methods are: walking, running, and flying." is wrong.

7.2 Commas!

7.2.1 Commas separate complete clauses (typically introduced by "and", "but", "therefore", "because", "since", etc.). "This proposal shows important problems, and it presents several solutions." If the "it" is deleted, the comma preceding the "and" should be deleted also.

7.2.2 Commas set off lead-in phrases. "In this proposal, we discuss ...".

7.2.3 Commas separate lists of three or more items. "Walking, running, and flying."

7.2.4 Commas set off non-restrictive clauses. "This proposal, which was written for CS519, is excellent."

7.2.5 Commas break up competing adjectives. "A large, very red car" or "Object-based, portable, programming environment."

7.3 Semicolons. These are used to separate two closely-related complete sentences. “Processor speed must be more than a single number describing a computer; it must be a function of the work being done.”

7.4 “em” dash (“—”). These are very emphatic separators. They can separate complete sentences or just sentence fragments. “Vector units—such as the 100 Mflops units on the Meiko CS-2—complicate the analysis.” “It is difficult to see how to proceed—something must be done!”

7.5 Hyphens. These are used to prevent ambiguity, especially for compound adjectives. “low-latency connection”, “run-time performance”, “machine-learning algorithm”, and “problem-solving system” are examples. Note that when these are not used as adjectives, they are not hyphenated. “The connection has low latency.” “The code is executed at run time.”

Beware of the word “speedup”. It is never hyphenated. “Speedup” is a quantity (e.g., “a speedup of 25.”) or an adjective (“speedup learning”). “Speed up” is a verb (e.g., “We must find a way to speed up this algorithm.”).

8. The word “each” is wonderful. It lets you switch from plural to singular to avoid ambiguity. “The computer contains 16 processors, each of which has two vector units.”