1046-49-1228   **Stephen G Nash*** (`snash@gmu.edu`), Systems Eng. & Operations Research Dept., Mailstop 4A6, Fairfax, VA 22030. *Computational Optimization: Insights & Questions.*

We all want to do better, so it is natural to want to optimize. But it isn't always easy. Complex science and engineering problems lead to complex mathematical models and complex computations. Adding optimization on top of all this magnifies the difficulties. Success may require a combination of mathematical analysis, algorithmic development, sophisticated software, and practical insight. I will illustrate these challenges through some practical examples, and describe current approaches and areas of research. In addition, I will mention some longer-term questions about where computational optimization might be headed, and some ambitious goals that might offer inspiration. (Received September 15, 2008)