gress. I found nearly no evidence that funding in one field limits funding in another. The notion that reducing one field's funds will increase another's is empirically just wrong. The point is that there are many other parameters that enter into the determination of a final Federal budget, and that in my opinion have a much greater weight than the total funds assigned to basic research.

I am sorry to learn that "many excellent proposals" in condensed matter physics are going unfunded. But let me assure Lindsay that that is the case for each and every field of physics. Obviously it is much more productive if we work together than if we indulge in internecine squabbles.

HERMAN FESHBACH
Massachusetts Institute of Technology
1/87 *Cambridge, Massachusetts*

The SSCene Creed

The physics community may stand or kneel.

I believe in the Copenhagen interpretation of quantum mechanics, the second law of thermodynamics and the unitarity of the S matrix.

I acknowledge one vacuum for the basis of Hilbert space, the inattainability of absolute zero and the nonobservability of phase.

I am willing to concede second quantization of fields, the wave–particle duality and the path integral formulation of quantum mechanics.

I am reasonably comfortable with canonical quantization, the manipulation of divergent quantities as though they were infinitesimals, and the confinement of quarks.

I am willing to speculate on the possibility of supersymmetry above present-day collider energies, the collapse of the wave packet upon measurement, and the "true" number of dimensions of the universe.

In my less lucid moments I will even buy supergravity and the introduction of local SUSY transformations on a manifold.

After a few martinis I will slur, "Hell yes!" to the suggestion that the underlying structure of the universe is a two-dimensional conformally invariant field theory.

After a prefrontal lobotomy I will declare fervently that a unified field theory encompassing all known particles and interactions is inevitable before the end of this century.

In the name of quantum mechanics, the Dirac equation and the compactification into itty-bitty circles of everything we don't observe,

Amen.

SANFORD WILSON
ERNEST LEWIS
6/86 *University of Texas at Austin*

How to slice a research pie

Billions of dollars are targeted for enormous particle accelerators (and defense research) while many areas of physical science must subsist essentially unsupported even if they are of easily demonstrable technological or societal importance. Criminalistics, the scientific examination of articles of physical evidence recovered from crime scenes, is just one of scores of examples. The US spends considerable sums on crime prevention, rehabilitation, law enforcement organizational efficiency and the corrections system. That this country nonetheless continues to have far and away the worst crime rate of the industrial nations tells of the effectiveness of these measures. A key role in maintenance of a reasonable level of social order is therefore played by the ability to solve crimes, in particular by criminalistics as a scientific tool of criminal investigation. Nothing, however, is spent by the Federal granting agencies in support of physical science research applied to criminalistics. I suspect that the taypayer would be less than delighted to find out that billions are dedicated to charm, color, strangeness, truth and beauty, while the jaded palates of research support strategists and program managers are not at all titillated by the facts that about 1 in 130 present US inhabitants will die by murder and that annually nearly a third of US households are victimized in some way by crime. Do the first instants of the Big Bang really merit that vastly greater support than does the safety of the country's citizens?

Unfortunately, many research programs that are innovative and have impact, but are unorthodox, fall victim to the passing of the buck because they do not neatly fall into a pet research support area. Worse, such programs apparently must be tainted with vulgar descriptors such as "useful" and "applied," if the intellectual snobbery that greets them is any guide at all. Curiously, such snobbery and the tendency to justify it by invoking "basic science" or "fundamental understanding" is all too often favored by those whose own work languishes in well-deserved obscurity, producing nothing but utterly inconsequential publications to clutter the literature.

No doubt basic research, even if expensive, has to be supported. How-