Back to the Future

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What can history say about what works and what does not work when setting priorities for new research programs and methodologies in astronomy? Is there an optimum balance between risk and innovation, such as building upon proven technologies or experimenting with new unproven technologies? Have astronomers been most effective as tool builders or cross-disciplinary entrepreneurs, acquiring expertise in emerging areas of physics, or have they been most effective when they manage to attract this talent and expertise from the new disciplines of physics? Does the degree of correlation between the motives and goals of patrons of astronomy and the goals of astronomers influence the quality and nature of subsequent knowledge production? What produces a better product or more robust discipline: elite-based meritocratic reward structures or egalitarian social, institutional and regional reward structures? While there are no absolute answers to questions like these, there may well be historical indicators that hint at what worked well and what did not prove to be especially effective. This presentation will provide several case studies from 20th century astronomy that offer illustrative guidelines astronomers might find helpful in thinking through these questions.