

# The Dismal Science and the Endless Frontier: How and Why Economists Think About S&T Policy

## *A Guide for Further Reading*

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February 13, 2005

### **1 How Economists Think About S&T and S&T Policy: General**

The classic sources are [27] and [1]. A more recent literature on “the new economics of science” (which is based largely on “the old sociology of science”) began with [4]. A useful survey is [35]. For more policy oriented discussions, see [28] (which I assigned for class) for a discussion of science policy, and also [22] and [21] for discussions of technology policy. For a discussion of these issues in the context of biomedical research, see [8].

### **2 Why Economists Think About S&T: Innovation and Economic Growth**

The original discussion of the role of technology in economic growth, which was contributed to Solow’s receiving the Nobel Prize in Economics, is [34]. For a historical review of the notion of the “residual” as a measure of technical change, see [9]. For a more critical perspective, see [26]. For more general non-technical discussions of the importance of technological change for economic growth, see [30], [31], and [28]. An excellent historical discussion of technical change and economic growth is [20].

### **3 Non-Rivalry, Appropriability, and the “Market Failure” Approach to S&T Policy**

Good general discussions are [31], [32], and [5]. For a discussion of the “tragedy of the anti-commons” i.e., the potential inefficiencies created by high appropriability on non-rival resources, see the seminal paper by Michigan’s own Becky Eisenberg [12].

## 4 Spillovers: Private, and Social Returns to Investments in R&D

The article I assigned for class, [13], is an excellent overview of the literature. [11] and [9] provide more advanced discussion of the relevant theoretical and empirical literatures. [3] and [21] suggest limits to the “market failure” approach to S&T policy.

## 5 Economic Perspectives on the Bush Report

Of course, the best place to start is with the Bush Report itself, [2]. For analyses of the political origins of the Bush Report, see [16] and the excellent biography of Bush, [38]. For economists’ perspectives on where Bush was wrong and where he was right, and the influence of the Bush report on postwar S&T policy, see [23] and [29]. Among the most useful discussions of the Bush Report by political scientists are [37] and [10].

## 6 The Linear Model of Innovation and its critics

The best statement of the linear model is in [2]. [17] is the classic (and trenchant!) critique of the linear model. More recent discussions of how the linear model has hindered S&T policymaking are [36], [37], [23], and [28]. For wonderful, nuanced, discussions of the complex relationships between science and technology see [25], [33], and [24].

## 7 Measuring S&T and Evaluating S&T Policies

There is a large literature on this stuff. [13] and [18] are useful discussions of the difficulties in “measuring” S&T. [15], [5], and [7] discuss difficulties in evaluating S&T policies.

## 8 Instruments of S&T Policy

Perhaps the best general discussion of the costs and benefits of various “instruments” of S&T policy is [6]. [8] offers a similar discussion, focused on biomedical research. For discussions of the costs and benefits of patent protection, and recent concerns about diminished patent “quality”, see [14] and [19].

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