

The MCBIOS Metric: Regional Collaboration to Monitor Biotechnology's Future

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Biotechnology is progressing rapidly across major subfields including genetic engineering, systems biology, bioinformatics, and computational biology. This presentation gives an overview of a set of future goals for biotechnology, explains the need for metrics to measure progress toward these as well as a single composite metric for overall progress, and explains the status of the project. The goals were specified by the MCBIOS participants in the year 2010, who are listed above as authors. For a few of the goals, progress has been made in developing specific metrics and road maps to their accomplishment, with many more remaining to be addressed in the future. Each of the addressed goals was divided into subgoals as appropriate, and each subgoal analyzed to determine a metric, road map and present status of the road map. Then, a metric for each goal was developed in terms progress toward its subgoals. Ultimately the plan is to combine the metrics for the goals into a composite metric – the MCBIOS Metric – that can serve as a proxy for rate of progress across the entire biotechnology arena.

It has often been conjectured that technological change is exponential. For the MCBIOS Metric, a graph of it over time might or might not look exponential. More importantly, the graph we hope to eventually plot will permit extrapolation of its shape, whatever it is, into the future. This will permit a view through a perhaps foggy lens of the distant biotech horizon. The potential implications of this metric range from the thrill of understanding in some sense what the future holds for biotechnology, to government science and technology policy.

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