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In this talk we apply differential geometric-based methods of feedback control to mathematical models of competition for two resources in a chemostat. We show that for various choices of control signals, some of these models can be made equivalent to controllable linear dynamical systems, and suitably chosen control objectives can be met. As a physical context for this study we have in mind one's ability to control the structure of microbial communities. We focus on the role of resource type and control choices in this process. (Received February 27, 2007)