The Leadership Program in Discrete Mathematics (LP-DM) is a professional development program for K-8 teachers designed by the presenters – a mathematician and a mathematics educator. It typically involves two eight-day summer institutes and subsequent follow-up sessions. Originally funded by NSF to conduct institutes for 25 cohorts of teachers during 1995-2001, the LP-DM has since conducted 18 additional institutes for K-8 teachers using grants from state agencies, and is actively recruiting participation by mathematicians at other sites. The presenters will discuss the mathematical content of the LP-DM, the design of the LP-DM, and the "franchise" model of dissemination. They will also discuss the curriculum materials they have developed, based on their experience with the LP-DM, for use in college mathematics courses for prospective K-8 teachers. (A Thursday afternoon presentation at the AMS-MAA-MER Special Session will focus on the collaboration between the presenters.) (Received September 26, 2005)