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Assumptions"; "Problems and Possibilities"; "Organization of the Project"; "SCOPE OF THE STUDY"; "The Charge to the Phase One Committee"; "Questions to be Answered by the Present Study"; "METHODS OF STUDY"; "OVERVIEW OF THE REPORT"; "2 Will Ph.D.s Consider Careers in Secondary School Science & Mathematics Education?"; "SURVEY METHODS AND RESPONSE"; "Survey Methodology and Response"; "Characteristics of Respondents"; "CAREER ASPIRATIONS"; "INTEREST IN SECONDARY SCHOOL EDUCATION"; "Defining Interest in Secondary School Education"; "Financial Considerations"; "ASPECTS OF A PROGRAM TO ATTRACT SCIENCE AND MATHEMATICS PH.D.S TO SECONDARY SCHOOL EDUCATION"; "INTEREST IN OTHER K-12 EDUCATION POSITIONS"; "SUMMARY"; "Level of Interest"; "Potential Incentives"; "Other K-12 Positions"; "3 Perspectives on Ph.D.s in Secondary School Science and Mathematics Education"; "PH.D.S IN SECONDARY SCHOOL SCIENCE AND MATHEMATICS EDUCATION"; "WHICH PH.D.S?"; "PREPARATION FOR TEACHING"; "PRACTICAL ASPECTS OF THE TRANSITION TO THE SECONDARY SCHOOL ENVIRONMENT"; "PH.D.S IN THE SECONDARY SCHOOL WORK ENVIRONMENT"; "4 Discussion"; "FINDINGS"; "Interest in Secondary Teaching"; "Challenges"; "What is Necessary for Success?"; "GUIDANCE FOR DEMONSTRATION PROGRAMS"; "Organization of Demonstration Programs"; "State Demonstration Programs"; "Selection of Ph.D.s for Teaching Positions"; "Role of Postsecondary Institutions"; "Flexibility in School Placement"; "Regional Clustering"; "Evaluation"; "Pedagogical Skills and Teaching Resources"; "Education Courses and Certification"; "Mentoring"; "Science Teaching Resources"; "Future Positions for Ph.D.s"; "Incentives"; "National Fellowship Program"; "Peer Networking"; "Connections with the Larger Scientific Community"; "REFERENCES"; "Appendix A Study Methodology"; "INTRODUCTION"; "SURVEY OF GRADUATE STUDENTS AND RECENT PH.D.S"; "Focus Groups"; "Questionnaire Development"; "Sampling"; "Survey Response"; "INTERVIEWS"; "Interviews with Ph.D.s"; "Interviews with Administrators"; "APPENDIX B Focus Group Summaries"; "SITES OF FOCUS GROUPS"; "SUMMARY OF FOCUS GROUPS"

Sommario/riassunto

The National Research Council conducted a study to identify a set of incentives that state governments and local school districts can use to attract Ph.D. scientists and mathematicians to secondary school teaching positions. This project investigated the career ambitions of Ph.D.s in the physical and life sciences through focus groups and a national survey to determine the kinds of work conditions and compensation packages that would induce them to take positions teaching physics, chemistry, biology, and various electives in public high schools or positions developing secondary school science and mathematics curricula. The study conducted interviews with Ph.D.s who are already teaching in secondary schools to ascertain information from their experiences, with local school district administrators to assess what they are realistically willing to offer Ph.D. scientists to attract them, and with higher education administrators to explore programmatic changes they would need to institute to provide Ph.D.s with skills tailored to secondary school teaching. These investigations led to this report which describes the incentives local school districts could use in establishing pilot programs in this area.