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Title Slide: Introduction to HSLS:09

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This module introduces users to the High School Longitudinal Study of 2009, or HSLS:09 for short. It provides users with basic information about the study's target population, sample and study design, and data collection rounds, topics, sources, and methods.

The module also provides a broad overview of the topics for which data are available for analysis to help you answer the fundamental question of "Are HSLS:09 data for me?" The subsequent HSLS:09 training modules contained within this system will discuss some of these topics in greater detail and address questions about how to effectively use the dataset for your analytic purposes.

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HSLS:09, is a nationally representative, longitudinal study that begins in 2009 with more than 25,000 ninth graders in 944 schools. These students will be followed throughout their secondary and postsecondary years. The study focuses on understanding students' trajectories from the beginning of high school into postsecondary education, the workforce, and beyond. What students decide to pursue, how, when, and why, are all crucial questions for HSLS:09 especially, but not solely, in regards to the paths into and out of science, technology, engineering, and mathematics, or STEM, courses, majors, and careers, and, the educational and social experiences that affect these shifts.

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HSLS:09 is the fifth in a series of NCES secondary longitudinal studies. This series includes the National Longitudinal Study of the High School Class of 1972, or NLS:72, the High School and Beyond, or HS&B, longitudinal study of 1980, the National Education Longitudinal Study of 1988, or NELS:88, and the Education Longitudinal Study of 2002, or ELS:2002.

These studies monitor the transition of national samples of young people from their high school experiences through their postsecondary years, including further education, participation in the workforce, and the assumption of other adult roles.

The right-most portion of the graphic shown here indicates the data collection rounds and instruments used for HSLS:09. You can see that the base-year of data collection was 2009. Data were collected using a student assessment, a parent survey, a teacher survey, an administrator survey, and a counselor questionnaire.

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The target population at the school level was defined as regular public schools, including public charter schools, and private schools providing instruction in both the 9th and 11th grade, in the 50 states and the District of Columbia. So, schools with only grades 10, 11, and 12 would be excluded from HSLS:09. The target population of students was defined to include all ninth-grade students who attended the study-eligible schools in the fall 2009 term.

Ninth grade students were randomly selected from sampled high schools to participate in HSLS:09. These students' parents and math and science teachers were invited to complete surveys, as were the school administrator and lead school counselor in each selected school.

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HSLS:09 has the primary goal of measuring students' academic, social, and interpersonal development. Because HSLS:09 contained mathematics assessments at two points in time, it is possible to measure gains in mathematics achievement across the first 3 years of high school. The study also allows researchers to examine the relationships between mathematics achievement and students' choices about, access to, and persistence in both mathematics and science courses in high school, and thereafter in the STEM pipelines in postsecondary education and careers. In this way, the mathematics assessment serves not just as an outcome measure, but also as a predictor of readiness to proceed into STEM courses and careers.

Additionally, HSLS:09 focuses on students' educational decision-making processes. Generally, the study asked students about when, why, and how they made decisions about high school courses and postsecondary options. The questions included coverage of what factors, from parental input to considerations of financial aid for postsecondary education, entered into those decisions. Questionnaires focused on factors that motivated students for STEM course-taking and careers.

The transition into adulthood from middle and secondary school, through postsecondary education and initial work experiences, is of special interest to federal policy and programs. Parents, educators, and policymakers all share the need to understand the effects that the presence or absence of good educational guidance from the school, in combination with guidance from the home, can have on the educational, occupational, and social success of the young adult.

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By collecting extensive information from students, parents, teachers, school counselors, school administrators, and school records, it is possible to investigate the relationship between home and school factors and academic achievement, interests, and social development at this critical juncture. Moreover, in the base year and first follow-up parent surveys, the study provided a basis for examining policy issues related to parents' roles in the educational success of their children. This included parents'

educational attainment expectations for their children, attitudes toward curricular and postsecondary educational choices, and the correlates of active parental involvement in their children's educational experiences.

The school environment was captured primarily through student, teacher, and administrator reports. It was therefore possible to examine the extent to which schools are expected to provide special services to selected groups of students to compensate for limitations and poor performance (including special services to assist those lagging in their understanding of mathematics and science.) Base-year teachers reported on sampled students' specific classroom environments and supplied information about their own background and training. These are among the many questions that HSLS:09 data can be used to address about the home education support system and the interaction of that system with the student and the school.

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Both individual- and institutional-level characteristics are investigated in HSLS:09. At the individual level, the study looks into educational attainment and personal development of the student. In response to policy questions and scientific investigations, data are provided on the demographic and background correlates of educational outcomes.

At the institutional level, HSLS:09 focuses on school effectiveness issues, including promotion, retention, and curriculum content, structure, and sequencing. Special attention was paid to these issues as they affected students' choice of, and assignment to, different mathematics and science courses and their achievement in these two subject areas.

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Base-year instrument design for HSLS:09 was guided by a theoretical framework in which the student is the fundamental unit of analysis. Under this framework, the different measures of the study were created to identify factors such as motivation, beliefs, and interests that lead to academic goal-setting and decision-making. The study traces the many influences (including perceived opportunities, barriers, and costs) on students' values and expectations that factor into their most basic education-related choices. The HSLS:09 design also connects their experiences to rich contextual information about the student's family, teachers, peers, and school environment.

The student questionnaire for in-school administration and the student assessment in algebraic reasoning were administered electronically, for the first time in the history of NCES secondary longitudinal studies. The parent, teacher, school administrator, and counselor questionnaires were designed for web self-administration or computer-assisted telephone interview. Computerization of the surveys contributed to higher quality data, because online quality editing and routing through the questionnaires reduced error. Computerization also improved the assessment, by facilitating a two-stage adaptive test. Because the assessments were web-based, students who had changed schools or left school could still participate, meaning that more math

achievement data became available for more students than was collected in previous high school cohorts.

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The first round of data collection for HSLS:09 began in the fall of 2009. The sample data are nationally representative for 9th-grade students and high schools in 2009, which means they can be generalized to the national population of all ninth-graders across the U.S. enrolled in regular public, Catholic, and other private schools that include both 9th and 11th grades. A randomly selected sample of over 25,000 fall-term 9th graders in more than 900 public and private high schools which had both a 9th and 11th grade, were asked to complete an algebra assessment and a survey online.

The students' parents, mathematics and science teachers, school counselors, and school administrators also were asked to complete surveys over the phone or online.

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The study produced not only a nationally representative dataset, but also state-representative datasets for ten states, which means the sample data can be generalized to the population of all ninth-graders enrolled in regular public, Catholic, and other private schools that include 9th and 11th grades in each of the ten states. In-school survey sessions with students were 90 minutes in length, with 15 minutes for instructions and setup, 35 minutes for the student questionnaire, and 40 minutes for the two-part, 40-question adaptive algebraic reasoning assessment.

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The first follow-up of HSLS:09 took place in spring of 2012, when most of the sampled students were in the 11th grade. Again, students took an algebra assessment and a survey online. Students who either dropped out or transferred were followed and surveyed at the same time as the rest of the initial sample who remained in the base year school. The first follow-up included surveys of school counselors and school administrators, and a subsample of students' parents, which were completed on the phone or online. However, students' mathematics and science teachers were <u>not</u> surveyed as part of the first follow-up.

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All base-year students were eligible for participation in the first follow-up, with the exception of those students who had withdrawn from the study (either by choice or because their parents had withdrawn them), those who had moved outside of the U.S., those who were incarcerated, or those who were deceased.

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Rather than collecting information from the parents of all students in the first follow-up, a random subsample of parents of all base-year student respondents was selected. Some of the sampled parents had responded in the base year, and some had been base-year nonrespondents. A parent interview was completed for about 8,700 of the base-year student respondents.

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A very brief follow-up data collection took place in the summer of students' expected graduation year, 2013, to learn about the cohort's postsecondary plans and decisions. High school transcripts were then collected in the fall of 2013.

Subsequent data collections are planned to occur three years after the expected high school graduation year, in 2016, to learn about students' postsecondary experiences. Then another data collection is currently planned for 2025 to learn about participants' choices, decisions, attainment, and experiences in young adulthood when most members of the cohort are 30 years old.

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This module has provided you with an introduction to HSLS:09 and described the study's target population, sample and study designs, and the data collection topics, rounds, sources, and methods. Additionally, this module has highlighted topics for which data are available for analyses. Important resources that have been provided throughout the module are summarized in this slide along with the module's objectives for your reference.

The subsequent HSLS:09 training modules discuss these topics in greater detail and address questions about how to effectively use the dataset for your analytic purposes.