

## Family genetics education through school and community partnerships

Jenny Johnson, Rebecca Giles, Louisa A. Stark, Stacy Eddings

**Background and objectives:** In order for individuals and families to take advantage of and understand advances in genomics, they need to increase their genetic literacy. Needs assessments conducted by the Utah Department of Health (UDOH) Chronic Disease Genomics Program and the University of Utah Genetic Science Learning Center (GSLC) identified an immediate and substantial need for culturally appropriate health and genetics education materials for adults and children, particularly for chronic diseases that include a genetic component and for family health history. To meet this need, the GSLC and UDOH developed genetics curriculum modules for 5<sup>th</sup> grade and high school students and their families, with a particular focus on the Hispanic/Latino community in Salt Lake City, Utah.

The objective of this session is to articulate the process used to engage community partners including students, teachers, families, and school systems in developing culturally-appropriate genetics curriculum materials.

**Methods:** Curricula were developed for 5<sup>th</sup> grade and high school students during three-day workshops held with Master Teachers where they learned about the topics, defined learning objectives, and drafted activities. Then utilizing community based participatory approaches, a small, diverse group of local Hispanic/Latino community members were invited to adapt existing classroom curricula and develop new take-home activities that were culturally and linguistically appropriate for Hispanic/Latino students and their families. The 5<sup>th</sup> grade curriculum module titled *Introduction to Heredity (IH)* consists of 5 classroom activities, 3 take-home family activities, and a teacher guide. The 10<sup>th</sup> grade curriculum module titled *Using Family History to Improve Your Health (UFHIYH)* consists of 4 classroom activities, promotional video, 2 take-home activities, and associated teacher materials. Materials meet national and state-level Health Education and Biology Standards and are available in both English and Spanish.

**Results:** The IH module was classroom tested in Spring 2007 with six 5<sup>th</sup> grade teachers and 159 students (54.2% Hispanic/Latino, 20.5% White, 14.5% Asian/Pacific Islander, 4.2% African American, 3.7% American Indian/Alaska Native, 3.2% Other). The materials received high ratings for their cultural appropriateness, student engagement, and achieving the intended learning objectives. The family activities were effective in engaging parents in their student's education. The UFHIYH English module was classroom tested in Spring 2006 with 8 high school Biology teachers and 536 students (7.5% Asian, 1.9% African American, 1.5% American Indian, 16.5% Hispanic, 4% Native Hawaiian/Pacific Islander, and 68% White non-Hispanic). The Spanish module will be tested in Fall 2007. Teachers reported that students could easily understand the information, the reading level was appropriate, and the materials were effective in teaching the concepts.

**Discussion/Conclusion:** The IH and UFHIYH curriculum modules are an engaging and effective way to teach genetics and family health history to students and their families. Teachers are the ultimate gatekeepers for increasing students' genetic literacy, as they determine and control what materials are used in the classroom and sent home to families. Hands-on learning is important for engaging community members, teachers, students, and families in genetics.