NIH-Training Modules Evaluation Plan

CSU STEM Center

The external evaluation of the proposed training modules program will be conducted by Julie Maertens in the Colorado State University STEM Center, which facilitates collaborations among STEM-related education and outreach projects within and outside CSU. Dr. Maertens has conducted several large-scale, multi-site youth program evaluations in conjunction with the State of Colorado, and also regularly works with researchers in- and outside of Colorado to implement STEM education and outreach evaluations. She currently leads the evaluation of three federally funded projects designed to: 1) Create a pre-service secondary teacher program that integrates the requirements for traditional engineering undergraduate degree programs, 2) Improve recruitment and persistence of women in the geosciences using a deliberate mentorship approach, and 3) Improve recruitment and retention of underrepresented minorities in computational biology and genomics by creating and conducting week-long workshops in Todos Santos, Mexico.

The conceptual framework for the evaluation will be organized using the CIPP model, which is designed to guide project decision-making based on assessment of a program’s *context, input, process and product* (Stufflebeam, 2003). The operational framework will use observable data to conduct both formative [F] and summative [S] evaluation of the program, and will focus on 2 main areas of the conceptual evaluation model to determine: 1) How well the program is implemented (*process*), and 2) How well the proposed modules and training activities meet the program objectives (*product*).

Evaluation data will include baseline program metrics as well as measures to gauge the short- and long-term success of the proposed training modules in achieving program objectives. Examples of data to be collected include:

* Number, educational level, and demographics of online module users (where available; survey participation is optional)
* Brief post-course evaluation of module usefulness (e.g., accessibility, content, goals, structure, overall experience) among online module users (where available; survey participation is optional)
* Number, educational level, and demographics of in-person test users
* In depth, 15-point post-course evaluation of module usefulness among in-person test users
* Follow-up surveys among in-person test users to determine future usefulness of the modules (e.g., how and whether module content is applied to future research activities)
* Project team implementation surveys

In addition to the proposed data collection, Dr. Maertens will train the project team to collect qualitative data among test users during the day-long user testing sessions (on-campus at CSU and at the ASM workshop), and how to use a qualitative content analysis process to extract ‘themes’ related to feedback (e.g., strengths, weaknesses) about the modules. These themes may be used, along with the evaluation survey data, to make iterative improvements to the modules each year.

Survey results will be presented annually via written report, and will summarize all findings and iterative program changes and provide recommendations for future programming. See Table XX for evaluation questions and methods.

Table XX. Evaluation Questions, Methods, and Timeline

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|  | **Evaluation Question & Function** | **Data Collection** | **Timing** |
| **Process** | To what extent is the program implemented as proposed? [F & S] | * Project team surveys to determine the extent to which the program activities are implemented as planned, whether activities take place within the proposed time frame, what barriers to implementation are encountered, and whether and how data collected are used to make improvements or refinements to the modules | Years 1-3 |
|  | | | |
| **Product** | How well does implementation of the training modules meet the program objectives? [F & S] | * Survey data collected to understand whether and how well the training modules impact short- and long-term participant learning and utility outcomes of interest | Years 1-3 |

**References**

Stufflebeam, D.L. (2003). The CIPP model for evaluation. In T. Kellaghan, D.L. Stufflebeam (Eds.), *International Handbook of Educational Evaluation* (31-62). Dordrecht: Kluwer Academic Publishers.