Example 1. Evaluation of a Program Designed to Enhance Retention of Students in a Doctoral Program

<table>
<thead>
<tr>
<th>Goals</th>
<th>Goal 1. Enhance scientific skills</th>
<th>Goal 2. Enhance scientific writing and presentation skills</th>
<th>Goal 3. Provide mentors to facilitate development as a scientist</th>
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<tbody>
<tr>
<td>Activities</td>
<td>Science Skills Course</td>
<td>Research Communication Group (RCG)</td>
<td>Mentoring Program</td>
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<tr>
<td>Summative Evaluation Measures</td>
<td>• Number of students completing Science Skills course</td>
<td>• Number of students attending meetings each week.</td>
<td>• Number of students and faculty participating in the mentoring program.</td>
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<td></td>
<td>• Construction of a high quality Science Skills course.</td>
<td>• Composition of the RCG in terms of ethnicity, discipline, stage of program etc</td>
<td>• Frequency of peer-mentor meetings.</td>
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<td></td>
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<td>• Documentation of work accomplished e.g. papers written, grants prepared, posters prepared, talks prepared and rehearsed</td>
<td>• Nature of experiences/activities covered during</td>
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<td>• Number of training grants applied for and awarded.</td>
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<tr>
<td>Formative Evaluation Measures</td>
<td>• Questionnaires and focus groups to assess satisfaction with program and to identify unmet needs in the area of research skill development</td>
<td>• Questionnaires and focus groups to assess strengths and weaknesses of the RCG</td>
<td>• Individual interviews with students and faculty to assess the quality of the mentoring experience and identify unmet needs and training needs.</td>
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<td>• Review of curriculum and assessment methods by external reviewers.</td>
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<td></td>
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<tr>
<td>Data</td>
<td>Fall Quarter</td>
<td>Quarterly</td>
<td>Quarterly</td>
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<tr>
<td>Collection Points</td>
<td>Instruments &amp; Data Sources</td>
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<tr>
<td></td>
<td>Data from Registrar’s Office and MSDP program data</td>
<td>Course curriculum, course materials, assessment materials, MSDP program data</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Individual interviews with students and mentors</td>
<td>MSDP program data</td>
<td>Individual interviews with students</td>
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</tbody>
</table>
Example 2. Summative evaluation plan of a program designed to enhance graduate students’ interdisciplinary research skills in the area of nanoscience.

<table>
<thead>
<tr>
<th>Aims</th>
<th>Summative Evaluation Questions</th>
<th>Indicators</th>
<th>Evaluation Methods</th>
<th>Timeline</th>
</tr>
</thead>
</table>
| Aim 1  
  i) Prepare students to conduct interdisciplinary research on nanoscience in interdisciplinary teams.  
  Does the EPIC program enhance participants skills that enable them to work in interdisciplinary teams e.g. interdisciplinary communication skills?  
  Are EPIC students more likely to engage in interdisciplinary research in their doctoral and post-doctoral research than students who do not participate in EPIC? | Does students’ interdisciplinary knowledge increase during the EPIC program?  
  number of students with satisfactory performance on interdisciplinary knowledge and skills assessments.  
  number of students with increase in skills and confidence. Comparison of EPIC student scores with control student scores  
  number of publications, presentations, proposals (funded & unfunded) involving interdisciplinary research on climate | assessments specifically designed for the program e.g interdisciplinary knowledge tests, real world problems, portfolios, rubrics  
  standardized assessment instruments developed by NIH to measure interdisciplinary skills and confidence in interdisciplinary skills. Comparison with control group of doctoral students who are not EPIC students but are in other NSF and NIH funded training programs and control students in the EPIC students’ home departments | pre and post program assessments  
  yearly review |