

**TEMPLATE FOR TEACHER DEVELOPMENT PROGRAMS**

**NOVEMBER 1993**

NAME OF FACILITY OR PROGRAM:

NAME OF PERSON COMPLETING TEMPLATE:

DATE:

<u>Components of Effective Practice</u>	<u>Intended Program</u>	<u>Actual Program</u>
<p>Best Practice</p> <p>1. Program Administration</p> <ul style="list-style-type: none"> <li>a. articulates clear program goals that are understood by all<sup>2,3</sup></li> <li>b. is clearly assigned as the responsibility of one or more persons</li> <li>c. includes teachers, scientists, educators, and administrators in program design</li> <li>d. creates collegial atmosphere<sup>10,11,14,15,19</sup></li> <li>e. ensures effective pre-program interaction</li> <li>f. ensures effective program follow-up<sup>2,3,14</sup></li> <li>g. communicates with and reports regularly to DOE</li> <li>h. maintains database of participant information</li> <li>i. establishes relationship with teacher's school/district<sup>4,14,15,19</sup></li> <li>j. designs and conducts participant</li> </ul>	<p>Intended Program</p>	<p>Actual Program</p>

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<p>recruitment so teachers representing the target population (e.g. those teaching students from underrepresented groups) are reached</p> <p>2. Vision for the Classroom (promoted by the program) emphasizes</p> <ul style="list-style-type: none"> <li>a. deep understanding by students of major science concepts or principles, development of skills, and "scientific habits of mind"<sup>1,2,3</sup></li> <li>b. a "hands-on/minds-on" instructional approach that includes student investigation, discovery, and application<sup>1,2,3</sup></li> <li>c. depth of study (fewer concepts and skills) rather than breadth<sup>1,2,3</sup>,</li> <li>d. balance between science content and process in classroom instruction<sup>1,2,3</sup></li> <li>e. ongoing, authentic assessment of important learning outcomes for students<sup>17,18</sup></li> <li>f. materials, strategies, and perspectives sensitive to diverse cultures, languages, genders, and learning styles<sup>7</sup></li> </ul>		

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<p>3. Teacher Development Program Activities</p> <p>a. are appropriately designed for adult learners<sup>8,9</sup></p> <ul style="list-style-type: none"> <li>• focus on growth rather than defects</li> <li>• relevant and practical</li> <li>• focus on teachers' interests and concerns</li> <li>• link teachers to resources and support</li> </ul> <p>b. model teaching principles and strategies that can be transferred to the classroom<sup>6,12,13</sup></p> <p>c. allow teachers to actively construct knowledge through hands-on activities<sup>12,13</sup></p> <p>d. include the use of tools, methods, and processes of scientists<sup>12,13</sup></p> <p>e. immerse teachers in the scientific process<sup>12,13</sup></p> <p>f. include actual or simulated problems or challenges of "real world" science<sup>12,13</sup></p>		

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<p>g. are designed so teachers learn cooperatively in small groups<sup>6,12,13</sup></p> <p>h. include opportunities to practice new classroom behaviors or strategies<sup>6,12,13</sup></p> <p>i. include opportunities for teachers to plan for use of new knowledge and skills in their own classrooms, with their own curricula<sup>8</sup></p> <p>j. include opportunities for teachers to work together, as they learn and plan for transfer to their individual classrooms<sup>11</sup></p> <p>4. Unique Contribution of DOE Laboratories</p> <p>a. scientists and technicians</p> <ul style="list-style-type: none"> <li>• participate in program design, implementation, and evaluation</li> <li>• assist in developing scientific/technical content</li> <li>• collaborate with teachers to solve real/simulated problems</li> <li>• serve as role models (minorities, women, disabled, senior/retired)</li> </ul> <p>b. scientific/technical facilities and equipment are used for training, immersion, and scientific experiences</p>		

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<p>c. the work being done (frontier science), both in the particular lab and in other DOE facilities, is the focus of teacher development activities</p> <p>5. Follow-Up</p> <p>a. learning activities for teachers are spread out over time<sup>6,12,13,14</sup></p> <p>b. follow-up focuses specifically on the use of new knowledge and skills in the classroom<sup>6,14,15</sup></p> <p>c. teachers have the opportunity to try out new knowledge and skills in classrooms before follow-up occurs<sup>12,13,14,15</sup></p> <p>d. follow-up takes a variety of forms, including additional training, problem-solving or sharing meetings, on-site or telephone consultation, networking through newsletters or telecommunications, training and support of local resource teachers or others to provide on-going assistance<sup>12,13</sup></p> <p>e. long-term commitment includes material, moral, logistical, technical, and</p>		

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<p>symbolic support from the laboratory, or as a result of arrangements made by the laboratory from the school or community<sup>5,12,1</sup></p> <p>6. Teacher Leadership and Responsibility</p> <p>a. teachers take on leadership responsibilities in aspects such as program development, delivery, implementation, follow-up, and spread to other colleagues<sup>10,14</sup></p> <p>b. teachers have input and/or involvement in decisions about the content, process, implementation, and/or evaluation of their learning experiences<sup>12,13,14</sup></p> <p>c. teachers are given support by the lab for leadership and networking with people outside the program, such as teacher colleagues and professional associations<sup>10</sup></p> <p>7. Program Evaluation</p> <p>a. monitoring of participant satisfaction during the program and follow-up activities identifies needed changes,</p>		

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<p>which are made immediately when appropriate and feasible<sup>14</sup></p> <p>b. ongoing formative and summative evaluation of important program outcomes involves data collection from a variety of sources, with resulting changes in program design<sup>14</sup></p>		