

RPES EVALUATION CRITERIA (FACTOR AND LEVEL DEFINITIONS)

Factor 1: Research Assignment

Level A (2 points)

Research assignments have the following characteristics:

- readily definable objectives;
- limited in scope to investigating specific phenomena or problems, or are segments of related investigations;
- require fairly conventional techniques;
- involve applying existing theory or methods to areas previously investigated, but under different conditions, or involve adapting previous studies in light of changes in theory or improved techniques and instrumentation; and
- result in contributions that add to scientific and professional knowledge or support developing new or improved methods and techniques.

Level C (6 points)

Research assignments have the following characteristics:

- the scope is broad and complex, requiring a series of comprehensive and conceptually related phases and studies;
- problems are difficult to define;
- require sophisticated research techniques; and
- result in contributions that:
 - answer important questions in the field;
 - account for previously unexplained phenomena;
 - open significant new avenues for further study;
 - confirm or modify a scientific theory or methodology;
 - lead to important changes in existing products, methods, techniques, processes, or practices; or
 - are definitive of a specific topic area.

Level E (10 points)

Research assignments have the following characteristics:

- the scope and complexity are at a level requiring subdivision into separate phases, some of which are considerably broad and complex;
- problems are exceptionally difficult and unyielding to investigation;
- require unconventional or novel approaches or complex research techniques; and
- results may include:
 - a major advance or opening of the way for extensive related development;
 - progress in areas of exceptional interest to the scientific and professional community;
 - important changes in theories, methods, and techniques;
 - opening significant new avenues for further study; or
 - contributions answering important questions in the field.

Level F (12 points)

The research assignment is characterized by:

- responsibility as a team leader for formulating and guiding a broad scale attack on problems in frontier areas of critical importance to major national programs. The project is of such complexity and scope that it must be sub-divided into a number of separate experimental and theoretical research phases, several of which are typical of Level E of this factor in the RGEG; or,
- responsibility for attacking basic research problems of such fundamental interest, extraordinary difficulty, and resistance to attack that:
 - there have been numerous attempts by highly competent scientists to explore the area and to gain a fundamental understanding of the processes or phenomena;
 - new hypotheses, concepts, and techniques must be developed for attack, and interpretation; and
 - successful performance of the work will lead to the major modification or important extension of current theory.

In either of the above situations, the assignment and leadership exercised influence the shaping of agency program goals, advancement of programs and understanding in the total field, and the planned activities of numerous scientists in Government, academic institutions, and private industry.

Factor 2: Supervisory Controls

Level A (2 points)

The supervisor typically assigns specific problems along with general instructions on the scope and objectives of the study. The supervisor or higher management makes any decisions to discontinue work, change emphasis, or change the research plan. The researcher may suggest studies and undertake them after receiving supervisory approval. The supervisor reviews work for adequacy of method, completeness, and appropriate interpretation of results.

The researcher confers with the supervisor regarding problem definition, the relationship of the problem to the organization's broader research goals, and developing a research plan. Supervisory or managerial direction and guidance help the researcher in the critical problem definition and planning stages, but do not negate the researcher's responsibility for adequately completing these steps.

The researcher is expected to:

- assume responsibility for the study and pursue it to completion;
- solve problems ordinarily encountered in accomplishing the work with only occasional supervisory input;
- interpret results; and
- prepare entire, or sections of, reports and papers.

Level C (6 points)

The supervisor may either assign a broad problem area to the researcher or allow the researcher to work with substantial freedom within an area of primary interest. The researcher has substantial freedom to identify, define, and select specific projects, and to determine the most promising research strategies and problem approaches.

The supervisor:

- approves plans calling for considerable investments of time or resources;
- makes final decisions concerning the direction of work and changes in or discontinuance of projects involving substantial research investments;
- relies on the researcher's professional judgment to such an extent that the researcher's recommendations are ordinarily followed; and
- reviews final work and reports, principally to evaluate overall results, recommendations, and conclusions.

The researcher is responsible, with little technical direction, for:

- formulating hypotheses;
- developing and carrying out the research plan;
- determining equipment and other resource needs;
- keeping the supervisor informed of general plans and progress;
- addressing novel and difficult problems requiring modification of standard methods;
- analyzing and interpreting results;

Level C (continued)

- preparing comprehensive reports of findings; and
- working with users to interpret and implement research findings or technologies.

Level E (10 points)

The supervisor provides broad administrative supervision, which is generally limited to approving staff, funds, and facilities, and to providing broad guidance on agency policies and mandates. Technical supervision is consultative in nature. Management accepts the researcher's findings as technically authoritative, as a basis for decisions, and as acceptable for review by the scientific community.

The researcher, working within the framework of management objectives and priorities, is responsible for:

- formulating research plans and hypotheses;
- carrying out the project plan;
- interpreting findings and assessing their organizational and professional applicability; and
- locating and exploring the most promising areas of research in relation to agency program needs and the state of the science or discipline.

Level F (12 points)

The supervision received is characterized by:

- a degree of confidence in and reliance on the researcher's productivity, competence, and judgment such that there is an unusual level of support of their recommendations and their most novel and as yet seemingly fruitless investigations;
- responsibility such that interpretations, recommendations, and conclusions having major impact on matters of great urgency and significance are furnished other agencies and the professional community without reference to or knowledge of higher authority in the agency; and
- a supervisory relationship that fully reflects recognition of the researcher as both a top technical authority in the field in the agency, and a distinguished and brilliant scientist.

Factor 3: Guidelines and Originality

Level A (2 points)

Guidelines include:

- existing theories and methods generally applicable to the research problem; or
- materials that may contain some inconsistencies, be partially defined, or provide several possible approaches to the problem.

Originality is demonstrated by

- developing a complete and adequate research design by selecting and adapting the most appropriate approach, methods, or techniques for the problem at hand; and
- limited extension or modification of procedures or techniques, as required.

Level C (6 points)

Guidelines:

- consist of existing literature in the field of limited usefulness due to contradictions, critical gaps, or limited applicability; or
- are largely absent because of the novel nature of the work.

Originality is demonstrated by:

- defining elusive or highly complex problems;
- developing productive hypotheses for testing;
- developing important new approaches, methods, and techniques;
- interpreting and relating significant results to other research findings;
- developing and applying new techniques and original methods of attack to solve important problems presenting unprecedented or novel aspects;
- isolating and defining critical problem features; and
- adapting, extending, and synthesizing theory, principles, and techniques into original or innovative combinations or configurations.

Level E (10 points)

Guidelines are almost nonexistent in pertinent literature.

Originality and creativity are demonstrated by:

- discovering complex theory or methodology;
- contributing significantly to the development of new theory or methodology to supplant or add new dimensions to a previous framework; and
- solving problems and delivering results that markedly influence the scientific field or society.

Level F (12 points)

The work is characterized by the application of such unusual productivity, creativity, and depth of insight into the fundamental nature of phenomena and their relationships as to produce a substantial variety of new methods and techniques, of new approaches to formerly intractable problems, of identification of new problems to be attacked, and of important new concepts and discoveries, inclusive of the type described in Level E of this factor in the RGEG.

New areas are opened up for exploration, the findings have widespread applicability to other fields of science and technology, and there is likely to be a major stimulus to scientific and technological effort and achievement in the field of endeavor.

Factor 4: Contributions, Impact, and Stature

Level A (4 points)	Level C (continued)	Level E (continued)	Level E (continued)	Level F (24 points)
<p>The researcher defines problems, performs background research, develops and executes a research plan, organizes and evaluates results, and prepares reports of findings. Work is expected to result in, or has resulted in:</p> <ul style="list-style-type: none"> primary authorship of papers or reports filling narrow gaps in an existing framework of knowledge, to corroborate existing theory, or to report findings of limited scope; or co-authorship of a major paper or report of considerable interest to the scientific field; providing information and technical support on assigned research projects to collaborators and managers; and recognition for contributing to the project and communicating results outside the agency. 	<ul style="list-style-type: none"> conceiving and formulating research ideas supporting or leading to productive studies by others; products that are significant in solving important scientific problems; selection to serve on important committees and review panels of technical groups and professional organizations; recognition by the scientific community as a significant contributor to the field of study; acknowledgement of impact by end users as evidenced by favorable reviews or citation in the work of others; invitations to make presentations to professional societies and others outside the organization on technical matters and management practices in the area of specialization; and consultation by users and other researchers who are respected in their fields of study. 	<p>are of such importance and magnitude that they move science forward. Research is of such impact that other researchers must take note of it to keep abreast of developments in the field.</p> <p>Work at this level includes many of the following:</p> <ul style="list-style-type: none"> primary authorship of a number of important papers including seminal or synthesis publications, some of which have had a major impact on advancing the field or are accepted as authoritative in the field; contributions to inventions, designs, techniques, models, or theories are regarded as major advances and open the way for further developments or solving problems of great importance to the professional community, the organization, or the public; being sought as a consultant by colleagues who are themselves recognized experts in the field; recognition by the scientific community as an authority in the field; 	<ul style="list-style-type: none"> requests from highly-respected colleagues to collaborate with the researcher; attracting new researchers to the field; invitations to address or to assume a leadership role in national professional organizations and associated committees; and selection to lead research to solve large and complex problems. <p>In addition, researchers at this level typically perform a variety of advisory activities based on their scientific reputation and standing such as:</p> <ul style="list-style-type: none"> contributing significantly to professional symposia defining the state of the discipline and new or emerging areas in the field; contributing to strategic research planning and program development; participating in major technology or information transfer activities of great importance to the scientific field, the agency, or the public; or participating in applying the research to important management and policy decisions. 	<p>The scientist is a nationally recognized authority and leader in an area of widespread scientific interest and investigation.</p> <p>The scientist will typically have received honors and awards from major national or international organizations for his or her accomplishments.</p> <p>The scientist is sought as an advisor and consultant on scientific and technological programs and problems which extend well beyond his or her own field.</p> <p>The researcher's reputation as a scientific leader is such that he or she serves as a recruiting attraction for recent graduates or visiting scientists who seek opportunities to work under his or her inspiration and guidance in order to benefit from the scientist's imaginative fire, critical judgment, and advanced research technique.</p> <p>The scientist's personal competence is likely to be a major consideration in parent Service, Department, or other governmental agency sponsorship of programs in his or her field.</p>
<p>Level C (12 points)</p> <p>The researcher has demonstrated competence and productivity as evidenced by conducting rigorous research of marked originality, soundness, and value. Work is expected to result in, or has resulted in:</p> <ul style="list-style-type: none"> primary authorship of publications of considerable interest and value to the field; 	<p>Level E (20 points)</p> <p>The researcher has made outstanding and significant contributions by conducting research in either a broad field or a narrow but very specialized field. The researcher's accomplishments</p>			