



UNITED STATES
OFFICE OF PERSONNEL MANAGEMENT
WASHINGTON, DC 20415-1000

OFFICE OF THE DIRECTOR

FEB 10 2006

MEMORANDUM FOR CHIEF HUMAN CAPITAL OFFICERS

FROM: LINDA M. SPRINGER
DIRECTOR

A handwritten signature in dark ink, appearing to be "LMS", is written over the printed name and title of Linda M. Springer.

Subject: Draft Research Grade Evaluation Guide

The Office of Personnel Management (OPM) is releasing the Draft Research Grade Evaluation Guide (RGEG). Please respond to the attached Request for Comments by March 17, 2006.

Using the lead agency test approach, we are requesting the following agencies take the lead in reviewing and testing the draft RGEG:

Department of Health and Human Services,
Department of Agriculture, and
Department of the Interior.

In addition to the lead agencies, we encourage all agencies to review and comment on the draft. The first attachment contains questions we would like you to answer as you complete your review. The second attachment provides background information on the development of the draft RGEG and the rationale for significant changes.

The RGEG currently covers professional research work in the biological, medical, agricultural, physical, and mathematical sciences, and in engineering and psychology. The draft RGEG extends coverage to include, in addition to psychology, all professional research positions in the Social Science, Psychology, and Welfare Group, 0100. We are proposing the expanded coverage primarily in response to agency requests. Agencies that do not now use the RGEG, but that have positions that will be subject to the draft RGEG's expanded coverage, should closely consider the impact of the proposed change.

We rely on agency human resources officials with positions covered by the RGEG to make sure subject matter experts and program management officials are aware of this draft and to seek their input. We depend on their input, along with yours, so that we can make appropriate adjustments to produce a final RGEG that will meet your needs.

If you have questions or would like to discuss this RGEG, please contact Ira Johnson, Jr. at (202) 606-3600 or by email to Ira.Johnson@opm.gov.

Attachments (2)

cc: Human Resources Directors
Agency Classification Chiefs

ATTACHMENT 1
REQUEST FOR COMMENTS
DRAFT RESEARCH GRADE EVALUATION GUIDE

**PLEASE PROVIDE YOUR COMMENTS AND SUGGESTIONS TO OPM BY
JANUARY 31, 2006.**

Note: Do not use the grade level criteria in the attached draft guide to classify positions until OPM issues the guide in final form.

Information We Need from Agencies with Covered Positions

Subject matter experts and human resources officials in **both lead and non-lead agencies** should answer the following questions about this Draft Research Grade Evaluation Guide (RGEG).

1. The present RGEG covers research work in the biological, medical, agricultural, physical, and mathematical sciences and in engineering and psychology. The Draft RGEG extends coverage to include, in addition to psychology, all professional research positions in the Social Science, Psychology, and Welfare Group, 0100.

- Should the RGEG cover research work in other science and professional occupations (for example, Accounting Series, 0510; Contracting Series, 1102; or Librarian Series, 1410)?
- If so, what additional occupations should be covered and why?

2. Is the definition of “research” adequate for research conducted in your covered research positions? If not, please provide proposed language and supporting information.

3. The Draft RGEG removes gaps from the point ranges for converting factor level points to a grade. What impact, if any, will this have on classifying your positions?

4. What is your overall assessment of the draft for evaluating the grade levels of research positions? What, if any, additional suggestions do you have for improving the draft? Please be specific.

Additional Information We Need from Lead Agencies

Please test the Draft RGEG by applying it to a sufficient number of positions to support an estimate of potential impact. Test positions are those presently classified under the RGEG, as well as positions that would be newly covered by the RGEG. Please provide the following:

1. The number of positions tested by series and grade level.
2. The potential impact on the positions, i.e., the number of upgrades, downgrades, and no grade changes; and the number of positions newly covered and newly excluded from RGEG coverage.

3. Copies of position descriptions or other documentation of positions that would change in grade level. Include an evaluation statement or an explanation of:
 - (a) How the position was classified using the present standard; and
 - (b) Why the grade changed after applying the draft criteria.

As you conduct the test application, do not include positions if there is any question about the accuracy of the current grade. However, if you have positions that have been especially difficult to classify under the existing RGEG, please apply the Draft RGEG to these positions and provide copies of the position descriptions. In addition, tell us if the Draft RGEG was easier or more difficult to apply than the existing RGEG.

How Do You Submit Comments?

In response to the request outlined above, we would like to have both:

- (a) Comments representing the agency's overall feedback, and
- (b) Representative comments from subject matter experts and subordinate locations to support your feedback.

Please submit comments in accordance with your agency's guidelines. Suggestions for change will be particularly helpful if you include the rationale and examples for the suggested change.

Please send your response by email to fedclass@opm.gov or by hard-copy to:

U.S. Office of Personnel Management
Center for Talent and Capacity Policy
Standards, Competencies, and Assessment Development Group
1900 E Street NW, Room 6H31
Washington, DC 20415-8330

Individuals who wish to send personal comments should send them to the same address. If you would like to discuss the draft or obtain additional information, you may contact Ira Johnson, Jr. by phone at (202) 606-3600 or by email to Ira.Johnson@opm.gov.

ATTACHMENT 2

BACKGROUND AND SUMMARY OF MAJOR CHANGES

A group of research scientists and human resources specialists from several agencies organized an Interagency Research Grade Evaluation Guide Committee to propose revisions to the present Research Grade Evaluation Guide (RGEG). OPM worked with the committee in an advisory capacity. This Draft RGEG is the product of that joint effort and a final OPM review and revision.

OPM's primary goal in revising the RGEG is to update the grade evaluation criteria for today's Federal research and development environment, while retaining agency application flexibility.

Typically, OPM initiates a study of position classification criteria by conducting extensive factfinding to gather broad-based agency input. In this effort, we have relied on the work of the committee to provide the information we normally gather during factfinding. We recognize that to be most effective, the substance of the RGEG should reflect the broadest possible agency perspective. Agencies use the RGEG to grade the work of positions in a wide variety of disciplines, work environments, and highly divergent cultures. For these reasons, the Draft RGEG provides only the most generic instructions for RGEG application. OPM encourages agencies to develop internal supplements to address agency-specific operations, products, and work methods.

The table on the following pages describes the significant proposed changes.

Proposed Change	Explanation/Rationale
1. Group related but previously scattered topics.	Simplify presentation and consolidate information; provide clearer focus and order that is more logical; eliminate overlap.
2. Eliminate text explaining the RGEG concept.	No longer needed because the concept is now well-established and described amply in documents such as "The Classifier's Handbook" and the "Introduction to the Position Classification Standards."
3. Clarify use of "research" in official titles of covered positions.	Establish uniform titling practices for research positions.
4. Eliminate references to grade GS-05 and GS-07 positions.	Work at these grade levels is not research, as defined by the RGEG. Classify such positions by applying the appropriate job family standard, occupational standard, or guide.
5. In grade GS-11 and above grading criteria, re-title Factor 1 to remove the word "situation" and re-title Factor 4 to replace the words "qualification and contribution" with the words "stature and impact."	In Factor 1, the research assignment encompasses the work situation; therefore the word "situation" in the factor title is unnecessary. Factor 4 criteria do not address "qualifications," but rather the reputation and prominence of the researcher in the research community; the word "impact" embraces both the researcher's contributions and success in information transfers.
6. Move factor level criteria immediately after factor descriptions.	More closely links general factor concepts with evaluation criteria.
7. Retain most original factor and degree terminology, but with some minor editing.	Simplifies presentation and improves parallelism.

Continued

Proposed Change	Explanation/Rationale
8. Emphasize quality/impact rather than quantity in Factor 4.	De-emphasizes quantitative factors, such as the number of publications, not necessarily related to the impact of the contribution.
9. Delete program examples (defense, health, national economy, etc.) from Level E of Factor 3.	Simplifies text and eliminates wording unnecessary for grading.
10. Delete the “In Excess of Degree E” criteria and all references to it.	Agencies use the “In excess of Degree E” criteria to identify candidates for Scientific and Professional (ST) positions. Agencies may develop their own ST criteria subject to OPM approval.
11. Delete references to basic and applied research.	Concepts are vague and unnecessary.
12. Require that evaluators award only the RGEG’s designated point values.	The award of other than designated point values is especially difficult to justify when challenged. The evaluator may extrapolate Factor Levels B and D from adjacent factor level criteria to refine point value awards.
13. Change the term “team leader” to “primary investigator.”	The General Schedule Leader Grade Evaluation Guide (GSLGEG), issued in April 1998, defines the term “leader” and authorizes the award of an additional grade level for positions that satisfy GSLGEG criteria. The term “primary investigator” appropriately eliminates the potential to award double credit to team leaders (first in the RGEG level evaluations and again by applying the GSLGEG).

Continued

Proposed Change	Explanation/Rationale
14. Broaden scope of coverage to include all research professionals in the social sciences.	Research professionals in the social sciences participate on teams with physical and biological scientists, mathematicians, and other professional researchers whose positions are covered by the RGEG. The expanded coverage gives the social scientists access to the same classification coverage as other researchers.
15. Eliminate gaps in the point ranges for converting factor level points to a grade.	The RGEG criteria permit ample grade evaluation flexibility without the gaps.

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INTRODUCTION

The Research Grade Evaluation Guide (RGEG) provides grading criteria for nonsupervisory professional research work in engineering and the biological, medical, agricultural, physical, mathematical, and social sciences occupational groups for General Schedule (GS) and other “white collar” pay plans. In the General Schedule position classification system established under chapter 51 of title 5, United States Code, the positions addressed here would be two-grade interval positions.

The RGEG is divided into three parts. Part I describes Federal research work. Part II provides the grading criteria for positions classified in accordance with GS grade definitions. Part III provides information on position titles for research positions, research grade evaluation panels, and other administrative matters related to research positions.

The RGEG does not provide information to determine a position’s occupational series. For guidance on selecting the appropriate series for the position, see The Classifier’s Handbook.

COVERAGE

This guide applies to work in professional scientific and engineering positions that satisfy both the definition of research and research responsibility as described below. If the definition of either research or research responsibility is not satisfied, use the standard or guide applicable to the position’s series to evaluate the grade of the position.

Research – Research is systematic, critical, intensive investigation directed toward discovering, disseminating, and applying new or expanded knowledge in a professional discipline. Research includes, but is not limited to, empirical and theoretical investigations that have one or more of the following objectives:

- to determine the nature, magnitude, and interrelationships of physical, biological, psychological, social, and other comparable phenomena and processes;
- to create or develop empirical, theoretical, or experimental means of investigating such phenomena and processes; or
- to develop principles, criteria, methods, and data for others to apply.

Research Responsibility – Professionals engaged in research work have one or both of the following responsibilities:

- personally performing professionally responsible research for a substantial portion of time; or
- directly and personally leading and participating in the activities of a research team and/or organizational unit (when the primary basis of selection for the position is

competence and capability in performing professionally responsible research rather than in supervising and managing a research organization).

Professionally responsible research meets the following criteria:

- the researcher's contributions, stature, and recognition have a direct and major impact on the level of difficulty and responsibility of the research; and
- the work:
 - involves applying scientific or comparable methods, including exploring and defining problems, planning the approach for study, analyzing data, interpreting results, and documenting or reporting findings;
 - requires creativity and critical judgment, which may materially affect the nature of the end product;
 - requires research capability attainable through graduate education or demonstrated research experience; and
 - is performed at a level of responsibility typically associated with independent research investigation.

Additionally, when assessing whether the position should be evaluated using the Research Grade Evaluation Guide, consider the purpose of the work as determined by assignments over time, qualifications required, management intent, and the organization's mission.

REPLACING THE PREVIOUS GUIDE

This guide replaces the Research Grade Evaluation Guide last revised in January 1976.

PART I – RESEARCH

THE RESEARCH ENVIRONMENT

In the Federal Government, researchers are typically expected to:

- identify and conceptualize research needs;
- plan and conduct experiments and studies;
- collect, analyze, manage, and document data, results, and findings;
- transfer new information and technology to users;
- publish and disseminate results;
- review, evaluate, and apply research products; and
- stay abreast of and apply new information and technology.

Researchers typically work closely with information users, managers, policy makers, and others to identify information gaps and needs; participate in strategic planning of research programs and projects; organize and lead interdisciplinary research teams; integrate new research findings and technology into policies and programs; and extend and interpret scientific information in terms relevant and useful to the public and society. In conforming to agency mandates and missions, researchers generate findings ranging from new explanations of phenomena to information useful in developing new technologies. These discoveries expand and advance scientific theories and knowledge into new and unexplored frontiers of human experience and perception.

RESEARCH VERSUS DEVELOPMENT

Some activities closely resemble the activities covered by this guide, but are more appropriately evaluated with another standard or guide. Of particular relevance is distinguishing between research and development, which is sometimes difficult because they share many common characteristics, standards, and procedures. Researchers often collaborate and perform functions associated with both activities; however, there are key differences between research and development work. Development involves the continuous exploitation of basic scientific and professional knowledge to achieve fairly definable and known desired results. In comparison, research often is difficult to define in terms of measurable results and expectations. When application of research is direct and rapid, and development is greatly compressed, determining when work ceases to be research and in fact becomes development is especially difficult.

Although research and development share many characteristics, their dissimilarities require different language and criteria for determining grade levels for GS positions. The table below describes some of the critical differences between research and development. Use the criteria in this table to decide whether the Research Grade Evaluation Guide is appropriate for evaluating the grade level of the work of the position. If it is a research position, use this guide to evaluate the grade level of the position. If the work of the position is more development than research, use the **Equipment Development Grade Evaluation Guide** to evaluate the grade of the position.

	Research	Development
Purpose	Extending knowledge and understanding.	New or improved products, processes, and techniques.
Assignments	Problems to be solved: <ul style="list-style-type: none"> • entail relative freedom to explore promising areas in relation to organizational programs; • may stem from an intent to close gaps in knowledge in a given field, or to develop new theories or explanations of phenomena; and • are difficult to define in terms of expected outcomes and measurable results. 	Problems to be solved: <ul style="list-style-type: none"> • are defined in advance or assigned; • may stem from an intent to exploit an understanding of phenomena and principles; or • have predictable outcomes or measurable results.
Results	Products are: <ul style="list-style-type: none"> • papers describing new and modified theories and principles; • explanations of phenomena; and • information to improve the understanding of techniques and processes. 	Products are: <ul style="list-style-type: none"> • papers describing application of theories and principles; • design concepts, models, patents, and inventions; and • equipment, techniques, and processes.

ADDITIONAL OCCUPATIONAL CONSIDERATIONS

The Research Grade Evaluation Guide is not intended to evaluate work involved with:

- monitoring research grants or contracts (see the **Research Grants Grade Evaluation Guide**);
- engineering development test and evaluation (see either the **Equipment Development Grade Evaluation Guide** or **Grade Level Guide for Test and Evaluation Work in Engineering and Science Occupations**); or
- supervisory, managerial, or administrative leadership duties (see the **General Schedule Supervisory Guide** or the **General Schedule Leader Grade Evaluation Guide**).

This guide does not cover trainee work (see applicable occupational standard).

PART II – GRADING INFORMATION

EVALUATION SYSTEM

Part II provides grading information for use in determining the appropriate grade of non-supervisory two-grade interval professional research positions. These grading criteria are applicable to General Schedule positions classified under chapter 51 of title 5, United States Code. They may also be used as appropriate to determine work levels for other Federal position classification systems.

The Research Grade Evaluation Guide (RGE) provides criteria for evaluating the grade level of research work for grades 9 through 15. Work that does not meet the minimum criteria for a grade 9 cannot be classified as a research position. For those positions that do not meet at least the minimum criteria for a grade 9 research position, use the occupational or job family position classification standard or guide appropriate for the series of the position to determine the grade level of the position.

The criteria for evaluating grade 9 work are in narrative format. The criteria for evaluating the work of positions for grades 11 through 15 are in a factor format. The factors are:

- Factor 1 – Research Assignment,
- Factor 2 – Supervisory Controls,
- Factor 3 – Guidelines and Originality, and
- Factor 4 – Contributions, Impact, and Stature.

Five Levels – Each factor has five levels, A through E, with increasing point values, respectively. This guide provides specific criteria for Levels A, C, and E. Level B falls between Levels A and C. Level D falls between Levels C and E. For example, if work exceeds Level A criteria, but does not satisfy Level C criteria, the work is awarded Level B.

Factor Relationships – Evaluate and assign factor levels separately for each factor, based on the best match between the factor level criteria and the researcher's work. In making evaluations, carefully consider the balance and relationship among the factors. Sound classification judgment usually precludes more than a 2-level difference between levels assigned to different factors. For example, if work is evaluated under Factor 1 at Level A, it is highly unlikely that work would warrant Level D or higher under Factors 2, 3, or 4. Keep in mind that the capabilities of the researcher may markedly influence the characteristics of the work.

Point Values – Each factor level has a point value. Factor 4 is double-weighted to reflect the relative importance of the researcher's stature and impact to the grade level determination. When evaluating the work, award the designated point values shown in the table on the next page. Work that fails to meet Level A criteria should be awarded zero points.

The table below shows the point values assigned to each level of the factors.

Points by Factor and Level				
Level	Factor 1	Factor 2	Factor 3	Factor 4
A	2*	2*	2	4
B	4	4	4	8
C	6	6	6	12
D	8	8	8	16
E	10	10	10	20

*If work falls below Level A for Factor 1 or for Factor 2, refer to grade 9 criteria to evaluate the grade of the position.

Grade Level – To determine the grade level of a position, add the point values for all assigned factor levels. Use the Grade Conversion Table shown below to convert the total points to a grade.

GRADE CONVERSION TABLE

Point Values	Grade
8 – 14 *	GS-11
16 – 24	GS-12
26 – 34	GS-13
36 – 44	GS-14
46 – 50	GS-15

*If work is awarded less than 8 total points, refer to the grade 9 criteria to evaluate the grade of the position.

If the assigned points fall near the top or bottom of a point range, be especially careful to consider all relevant facts before making the final point assignment and grade determination.

EVALUATION CRITERIA AND FACTORS

Grade Level 9 Criteria

Research Assignment – Researchers carry out projects that have clearly specified objectives and involve investigating a limited number of variables. They independently plan and carry out research in accordance with approaches others have structured. Researchers generally plan project details based on precedents established in related projects. They may devise and recommend alternative methods of standardized analysis for solving moderately difficult problems. Generally, they have a higher degree of responsibility for data collection than for interpretation.

Supervisory Controls – The employee works under the technical and administrative supervision of a supervisor or a higher graded researcher. The supervisor defines the immediate objectives and the nature of results that are expected. The employee discusses any potential and actual sources of difficulty with the supervisor. The supervisor reviews recommended work plans, inspects work in progress to observe the adequacy of research methods and practices, and gives advice. The supervisor reviews completed products for adequacy, completeness, and validity of conclusions reached.

Guidelines – Precedents are generally available in the form of previous studies on related subjects, standard methods in textbooks, handbooks, or other literature, and procedural manuals. Most assignments, however, have features that preclude directly applying the precedents. Accordingly, the researcher must select and adapt methods and identify the best techniques for solving the problem. The researcher exercises originality in developing improvements and modifications to established procedures. The researcher exercises judgment to ensure that tests, measurements, and observations yield valid results.

Minimum Criteria – Work that does not meet the criteria for grade 9 cannot be classified as a research position. For those positions that do not meet at least the minimum criteria for a grade 9 research position, use the occupational or job family position classification standard or guide appropriate for the series of the position to determine the grade level of the position.

Grade Level 11 through 15 Criteria

This guide has four factors for grading the work of researchers. While there is some overlap among the factors, each focuses on a different aspect of the researcher's work and the relationship between the researcher and the research environment.

Factor 1 – Research Assignment

This factor deals with the nature, scope, and characteristics of the researcher's current assignment. Award a factor level that reflects the norm of current assignments, rather than atypical projects. Research assignments are directly dependent upon the individual qualities of the researcher and the inherent difficulty of the research problems. Work commonly expands commensurate with the researcher's motivation, capability, and creativity.

Projects and Teams – For project and team members, base the factor level only on the specific projects or portion of projects for which the researcher is responsible. For project managers, base the factor level on the scope and character of the total project.

Primary Considerations – In evaluating this factor, consider the:

- assignment scope and complexity, objectives, and means of accomplishment;
- problem breadth and depth;
- availability of related research studies;
- extent to which objectives can be defined;
- number of unknowns and critical obstacles;
- variety and depth of knowledge and expertise required to solve problems;
- extent and complexity of the required validation process;
- necessity to translate abstract concepts into easily understood statements of theory or models, and to determine how best to disseminate information or transfer research findings;
- utility of the end product in solving the initial problem and in opening new areas of investigation; and
- expected impact of end results, products, or outcomes.

Factor 1 – 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 publishable contributions that add to scientific and professional knowledge or support developing new or improved methods and techniques.

The researcher typically works as a project or team member.

Factor 1 - Level C (6 points)

Research assignments have the following characteristics:

- the scope is so broad and complex that it requires a series of comprehensive and conceptually related phases and studies;
- problems are difficult to define;
- require unconventional or novel approaches or 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.

The researcher typically works as a project member or as a primary investigator.

Factor 1 – Level E (10 points)

Research assignments have the following characteristics:

- the scope and complexity are such a level as to require subdivision into separate phases, some of which are considerably broad and complex;
- problems are exceptionally difficult and unyielding to investigations;
- require unconventional or novel approaches or sophisticated 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 methods and techniques; or
 - publishable contributions that answer important questions in the field.

The researcher typically works as a project member or as a primary investigator.

Factor 2 – Supervisory Controls

This factor deals with the researcher's current level of independent performance and with the technical and administrative guidance and control that the supervisor exercises over research work.

For a given research assignment, a supervisor may exercise a considerable amount of oversight. On the other hand, a supervisor may exercise minimum control and guidance, but works to create a climate conducive to generating ideas through staff discussions and seminars. To perform at maximum effectiveness within these supervisory controls, researchers may consult frequently with colleagues and collaborators. Use care in distinguishing between such consultations and supervisory control and guidance.

Primary Considerations – In evaluating this factor, consider the:

- manner in which the supervisor assigns work;
- researcher's freedom to determine a course of action;
- degree of the supervisor's acceptance of the researcher's recommendations, decisions, and final products; and
- researcher's opportunity for procedural innovation.

Researchers working on complex team projects that are not divided into smaller components exercise independent performance when they:

- participate fully as a professionally responsible team member in substantive aspects of the work; and
- make contributions that are equivalent to independently performing more limited research projects.

The requirement for independent performance is not compromised by supervisors assigning projects, suggesting avenues of research, or guiding research in general, as long as researchers retain personal responsibility for scientific creativity, for planning and conducting studies, and for organizing, evaluating, and documenting results. Similarly, critical review by supervisors for adherence to scientific methods, thoroughness, relevance of conclusions, etc., is considered part of normal review procedures and does not alone reduce the points assigned under the Supervisory Controls factor.

By contrast, the researcher's independence is significantly limited when a supervisor:

- provides detailed instruction on preparing a research plan;
- provides detailed problem definition before assignment to the researcher; or
- assumes responsibility for analysis, evaluation, or reporting.

Factor 2 – 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.

Factor 2 – 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 that call for considerable investments of time or resources;
- makes final decisions concerning the direction of work and changes in, or discontinuance of, projects that involve 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.

(continued)

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 that require modifying standard methods;
- analyzing and interpreting results;
- preparing comprehensive reports of findings; and
- working with users to interpret and implement research findings or technologies.

Factor 2 – Level E (10 points)

The supervisor provides broad administrative supervision, which is generally limited to approving staffing, 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 and as a basis for decisions.

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

- formulating research plans and hypotheses, and 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 involved.

Factor 3 – Guidelines and Originality

This factor deals with the creative thinking, analyses, syntheses, evaluation, judgment, resourcefulness, and insight that characterize the work currently performed.

Guidelines usually consist of literature in the field, procedures, instructions, or precedents that may be adapted or modified to meet the requirements of the current assignment. Features to be considered are:

- the extent and nature of available written guides;
- intrinsic difficulty encountered in applying guides in terms of their ready adaptability to the current assignment; and
- the degree of judgment required in selecting, interpreting, and adapting guidelines.

In assessing the impact of creativity in the position, consider the requirements for:

- original and independent creation, analysis, reasoning, evaluation, and judgment; and
- originality in interpreting findings and translating findings into a form usable by others.

Factor 3 – Level A (2 points)

Guidelines include:

- existing theories and methods that are 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.

Factor 3 – Level C (6 points)

Guidelines:

- consist of existing literature in the field that is 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; and
- isolating and defining critical problem features and adapting, extending, and synthesizing existing theory, principles, and techniques into original or innovative combinations or configurations.

Factor 3 – Level E (10 points)

Guidelines are almost nonexistent in pertinent literature.

Originality and creativity are demonstrated by:

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

Factor 4 – Contributions, Impact, and Stature

This factor focuses on the researcher's total contributions, impact, and stature as they bear on the current research assignment. It is not restricted to only present accomplishments – past accomplishments and achievements should also be taken into account. However, recency of accomplishment is important. Recent research or similar activities are essential to receiving full credit.

Security regulations, proprietary agreements, or other circumstances may prevent publishing research results and make it difficult to evaluate the work based on its impact on the larger professional community. Agencies should develop alternative processes to evaluate the impact of this work.

Contributions: The researcher's contributions reflect the knowledge, skills, and experience the incumbent brings to the position. Professional journal articles are an expected product of research results for communicating scientific findings to the broader research community; however, they are not the only outlet for communicating information. Journal articles should be balanced with other forms of communication to ensure broad impact from the results of the work. Indicators of the researcher's contributions may include:

- research publications (for example, journal articles, monographs, books, reviews, agency and customer reports, maps); and
- innovations and technology transfer.

Do not give undue weight to the quantity of publications, research contributions, and professional activities. Consider primarily the quality, impact, and relevance of the researcher's contributions on the scientific community or field.

Impact: Consider whether the researcher:

- has an impact on scientific and/or societal issues;
- sets new research directions;
- develops new methods, techniques, or tools that are used by other researchers; and
- drives management and policy outcomes.

Stature: Stature is established when the researcher is recognized by the scientific field and/or society, as indicated by:

- requests for expert advice/consultation by other professionals and managers;
- requests to exercise leadership on research teams or projects;
- invitations to serve on advisory boards;
- requests to organize or chair committees, workshops, or symposia;
- invitations to address scientific or professional organizations;
- invitations to write synthesis papers;
- recognition by professional societies and external groups; or
- honors and awards.

A researcher in one field may move into a related field. Such a move does not change Factor 4 credit if the researcher will perform research work in the new field at substantially the same level of competence as before after a reasonably short period.

Factor 4 – Level A (4 points)

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:

- primary authorship of papers or reports that serve to fill 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 reports 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.

Factor 4 – Level C (12 Points)

The researcher has demonstrated competence and productivity as evidenced by conducting rigorous research that is of marked originality, soundness, and value. Work is expected to result in, or has resulted in:

- primary authorship of publications of considerable interest and value to the field;
- conceiving and formulating research ideas that support or lead 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, such as favorable reviews and citations 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.

Factor 4 – Level E (20 points)

The researcher has made outstanding contributions by conducting research in either a broad field or a narrow but very specialized field. The researcher's accomplishments are of such importance and magnitude that they move the science forward. Research is of such impact that other researchers must take note of it to keep abreast of developments in the field. Work at this level includes many of the following:

- 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 that are regarded as major advances and have opened the way for further developments or solved 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;
- 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.

In addition, researchers at this level typically perform a variety of advisory activities based on their scientific reputation and standing such as:

- contributing significantly to professional symposia that define 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; or
- participating in applying the research to important management and policy decisions.

PART III – ADMINISTRATIVE CONSIDERATIONS

Position Titles

The Office of Personnel Management (OPM) requires agencies to assign every position an official position title that includes a basic title, which may be appended with one or more prefixes and suffixes. Follow the instructions in the occupational or job family position classification standard related to the position under consideration to assign the basic position title and suffixes, as appropriate. Basic titles may be modified with one or more of the following prefixes:

- *Research* – if work satisfies the criteria for applying this Guide;
- *Supervisory Research* – if work satisfies the grade criteria for applying this Guide and meets the criteria for “supervisor” in the General Schedule Supervisory Guide; and
- *Lead Research* – if work satisfies the criteria for applying this Guide and meets the criteria for “leader” in the General Schedule Leader Grade Evaluation Guide.

Standard Occupational Classification (SOC) System

The Office of Management and Budget (OMB) requires all Federal agencies collecting occupational data to use the Standard Occupational Classification (SOC) system for statistical data reporting purposes. The Bureau of Labor Statistics (BLS) uses SOC codes for a National Compensation Survey and other statistical reporting. The SOC system recognizes the research function in describing many occupations, but does not identify that function in occupational titles. For that reason, the SOC code for a professional research position is the SOC code that is appropriate for the basic occupation. For example, the SOC codes for the OPM-authorized occupational titles, Research Horticulturist, Research Chemist, and Research Metallurgist, are Horticulturist, Chemist, and Metallurgist, respectively. More information about the SOC is available at <http://stat.bls.gov/soc>.

Evaluation Procedures

Agencies are responsible for properly applying this guide in accordance with OPM guidance and regulations. Human resources specialists play a key role in ensuring compliance and are an integral part in the evaluation process. Agencies have discretion in establishing and evaluating research positions; however, OPM recommends applying the same evaluation method to all research positions within an agency. OPM further recommends the use of evaluation panels that:

- are staffed by both researchers and human resources specialists to provide critical subject matter expertise and to build consensus for the grade level determination; and
- include disciplinary diversity to provide better perspective with respect to the relationship of the specific work of the position to broader areas of research.

The nature, type, importance, and significance of various professional contributions, research products, and other scientific outputs vary across agencies and disciplines. Therefore, agencies

may find it helpful to develop supplements to this guide to aid in evaluating research work in their specific research environment.

Agencies applying this guide should establish a comprehensive mechanism for gathering information relevant to the classification process. Information relevant to Factors 1, 2, and 3 is usually included on position descriptions. The researcher typically provides an information package describing professional contributions, recognition, service, impact, and stature for evaluating Factor 4.

Periodic Review

Because significant changes in research positions may occur gradually over time, agency procedures should provide for periodic review to ensure accuracy and proper classification. This classification review may result in a change in grade level or change to a non-research position.

Documentation

Part 511 of title 5, Code of Federal Regulations, permits General Schedule employees to appeal the classification of their positions. Accordingly, agencies must be able to defend their classification decisions. Agencies should retain all material relevant to the evaluation process as part of the documentation supporting their research and grade level decisions.

Vacant and New Positions

Classify vacant and new positions based on the total factor pattern consistent with the accomplishments, contribution, and competencies to be required of prospective candidates.