

FDA PERSONNEL GUIDE FOR THE EVALUATION OF NCTR SUPPORT AND SERVICE SCIENTISTS AT GS-12 AND ABOVE

PURPOSE:

The purpose of this Guide is to provide grade level criteria which address the work performed by support and service scientists in NCTR at GS-12 and above. This criteria is based on the written grade level criteria found in the various position classification standards which represent the occupational series in which NCTR support and service scientists are classified.

COVERAGE:

The policy, procedures, responsibilities, and criteria found in this Guide will be used to evaluate all requests received from NCTR managers and supervisors to establish new and to fill vacant support and service scientist positions at GS-12 and above, and to evaluate all support and service scientists proposed for promotion at GS-12 and above.

CLASSIFICATION ISSUE

There are presently two types of professional scientists who function in support of or provide services to the research scientists in the various NCTR research science organizations. The differences between these two kinds of positions need to be understood so both may be approached with consistency by NCTR supervisors, and because career advancement and the methods of evaluating these scientists are different.

1. Research, and Support and Service Scientist Positions.

Support and service scientist are scientific professionals. The support scientist works in a research laboratory in support of a research scientist, and the service scientist works in a laboratory designed to provide service and support to research scientists at the request of those scientists.

Support and service scientists perform limited elements of research work such as literature data searches, surveys designed to collect or report scientific data, or work limited to the collection, identification, and analysis of animal, mineral, biological, or chemical specimens.

2. Supervisory Positions

When support scientists are found as team leaders or as supervisors, the grade of the position may be based either on the supervisory responsibilities or the work of the individual scientist depending on which would yield the higher grade. The grade of a team leader or supervisor of a small support unit will usually be based on the personal competence of the scientist in the performance of the work for which the scientist as an individual is

responsible. This Guide is designed to evaluate such work. However, some scientists who act as team leaders or who supervise small units, and nearly all who direct large support organizations, in addition to scientific competence, require supervisory and administrative ability and qualifications. These positions are classified by the criteria found in the General Schedule Supervisory Guide, and are not subject to the requirements of this Guide.

RESOLUTION:

The attached Supplement One, Plan for the Evaluation of Support and Service Scientist Positions in the NCTR at GS-12 and Above, and Supplement Two, Support and Service Scientist Grade Level Criteria will be used in the peer review of scientists proposed for selection and promotion into NCTR support and service scientist positions at GS-12 and above. Whether the grade of a support scientist will be based on individual duties or supervisory responsibilities, will be determined by NCTR management based on program needs and requirements as measured against the principles described above.

Progression of support and service scientists through established career ladders has traditionally been accomplished through established position classification procedures as a joint effort between NCTR and OHRMS. Position descriptions are written by supervisors and evaluated by personnel generalists, and scientists proposed for promotion are desk audited. This process will continue unchanged for promotions through the GS-11 level.

Because of the highly specialized and complex nature of support and service scientist work at GS-12 and above, NCTR management has decided to establish a review Committee composed of research and senior support and service scientists to assist OHRMS in the classification of these positions. Such a Committee offers two advantages: highly technical and complex positions are evaluated by those who are similarly trained and familiar with nature of the work and, the support and service scientist community can be expected to be more accepting of, and so be more confident, in the personnel decisions which are made.

Supplement One establishes the responsibilities and procedures which will govern the conduct of the review Committee. **Supplement Two** details the documentation requirements which must be met in submissions to the review Committee. **Supplement Three** presents the required format for an FES position description with suggestions and leading questions which address the meaning and intent of each of the required nine factors. **Supplement Four** offers guidance on the conduct of in-depth reviews to be conducted by the various Committee members. **Supplement Five** establishes the criteria which will be used by the review Committee to evaluate proposed position classification actions at GS-12 and above.

TABLE OF CONTENTS

SUPPLEMENT ONE

Evaluation Plan for Support and Service Support Scientists in NCTR

Purpose page 4

The Committee..... page 4

Procedural Steps..... page7

Documentation Required..... page 9

SUPPLEMENT TWO

Documentation Requirements page 11

SUPPLEMENT THREE

Position Description Format page 13

SUPPLEMENT FOUR

Guidelines for Conducting In-Depth Reviews page 16

SUPPLEMENT FIVE

NCTR Support and Service Scientist Grade Level Criteria page 17

Introduction..... page 17

Grade Conversion Table..... page 20

Grade Level Criteria..... page 21

Abbreviated Grade Level Criteria..... page 37

SUPPLEMENT ONE

**EVALUATION PLAN FOR THE EVALUATION OF
SUPPORT AND SERVICE SCIENTISTS AT GS-11 AND ABOVE**

1. PURPOSE.

This Evaluation Plan establishes the responsibilities and procedures which will be followed in evaluating NCTR support and service scientists proposed for promotion to GS-12 and above, candidates for vacant support and service scientist positions at GS-12 and above, and the mandatory three year cyclical review of incumbent support and service scientists at GS-12 and above.

2. THE REVIEW COMMITTEE.

A. Members - The Committee will consist of seven members.

1. A Division Director, or equivalent, will be appointed by the Center Director to serve as the Committee Chair.
2. An OHRMS position classification specialist will serve as a full member of the Committee, and offer guidance and advice in the review and evaluation of those cases which come before the Committee.
3. Five Center scientists at the senior scientist and science Branch Chief or team leader levels or higher will be selected by the Chair, one of whom will be appointed by the Chair to serve as the Vice Chair, with the concurrence of the Center Director. These scientists will each serve a three year term with one or two rotating off the Committee each year.
4. Alternates, as agreed on by the Chair and the Center Director, will be appointed to serve on the Committee when necessary.
5. An Executive Secretary, who will not be a full member of the Committee, will be appointed by the Center Director and will report to the Chair.
6. Five members, including the Chair and the position classification specialist, present at a Committee meeting will constitute a quorum.

B. Advisory Participants. The Committee will have the authority, when seen fit, to call on candidates, scientists, and any other appropriate individual who may be of assistance in the review of a case.

3. RESPONSIBILITIES.

A. Center Director.

1. Appoints the Committee Chair.
2. Concurs in the selection of Committee members made by the Chair.
3. Reviews and approves cases sent to the Committee.

B. Center Division Directors and Managers.

1. At the request of the Committee Chair, nominate scientists and science management officials with appropriate scientific background for membership on the Committee.
2. Review cases submitted by appropriate supervisors for completeness and scientific merit.
3. Sign transmittal memorandum, and forward cases to the Committee Chair through the Center Director.

C. Committee Chair.

1. In consultation with the Center Division Directors, selects and recommends to the Center Director scientists for membership on the Committee. Selects a Vice Chair from among the Committee members.
2. Schedules, calls, and chairs Committee meetings, and notifies Center management of those dates. Special meetings may be called at the discretion of the Chair for such purposes as orienting and training new Committee members, and reviewing and evaluating candidates for vacant positions.
3. Establishes the required three year mandatory review cycle for all incumbent support and service scientists at GS-12 and above whose grades are based on their individual duties, and insures that the supervisors of such scientists are notified when reviews are scheduled.
4. Conducts orientation Committee members to establish guidelines for the review and evaluation of cases, and provides guidance in instances which are not specifically covered by this Guide.
5. Receives all case material. With the OHRMS member decides whether cases have been submitted in the proper format, whether submissions are adequate and complete, and whether all appropriate supervisory signatures are present.

6. Assigns cases to appropriate Committee members for indepth review prior to scheduled Committee meetings.

7. Insures the confidentiality of Committee meetings and proceedings.

8. Prepares Committee recommendations on the disposition of cases.

9. Speaks for the Committee in communications with the Center Director, Center Division Directors and other management, sponsors, candidates, and any others having business with the Committee.

D. Center Review Committee.

1. Meets as scheduled, and when called by the Chair to address special circumstances.

2. Review and evaluation of case material.

a. Each case will be carefully reviewed, and evaluated on scientific merit. All information germane to a case such as memoranda of recommendation, reports and evaluations by supervisors, and work examples will be used

b. The Committee may schedule interviews with the recommending supervisor or persons with knowledge of a candidate's achievements and contributions. Representatives of disciplines not presently on the Committee may be invited to provide information on the role and impact of the discipline on the science being evaluated.

c. A Committee member who is also the recommending supervisor may discuss, but not participate in deciding on the disposition of a case.

d. A consensus of those present at a Committee meeting will determine the recommended disposition of each case.

e. The Chair or a member designated by the Chair will summarize the Committee findings and final recommendation in writing. On acceptance by the Center Director, the Chair will notify the recommending supervisor.

f. The activities of the Committee including both written and verbal communications and actual Committee deliberations, discussions, and decisions are considered to be **confidential**.

E. Position Classification Specialist.

1. Works with the Chair and Committee in all aspects of the evaluation process.
2. Serves as a full member of the Committee
3. Applies the appropriate OPM position classification standard or standards to cases being considered by the Committee, and prepares an evaluation statement relating the written grade level criteria to the contributions of the scientist being evaluated..
4. Informs the Committee of any modifications or changes in appropriate position classification standards and any other criteria used in the review and evaluation of scientists

F. Executive Secretary of the Committee.

1. At the direction of the Chair, secures nominations for membership on the Committee from Center management. Keeps track of the terms of Committee members and alerts the Chair when terms are about to expire so that replacements can be nominated and selected.
2. Coordinates and schedules meeting dates with the Chair and confirms dates with Committee members.
3. Receives cases from Center Division Directors and managers, and distributes case material to Committee members.
4. Establishes mandatory review schedules, and notifies supervisors of this requirement when appropriate..

4. PROCEDURAL STEPS

A. The Chair establishes the dates of stated Committee meetings, and any necessary special meetings, and notifies all Center Division Directors and managers inviting submissions for promotions and mandatory review of incumbent scientists at GS-12 and above.

B. The immediate supervisor and the candidate are responsible for preparing the required case material. The immediate supervisor, but no lower than the Branch Chief level, is responsible for certifying the completeness and accuracy of the case material. This supervisor is responsible for submitting the original and seven copies of the case through appropriate management channels to the Executive Secretary.

C. All cases must be received by the Executive Secretary at least 60 days before the first day of the month in which a Committee meeting is scheduled.

D. The Chair and the position classification specialist review all cases and make an initial evaluation of the documentation and recommendations. Cases which are accepted will be given to the Executive Secretary for distribution to the Committee members. If a case does not contain sufficient documentation, the case material will be returned to the recommending supervisor for the collection and submission of the necessary information. Failure to respond with relevant material, or in a timely fashion, may result in the deferral of a case until the next scheduled meeting of the Committee.

E. The Chair in consultation with the position classification specialist assigns each case to a Committee member as an indepth reviewer. The indepth reviewer will obtain any additional information which will help the Committee to better understand a case. The indepth review will consist of a personal interview with both the recommending supervisor and the candidate. When the work of the scientist directly relates to or impacts the program of another distinct organizational entity, an effort should be made to interview the manager or scientist responsible for the program (see Supplement Four, Guidelines for Conducting Indepth Interviews).

F. Prior to scheduled Committee meetings, each Committee member will review each case and reach a tentative conclusion based on the criteria found in Supplement Five, NCTR Support and Service Scientist Grade Level Criteria.

G. Committee meetings will be conducted in accordance with accepted guidelines. Committee discussions are considered to be **absolutely confidential**, and Committee recommendations and decisions will be distributed through official channels only.

H. After the review of a case, the Chair will prepare a written recommendation in behalf of the Committee which will be sent to the recommending supervisor through the appropriate Center management.

I. The position classification specialist will prepare an evaluation statement for each successful case, and insure that any necessary personnel action is taken.

J. Cases which do not meet the necessary criteria for the grade level proposed or at which an incumbent scientist is performing will be returned to the recommending supervisor through appropriate Center management with a written explanation prepared by the Chair detailing the reasons for the Committee decision. Any subsequent resubmission must clearly address these points.

K. All scientists covered by this Plan may appeal the final classification of their

positions through established Agency and OPM classification appeal procedures.

5. DOCUMENTATION REQUIREMENTS

A. The supervisor in conjunction with the candidate prepares an original package and seven copies for submission to the Committee Chair through appropriate Center channels.

B. The original package will contain the following in sequential order:

1. Transmittal Memorandum from the appropriate supervisor through the Center Director to the Committee Chair. In the case of mandatory reviews, the Chair and the Executive Secretary will notify appropriate management of the requirement to prepare review packages which will update any previous submission, and contain a recommendation as to whether the scientist should be retained at grade, promoted, or reduced to a lower grade. These documents will be requested at least 120 days prior to a scheduled meeting of the Committee three years after the last Committee review of a scientist.

2. Memorandum of Recommendation from the immediate supervisor, but not lower than the Branch Chief level, containing:

a. The name, title, series, and current grade of the scientist, and the nature of the action requested.

b. A brief summary of the scientist's career. This summary may address the candidate's educational background, the area in which the scientist is considered to be specially qualified, the reputation which has been built by the scientist, related and pertinent experience in other program areas, recognition which the scientist has received such as honors, awards, invitations, or any other appropriate information.

c. List of accomplishments to the Agency, regulated industry, scientific community, and the regulatory process. See Supplement Two, Documentation Requirements - Memorandum of Recommendation and List of Accomplishments. Each accomplishment should be described as completely as possible with primary emphasis on **what was accomplished and why the accomplishment was significant to Agency. Care should be taken in selecting the most significant contributions, and in clearly explaining how the scientist, through those contributions, has personally impacted the scientific mission of the Agency.** The substance and impact of the contributions are of the greatest interest to the Committee. **Volume and numbers are not critical and may present an image that a case lacks focus and relevance.**

d. Special expertise. Briefly describe the kind and level of expertise possessed by the scientist which allows the scientist to perform at the level proposed or at which performing. Reference should be made to Supplement Five, NCTR Support and Service Scientist Grade Level Criteria. Recommendations should focus particularly on the Knowledge Required by the Position, Supervisory Controls, Guidelines, Complexity, and Scope and Effect. However, each of the nine factors should be addressed on how each applies to the recommendation being made. Also, of interest to the Committee, is the skill and ability of the scientist to express both verbally and in writing those opinions, conclusions, and positions which have been reached by the scientist.

e. OF-8 and Position Description. The proposed position description must follow the nine factor format required by the Factor Evaluation System. See Supplement Three, Position Description Format.

f. A complete copy of the most recent Performance Appraisal of record.

SUPPLEMENT TWO

DOCUMENTATION REQUIREMENTS

The Memorandum of Recommendation should be restricted to actual accomplishments within the recent past, such as three to five years, not future plans or problems or accomplishments long past. The memorandum should begin with a brief paragraph summarizing the scientist's career by giving the total number of years which have been devoted to support and/or service scientist work and the various organizations and locations in which that work has been performed, and a general statement about the scientist's reputation and recognition which has been obtained.

Following the introductory paragraph, the scientist's area of expertise and the most significant accomplishments over the scientist's career should be addressed in chronological order. There is no particular limit to the number of accomplishments which may be addressed.

Each accomplishment should be described as concisely as possible with primary emphasis placed on **what was accomplished** and **why the accomplishment was significant**. In the case of a team effort, it will be necessary to explain exactly what the scientist contributed to the total effort. Since the significance of an actual accomplishment sometimes changes with time, these statement should be carefully written

The accomplishments which are addressed may be documented by memoranda, final technical reports, manuscripts, publications, or any other pertinent document. Any documentation should be chosen with the following in mind:

- ✓ the significance of a particular accomplishment may have increased with time,
- ✓ while past accomplishments may be important, **recent** accomplishment show maintenance of scientific competence, and
- ✓ for most situations, one or two carefully selected references will be sufficient to support a well-stated accomplishment.

If publications are offered, they should be referenced to the particular accomplishment which they support. When more than one publication is used to document an accomplishment, all the publications must support the single accomplishment

A position may include duties and responsibilities that are not support or service oriented. If this kind of work is performed on a regular and recurring basis, it should be documented in the position description. If such work is an extension of the scientific work performed, it may help support the significance and impact of the scientist's overall responsibilities. These accomplishments may be seen as activities similar to support or service scientist and assure the maintenance of scientific competence.

SUPPLEMENT THREE

POSITION DESCRIPTION FORMAT

DUTIES:

The object of this part of the position description is to present major duties of the position in their order of importance. Major duties are those which usually occupy more than ten percent of a scientist's time, and are performed on a regular and recurring basis. Regular and recurring duties are those which are performed on a day-to-day basis or even seasonably, such as once a year, but every year. Such duties are not one-time duties such as special projects, or of a temporary nature such as acting for a supervisor or filling in for another scientist. Major duties are the primary reason for the existence of a position, all other duties are minor or peripheral.

Duties are best described in simple, straight forward language. Sentences should be in the active voice, using action verbs, and made up of words with as few syllables as possible. Enough information should be presented so that the Committee can readily understand what is happening. Do not use words and phrases like; assists, executes, coordinates, participates, facilitates, or serves as the focal point. The Committee wants to know what the scientist actually does.

In addressing each one of the following nine factors, consider not only the questions, but also carefully consider the grade level criteria presented under each factor in Supplement Five, NCTR Support and Service Scientist Grade Level Criteria.

FACTOR 1 - KNOWLEDGE REQUIRED BY THE POSITION

What knowledge is required to do the work of the position such as the scientific discipline, functional specialties, other Agency programs, the regulated industry, programs of State, local, and foreign governments, programs of national, international organizations etc.?

What knowledge is required by Agency enabling legislation, policy, rules, regulations, and precedents, past decisions and practices, the way in which others approach the Agency, the wishes and desires of the Congress, etc.?

What kinds and levels of skill are necessary to perform the work of the position such as the ability to identify problems, gather and analyze information, draw conclusions, recommend solutions, write reports and papers, organize and deliver briefings, negotiate acceptance and implementation of recommendations, plan, organize, and direct the work of others?

FACTOR 2 - SUPERVISORY CONTROLS

How does the supervisor assign work - with detailed or general instructions, with instructions for new, difficult, or unusual aspects of the work only, with general suggestions

on approaches to work, etc.?

What responsibility does the scientist have for carrying out the work - within general guidelines establishes approach to assignments, handles all work independently according to accepted policies and practices, resolves, conflicts, determines approach to be taken, etc.?

How is the work reviewed - for appropriateness, accuracy, adequacy, and compliance with instructions, is it expected to be technically accurate, accepted as authoritative, etc.?

Is the scientist involved in team or collaborative efforts? Is it a formal team? Does the scientist function in a lead role?

FACTOR 3 - GUIDELINES

What guides are used in performing the work, such as laws, rules, regulations, manuals, precedents, established guidelines?

How are the guidelines used, how applicable are they, are they lacking, are precedents available, is judgment needed to follow established guidelines or to deviate from or interpret guidelines, to adapt or develop new guidelines, etc.?

If new or modified guidelines are developed as a result of the scientist's work, who must use them, does the scientist continue to be the source of information on and the intent of the guidelines, etc.?

FACTOR 4 - COMPLEXITY

What is the nature of the work and assignments - related, sequential steps, different processes, independent assignments with varying duties, etc.?

What kind of variations exist in the work? Is the scientist concerned with factual situations, with identifying interrelationships or deviations, with originating new approaches or techniques, with establishing new standards, etc.?

FACTOR 5 - SCOPE AND EFFECT

Does the scientist's work impact others and the way in which they work?

Does the scientist's work affect the accuracy, reliability, or acceptability of other work processes?

Does the scientist's work affect the programs, objectives, and goals of the organization in which employed, other organizations? Which ones?

What impact does the work have on regulated industry, State, local and foreign governments, other agencies, national or international organizations, etc.?

FACTOR 6 - PERSONAL CONTACTS

What kind of people and which organizations does the scientist come into contact with, such as co-workers, various supervisors and managers in the Agency, representatives of industry, State, local and foreign governments, trade organizations, national and international organizations, etc.?

What positions do these contacts hold and at what levels in the organizations which they represent?

FACTOR 7 - PURPOSE OF CONTACTS

What is the purpose of the scientist's contacts - to give and receive information, to resolve problems, to motivate and influence others, to justify, defend, negotiate, or settle matters, etc.?

Does the scientist deal with people who are skeptical, uncooperative, unreceptive, hostile?

Does the scientist settle controversial issues or arrive at compromise solutions with persons who have different viewpoints, goals or objectives?

What kind or level of commitment authority does the scientist have in representing the office, Center, or Agency?

FACTOR 8 - PHYSICAL DEMANDS - What is the nature of the scientist's physical activity - sedentary, walking, standing, etc.?

FACTOR 9 - WORK ENVIRONMENT - What is the nature of the environment in which the scientist works - office, laboratory?

SUPPLEMENT FOUR

GUIDELINES FOR THE CONDUCT OF INDEPTH INTERVIEWS

Prior to a scheduled meeting, the Committee Chair will assign case to appropriate Committee members and alternates for in-depth reviews. Objectivity is critical to this process. The reviewer is expected to read both the case and any material which has been submitted to enhance the case such as commendations, letters of appreciation, etc. This review should be conducted in enough detail to allow the reviewer to critically evaluate and intelligently discuss the assigned case with the whole Committee. The reviewer should also go beyond the written case material in an attempt to clarify and check the significance of scientist's accomplishments, sort contributions from those of other scientists, and bring any additional information to the Committee meeting for discussion which was not available in the case material.

Each in-depth review will ideally involve at least two interviews, the scientist being reviewed and the immediate supervisor. The supervisor usually is the best source for points of clarification and of additional information pertinent to the case. The reviewer may also find it necessary to interview others as well, depending upon the reviewer's familiarity with the scientist and the position, and the mission of the organization.

Preparation before conducting interviews is important because it will save time for both the reviewer and the one interviewed. In addition to reading and being familiar with the case material, the reviewer should also read and be familiar with the grade level criteria for Center support and service scientists found as Supplement Five, the memorandum of recommendation, and the position description submitted with the case. It should be remembered that the position description is an official document which the supervisor certifies as containing both an adequate and accurate description of the work assigned to scientist. Both the grade level criteria and the position description are presented in the nine factor FES format. Supplement Three, Position Description Format offers questions related to each of these nine factors which can help the reviewer prepare for an interview and suggests questions which can be asked in order to gather the kind of information necessary to evaluate a case.

Interviews should be scheduled at a mutually convenient time. To conduct a successful interview, the reviewer should make sure the questions are understood, let the one being interviewed take the lead whenever possible, ask open-ended questions and be sure to understand the answers, restate the important points during the interview, take notes, look at work samples and collect any that might be relevant to a better understanding of the work, summarize the main points at the end of an interview, and let the one being interviewed know that the reviewer is available if there is any additional information.

SUPPLEMENT FIVE

SUPPORT AND SERVICE SCIENTIST GRADE LEVEL CRITERIA

The classification criteria contained in this Supplement have been derived from the criteria published in those position classification standards which address the various biological and physical science occupations found in NCTR science organizations. The classification factors, factor levels and point values, and the conversion table are identical to those required by the Office of Personnel Management, Factor Evaluation System. Positions must be evaluated on a factor by factor basis, comparing the duties of a position, the work situation, and any special competence of the scientist with the various factor level descriptions. A position must be fully equivalent to the overall intent of each factor level selected.

Specific examples of methods, procedures, or equipment described in this Supplement are for illustrative purposes only. These examples are to be used as a general frame of reference or bench mark and should not be applied mechanically. Good judgment should be used in deciding whether a position fully meets the essential requirements of a particular factor level. In order to be assigned a particular factor level, it is only necessary for the position to satisfy the overall intent of the factor level description rather than matching all of the specific examples provided.

The FES requires the use of nine factors in the evaluation of positions.

1. **Knowledge Required by the Position** - Nature and extent of information and facts which must be understood to perform acceptable work, and the kinds of skills necessary to apply this knowledge.
2. **Supervisory Controls** - The nature and extent of direct and indirect controls exercised by the supervisor, the responsibility delegated to the scientist, and the review of completed work.
3. **Guidelines** - The nature of the guidelines and the judgment needed to apply them.
4. **Complexity** - The nature, number, variety, and intricacy of the tasks, steps, processes, or methods in performing the work, and the difficulty and originality involved.
5. **Scope and Effect** - The purpose, breadth, and depth of the work assignments and the effect of the recommendation or service both within and outside the organization.
6. **Personal Contacts** - With whom and the level at which contacts are made.
7. **Purpose of Contacts** - Purpose and difficulty in communicating with those contacted.
8. **Physical Demands** - The requirements and physical demands placed on the employee by the work assignments.

9. **Work Environment** - The risks and discomforts in physical surroundings.

These factors form a pattern which establishes the grade level of a position. Within the FES, certain factors are considered to be more important than other factors and so are more heavily weighted. These factors which control the grade of a position are Knowledge Required by the Position, Supervisory Controls, Guidelines, Complexity, and Scope and Effect. The factors for Personal Contacts, Purpose of Contacts, Physical Demands, and Work Environment will never separately or as a group control the grade of a position. While these factors are not as important as the others in terms of point scores, they must be complimentary to and be consistent with the purpose and intent of the other factors.

The critical difference between GS-9 and GS-11 will always be found in the factors for Knowledge Required by the Position, Supervisory Controls, and Complexity. Factor levels 1-7, 2-4, and 4-4 must be met for a support or service scientist position to be classified at GS-11. A position must also meet the other factor level descriptions which are complementary at GS-11: 3-3, 5-3, 6-2 or 3, 7-2 or 3, 8-1 or 2, and 9-1 or 2. If a position fails to meet these other factor level descriptions which are typical of GS-11 and complementary to the critical levels of 1-7, 2-4, and 4-4, this is a strong indication that the required levels have not been met for the essential factors of Knowledge Required by the Position, Supervisory Controls, and Complexity. In such instances, the levels assigned to these three factors should again be carefully reviewed to make sure that these factors have been properly evaluated.

The critical difference between GS-11 and GS-12 will always be found in the factors for Guidelines, and Scope and Effect. Factor Levels 3-4 and 5-4 must be met for a support or service scientist position to be classified at GS-12. A position must also meet the other factor level descriptions which are complementary at GS-12: 1-7, 2-4, 4-4, 6-3, 7-3, 8-1 or 2, and 9-1 or 2. If a position fails to meet these other factor level descriptions which are typical of GS-12 and complementary to the critical levels of 3-4 and 5-4, this is a strong indication that the required levels have not been met for the essential factors of Guidelines, Scope and Effect. In such instances, the levels assigned to these two factors should again be carefully reviewed to make sure that these factors have been properly evaluated.

The critical difference between GS-12 and GS-13 will always be found in the factors for Knowledge Required by the Position, and Complexity. Factor Levels 1-8 and 4-5 must be met for a support or service scientist position to be classified at GS-13. A position must also meet these other factor level descriptions which are complementary at GS-13: 2-4, 3-4, 5-4, 6-3, 7-3, 8-1 or 2, and 9-1 or 2. If a position fails to meet these levels which are typical of GS-13 and complimentary to the critical levels of 1-8 and 4-5, this is a strong indication that the required levels have not been met for the essential factors of Knowledge Required by the Position, and Complexity. In such instances, the levels assigned to these two factors should again be carefully reviewed to make sure that these factors have been properly evaluated.

The critical difference between GS-13 and 14 will always be found in the factors for Supervisory Controls, and Guidelines. Factor levels 2-5 and 3-5 must be met for a position to be classified at GS-14. A position should also meet the other factor level descriptions which are complementary at GS-14: 1-8, 4-5, 5-4 or 5, 6-3, 7-3, 8-1 or 2 and 9-1 or 2. If a position fails to meet these other levels which are typical of GS-14 and are complimentary to the critical levels 2-5 and 3-5, this is usually a strong indication that the required levels have not been met for the essential factors of Supervisory Controls, and Guidelines. In such cases, the levels assigned to these two factors should again be carefully reviewed to make sure that these factors have been properly evaluated.

The pattern of factors which would be typical for NCTR support and service scientists at the grade levels addressed above can be seen more clearly in the following table:

GS-11	GS-12	GS-13	GS-14
1-7	1-7	1-8	1-8
2-4	2-4	2-4	2-5
3-3	3-4	3-4	3-5
4-4	4-4	4-5	4-5
5-3	5-4	5-4 or 5	5-5
6-3	6-3	6-3	6-3
7-2 or 3	7-3	7-3	7-4
8-1 or 2	8-1 or 2	8-1 or 2	8-1 or 2
9-1 or 2	9-1 or 2	9-1 or 2	9-1 or 2

The descriptions of work at the various factor levels in the following grade level criteria are stated in general terms for the purpose of illustration. These examples are to be used as a general frame of reference or bench mark and should not be applied mechanically. In this way, the grade level criteria with the exercise of good judgment may be used to evaluate the many different kinds of support and service scientist work found in NCTR.

It should be noted that neither the presence or absence of, or the number of publications attributed to a support scientist can or will be used to establish the grade level of a support or service scientist. None of the many position classification standards which have been established to evaluate the work of nonresearch scientists, including those which serve as the basis of the grade level criteria found in this Plan, use publications as a part of the classification grade level criteria. For support scientists, publications merely serve as evidence along with other appropriate information that a scientist has in fact performed a certain kind of work, has contributed to a project, is actually recognized for expertise in a certain area, etc.

Also, authorship, co-authorship, primary, secondary, or otherwise, as in the issue of publications has no part in establishing the grade of a NCTR support or service scientist. As with publications, co-authorship may serve as evidence of work performed. However, this evidence may vary from scientist to scientist because of the personal habits of research scientists or research managers responsible directly or indirectly for the work of support or service scientists. Some research scientists generously recognize the work of other scientists by including their names as co-authors of papers, other research scientists do not. While co-authorship may be an indicator, it may also be an inconsistent indicator. Other sources of information are important and have been demonstrated through long use to be more reliable in the Federal government. These sources include in-depth interviews with scientists and supervisors, position descriptions, functional statements, staffing charts, and other traditional evidence used to classify positions.

GRADE CONVERSION TABLE

Total points on all evaluation factors are converted to GS grades as follows:

POINT RANGE	GRADE
2355 - 2750	GS-11
2755 - 3150	GS-12
3155 - 3600	GS-13
3605 - 4050	GS-14

**GRADE LEVEL CRITERIA
FACTOR LEVEL DESCRIPTIONS**

FACTOR 1 - KNOWLEDGE REQUIRED BY THE POSITION

This factor measures the nature, variety and intensity of knowledge, skills and ability required to perform the work successfully. How the knowledge, skill or ability is applied by the scientist, or the reason it is required must also be considered. In order to be credited, the knowledge, skill or ability must be both required by the position and actually applied, on a regular basis, by the scientist. Possession of a professional knowledge of the fundamental theories, principles and methods in a scientific discipline equivalent to that obtained through the successful completion of a bachelor's degree program, or equivalent experience or training, is the minimum requirement for positions covered by this criteria.

Factor Level 1-7 - 1250 Points (GS-11,12)

At this level, the scientist possesses an in-depth knowledge of the concepts, theories, principles and methods of the specialty area. This knowledge is of sufficient depth to enable the scientist to determine the most appropriate approach to be used and to recognize the need for and to adapt and modify standard methods and procedures to meet new or unprecedented requirements.

For example, the scientist may have varied the standard pH or used a different gel material in an effort to improve the quality of the resolution or reduce the time required to produce pictures using electrophoresis. The scientist may have modified the standard operating procedure for determining the level of pesticides contained in animal feed to produce more consistent results. The scientist is skilled in the operation, calibration and minor repair of analytical instrumentation, such as the electron microscope, HPLC, and gas chromatograph, and has the ability to recognize and suggest the shapes or poor resolution. The scientist has demonstrated the ability to plan, organize and carry out projects or studies involving collaboration with other labs or branches within the Center. In recognition of the scientist's expertise in planning and carrying out the procedures associated with the specialty area, the scientist may have been requested to assist other scientists in organizing their labs, to perform the specialized procedures, or in training other labs to perform them. The scientist possesses skill in analyzing experimental results for validity and in providing preliminary interpretations as to the significance of the data to the hypothesis. Communication skills may be applied by the scientist in one or more of the following ways: to prepare the introduction or the materials and methods sections of papers; to prepare and present poster sessions at conferences; to draft technical reports; to train other members of the peer group in performing specialized procedures; to document changes to standard operating procedures in lab SOP manuals; or to explain branch operations to outside groups.

Factor Level 1-8 - 1550 Points (GS-13,14)

At this level, the scientist possesses a mastery of the theories, principles, and methods of a specialty area, such as molecular biology, or cytology, as evidenced by recognition as one of the Center experts in applying the methods peculiar to the specialty area. The scientist's knowledge of the specialty area is used in recognizing the need for new and improved experimental methods and procedures in order to overcome current limitations. For example, the scientist may have developed a new procedure for detecting the presence of bacteria and viruses in experimental animals. The scientist may have developed a new method for the computer analysis of HPLC data, or developed a users manual for the operation of a highly specialized instrument not used in any other lab, such as a mass spectrometer.

The scientist is knowledgeable of regulations, standards, and guidelines pertinent to the specialty area and applies this knowledge in recommending new experiments or changes in established methods and procedures to meet new legal or regulatory requirements, such as the modification of contamination monitoring procedures to comply with new EPA standards, or use of different methods for storing or disposing of radioactive materials in light of new safety requirements. In the area of instrumentation, the scientist is skilled in the identification of new applications for and the diagnosis and repair of highly specialized equipment, such as the nuclear magnetic resonance spectroscope, electron microscope, or fluorescent activated cell sorter. The scientist at this level provides consultation to scientists throughout the Center in the use of the equipment and in the interpretation of results obtained. This consultation is sufficiently important to the outcome of studies that the scientist may be cited as co-author of publications where the equipment was used to produce data. The scientist is familiar with new methodological and technological developments in the specialty and is active in efforts to incorporate new developments into standard operating procedures. The scientist's mastery of the principles and methods of the specialty area are also applied in resolving critical, highly unusual, or unprecedented situations. The scientist may be sought out in such situations because of recognized expertise.

For example, the scientist may be called on to develop new procedures or make extensive adaptations to existing procedures in order to produce, from a limited sample, a greater quantity of data than has been produced previously. Or the scientist may be required to develop procedures for the use of new analytical instruments or for new instrument applications where there is very limited published information about the capabilities and limitations of the particular instrument. The scientist's decisions and recommendations on such matters as the validity of the data produced, the procedures to be used to produce the desired results, or the level of resources such as personnel, equipment, and time required to carry out a planned study or a new surveillance program, have a significant effect on the nature and direction of new studies and programs, and on decisions to terminate, extend, or modify existing programs or studies in progress.

Communication skills may be used in one or more of the following manners: preparing discussion or results sections of papers possibly as co-author or first author; in drafting new

protocols; in presenting the results of studies at journal clubs or regional conferences; in providing advice and consultation on the applications of specialized instrumentation; or in proposing major changes in service procedures to lab chiefs.

FACTOR 2 - SUPERVISORY CONTROLS

This factor measures the degree of guidance and control exercised over the

position. There are three aspects to this factor: how assignments are received, especially the specificity of instructions or directions provided at the beginning of the assignment; the amount of responsibility entrusted to the scientist to plan and carry out the assigned work and the extent to which advice and assistance is provided to the scientist while work is in progress; and, the manner in which the work is reviewed. The kind of contact between the scientist and the supervisor should be examined closely before judgment is made on this factor to decide whether the contact is actually to provide direction or guidance. Contact with the supervisor, or with other officials in the supervisory chain, is often consultative in nature, that is to exchange information or to arrive at a mutually agreeable decision, rather than for the purpose of requesting assistance or receiving guidance.

Factor Level 2-4 - 450 Points (GS-11,12,13)

At this level, the supervisor defines the overall scope of the work, approves resources to be made available to the scientist for a particular assignment, and assists the scientist in the initial planning stages by performing such functions as negotiating agreements, or determining the supplies and equipment necessary to organize the lab for DNA cloning experiments. Priorities, deadlines and general approaches are developed cooperatively by the supervisor and the scientist in recognition of the scientist's extensive experience in the performance of established lab procedures. In the service area, assignments are generated according to established surveillance program procedures; supervisory guidance is provided only when methods are changed or a new method is implemented, such as new procedures for detecting the presence of microorganisms or determining the nutritional contents of animal feeds. The scientist has typically suggested new experiments after determining the need for modification of established procedures, or the adaptation of procedures described in current literature to the lab. The scientist independently identifies and locates sources of information relevant to the assignment, including contacting scientists in other organizations, such as authors and presenters of papers, to develop more information about a new method or technique.

The scientist independently plans, organizes and carries out the work, either personally or in collaboration with other lower graded lab support workers assigned to the project. The scientist determines the need for and recommends to the supervisor changes in methods or conditions, or the extension of experiments beyond the original plans in order to ensure validity and to produce the desired results. The scientist keeps the supervisor informed through periodic discussions. The supervisor is consulted only on unusual or controversial matters such as data that may be in serious conflict with expected results, the unavailability of supplies which could affect the planning of other studies, or the lack of cooperation from service organizations.

Completed work, such as draft protocols, technical reports, papers, revised SOP's or recommendations for new areas of study, is reviewed for the accomplishment of objectives,

for overall technical adequacy, and for feasibility. The scientist is responsible for the accuracy of results and for the soundness of judgments and interpretations.

The content of reports or papers prepared by the scientist are typically subject to editorial revisions only. Conclusions and recommendations made by the scientist are not usually changed by the supervisor.

Factor Level 2-5 - 650 Points (GS-14)

At this level, the supervisor defines overall scope of work, approves resources such as time, material, and assists in initial planning; priorities, deadlines, and approaches decided cooperatively. The scientist locates sources of information and references, including contacts with researchers in other labs. The scientist independently plans, organizes and carries out assignments; identifies the need for and recommends methods changes or rerunning of experiment; and consults the supervisor only on very unusual or controversial matters, such as presence of highly contagious microorganisms, lack of cooperation from support groups, major inconsistencies in data. Work is reviewed for accomplishment of overall objectives, technical adequacy and feasibility of methods selected. The scientist is fully responsible for accuracy of results and soundness of judgments. Written work reviewed for editorial purposes rather than content.

FACTOR 3 - GUIDELINES

This factor measures the availability, specificity, and applicability of guidelines, including policies and procedures, instructions, established

practices, precedents, textbooks, manuals, professional journals, handbooks, and other reference materials. This factor also evaluates the degree of judgment exercised by the scientist in selecting, applying, adapting, interpreting, modifying, extending, or originating guidelines.

Factor Level 3-3 - 275 points (GS-9,11)

At this level, guidelines include methods manuals and standard operating procedures, technical references such as textbooks and the Merck Index, current literature, equipment operations manuals, Agency and Center lab policies governing such matters as humane treatment of experimental animals and safe handling of radioactive materials, and precedents documented in lab notebooks or other sources of information.

In lab support situations, guides can rarely be applied directly to the assignment because most if not all experiments involve at least some unique features which require the modification of conditions, such as use of different media, reagents, or mouse strains, or the need to use available equipment which may differ from that used in precedent experiments. Because experimental techniques are constantly evolving, the scientist reevaluates established guidelines in relation to current knowledge before they can be applied. The scientist in adapting and modifying available guides, to a limited degree, to meet local conditions and to solve problems. Judgment is also exercised in relating new assignments to precedents such as virological testing of rat specimens for the presence of a newly identified pathogen, or using gas chromatography to isolate and purify new compounds.

In the service setting for chemical or microbiological surveillance, or dose certification assays, the scientist selects the appropriate SOP for use to ensure GLP compliance. If circumstance dictate, the scientist may adapt or modify the SOP, to a limited degree, after appropriate validation and supervisory approval. The scientist may assist the supervisor or another higher level scientist in developing and validating new methods and procedures.

Factor Level 3-4 - 450 Points (GS-12,13)

At this level, in addition to those guidelines listed at the preceding level, guidelines include recent developments in the specialty area. The scientist obtains information about these developments through reading, attendance at conferences or workshops, or personal contact with scientists in other Center labs or in other organizations. Because newly developed methods and procedures usually have not been validated fully or contain significant gaps, the scientist must use careful judgment in applying them to the lab. In addition to adapting new methods and procedures to the lab, established methods and techniques must often be substantially modified in order to meet the requirements of the lab, such as conducting toxicity analysis of unknown substances or compounds, or carrying

out chemical analyses according to specifications contained in inter-agency agreements.

Judgment is used in determining the need for new or improved methods, and in applying new technological developments to the lab. The scientist has demonstrated initiative and resourcefulness in adapting or extending standard procedures to resolve unprecedented problems, such as using a combination of instruments not previously considered to be feasible. The scientist's investigation of trends or advances in the specialty area often results in the development of guides used by other lab workers or in proposals for new studies.

Factor Level 3-5 - 650 Points (GS-14)

At this level, guides are much broader than at the preceding level. Guidelines such as Agency policies and regulations or legislation affecting the specialty area are applicable in only a very general sense to the work being performed by the scientist. The limited guidance that is applicable is derived more from informal means, such as discussions with prominent authorities in the specialty area, or through participation on technical or scientific committees. In the absence of applicable guidelines, the scientist develops new or substantially improved methods and procedures designed to fill gaps in knowledge or to improve understanding of a particular process or phenomenon.

Judgment is exercised in identifying areas where new methods and procedures are needed and in planning projects to develop new methods. The scientist also uses judgment in explaining or defending the methods and procedures used in the lab to internal or external review groups who may challenge the validity of results contained in published reports. An integral part of the scientist's assignment is the development of guidelines, instructions, standards and procedures used by other support and service scientists throughout the Center. The methods originated by the scientist have also been adapted for use in other organizations.

FACTOR 4 - COMPLEXITY

This factor measures the nature, variety, and relative difficulty of the functions performed and the systems, methods, procedures, and instrument

techniques used. Also considered under this factor is the difficulty encountered in determining what needs to be done, the nature of the problems and obstacles encountered, the degree of analysis, evaluation, and insight required, and the opportunity for creativity and ingenuity. Other complicating factors, including administrative and management issues, should also be addressed under this factor. Noteworthy professional achievements or recognition should also be included in the evaluation of this factor.

Factor Level 4-4 - 225 Points (GS-11,12)

At this level, the assignment involves modification of established methods and procedures to increase efficiency, such as reduce costs or time required, to improve the degree of accuracy and validity of results, to meet unusual requirements in the lab, or to take advantage of special facilities at the Center, such as highly sophisticated biophysical analytic capabilities. The scientist has demonstrated the ability to plan and carry out a wide range of moderately difficult procedures, such as HPLC, ELISA, SDS-PAGE, or to carry out several highly complex procedures, such as DNA sequencing.

In the service area, the scientist will have demonstrated competency in the performance of the most of the major analytical SOP's in the specialty area, and have developed special expertise in the analysis of specimens or samples for contaminants which are difficult to isolate and quantify. The scientist has complete logistics responsibility in the lab, including setting up the lab to implement new procedures such as establishment of tissue culture facilities in a lab formerly carrying out standard biochemical procedures. This will typically involve determining supply and equipment requirements and meeting with scientists in other labs within or outside the Center to discuss lab organization and operation. The scientist is responsible for reviewing current literature or attending workshops to identify new methods or technological advances which may have applicability to the lab. The scientist typically will have completed an evaluation of a new method, procedure or instrument, resulting in the approval and introduction of the procedure or instrument into the lab or approval pending the availability of funds or facilities.

The scientist is responsible for not only recognizing inconsistencies in the data produced, as is characteristic of the preceding level, but also for determining the source of the inconsistency and for recommending corrective action. The scientist is also responsible for reconciling conflicting data, often by identifying possible validity problems in previous studies. The scientist is responsible for analyzing experimental data and for drawing tentative conclusions about the significance of the data to the hypothesis. The scientist prepares tables, charts and graphs which are typically used intact in published papers.

At this level, the scientist may have co-authored publications, prepared one or more abstracts, written in-house technical reports, prepared a new SOP, or prepared or presented information in other forms which clearly demonstrated the scientist's ability to

communicate results to other professionals. Creativity and originality is required to modify and adapt established methods to meet unique or unusual requirements in the lab and to evaluate the applicability of newly developed analytical methods and procedures and to make recommendations for implementation where feasible.

Factor Level 4-5 - 325 Points (GS-13,14)

At this level, the assignment involves the development of new or significantly improved procedures or techniques, or the establishment of new analytical capabilities to meet highly specialized requirements. Much of the scientist's effort is devoted to the implementation, refinement, and documentation of new procedures, and the training of Center personnel in the performance of the procedures. Analytical assignments involve the isolation and characterization of compounds on which a limited amount of information or conflicting data has been published, such as caffeine, or in which a high degree of public interest has been focused such as nitrosamines, gentian violet, or amphetamines. The scientist's most significant contributions have been the origination and validation of new procedures.

Accomplishments may also have included the development and implementation of new analytical applications for highly specialized instrumentation, such as two-dimensional NMR or fast-atom bombardment using mass spectrometry, where the methods have not been completely proven.

In the service area, the scientist has responsibility for providing a complete range of services in the specialty area, such as chemical or microbiological surveillance. In the support area, the scientist has responsibility for determining the resources, such as funding, supplies, equipment, personnel, required to meet the short and long range needs of the lab. The scientist's responsibilities in this regard may include such administrative functions as drafting the budget for the lab, presenting proposals for the purchase of new equipment, or justifying lower graded support staff. The scientist continually reviews current literature, including unpublished manuscripts, and initiates discussions with other scientists carrying out related studies to maintain an awareness of new developments in the field. The scientist also may have coordinated or participated in workshops held at the Center to explain new procedures to other scientists. The scientist may have served as first author on a published paper, presented papers or poster sessions at local or regional conferences, or communicated the results of assigned projects to other scientists in a comparable fashion. The scientist may have received recognition for professional expertise or accomplishments in a number of different ways, such as being invited to serve on committees to discuss new procedures or to share similar information with other scientists, earning professional certification in the specialty, nomination for more than one special achievement award, or other comparable means of professional recognition. The number of new or improved methods, procedures and instrumental techniques developed and/or implemented are evidence of the high level of creativity and originality applied by the scientist. The scientist will typically have served as a project leader, team leader, or supervisor over other support or service scientists, or had responsibility for monitoring work performed under contract.

FACTOR 5 - SCOPE AND EFFECT

This factor measures the purpose of the work and the impact, influence, and importance of the scientist's efforts to the accomplishment of the organizational mission and to the advancement of scientific principles, methods, and procedures. This factor is also designed to recognize those

situations where the unusual initiative and exceptional abilities of the scientist have resulted in the expansion of the job beyond its standard dimensions.

Factor Level 5-3 - 150 Points (GS-11)

At this level, the purpose of the scientist's work is to select and apply established methods and procedures in order to produce accurate and reliable data and analyses in support of research studies. The scientist also modifies standard procedures to meet the specific needs of the assignment. The scientist is expected to recognize inconsistent or aberrant data during the course of the experiment and to suggest the source or significance of the inconsistency. The scientist's responsibilities extend to training other lab workers in the performance of standard procedures, and ensuring that adequate supplies are available in the lab, that hazardous materials are properly handled and disposed, and that equipment is in working order. The scientist has demonstrated sufficient competence in the performance of standard procedures, such as HPLC, GC, electrophoresis, autoradiography, spectrophotometry, electron microscopy, antibody production, and similar procedures, so that the scientist is afforded the freedom to plan and carry out procedures to the point of analyzing and interpreting the data. The scientist's efforts affect the accuracy and reliability of experimental results and the responsiveness of analytical and diagnostic services, and ensure the smooth and efficient operation of the lab.

Factor Level 5-4 - 225 Points (GS-12,13)

At this level, the purpose of the work is to modify and adapt established methods and to develop new procedures designed to meet unusual requirements or to enhance the current capabilities of the lab. The scientist provides expertise in the performance of specialized procedures, including advising other labs on applying and implementing such procedures. The scientist may have developed exceptional skill in a highly specialized assay or procedure, such as newborn mouse assay or gel autoradiography, to the point where other scientists, including scientists in other government or private labs, request the scientist's advice and guidance. Responsibilities also include the evaluation of new methods, procedures and instrumentation for the lab, and communicating results of the scientist's work to scientists outside the immediate lab. The scientist's efforts have resulted in new and improved methods which have enhanced the accuracy and validity of results or substantially increased the efficiency with which analytical services are provided.

The documentation and publication of refinements or other modifications to standard procedures made by the scientist extends the impact of the scientist's contributions beyond the immediate lab and, in some cases, the Center.

Factor Level 5-5 - 325 Points (GS-13,14)

At this level, the purpose of the work is to provide expert advice and guidance to other scientists throughout the Center in the specialty area. The specialty area may be the application of highly specialized instrumental techniques, such as the NMR spectroscopy, mass spectrometry, or fluorescence activated cell sorters, development of new analytical or diagnostic services, or the adaptation of microcomputers to standard analytical procedures. The scientist's expertise is also applied in the resolution of long standing problems, such as inability to isolate specific compounds of interest which have resisted the efforts of other specialists. The scientist's recognition extends outside the Center; the scientist's reputation in the specialty area may have been an important factor in the receipt of contracts from other agencies to perform analytical services. Another aspect of the scientist's responsibility is the recognition of future requirements and the implementation of new or significantly improved procedures or new services in response to projected future needs. The scientist's advice affects decisions made by Center management officials on such matters as the initiation of new services or the expansion or curtailment of current services, whether or not to approve new protocols involving the use of relatively new, untested procedures, or in determining the regulatory or policy impact of analytical results. The presentation of information about procedures developed or substantially improved by the scientist, whether in journals or through conferences and workshops, has the potential for advancing the state-of-art in biochemical or biophysical analysis.

FACTOR 6 - PERSONAL CONTACTS

This factor measures the kind, level, role, and authority, of people contacted and the conditions and circumstances surrounding the contacts. Careful consideration should be given to the frequency of contacts to avoid crediting contacts made on an occasional basis only.

Factor Level 6-3 - 60 Points (GS-11,12,13,14)

Contacts are maintained with top Center management officials including Division Directors and Office Directors, with scientists in other organizations, such as NIH or EPA, and at universities, medical schools, and private laboratories, with policy, planning and administrative management officials at FDA headquarters, with representatives of the biotechnology industry, such as scientists or attorneys, with management consultants, and with sales and technical representatives from biological supply companies and equipment manufacturers and suppliers. Many of these contacts are initiated by the scientist. Contacts are frequently made away from the work site.

FACTOR 7 - PURPOSE OF CONTACTS

This factor measures the reason for making contacts addressed in Factor 6 - Personal Contacts and the difficulty involved in justifying, defending or persuading others to accept the information presented.

Factor Level 7-2 - 50 Points (GS-11)

At this level contacts are made to plan and coordinate the work, to explain and advise on the use of new methods and procedures, to solve problems, to train others in lab procedures, to defend proposals for new studies or study extensions, to keep informed about new developments, and to present the results of experiments to Center officials. Contacts are initiated both by the scientist and by others seeking the scientist's advice or guidance. Most of the information presented by the scientist is not controversial. However, the scientist is required to persuade others to accept the scientist's decision or recommendation to implement new methods and to initiate new projects where there may be some resistance because of unwillingness to change methods or because of a scarcity of resources to support new projects.

Factor Level 7-3 - 120 Points (GS-11,12,13,14)

At this level, contacts are principally to convince other scientists or scientific management officials to accept the scientist's judgment or recommendation where there is serious disagreement or conflicting opinions about the information presented by the scientist. Recommendations may concern such matters as the implementation of new programs at the Center, such as a new animal genetics facility, or the purchase of highly sophisticated, costly instrumentation. Contacts may also be made to motivate others to cooperate on an important study or to submit additional information where the information may lead to unfavorable findings. Contacts may be made to provide expert advice to other organizations in the application of new procedures or instruments designed to solve critical problems or to improve the overall quality of experimental results. The scientist may present testimony as an expert witness in court or in an administrative hearing on an issue that is contested by two opposing parties.

FACTOR 8 - PHYSICAL DEMANDS

This factor measures the intensity and regularity of physical demands, imposed on the scientist and the requirement for possession of unusual physical characteristics or special abilities.

Factor Level 8-1 - 5 Points (GS-11,12,13,14)

At this level, the work is primarily sedentary and involves only occasional walking, standing, bending, and carrying of light objects.

Factor Level 8-2 - 20 Points (GS-11,12,13,14)

At this level, the work requires moderate to heavy physical exertion including standing for prolonged periods at the laboratory bench, working under biological hoods for several hours in succession, or lifting of moderately heavy objects (less than 50 pounds) such as animal cages or lab supplies and equipment.

The work may also require possession of above average manual dexterity to perform delicate surgical manipulations on lab animals, such as removal of small organs, or implantation of electrodes in fetuses, possession of acute visual perception to make precise observations, and above average resistance to fatigue.

FACTOR 9 - WORK ENVIRONMENT

This factor measures the physical surroundings in which the scientist works including the need to take precautionary measures to avoid exposure to hazardous materials or other physical risks.

Factor Level 9-1 - 5 Points (GS-11,12,13,14)

At this level, work is performed in an office setting with adequate light, heat and ventilation. The scientist is occasionally exposed to hazards typical of a biochemical laboratory..

Factor Level 9-2 - 20 Points (GS-11,12,13,14)

At this level, the scientist is regularly exposed to toxic, carcinogenic, and infectious compounds, to radioactive materials, or to excessive noise and heat. The assignment may also require working in proximity to high voltage equipment creating the potential for electric shock. There is also the possibility of painful animal bites. The work requires the exercise of special precautions such as working under hoods, wearing badges indicating radioactive exposure, or wearing protective clothing.

ABBREVIATED GRADE LEVEL CRITERIA

FACTOR 1 - KNOWLEDGE REQUIRED BY THE POSITION

Factor Level 1-7 - 1250 Points (GS-11,12)

Intensive knowledge of principles and methods in specialty area; ability to recognize need for and adapt/modify established procedures; skill in operation, calibration, and minor repair of STEM, HPLC, GC and the like, and ability to pinpoint basic instrumentation problems; ability to plan, organize and carry out projects involving other lab workers; skill in validating results and making preliminary interpretations; communication skill to prepare sections of manuscripts, draft technical reports, document changes to SOP's, and train others in specialized procedures.

Factor Level 1-8 - 1550 Points (GS-13,14)

Mastery of theories, principles and methods of specialty area to serve as expert in application of specialized methods; ability to recognize need for and develop new procedures to solve critical or novel problems or to perform more refined analyses; knowledge of legal and regulatory issues affecting the specialty area; ability to advise others in application of highly sophisticated instrumentation, such as NMR, MS, or innovative microcomputer applications; skill in diagnosis and repair of specialized lab equipment; ability to apply state-of-the-art in methods and technology to biotechnology research; communication skills to draft papers for publication, provide advice to other scientists, or propose major changes in lab organization or service procedures.

FACTOR 2 - SUPERVISORY CONTROLS

Level 2-4 - 450 Points (GS-11,12,13)

Supervisor defines overall scope of work, approves resources such as time, material, and assists in initial planning; priorities, deadlines, and approaches decided cooperatively; scientist locates sources of information and references, including contacts with researchers in other labs; the scientist independently plans, organizes and carries out assignments; identifies need for and recommends methods changes or rerunning of experiment; supervisor consulted only on very unusual or controversial matters, such as presence of highly contagious microorganisms, lack of cooperation from support groups, major inconsistencies in data; work is reviewed for accomplishment of overall objectives, technical adequacy and feasibility of methods selected; scientist is fully responsible for accuracy of results and soundness of judgments; written work reviewed for editorial purposes rather than content.

Level 2-5 - 650 Points (GS-14)

Supervisor provides administrative direction only with assignments which are made within the terms of broadly defined national programs, missions, of functions; the scientist is a

recognized expert in field of scientific specialization and is responsible for independently planning, designing, and carrying out projects, assignments, studies or other work independently; the scientist is the one to whom other Center scientists regularly turn and rely upon to resolve issues of exceptional complexity and scope within the field of specialization where little policy or scientific guidance exists, these decisions are accepted as authoritative, and serve as precedents for future analogous situations often forming the basis for formal written statements of scientific policy, procedures, and processes; results of work are accepted as scientifically and technically authoritative and are normally accepted without significant change; recommendations for new projects and alteration of objectives are usually evaluated for such considerations as availability of funds and other resources, broad program goals, or national priorities.

FACTOR 3 - GUIDELINES

Factor Level 3-3 - 275 Points (GS-11)

Guides include standard technical references, current literature, equipment manuals, lab policies and precedents; the scientist must usually adapt guides to fit different requirements, such as use of different media, reagents, or instruments; revises established guides as necessary; judgment used in selecting and applying most suitable guides, in adapting guides to local requirements, and in relating precedents to new or unusual assignments; the scientist may assist in validating new methods developed by others in the lab.

Factor Level 3-4 - 450 Points (GS-12,13)

Guides include recent discoveries and advances in the specialty area; the scientist must research new developments through personal contact with other scientists; judgment is required in adapting new methods and procedures to the lab; judgment also exercised in determining the need for new or substantially modified procedures to solve problems or meet unique requirements, isolation of unknown compounds, and in applying new procedures in the lab; initiative demonstrated by successful incorporation of new procedures in the lab; has developed SOP's or instructions used by other scientists in the lab.

Factor Level 3-5 - 650 Points (GS-14)

Guides include agency policies, regulations and legislation affecting biological products; scientist must assess impact of new policies and regulations and pending legislation on the assignment area, such as effect of new directions in food and drug regulation on current or

planned research or established procedures; guidance is often derived through discussions with scientists in other organizations who are pursuing related research problems; the scientist recognizes need for new procedures in the specialty area to close gaps in knowledge or increase understanding about critical processes; judgment required in identifying areas where new or improved procedures are needed and in implementing and providing training on new or significantly improved procedures; judgment also applied in defending and explaining methods used to outside review groups; procedures and guides originated by the scientist are applied throughout the Center and may have been adapted for use in other government and private labs as well.

FACTOR 4 - COMPLEXITY

Factor Level 4-4 - 225 Points (GS-11,12)

Assignments involve modifying established procedures to improve accuracy and validity of data, increase efficiency or respond to unusual requirements; the scientist has demonstrated ability to carry out a wide range of moderately difficult procedures or most of major analytical/surveillance SOP's and has developed recognized expertise in applying a highly specialized assay or test; the scientist has complete lab logistics responsibility including determining supply and equipment requirements; researches literature and other sources of information to discover promising new developments; determines sources of inconsistencies in results and recommends correction; analyzes data and draws tentative conclusions regarding significance of data to hypothesis; prepares tabular material for publications; the scientist may have co-authored papers, written technical reports, documented new SOP's or, communicated results similarly; exercises creativity in modifying established methods and evaluating applicability of new methods developed in other labs.

Factor Level 4-5 - 325 Points (GS-13,14)

Assignments involve development of new or significantly improved procedures or introduction of new analytical capabilities; primary function is implementing, refining, documenting and training other scientists in applying new methods; analytical efforts concentrate on characterizing highly complex or controversial biological products; responsibilities may include development/implementation of new instrumentation techniques for highly specialized equipment, or planning and directing major services; scientist typically shares administrative responsibilities with lab chief, such as budget administration, personnel management, procurement; evaluates new developments in the specialty area for the Center; may have authored papers, presented papers or posters at conferences, or served on technical panels or committees; the scientist has attained significant professional recognition, such as achievement awards, professional certification; creativity and originality is evident in impressive numbers of new or improved procedures or

new instrumentation techniques introduced.

FACTOR 5 - SCOPE AND EFFECT

Factor Level 5-3 - 150 Points (GS-11)

Purpose of the work is to select and apply established procedures to produce valid data; modification of standard procedures is also necessary to meet changing needs in the lab; the scientist recognizes inconsistent data and takes corrective action; scope of work includes training other lab workers in performing standard procedures and managing lab; sufficient technical competence has been displayed that scientist routinely plans and carries out experiments to the point of data analysis and interpretation without direction; efforts affect the accuracy and reliability of results and responsiveness of centralized services.

Factor Level 5-4 - 225 Points (GS-12,13)

Purpose of work is to modify established procedures and develop new methods to meet unique requirements or upgrade current capabilities; scientist provides expertise in performing specialized procedures and advises other labs in their application; scope of assignment includes evaluating new methods and communicating results of work to scientists outside the immediate lab; scientist's efforts enhance ability of lab to produce and analyze valid data or increase efficiency of service delivery; documentation of new or improved methods has salutary impact on other labs including those in other government and non-government organizations.

Level 5-5 - 325 Points (GS-13,14)

Purpose of work is to provide expert advisory services to other scientists on new or improved application of highly specialized instrumental techniques or implementation of new analytical or diagnostic services; the scientist is often called upon to resolve unusually difficult or long standing problems involving the specialty; recognition extends to other labs outside the Agency as evidenced by requests for consultation/collaboration; scope of work includes assessing and planning for future requirements, such as, initiating new services or new procedures; advice influences decisions to expand or contract current services, or to approve new protocols; scientist's counsel is also solicited in formulating long range plans for the lab or division; results of the scientist's efforts have potential for advancing procedural state-of-the-art in the specialty area.

FACTOR 6 - PERSONAL CONTACTS

Factor Level 6-3 - 60 Points (GS-11,12,13,14)

Personal contacts are made with scientists, administrative representatives and others outside the Agency such as scientists from other Federal agencies, state and local governments and technical representatives from private industry or other countries. These contacts are in addition to those described at the next lower level.

FACTOR 7 - PURPOSE OF CONTACTS

Factor Level 7-2 - 50 Points (GS-11)

The purpose of the personal contacts, in addition to exchanging information, is to plan and coordinate work with others, discuss problems concerning scientific methods and possible solutions, interpret data which has been gathered and explain its significance, or clarify the information requested, resolve operating problems, and agree on schedules and plans. Those contacted are cooperative because they are working toward mutual goals.

Factor Level 7-3 - 120 Points (GS-12,13)

The purpose of the personal contacts is to persuade, influence, or motivate others who are skeptical, uncooperative, or have different and conflicting opinions such as persuading other scientists to accept changes in procedures and methods about which there is technical disagreement.

Factor Level 7-4 - 220 Points (GS-14)

The purpose of the contacts is to justify, defend, or settle matters involving significant or controversial issues. Occasionally serves as the Center representative at meetings, hearings, conferences concerning national programs, controversial policies or regulations, or the development of Agency wide standards and guides.

Those contacted typically have widely differing viewpoints, objectives, or goals which require the scientist to convince those contacted to accept the Agency position or to develop suitable compromises or alternatives.

FACTOR 8 - PHYSICAL DEMANDS

Factor Level 8-1 - 5 Points (GS-11,12,13,14)

Work does not impose any unusual physical demands.

Factor Level 8-2 - 20 Points (GS-11,12,13,14)

Work requires moderate to heavy physical effort, including prolonged standing, lifting and moving moderately heavy objects; above average manual dexterity and visual acuity is also required.

FACTOR 9 - WORK ENVIRONMENT

Factor Level 9-1 - 5 Points (GS-11,12,13,14)

Work is performed in office setting with occasional performance in a laboratory.

Factor Level 9-2 - 20 Points (GS-11,12,13,14)

Work involves frequent exposure to hazardous materials, or to excessive noise and heat, or, working in proximity to high voltage equipment, special precautions such as working under hoods, wearing protective clothing, and periodic physical exams may be required.