



UNITED STATES OFFICE OF PERSONNEL MANAGEMENT
Washington, DC 20415

Human Capital Leadership
and Merit System
Accountability Division

Classification Appeal Decision
Under section 5112 of title 5, United States Code

Appellant: [appellant]

Agency classification: Materials Research Engineer
GS-806-13

Organization: [name] Branch
[name] Directorate
[name] Center
National Aeronautics and Space
Administration
[location]

OPM decision: Materials Research Engineer
GS-806-13

OPM decision number: C-0806-13-01

/s/ Robert D. Hendler

Robert D. Hendler
Classification and Pay Claims
Program Manager
Center for Merit System Accountability

October 18, 2006

Date

As provided in section 511.612 of title 5, Code of Federal Regulations, this decision constitutes a certificate that is mandatory and binding on all administrative, certifying, payroll, disbursing, and accounting officials of the Government. The agency is responsible for reviewing its classification decisions for identical, similar, or related positions to ensure consistency with this decision. There is no right of further appeal. This decision is subject to discretionary review only under conditions and time limits specified in the *Introduction to the Position Classification Standards*, appendix 4, section G (address provided in appendix 4, section H).

Decision sent to:

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Introduction

On June 5, 2006, the Atlanta Field Service Group of the U.S. Office of Personnel Management (OPM) accepted a classification appeal from [appellant], Ph.D, who currently occupies a position classified as Materials Research Engineer, GS-806-13, in the [name] Branch, [name] Directorate, [organization], National Aeronautics and Space Administration (NASA), [location]. He believes his position should be classified as GS-14. We received the initial agency administrative report on July 11, 2006. We accepted and decided this under the provisions of section 5112 of title 5, United States Code (U.S.C.).

Background

A peer review panel, following the agency's Research Development Classification Process (RDCP), evaluated the appellant's position at the GS-13 level in August 2005. The appellant requested a re-evaluation of the findings and a subject matter expert and an agency human resources specialist affirmed the peer panel's grade findings in March 2006. The appellant then appealed to his agency which, on May 9, 2006, sustained the current classification of the appellant's position. The agency evaluated the appellant's position using the Research Grade-Evaluation Guide (RGEG), dated January 1976, which was applicable at that time.

The appellant is assigned to position description (PD), number [#], which was certified as accurate by the supervisor and the appellant. Although the PD does not identify the current research project, the appeal record contains additional descriptive information which we find, along with the official PD, contains the major duties and responsibilities assigned to and performed by the appellant.

General issues

The appellant makes various statements about his agency's review and evaluation of his position. He states that the agency's review of his work considered only a seven month period and did not include all of the work he has performed since December 2000. He also believes his absence for active duty military service adversely impacted the score he received in the RDCP because funding and other resources were not available for his research upon his return to duty. In adjudicating this appeal, our only concern is to make our own independent decision on the proper classification of the appellant's position. By law, we must make that decision solely by comparing his current duties and responsibilities to OPM standards and guidelines (5 U.S.C. 5106, 5107, and 5112). Because our decision sets aside all previous agency decisions, the appellant's concerns regarding his agency's classification review process are not germane to this decision. Therefore, we have considered the appellant's statements only insofar as they are relevant to that analysis.

The appellant discusses work that he performed since 2000. However, 5 U.S.C. 5112 requires that we can consider only current duties and responsibilities in classifying positions. Established OPM guidance requires that a representative work cycle be determined for establishing what work is characteristic of a position for classification evaluation. The "cycle of work" representative of a position can vary from agency to agency, or even within a given agency. Given the cycle of the appellant's work, particularly as relates to his on-going research and incorporation of aspects of it, current duties for this position are those that have

occurred in about the past two years. The earlier investigations provide useful historical background and personal qualification for work currently assigned, but our adjudication must focus on the more recent work performed by the appellant.

Position Information

The branch in which the appellant's position is located provides technical expertise in advanced materials and processing to Department of Defense (DoD) aerospace partners. The appellant's position enables material advancements and problem resolution by providing technical expertise, problem solving skills, and benchmarking of current materials and conducting experimental methods for relevant materials problems. Projects are aimed at particular applications and require the appellant to formulate and execute research and design approaches. The appellant is a member of an interdisciplinary team of scientists, engineers, and project managers and may serve as a team leader. When serving as a team leader, he plans, coordinates, and integrates a multidisciplinary approach to develop and fabricate optoelectronic materials and provides the technical direction for characterization, fabrication work, and required resources to accomplish the work. Projects have involved work in the field of nanotechnology entailing the design, fabrication, and testing of optoelectronic materials and coatings.

Since October 2005, the appellant has worked on flexible materials and flexible conductive material in support of the Advance Aircraft Program (AAP). The AAP is a NASA headquarters-level program involving applications of fundamental research for DoD applications. The AAP research is devoted to vehicle survivability and maneuverability. The appellant's research project is classified and pertains to a sub-set of one of the program's systems. It focuses on the interface of elastics and aircraft design and involves defining the material properties of elastics as they might impact the applications problem. Aspects of the research problem include the strain on the materials, their conductivity, and their anisotropic properties. The appellant is designated flexible materials group lead and, in that capacity, he has coordinated with other groups working on other approaches for the project and formulated milestones and technical objectives for the project goals.

Prior to his current research assignment, the appellant worked from October 2004 to October 2005 on a metal patterning project for which he led an ad hoc team of four researchers and three technicians. The project involving the laser ablation and irradiation patterning of palladium self-metallized films in the preparation of simple electrical circuits and other defined patterns. It also included the design and patterning of palladium by photodecomposition of palladium salt in polyamic acid using laser irradiation. The work represented a broadening of knowledge of metal plating and technological operation boundaries, or design space, and resulted in identification of two processing techniques, along with two patent applications.

The branch chief generally provides broad administrative supervision and discusses possible technical approaches with him. The appellant has freedom to formulate and execute the research plan within staffing and budget constraints imposed by the Program Manager and the supervisor. He is assigned to an applications team and receives project direction from the applications team lead.

To help decide the appeal, we conducted a phone audit with the appellant and interviewed his supervisor. We also telephonically interviewed seven other engineers and scientists knowledgeable of the appellant's work and materials engineering, whose names were furnished to us by the appellant and the agency. In reaching our classification decision, we have carefully reviewed the audit findings and all other information of record furnished by the appellant and his agency, including his official PD, which we find contains the major duties and responsibilities assigned to and performed by the appellant.

Series, title, and standard determination

The agency classified the appellant's position in the Materials Engineering Series, GS-806, and titled it as Materials Research Engineer. The appellant agrees with the agency's title and series determinations and we concur.

The appellant questions the agency's interpretation of the RGEG, used to evaluate his position, in identifying criteria for meeting a Degree D level of difficulty for two of the RGEG's factor levels. The agency credited Degree C for Factors I and IV and Degree D for Factors II and III. The appellant believes Factors I and IV warrant Degree D. OPM issued a new RGEG on September 11, 2006, which supersedes the earlier RGEG, and must be applied to all covered positions. We applied the new RGEG to the appellant's position. We have provided RGEG interpretive information as it applies to the appellant's position in our grade determination rationale.

Grade determination

The RGEG, Part II, uses four factors to evaluate covered positions. Each factor has five levels (degrees in the previous RGEG), A through E, with increasing point values. The guide provides specific criteria for Levels A, C, and E. Level B or D may be assigned when a position exceeds Level A or C criteria, but does not fully satisfy Level C or E criteria respectively. The RGEG is a narrative classification standard. The criteria at each level description represent the mid-point and do not describe the ceiling or floor for a factor level. Therefore, a position must substantially exceed the level defined before crediting at the next higher level can be considered. In addition, when one aspect of a factor level exceeds the defined level but another equally important aspect falls short of the defined level, the factor level is not exceeded.

A point value is assigned to each factor based on a comparison of the position's duties with the factor-level descriptions in the guide. The total points assigned are converted to a grade by use of the grade conversion table in the guide. Our evaluation of the appellant's position using these factors follows.

Factor I, Research Assignment

This factor deals with the nature, scope, and characteristics of the researcher's current assignment. The assigned factor-level reflects the norm of current assignments, rather than atypical work. For project and team members, it is based on the specific projects or portion of projects for which the researcher is responsible.

At Level C, research assignments are broad and complex in scope, requiring a series of comprehensive and conceptually related phases and studies. Problems are difficult to define and the work requires sophisticated research techniques. The researcher typically works as a project member or as a primary investigator. At this level, the researcher's work results in contributions that answer important questions in the field or open significant new avenues for further study. They may lead to important changes in existing products, methods, techniques, processes, or practices or are definitive of a specific topic area.

At Level E, the scope and complexity of the research assignments are at a level requiring subdivision into separate phases, some of which are considerably broad and complex. The problems are exceptionally difficult and unyielding to investigation and the work requires unconventional or novel approaches or complex research techniques. Work results may include a major scientific advance or open the way for extensive related development. They may include progress in areas of exceptional scientific or professional interest or important changes in theories. The research contributions may answer important questions in the field.

Comparable to Level C, the appellant is assigned very complex problems requiring research of materials' properties to determine use in new applications. While the research techniques used for projects may be sophisticated or more conventional, as in the current assignment, the work requires innovative approaches to determine materials' properties and transformations for use in applications. The appellant is currently working on a proof of concept solution for a unique material structure that is in the preliminary characterization phase and he has not yet submitted a research proposal. No similar studies have been done on the particular application involved and there is very little information on elastomers under high strain applications. If the solution is promising, the research would move into other phases and could have significant impact for the agency and enhance knowledge of changes in materials' properties. Like Level C contributions, the appellant's research on palladium self-metallized films resulted in improvements in techniques, as demonstrated by patent applications, and expanded design space in demonstrating a concept that could be used beyond the immediate application. As at Level C, the appellant is assigned to a team of scientists working on different approaches to the problem and is designated as flexible materials team lead. In his self-metallized films project, the appellant used three teams of experts to work on several avenues in the research study and testing. The project results expanded the current field of knowledge and resulted in patent applications based on the unique methods used for metal plating.

The position does not approach or meet Level E. Unlike this level, the appellant's research over the last two years has not had comparable breadth or exceptional difficulty, nor has it involved separate phases as anticipated for work at this level. The appellant's current work assignment has not advanced significantly yet and his self-metallized films work involved facilitating three teams in the testing phase but did not have the scope and complexity anticipated at Level E. His research resulted in improvements in electrical conductivity of the self-metallized films but, unlike Level E, did not represent a major scientific advance or open the way for extensive development. Instead, it was considered evolutionary, expanding design space, and provided new approaches for metal plating processes typical of Level C. Therefore, we find the appellant's position meets but does not exceed Level C which is credited for 6 points.

Factor 2, Supervisory Controls

This factor deals with the researcher's current level of independent performance and the technical and administrative controls over research work.

At Level C, the supervisor assigns a broad problem area to the researcher or allows the researcher to work with substantial freedom within an area of primary interest. In either case, 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 involving considerable resources, makes final decisions on work direction and changes to it, and evaluates overall results, recommendations, and conclusions through review of final work and reports. The supervisor typically relies on the researcher's judgment and follows recommendations. The researcher is responsible, with little technical direction, for formulating hypotheses, developing and carrying out the research plan, and determining resource needs.

At Level E, technical supervision is consultative in nature and the researcher works under broad administrative supervision, usually limited to approving staffing, funds, and facilities and broad guidance on agency policies and mandates. The researcher works within the framework of management objectives and priorities in formulating research plans, assessing the organizational and professional applicability of research findings and hypotheses, and locating and exploring the most promising areas of research in relation to agency program needs and the state of the science or discipline.

Level C is met. As at this level, the appellant's supervisor provides project requirements and available resources to the appellant and together they discuss technical approaches. The appellant works under project direction of the applications project lead and is expected to identify and explore the most promising avenues of research for his portion of the systems project. The applications team lead and the Center's technical lead for the program determine applicability of the research for the project. As at Level C, the appellant has total responsibility for generating project plans, enlisting the support of contributing organizations, directing the research plan to completion, and interpreting results. He has considerable latitude in terms of the approaches he takes in fulfilling program requirements and provides quarterly or bi-annual updates to the supervisor and weekly updates to the applications team lead.

The position does not approach or meet Level E. Although the appellant works under consultative or nominal technical supervision, the appellant does not have the latitude to locate and explore the most promising areas of research in relation to agency program needs and the state of the science. Rather, he works within the parameters of identified applications problems with the freedom to pursue the most promising approaches typical of Level C. The appellant's assignments are more constrained than expected at Level E since his proposals and his research are reviewed for applicability. This level also is characterized by broader responsibility than delegated to the appellant in that the researcher is expected to formulate research plans as would be required for broader projects having broad and complex subdivisions and carrying out a project plan rather than a research plan as identified at Level C. The limited supervision over this position within its current parameters does not provide

sufficient weight to indicate that the work exceeds Level C. Therefore, Level C is credited for 6 points.

Factor 3, Guidelines and Originality

At Level C, guidelines consist of literature having limited usefulness due to limited applicability or are largely absent. The researcher demonstrates originality in defining elusive or highly complex problems and isolates and defines critical problem features. He or she defines productive hypotheses for testing, develops important new approaches, methods, and techniques, and applies new techniques of attack to solve important problems presenting unprecedented or novel aspects. The researcher adapts, extends, and synthesizes theory, principles, and techniques into original or innovative combinations or configurations. In contrast, at Level E, guidelines are almost nonexistent. The researcher discovers complex theory or methodology and solves problems that markedly influence the scientific field or society. He or she contributes significantly to the development of new methodology to supplant or add new dimensions to a previous framework.

The distinction between Levels C and E primarily lies in the manner in which originality is expressed. Level C focuses on the creativity, analysis, and judgment required to define the research problem and to develop the approaches, methods, and techniques to carry out the work. However, Level E includes the additional element of results, i.e., the contributions made to the scientific field in the form of new theories and methodologies that are developed during the course of the work. To fully meet Level E, the research must have gone considerably beyond Level C to extend or develop theory or methodology to the extent that existing theory or methodology is replaced or significantly altered.

As at Level C, the appellant's research assignments are characterized by very limited availability or absence of guidelines, e.g., novel metal containing polymers and their physical properties such as heats of capacity, electron affinities, and ionization potentials; elastomers under high strain applications over a long period of time, etc. Fundamental information on optoelectronics and nanotechnology is available for the study, but not for the applications problem. The appellant's self-metallized film research enabled the appellant to improve the electrical conductivity of the self-metallized films using a post-electroplating process and increased the metal film thickness to allow greater current flows and soldering of leads for subsequent device fabrication. This research represents a slight improvement or broadening of what had been done previously, but does not have the impact expected at Level E. The resulting patent applications demonstrate the uniqueness of the processes and their potential further uses; however, it shows the work exceeds Level C.

The scientists we spoke to indicated the appellant's current research, though not involving new phenomena or theories, could result in a major advance for the agency and project funders and be important to other projects if successful. The research is in a preliminary characterization phase and the appellant is working on a proof of concept solution. Several of the scientists interviewed did not see a new process resulting from the research or indicated it is too early to determine impact. Although the appellant's research may have the potential to meet Level E, the work is not sufficiently developed to credit Level E at this time. We find the position sufficiently exceeds Level C to warrant the crediting of Level D for 8 points.

Factor 4, Contributions, Impact, and Stature

This factor is not restricted to present and immediate past job performance. It is intended to focus on the total contributions, impact, and stature of the researcher as they bear on the current research assignment.

At Level C, the researcher has demonstrated competence and productivity as evidenced by conducting rigorous research of marked originality, soundness, and value. Work is expected to result in, or has resulted in primary authorship of publications of considerable interest and value to the field, products that are significant in solving important scientific problems, and research ideas leading to productive studies by others. The scientific society recognizes the researcher's professional stature and impact through, selection to serve on important committees and review panels, favorable reviews or citation's of the researcher's publications, invitations to make presentations to professional societies and others, and consultation by users or other researchers who are respected in their fields of study.

At Level E, the researcher has made outstanding and significant contributions by conducting research in either a broad field or a narrow but very specialized field. His or her accomplishments are of such importance and magnitude that they move science forward. Other researchers must take note of it to keep abreast of developments in the field. Work at this level includes primary authorship of a number of important papers accepted as authoritative or having a major impact in the scientific field. Contributions to inventions, techniques, etc., are regarded as major advances and open the way for further developments or solving problems of great importance. The researcher is recognized as an authority in the field and is invited to address or to assume a leadership role in national professional organizations, to collaborate with highly-respected colleagues, to lead research to solve large and complex problems, to perform a variety of advisory activities, etc.

The position meets but does not exceed Level C. As at this level, the appellant has demonstrated competence in the polymer field. Since 1996, he has authored and co-authored 10 refereed journal articles, six of them since 2000. Out of eight proceedings, three have been refereed and five un-refereed. The appellant has contributed chapters for two refereed books, one as recently as 2003. He has two patent applications and two invention disclosures. He also has a non-disclosure agreement for the "Thermally Driven Miniature Piston Actuator." The appellant's publications have generated approximately 100 citations since 2000 and another 140 from 1996 through 1999. Like Level C, the appellant's recognition by the scientific community is evidenced through the seven presentations he has made to outside organizations, most recently invited lectures at the University of Cambridge in England and the University of Connecticut. He is consulted by users and other researchers who are respected in their fields of study. While the number of work citations is notable, it provides further evidence of the interest and value of his work with polymers, particularly liquid crystal elastomers, and not evidence of recognition by the scientific community as an authority in the field.

The position does not approach or meet Level E. The record shows the appellant's work is characterized as having increased design space but not by having moved science forward through enabling something that couldn't already be done. Similarly, the appellant's

research has not yet had comparable impact or evidence the contributions or stature as indicated for this level. For example, the appellant has not had authorship of a number of important papers having major impact, achieved recognition as an authority in the field, received requests from highly-respected colleagues to collaborate, perform a variety of significant advisory activities, etc. Therefore, Level C is credited for 12 points.

Summary

A total of 32 points falls within the GS-13 range of 26 to 34 points according to the Grade Conversion Table provided in the RGEG.

Decision

The appellant's position is properly classified as Materials Research Engineer, GS-806-13.