U.S. Office of Personnel Management
Office of Merit Systems Oversight and Effectiveness
Classification Appeals and FLSA Programs

Washington Oversight Division
1900 E Street, N.W.
Washington, DC 20415

Classification Appeal Decision
Under Section 5112 of Title 5, United States Code

Appellant:	[name]
Agency classification:	Biomedical Engineer GS-858-14
Organization:	Department of Agriculture Agricultural Research Service Field Organization Beltsville Area Livestock and Poultry Sciences Institute [laboratory] Beltsville, Maryland
OPM decision:	GS-858-14 Biomedical Engineer
OPM decision number:	C-0858-14-01

Richard Quasney
Classification Appeals Officer

7/20/99

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:

[appellant]

Mr. Roger L. Bensey
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Resources Management
Department of Agriculture
Washington, D.C. 20250

Mr. James Bradley
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Introduction

[appellant], who is employed as a Biomedical Engineer, GS-858-14, in the [laboratory] of the Livestock and Poultry Sciences Institute, Agricultural Research Service (ARS), U.S. Department of Agriculture (USDA), in Beltsville, Maryland, appealed the classification of his position to the Washington Oversight Division of the U.S. Office of Personnel Management (OPM). [appellant] requested that his position be classified as Biomedical Engineer, GS-858-15. This appeal was accepted and decided under the provisions of section 5112 of title 5, United States Code.

An on-site position audit was conducted by a Washington Oversight Division representative on May 6, 1999. The appellant's current and former first-line supervisors were also interviewed. This appeal was decided by considering the audit findings and all information of record furnished by the appellant and his agency, including his current research information statement (CRIS), his official position description, and its accompanying research evaluation case submission, as well as similar information from a 1993 OPM classification appeal decision of the appellant's position. In addition, telephone interviews were conducted with a number of scientists familiar with various aspects of the appellant's research.

General issues

The appellant filed a previous classification appeal with OPM in 1992, and subsequently received an OPM classification appeal decision sustaining the classification of his position in March, 1993. The appellant's position continued to be classified the same at the time of this request for appeal. The previous OPM classification appeal decision considered the body of the appellant's research work prior to 1993. Under section 511.607 of title 5, Code of Federal Regulations, an OPM classification appeal decision my not be reviewed or appealed when there has been no change in the governing classification standard(s) or the major duties of the position. Although the appeal was accepted for adjudication, we imposed certain limitations on the scope of our review. Accordingly, we examined the appellant's position within the context of his new research assignment, and any additional projects/publications that have occurred since the previous OPM classification appeal decision was issued. Thus, we did not reconsider any work that was already considered in the March 1993 OPM classification appeal decision. The appellant was duly informed. The practical effect of this is most apparent in our evaluation of Factor IV of the Research Grade-Evaluation Guide (RGEG), which is the factor in the RGEG that considers the research scientist's body of research work.

Most recently, the appellant's position was reviewed by an ARS research position evaluation committee in June, 1998. The panel evaluated his position at the GS-14 level, thus keeping the appellant in grade. The appellant is appealing only the grade of his position. He disagrees with the scoring for Factors I, II, and IV of the RGEG. The appellant has also raised certain issues about how his agency evaluated his position and the propriety of his agency's written policy guidance on evaluating research science positions that warrant explanation. Since OPM's adjudication of a classification appeal constitutes an independent and *de novo* review, OPM does not consider the manner in which the agency determined the classification of an appealed position.

Agencies are afforded substantial discretion in determining the specific process or manner in which they determine the classification of their positions including such things as the composition of an evaluation panel. In so far as the agency's written policy guidance on applying the RGEG in classifying its research science positions, we found nothing in the appellant's specific allegations that would directly conflict with either general classification principles or instructions in the RGEG. Specifically, based on our reading of the appropriate cited provision, we can not agree with the appellant's apparent conclusion that this provision mandates that evaluation of factors I, II, and III be predicated on the (prior) evaluation of factor IV, contrary to instructions in the RGEG requiring separate evaluation of each factor. In addition, we recognize the provision instructing concentration on the most difficult, complex or best work, among all the work considered, as a commonly accepted classification practice that focuses on the assignments with the highest grade-level impact.

Position information

The appellant investigates nutrient utilization by dairy cattle and the resulting flow of nutrients into manure, and manure management in environmental and economic impact. He is the primary research scientist responsible for studying manure management under the Current Research Information Statement (CRIS), Sustainable systems for managing manure from dairy cattle. The appellant is the only full time research scientist working under this CRIS and is the only Biomedical Engineer in the laboratory. It is expected that successful completion of the research will contribute toward establishment of new national standards for diets and manure processing and handling procedures.

Series determination

The appellant conducts research on animal physiology and the effects of external stimuli on biological systems and processes, and requires the design of specialized instruments and devices to detect or measure the phenomena being studied. This is consistent with positions classified to the Biomedical Engineering Series, GS-858, which requires the application of engineering concepts and methodology to investigate problems and phenomena of living systems and to develop materials, instruments, diagnostic and therapeutic devices, and other equipment applicable in the study of life systems. The appellant does not disagree with the series determination.

Title determination

No titles are prescribed for positions in the GS-858 series since there is no published standard for this series. The guidance in the Research Grade-Evaluation Guide, dated June 1964, provides agency discretion in titling research positions in series for which there are no published standards. The appellant's current title of Biomedical Engineer is not inconsistent with this guidance.

Standard determination

The appellant's position was evaluated by application of the Research Grade-Evaluation Guide (RGEG) which is used across series lines to determine the grade levels of research positions. Part I of the RGEG is used to evaluate positions at GS-11 through GS-15 that are engaged in basic or applied research in the sciences, when the functions involve the personal performance, as the highest level function and for a substantial portion of the time, of professionally responsible research. Part I includes four factors that are considered and rated separately, with the total point value then being converted to a grade level by use of the grade conversion chart provided in the RGEG.

Each factor is evaluated at one of five degree levels. Three of these levels (A, C, and E) are defined in the RGEG. An intermediate level (B or D) may be assigned when a position is evaluated between levels A and C or levels C and E, respectively.

Grade determination

Factor I: Research Situation or Assignment

This factor deals with the nature, scope, and characteristics of the studies being undertaken by the employee. It is intended to reflect the situation or assignment in the current job, rather than a summation of the employee's assignments over a long period of time. The ARS peer panel rated this factor at Degree D. The appellant disagrees with this rating.

At Degree C, the scientist is responsible for formulating and conducting a systematic research attack on a problem area of considerable scope and complexity. Problems of this scope must be approached through a series of complete and conceptually related research studies carried out by the scientist or by a team led by the scientist. Complexity is such that problems are typically difficult to define, require unconventional or novel approaches, require sophisticated research techniques, and/or present features of more than average difficulty. Research studies of this scope will result in a series of publishable contributions to the knowledge that will: (1) answer important questions in the scientific field, account for previously unexplained phenomena, and/or open significant new avenues for further study; (2) represent an important contribution to the validation or modification of scientific theory or methodology; (3) result in important changes in existing products, processes, techniques, or practices; and/or (4) be definitive of a specific topic area.

The difficulty and complexity of the appellant's research meet or exceed Degree C. The appellant's current research in the area manure management involves exploring how nutrients in animal manure that are of potential economic value to farmers can be best utilized and how manure can best be managed in terms of handling, storing and disposition to minimize harmful environmental impact in a cost effective manner including odor. The data thus generated will be used in the development of national standards for animal diets and in improved procedures for handing, storing and utilizing animal manure. Currently, the appellant has conducted experiments

using wind tunnels to measure short-term ammonia losses from fresh manure and the effects of chemical additives on reducing ammonia emissions and the effects of growth hormone on excreted nitrogen partitioning to urine and feces. The appellant is currently involved in a project focusing on an environmental chamber housing dairy cattle in detecting and measuring ammonia, methane, carbon dioxide emissions and odorous compounds from manure under controlled and varied ambient conditions. Other factors will be introduced and varied, such as diet, management, and the use of chemical or biological additives, to study their effect. Another project will consist of experiments to modify the composition of manure constituents with the goal of stabilizing nitrogen in a form usable for fertilizer and controlling the level of phosphorous. Another study will examine the fertilizer value of manure constituents based on actual plant growth and study measurement techniques. This work is of a greater level of difficulty than expressed at Degree C, where problems are described as being of more than average difficulty and require approaches that are merely unconventional or novel. In contrast, the appellant's work is of a considerable level of difficulty since there are few relevant studies to determine approaches and methods to employ (how to detect and measure such elements as gaseous emissions and ammonia volatilization under management conditions).

Three types of research situations are described at Degree E. The first situation ordinarily involves leadership of a team conducting applied research, and the third situation necessarily involves team leadership. In either case, the appellant's role is not considered to meet the intent of the RGEG in its discussion of team leadership responsibilities. Although the appellant acts as principal investigator on collaborative projects, thereby receiving first authorship on any resultant publications, such arrangements are common to scientific endeavor and do not constitute the type of formalized, continuous team leadership, including attendant administrative and management responsibilities, intended in the first and third situations.

The second Degree E situation (which does not include team leadership) involves responsibility for attacking basic research problems which have been recognized as exceptionally difficult and unyielding to research analysis so that their solution would represent an advance of great significance.

The appellant's current research areas are not considered to be exceptionally difficult to the point that they have been unyielding to research analysis. His research may be characterized as novel and in areas relatively unexplored, rather than an area where a level of exceptional difficulty has been demonstrated through many previous unsuccessful research attempts. Although previous work has been performed, most notably in the Netherlands, this work is not directly relevant since farming conditions vary greatly in this country from those in studied areas. The term "great significance" is not defined in the RGEG, but it would involve an advance significantly beyond that described at Degree C, which includes accounting for previously unexplained phenomena, opening significant new avenues for further study, or contributing in an important way to validating or modifying scientific theory. The appellant's current research at this time does not go beyond these Degree C characteristics, in that its potential impact is to provide new and modified methods to study the economic and environmental impact of animal manure, which in

time, may contribute toward national animal dietary standards and procedures for handling and processing manure. However, in the early stages of the work, the broad advances described at Degree E, can not be inferred. Therefore, because Degree C is exceeded in relation to the difficulty and complexity of the research, but Degree E not fully met, the intermediate Degree D is credited for this factor.

Evaluation: Degree D 8 points

Factor II: Supervision Received

This factor deals with the supervisory guidance and control exercised over the researcher in the current job situation. The ARS peer panel rated this factor at Degree D. The appellant contends that his position should be rated at Degree E.

At Degree C in basic research, the scientist has substantial freedom to identify, define, and select specific problems for study, being responsible for determining what appear to be the most fruitful investigations and approaches to the problem area. The researcher is responsible, with little or no supervisory assistance, for formulating hypotheses, for developing and carrying out the plan of attack, for coping with novel and difficult problems requiring modification of standard methods, for analyzing and interpreting results, and for preparing comprehensive reports of findings. The supervisor is kept informed, through occasional discussions, of general plans and the progress of the work. The supervisor approves plans which call for considerable investments of time or equipment and is responsible for final decisions concerning direction of the work and changes in, or discontinuance of, important lines of investigation. The researcher has full responsibility for decisions regarding the use of equipment and other resources, and his completed work and reports are reviewed principally to evaluate overall results.

At Degree E, technical supervision is nominal and consultative. The researcher works under broad administrative supervision, which is generally limited to approval of staffing, funds, and facilities, and to broad agency policies. Within the framework of management objectives, priorities, and pressures for results, the researcher is expected to locate and explore the most fruitful areas of research in relation to the agency's program needs and the state of the science involved; to take complete responsibility for formulating research plans and hypotheses and for carrying them through to completion; and to take full and final technical responsibility for interpreting findings, including interpreting their applicability to activities and interests of the agency, and their broader applicability to basic scientific methodology. Within the agency, these interpretations are accepted as technically authoritative and become the basis for necessary administrative action.

The supervision received by the appellant is comparable to that at Degree E. The appellant is the sole scientist engineer in the laboratory and is supervised by a scientist whose position is classified in another scientific discipline. The appellant does not receive technical supervision. The appellant's research results are accepted by the supervisor as technically accurate, and are

reviewed for validation only within the context of the peer review process. He is responsible for selecting specific research ideas within the overall agency program, for the use of funds allocated to specific projects, for identifying approaches, and for planning, conducting, interpreting, and reporting research results. The national program staff retains authority for approval of major changes in the direction of research areas.

Evaluation: Degree E 10 points

Factor III: Guidelines and Originality

This factor deals with the creative thinking, analyses, syntheses, judgment, resourcefulness, and insight that characterize the work performed by the employee in the current job situation. The ARS peer panel rated this factor at Degree E. The appellant agrees with the rating of this factor.

At Degree C in basic research, available guidelines and precedents are limited in usefulness or may be largely lacking because of the novel character of the work being done. A high degree of originality is required in defining problems which are very elusive and/or highly complex, in developing productive hypotheses for testing, in identifying significant problems for study, in developing important new approaches, methods, and techniques, and in interpreting and relating the significance of results to other research findings.

In applied research, Degree C typically involves development and application of new techniques and original methods of attack to the solution of important problems presenting unprecedented or novel aspects. This includes application of a high degree of insight to isolate and define the critical features of the problems. It also requires application of a high degree of originality and ingenuity in adapting, extending, and synthesizing existing theory, principles, and techniques into original and nonobvious combinations or configurations, and in defining and conducting the specific research studies necessary for the solution of the problems dealt with.

The appellant's research is essentially basic, although it has applied aspects. In either case, the availability of guidelines and the originality required in the appellant's position meet or exceed Degree C. Very little information exists in the area of appellant’s current research. The literature includes studies from the 1920s and 1930s, but very little more recently where problems of environmental impact of animal manure and offensive odors have become primary concerns. Many studies in the literature look at only one compound, whereas the appellant is studying several at the same time. Recent studies, primarily overseas, are not directly relevant because of significant differences in farm management practices, environmental factors, and other differences. Although the literature may be used as a broad guide, the appellant has had to significantly modify existing approaches and techniques to fully investigate the phenomena under study in his research in this area. Thus, the appellant’s research exceeds Degree C, where only particular aspects of the assignment are expected to be novel or unprecedented.

At Degree E, originality is represented by creative extension of existing theory or methodology, or significant contribution to the development of new theory or methodology which is of such scope as to supplant or add new dimensions to a previous framework of theory or methodology. Alternatively, Degree E originality (particularly in applied research) may be represented by responsibility for applying a very high degree of imagination and creativity in the solution of problems of marked importance (for example, to the scientific field, to national defense, to health, to major segments of the national economy) for which there is an almost complete absence of applicable guidelines, pertinent literature, and methodology.

The distinction between Degrees C and E relates primarily to the manner in which originality is expressed. Degree C focuses on the creativity, analysis, and insight required to define the research problem, and to develop the approaches, methods, and techniques to carry out the work. There is no question that the appellant's research fully meets, and to some extent, exceeds that level. Degree E, however, 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 Degree E, the research must have gone considerably beyond Degree C to extend or develop theory or methodology to the extent that existing theory or methodology is replaced or significantly altered. Although the appellant's research may potentially approach this level, no such achievements have been attained to date, and it would be premature to credit this level of impact. Since the appellant's work meets and exceeds Degree C and approaches Degree E in terms of the originality and methodology employed, Degree D, the intermediate level, is credited for this factor.

Evaluation: Degree D 8 points

Factor IV: Qualifications and Scientific Contributions

This factor measures the total qualifications, professional standing and recognition, and scientific contributions of the researcher, insofar as these bear on the dimensions of the current work situation and work performance. It is given twice the weight of the other factors. The RGEG instructs that although the total history of accomplishment is to be considered under this factor, recent research is essential to full credit for past accomplishments. The ARS peer panel rated this factor at Degree D. The appellant contends that his position should be rated at Degree E.

The appellant has conducted research on teat defense mechanisms as barriers to mastitis in dairy cows, mechanisms affecting the efficiency of lactation and milk removal, the effect of stray voltage on animal behavior and lactation, and the behavioral and stress responses of dairy cows to farm management procedures and other variables and the attendant effects on milk yields, milk ejection responses, and associated endocrine and other physiological processes related to the transfer of fluids from systemic circulation to milk. Most of this prior work was considered in the 1993 OPM classification appeal decision. As mentioned, we reviewed only the work completed since that time. In that regard, we reviewed the appellant's work in the area of animal stress, which he was working on at the time of the 1993 OPM classification appeal decision. Similarly, we reviewed the appellant's work in the area of chronobiology. This work, while

completed many years before the 1993 OPM appeal decision, was not considered because the work had not yet been published and thereby subjected to the critical analysis and validation by the peer review process.

At Degree C, the researcher has demonstrated his ability as a mature, competent, and productive worker and will typically have authored one or more publications of considerable interest and value to the field (as evidenced by favorable reviews, by citation in the work of others, by presentations of papers to professional societies, etc.), and/or will have contributed inventions, new designs, or techniques which are of material significance in the solution of important applied problems. Contributions at this level derive from highly productive (in terms of both quantity and quality) personal performance of research of such originality, soundness, and value as to have marked him as a significant contributor to his field. Researchers at this level are beginning to be sought out for consultation by colleagues who are professionally mature researchers. The RGEG speaks of "emerging recognition" in the field at Degree C.

At Degree E, the researcher has demonstrated outstanding attainment in a broad, or in a narrow but intensely specialized, field of research. He will typically have authored a number of important publications, of which at least some have had a major impact on advancing the field, or are accepted as definitive of important aspects of it, and/or he will have contributed inventions, new designs, or techniques which are regarded as major advances in basic or applied research, and which have opened the way for extensive further developments, or have solved problems of great importance to the scientific field, to the agency, or to the public. The Degree E researcher is sought as a consultant by colleagues who are specialists in his field, and speaks authoritatively regarding his field in contacts within and outside the Government. Invitations to address national professional organizations, and recognition in the literature of his field through favorable reviews and numerous citations by others, are further typical evidences of attainment.

The appellant's work in the area of animal stress meets and exceeds Degree C in certain aspects. The appellant identified physiological indices of stress in animals, and established interrelationships of physiological mechanisms affecting lactation using innovative measurement and monitoring devices adapted and designed by the appellant. The appellant's work in this area has thus contributed to how stress is defined in a farm production setting and provided support for existing farm management practices. The appellant was invited to present two papers by international organizations and nominated by the institute director to serve on a related committee. The appellant terminated research in this area in 1995 when he was called upon to conduct research in his current area of manure management. Thus, while he produced some promising results, approaching Degree E, he did not further pursue and expand this area of research to the extent required for full credit at Degree E. The appellants work in this area cannot be found to significantly impact on his current research situation. We are aware that shifts in research missions (priorities) are beyond the appellant's control, however, the standard requires that we consider the appellant's qualification and contributions as these bear on the dimensions of the current research situation and work.

The appellant's work in the area of chronobiology established guidelines for design of experiments involving hormones. This work aided in the interpretation of stress hormones and added to the larger body of knowledge in the field of chronobiology. While this work fully meets the requirements of Degree C, the appellant's work does not approach Degree E. While the appellant has authored a number of publications in this specialized field, there is no indication that these publications have had a major impact on advancing the field or definitively settled important areas of it, as required at Degree E. The appellant completed work in this area over 10 years ago although some of his publications have been just published more recently. The appellant's advisory and consulting activities and his level of professional recognition in this area of research do not meet or approach the Degree E Level. The appellant provided no evidence on the extent of his citations in this area of research.

The appellant's research in the area of manure management is in the early stages and he has just submitted his first publication for acceptance. His research in this area, then, has yet to produce contributions that would be creditable under this factor.

Considering the evaluation of the appellant's previous research in the prior 1993 OPM decision, most notably his work in the stray voltage area, and his research in animal stress, Degree D best characterizes the work of the appellant as it pertains to this factor.

Evaluation: Degree D 16 points

Summary

Factor evaluations and points assigned are as follows:

I. Research Situation or Assignment
Degree D: 8 points

II. Supervision Received
Degree E: 10 points

III. Guidelines and Originality
Degree D: 8 points

IV. Qualifications and Scientific Contributions
Degree D: 16 points

The total of 42 points falls within the GS-14 point range (36-42 points) on the grade conversion chart provided in the RGEG.

Decision

The appealed position is properly classified as Biomedical Engineer, GS-858-14.