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

Appellant: [Name]

Agency classification: Research Food Technologist
GS-1382-13

Organization: [Organization]
[Organization]
[Organization]
[Organization]
Agricultural Research Service
U.S. Department of Agriculture
[Location]

OPM decision: Research Food Technologist
GS-1382-14

OPM decision number: C-1382-14-01

_____/s/_____
Jeffrey E. Sumberg
Deputy Associate Director
Center for Merit System Accountability

_____9/10/09_____
Date

As provided in section 511.612 of title 5, Code of Federal Regulations (CFR), this decision constitutes a classification 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 the conditions and time limits specified in 5 CFR 511.605, 511.613, and 511.614, as cited in the *Introduction to the Position Classification Standards*, appendix 4, section G (address provided in appendix 4, section H).

Since this decision changes the classification of the appealed position, it is to be effective no later than the beginning of the fourth pay period after the date of this decision (5 CFR 511.702). The servicing human resources office must submit a compliance report containing the corrected position description reflecting the actual work of the position as described in this decision and a Standard Form 50 showing the personnel action taken. The report must be submitted within 30 days from the effective date of the personnel action to the U.S. Office of Personnel Management (OPM) office which accepted the appeal.

Decision sent to:

[Name]
U.S. Department of Agriculture
Agricultural Research Service
[Organization]
[Organization/Location]
[Location]

Tina Voglesong
Classification Officer
U.S. Department of Agriculture
Agricultural Research Service
Human Resources Division
5601 Sunnyside Avenue
Beltsville, MD 20705-5101

Director of Human Capital Management
U.S. Department of Agriculture-OCHM
J.L. Whitten Building, Room 302-W
1400 Independence Avenue, SW
Washington, DC 20250

Introduction

On November 12, 2008, the Philadelphia Accountability and Oversight Group of the U.S. Office of Personnel Management (OPM) accepted a position classification appeal from [appellant]. The appellant's position is currently classified as a Research Food Technologist, GS-1382-13, and is located in the [Name], [Organization]. [Organization] [Organization], Agricultural Research Service (ARS), U.S. Department of Agriculture (USDA), [Location]. The appellant believes his position should be upgraded to GS-14. We received the complete agency administrative report on December 8, 2008, and have accepted and decided this appeal under section 5112 of title 5, United States Code (U.S.C.)

To help us decide the appeal, we conducted telephone and e-mail interviews with the appellant's first-level supervisor on February 3, 2009. We also interviewed 14 research scientists throughout the world who are familiar with the appellant's research in February and March 2009. We also contacted the appellant to corroborate and clarify the written record. In reaching our classification decision, we have carefully considered all of the information obtained from the interviews, as well as the written information furnished by the appellant and his agency, including the position description (PD) of record.

Background

The ARS Research Position Evaluation System (RPES) provides for review of category 1 research scientist positions on a cyclical basis to ensure classification accuracy. The RPES is based on the "person-in-the-job" concept. Under this concept, the research scientists have open-ended promotion potential based on their personal research and leadership accomplishments which can change the complexity and responsibility of their positions. Under the RPES, properly appointed chairs, panelists, and human resources representatives who exercise signatory authority for the panel are delegated authority to determine both the propriety of the paneled position's coverage by the Research Grade Evaluation Guide (RGEG) and the appropriate grade level for the position in accordance with RPES procedures.

On November 7, 2007, an ARS RPES panel comprised of six scientists from diverse disciplines; i.e., three research geneticists, a research nutritionist, an agricultural engineer, and a research physiologist, and one human resources specialist conducted a peer group evaluation of the appellant's position. As part of the RPES process, the appellant was required to submit a research position evaluation case write-up certified by his supervisor as an accurate reflection of his accomplishments to support the level credited for Factor 4, Contributions, Impact and Stature of the RGEG. The panel issued a research position evaluation report (RPER) on November 16, 2007, which found the appellant's position was properly classified as Research Food Technologist, GS-1382-13.

On December 12, 2007, the appellant filed a classification appeal with USDA stating the RPES panel did not properly credit Factor 3 of the RGEG to his position, and his position should be upgraded to GS-14. We accepted the appeal on November 12, 2008. The appellant submitted supplemental clarifying information on January 12, 2009.

Position information

USDA provides leadership on food, agriculture, natural resources and related issues based on sound public policy, the best available science and efficient management.

ARS develops solutions to a wide range of problems related to food and agriculture including problems requiring long-term commitment of resources and problems unlikely to have solutions with the quick commercial payoff which would convince private industry to do the research. These problems range from protecting crops and livestock from costly pests and diseases to improving quality and safety of agricultural commodities and products, determining the best nutrition for humans, sustaining natural resources, and ensuring profitability for producers and processors while keeping costs down for consumers.

The MFSRU conducts basic and applied research on pathogenic bacteria and viruses to ensure a safe food supply. Research addresses high priority United States national needs by developing technical information and technologies needed by federal regulatory agencies, the food industry, consumers, and the international scientific community.

The appellant is responsible for the designing, conducting, and disseminating microbial research aimed to develop new valid, robust predictive models which describe the growth, survival, and inactivation of high priority pathogens in raw and ready to eat poultry foods (microbial pathogen response). The appellant is the research scientist responsible for research efforts in the new and emerging area of predictive microbiology. The appellant is responsible for the direct supervision of [name].

The appeal record, including the official position description (PD), contains descriptive information about the major duties and responsibilities assigned to and performed by the appellant, and we incorporate it by reference into our decision.

Series, title and standard determination

The agency assigned the position to the Research Food Technology Series, GS-1382 and, due to its coverage for grading purposes by the RGEG, titled it Research Food Technologist. The appellant does not disagree and, based on careful review of the record, we concur.

Grade determination

Part II of the RGEG provides grading criteria to evaluate non-supervisory professional research positions at grades 11 through 15 by applying four evaluation factors. Each factor contains five levels to which points are assigned. There are specific criteria identified for three factor levels; i.e., A, C, and E. Work is evaluated against each factor and level based on fully meeting the criteria. Intervening levels; i.e., B and D, are assigned in instances where work meets and exceeds the preceding level criterion, but does not fully meet the next higher level. OPM also considers the balance and the relationship between the different factors when determining levels. Additionally, it is important to note the capabilities of the researcher may markedly influence the characteristics of the work, i.e., impact of the person on the job.

Factor 1, Research Assignment

This factor deals with the nature, scope, and characteristics of the researcher's current assignment. The ARS panel rated this factor at Level D, 8 points with which the appellant agrees. Based on careful evaluation of all information of record, we agree and have so credited the position.

Factor 2, Supervisory Controls

This factor deals with the researcher's current level of independent performance and the technical and administrative guidance and control the supervisor exercises over the research work. The ARS panel rated this factor at Level D, 8 points with which the appellant agrees. Based on careful evaluation of all information of record, we agree and have so credited the position.

Factor 3, Guidelines and Originality

This factor deals with the use of guidelines and originality in performing the work. It deals with the creative thinking, analysis, synthesis, evaluation, judgment, resourcefulness, and insight characterizing the work currently performed. The RPES panel rated this factor at Level C, 6 points. The appellant disagrees with this rating and contends his position merits a rating of Level D.

At Level C, literature, precedents and guidelines in the field are of limited usefulness due to limited applicability or largely absent because of the novel nature of the research work involved. Originality is demonstrated through defining elusive or highly complex problems; developing productive hypotheses for testing; developing new approaches, methods, and techniques; interpreting and relating significant results to other research findings; developing and applying new techniques and original methods to solve problems; isolating and defining critical problem features; and adapting, extending and developing theory, principles, and techniques into original or innovative combinations or configurations.

At Level E, guidelines are almost non-existent in pertinent literature. Originality and creativity are demonstrated by discovering complex theory or methodology contributing significantly to the development of new theory or methodology to supplant or add new dimensions to a previous framework; and solving problems and delivering results which markedly influence the scientific field or society.

The appellant's supervisor and scientists interviewed characterize the appellant's research work as difficult and highly complex since predictive microbiology is a new and emerging field. As stated in the RPER, the literature available for modeling pathogen growth on food with other microorganisms or as a function of novel factors such as food matrices, strain variations, physiological state and pathogen density is nonexistent. As described in the RPER, and verified by the appellant's supervisor, the guidelines and precedents applicable to the appellant's work are almost non-existent. A number of scientists familiar with the appellant's research supported the non-existence of information and data in the appellant's field of expertise.

The RPER states the appellant was the first to hypothesize models can be developed in real foods with pathogens; i.e., Salmonella. According to the Centers for Disease Control, the Salmonella pathogen is a leading cause of illness from foods with an estimated 1.4 million cases and 500 cases of death in the United States annually resulting from ingestion. The appellant was the first to successfully validate an alternative approach which used a multiple antibiotic-resistant strain of Salmonella which occurs in nature to investigate and model pathogen behavior in real foods. The appellant exploited the unique characteristics of this strain to develop a novel enumeration method which allowed his team to develop and validate the first models for growth of Salmonella in real food and from a low initial density. The appellant hypothesized the pathogen could be transformed to a phenotype; i.e., one or more characteristics intrinsic to the pathogen which can be made visible through some technical procedure, allowing the pathogen's enumeration in the presence of other microorganisms. The appellant conducted a series of highly innovative studies evaluating the use of fluorescent Salmonella transformed with green fluorescent protein from jellyfish. This required the appellant to develop new agar media which would allow the Salmonella to grow resulting in the enumeration of the pathogen on food with other microorganisms. In contrast to 90 percent of the reports in scientific literature, the results demonstrated the transformation of bacteria with the protein induced fitness problems and resulted in strains not fit for modeling studies.

The appellant made significant discoveries which resulted in the development of two new statistical methods he named Acceptable Prediction Zone (APZ) method for nonstochastic models and the 90 percent Concordance Method for stochastic models. Through highly creative and original research, the appellant addressed important methodology and theory gaps which influenced the direction of research in his field of predictive microbiology. The appellant's influence is evident through his ability to direct research away from the development of models in laboratory broth, to the development of models in real food with native and competing micro-flora. This resulted in moving research away from subjective to objective validation of model performance and robustness. The appellant's APZ method has also been applied in non-poultry related studies involving host fungus interactions in urban and plantation forestry by German and Swiss predictive microbiologists. The APZ method is compared and contrasted to the gold standard method as published in the Biological Control Journal dated January 9, 2009. This shows the appellant's research continues to be of interest and applied in other areas of study years after its origination.

A scientist interviewed stated the appellant's body of knowledge and research in the areas of predictive microbiology and risk assessment, as related to the poultry industry, is unique and highly complex. It is considered groundbreaking, exceptional, and original by many research scientists who are applying the appellant's research conclusions and data in their studies and comparative analyses. Additional information from interviews and the scientific literature indicates the appellant's work on Salmonella in poultry impacted the route taken in designing experiments with raw poultry. It further showed anyone publishing in the field of Salmonella growth in chicken would be well advised to be aware of the appellant's publications on the topic and to consider them carefully before conducting their own research. This shows the appellant has contributed significantly to the development of new theories and/or methods which supersede or add new dimension to a previous framework.

The appellant's contributions to this emerging field, e.g. research studies, data, and models are supported by the numerous publications and citations of his research appearing in scientific papers, national and international journals, book chapters, as well as in a number of studies prepared and written by other researchers who refer to the appellant's work. Many in the scientific research community, as well as those in academia expand upon the appellant's research. The appellant's extensive research is used by others in the field of predictive microbiology and risk assessment. In essence, the appellant's work is used as a benchmark or framework against which many scientists develop, test and validate their work, and develop new models.

The appellant's research on predictive microbiology is of great significance and somewhat controversial due to the competitive nature of the work. The appellant's work on predictive modeling on pathogen growth behavior has challenged the credibility of precedent studies used in this evolving field, specifically the gold standard. The gold standard is a measurement which is widely accepted as being the best available to measure a construct. Studies applying both models have appeared in national scientific journals, the World Health Organization studies, and international scientific journals. A recent study conducted by scientists in Germany and Switzerland as published in Biological Control dated 2009, also demonstrates that scientists in the international scientific community are adopting the appellant's acceptable prediction zone method for use in other areas, e.g. host-fungus interactions in urban and plantation forestry.

The appellant fully meets and exceeds the guideline and originality criteria described in Level C. Some aspects of Level E are met, e.g. guidelines are almost nonexistent in pertinent literature. In relation to the originality criteria of Level E, the appellant meets two of the three factors. Although he has not demonstrated the discovery of complex theory or methodology, he has contributed significantly to the development of new theory modeling or methodology which supersedes or adds new dimension to the previous framework; and has demonstrated solving problems and delivering results which markedly influence the scientific field or society, i.e., the appellant's work has had a positive impact on the poultry industry.

Since the appellant meets and exceeds Level C and meets some but not all the criteria of Level E, Degree Level D at 8 points is assigned.

Factor 4, Contributions, Impact and Stature

This factor focuses on the researcher's total contributions, impact, and stature as they bear on the current research assignment. It is not restricted to present and immediate past accomplishments and achievements although recency is important. The ARS panel rated this factor at Degree Level C, 12 points with which the appellant agrees. Based on careful evaluation of all information of record, we agree and have so credited the position.

At Level C, the researcher has demonstrated competence and productivity as evidenced by conducting rigorous research of marked originality, soundness, and value. The appellant's certified write-up, review of published works, book reviews and corroborative statements obtained during interviews, show he has met and exceeded Level C.

The appellant meets some elements of Level E. Through highly creative and original research, the appellant has developed predictive methods which have influenced research in the field of microbiology. The methods are the Acceptable Prediction Zone (APZ) method for evaluating and validating nonstochastic models and the 90 percent Concordance Method for stochastic predictions of microbial growth. The appellant directs research away from the development of models in laboratory broth to the development of models in real food with native and competing micro flora and away from subjective to objective validation of model performance and robustness. The appellant's APZ method has also been used in non-poultry related studies involving host fungus interactions in urban and plantation forestry by German and Swiss predictive microbiologists where the method is compared and contrasted to the gold standard method as published in the Biological Control Journal dated January 9, 2009.

Another contribution the appellant made to the field of poultry food safety is the new theory and methodology he developed for mapping the distribution of pathogens on the carcasses of poultry. His research paper on this subject entitled *An Approach for Mapping the Number and Distribution of Salmonella Contamination on the Poultry Carcass* was accepted in March 2008 and published in the *Journal of Food Protection,* Volume 72, Number 9, 2008, pages 1785 – 1790.

The appellant meets another element of Level E by serving as a consultant to others regarded as professionals in the poultry food safety industry. He serves in an advisory and consultative capacity on the editorial board of the Journal of Food Protection as well as provides ad hoc reviews for food safety journals to include Journal of Food Science, Food Microbiology and International Journal of Food Microbiology. The appellant has also provided consultative services to professional organizations such as the World Health Organization (WHO) as well as Empire Kosher Poultry. He also serves on the Pathogen Modeling Programs Advisory Board, whose customer base consists of meat, poultry, and the slaughter industry. The appellant's record and scientists we interviewed support he is sought as a consultant in areas related to predictive microbiology, modeling and risk assessment by scientists, researchers in the field, academia, and the poultry industry.

Fourteen professional scientists were interviewed. The group was comprised of national, international and academic members of the scientific community. Thirteen of them regard the appellant as an authority in the field of predictive microbiology and risk assessment. All of them state that they have cited the appellant's work in their own research studies. In addition, publications by other scientists cite the appellant's research to validate their models or area of study.

The appellant fails to meet the remaining elements under Level E. For example, a review of the listing of publications the appellant submitted shows he has published for over 20 years. The RGEG requires us to consider the recency of accomplishments. We must focus on the more recent publications, e.g., the past 12 to 18 months. The record shows at least three quarters of the appellant's most recent publications were issued over two years ago.

Another element of Level E the appellant does not meet is attracting new researchers to the field of predictive microbiology. The appeal record shows that he has served as a consultant to many

in the poultry food safety industry over the years. He has also served as a mentor to many graduate students at UMES. However, the record does not show the appellant has not brought established scientists into the field of predictive microbiology.

Another element of Level E the appellant did not meet involves the area of working on collaborative projects. With the exception of one recent collaborative project involving chicken skin and Italian marinade in March 2009, the appellant does not show consistent involvement in recent collaborative projects.

After careful evaluation of the appeal record, the appellant was found to meet three of the eight elements of Level E under Factor 4. Since the appellant meets a limited number of elements of Level E, his work does not exceed Level C and approach Level E sufficiently to support Level D at this time.

Summary

Factor evaluation and points assigned are:

Factor 1 - Research Assignment
Level D: 8 points

Factor 2 - Supervisory Controls
Level D: 8 points

Factor 3 –Guidelines and Originality
Level D: 8 points

Factor 4 – Contributions, Impact and Stature
Level C: 12 points

Total: 36 points

Decision

The appellant's position warrants a total of 36 points. Therefore, in accordance with the RGEG conversion table on page 7 of the standard, the appellant's position is properly graded at GS-14.