Biology

1st Agricultural Research Service
2nd Field Organization
3rd North Atlantic Area
4th Beaver, WV

Appalachian Farming Systems Research Center

SUPERVISOR'S CERTIFICATION
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Factor Evaluation System

1. Knowledge Required
   1-7 1250
2. Supervisory Controls
   2-4 450
3. Guidelines
   3-3 275
4. Complexity
   1-3 150
5. Scope and Effect
   5-4 225

6. Personal Contacts
   6-2 75
7. Purpose of Contacts
   7-3 75
8. Physical Demands
   8-1 5
9. Work Environment
   9-2 20

Total Points 2450

Classification Certification
I certify that this position has been classified as required by Title 5, US Code, in conformance with standards published by the OPM or, if no published standard applies directly, consistently with the most applicable published standards.

REMARKS
Applied new JFS 400, Professional Work in the Natural Resources Management and Biological Sciences Group, dtd 09/05
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BIOLOGIST
GS-0401-11

The position is located at the USDA, ARS, NAA Appalachian Farming Systems Research Center in Beaver, West Virginia. The mission of the laboratory is to develop knowledge and technology that increases profitability of agricultural enterprises in the Appalachian region, including diversified small-scale family farms, while enhancing environmental stewardship. The primary function of this position is to support the mission of the research center as a team member providing specialized research assistance support to the Research Agronomist-Lead Scientist of the Grazing Management Research Group.

A. MAJOR DUTIES

Incumbent has full responsibility for implementing experiment protocol, maintaining research environment, and overseeing collection of plant data from complex field plot, grazed paddock and controlled environment experiments. Specific duties include: field plot design and layout; culture of forage plants including establishment, fertilization and harvesting; select sampling methodology and design sampling protocol; modify, develop and conduct laboratory analyses; and select and apply statistical methodology to analyze and model complex and time-course data sets.

Typical, but not all-inclusive, duties are illustrated by performance of any combination of the following:

Responsible for preparation and maintenance of field and controlled environment sites according to prescribed protocol and makes independent observations and procedural adjustments to improve credibility of data.

Coordinates sample collection and processing, and conducts specific sample analyses from complex experiments primarily in field and grazed paddock situations, and sometimes controlled environments.

Independently selects and applies appropriate statistical methodology for time-course and nonparametric statistical analysis, mixed-models techniques and modeling of multivariate data sets and prepares summaries of analyses.

Searches literature and develops proficiency in specific aspects of principles, methods and procedures for ongoing research.

Plans and sequences technical aspects of research protocol, collects data and summarizes results, and devises and recommends alternative methods of standardized analysis to solve complex problems.

Keeps daily records of experiments and assists in preparing technical reports and manuscripts by providing concise summaries of research methodology and data.
B. EVALUATION FACTORS

1. KNOWLEDGE REQUIRED BY THE POSITION

Extensive professional knowledge of biology and chemistry principles as they apply to forage-livestock systems, forage production, pasture ecology and livestock management, which enables the incumbent to collect valid data, conduct analyses and implement treatments, complete assignments, make observations, and relate significance of results to the overall research assignment.

Broad knowledge and practical experience in field plot establishment including site preparation, planting methods, plant identification and forage plant morphology and the culture of forage plants (cool- and warm-season perennial and annual grasses, legumes and forbs) in plot and grazed paddock environments.

Knowledge and skill in selection, application and interpretation of nonparametric and time-course statistical methods, and mixed-models techniques to analyze data and assist in generating mechanistic and predictive models of data responses.

Knowledge and skill in application of instrumented and non-standard sampling techniques to collect plant response data in field and controlled environments including portable photosynthesis monitors, microclimatological instrumentation and computerized microclimate characterization, quantum sensors and radiometers.

Knowledge and skill in ecophysiological methods of data analysis including quantifying plant competition, calculation of growth efficiencies, modeling growth rates and applying calculus to describe growth model functions.

Skill in operating and maintaining laboratory equipment; specifically, automated instrumentation and procedures for total nonstructural carbohydrate concentrations and components thereof, freeze-dryers and drying ovens, and HPLC systems.

Skill in keeping exact and detailed records of data, supplies and daily observations using personal computers and software applications and recognizing unexpected or erroneous results and independently resolves discrepancies.

Ability to follow complex instructions, coordinate and schedule work assignments and carry out multiple tasks for several simultaneously ongoing experiments, independently or as part of a team.

Ability to locate, organize and understand information from published literature for use as guidelines and new procedures and approaches.
2. SUPERVISORY CONTROLS

The incumbent works under the general supervision of a Research Agronomist and Lead Scientist for the Pasture Ecology and Grazing Management Research Group, who assigns objectives for the forage management component of the project.

Work assigned indicates the general objectives of the overall project and generally outlines experimental approaches and the nature of analyses or measurements to be made. Incumbent prioritizes approaches, assists in planning experiments and independently carries out experiments. Problems arising during experiments are resolved according to experience, previous training and accepted principles. Methods involved in implementing new procedures are discussed in general terms and completed work reviewed upon completion for conformance to established policies and procedures, and for technical accuracy.

Review is usually in the form of how technical and related administrative problems are resolved. Accuracy of data produced, quality of observations made, and procedures employed in planning and executing work are generally accepted without detailed review.

3. GUIDELINES

Guidelines include established methodology, manuals, technical references and precedent investigations. Judgment is required in selecting the most appropriate guides and references to apply to each problem. Significant deviations from guidelines are discussed with senior researchers for recommended action. The incumbent evaluates new methods and makes adaptations or modifications to solve specific problems or meet objectives.

4. COMPLEXITY

The incumbent is expected to work on several often unrelated projects concurrently. Much of the work is developmental and requires constant attention to detail and possible adjustment of methodology to obtain valid data.

The work requires the performance of various technical duties, which involve differing and unrelated processes and methods. A number of possible courses of action for planning and executing the work exists, and the incumbent is given leeway, or exercises discretion in choosing from among them.

Judgment is required to apply a wide range of conventional, established approaches, methods, techniques and solutions to new situations.

5. SCOPE AND EFFECT

The purpose of the work is to conduct experiments and analyses, and develop new methodologies that contribute an understanding of biological processes important in pasture management and grazing ecology. Results directly affect the design and
execution of related experiments or the adequacy of such activities as long-range work plans, field investigations, testing operations, research conclusions and the research reputation of the organization.

6. PERSONAL CONTACTS
and
7. PURPOSE OF CONTACTS

Personal contacts are principally with technicians and scientists within the immediate work unit or other laboratories within the location. Occasionally, contacts with scientists outside the location may be needed.

Contacts are for the purpose of obtaining, clarifying, or exchanging information on theoretical and problematic solutions to the experimental designs and methods, plan and coordinate the work, receive instructions, and report progress and results of work.

8. PHYSICAL DEMANDS

The work requires some physical exertion, such as regular and recurring walking, or bending. In many situations the duration of the activity (such as most of a work day) and conditions (out-of-doors under a range of weather conditions) contributes to the arduous nature of the job. In other situations, there may be special requirements for agility or dexterity such as exceptional hand/eye coordination and physical strength.

9. WORK ENVIRONMENT

The work involves regular and recurring moderate risks or discomforts, which require special safety precautions, e.g., working with large grazing livestock, irritant chemicals or working outdoors. The employee is required to use protective clothing such as gowns, coats, boots, goggles and gloves.

C. OTHER CONSIDERATIONS (Check if applicable)

[ ] Supervisory Responsibilities (EEO Statement)
[ ] Training Activities - Career Intern, Student Career Experience Program
X Motor Vehicle or Commercial Driver's License Required
X Pesticide Applicators License Required
[ ] Safety/Radiological Safety Collateral Duties
[ ] EEO Collateral Duties
[ ] Drug Test Required
[ ] Vaccine(s) Required
[ ] Financial Disclosure Required
[ ] Special Physical Requirements/Demands
[ ] Other:
**OFFICIAL**

10. **TITLE**

Biologist

11. **SERIES**

GS 0401

12. **PP**

5th

13. **FUNC**

Appalachian Farming Systems Research Center

14. **GRADE**

6th

15. **DATE**

April 9, 2003

17. **CLASSIFIER**

Yes

18. **ORGANIZATIONAL STRUCTURE** (Agency/Bureau)

1st

Agricultural Research Service

2nd

Field Organization

3rd

North Atlantic Area

4th

Beaver, WV

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21. **SUPERVISOR’S NAME AND TITLE**

David P. Belesky, Research Agronomist

22. **SECOND LEVEL SUPERVISOR’S SIGNATURE**

William M. Clapham, Research Leader

23. **DATE**

March 5, 2003

**FACTOR EVALUATION SYSTEM**

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29. **SIGNATURE**

Jamie E. Carr

30. **DATE**

April 9, 2003

31. **NAME AND TITLE**

Jamie E. Carr

33. **FLSA**

E

34. **REMARKS**

Nonexempt

FPL-65-11
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X Pesticide Applicators License Required
[ ] Safety/Radiological Safety Collateral Duties
[ ] EEO Collateral Duties
[ ] Drug Test Required
[ ] Vaccine(s) Required
[ ] Financial Disclosure Required
[ ] Special Physical Requirements/Demands
[ ] Other:
REASON FOR THIS POSITION

POSITION DESCRIPTION COVER SHEET

COMMENTS

OFFICIAL

Biolist

Month Day Year

GS 401 07

ORGANIZATIONAL STRUCTURE (Agency/Bureau)

1st Agricultural Research Service

2nd Field Organization

3rd North Atlantic Area

4th Beaver, WV

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SUPERVISOR'S NAME AND TITLE

David P. Belesky, Research Agronomist

SECOND LEVEL SUPERVISOR'S NAME AND TITLE

William M. Clapham, Research Leader

FACTOR EVALUATION SYSTEM

1. Knowledge Required

2. Supervisory Controls

3. Guidelines

4. Complexity

5. Scope and Effect

25. FLD / BMK

6. Personal Contacts

7. Purpose of Contacts

8. Physical Demands

9. Work Environment

26. POINTS

27. TOTAL POINTS

28. GRADE

CLASSIFICATION CERTIFICATION

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SIGNATURE

NAME AND TITLE

Human Resource Specialist

FLSA:  E

FPL - GS - 11
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<th>14. BUS. CD. (4)</th>
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<th>16. PAS. IND. (1)</th>
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<td>3 = Paper Rev.</td>
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<td>4 = PME / Activity Rev.</td>
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### REMARKS

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B. EVALUATION FACTORS

1. KNOWLEDGE REQUIRED BY THE POSITION

Extensive practical knowledge of basic biology and chemistry principles as they apply to forage-livestock systems, forage production, pasture ecology and livestock management, which enables the incumbent to collect valid data, conduct analyses and implement treatments, complete assignments, make observations, and relate significance of results to the overall research assignment.

Broad knowledge and practical experience in field plot establishment including site preparation, planting methods, plant identification and forage plant morphology and the culture of forage plants (cool- and warm-season perennial and annual grasses, legumes and forbs) in plot and grazed paddock environments.

Knowledge and skill in selection, application and interpretation of nonparametric and time-course statistical methods, and mixed-models techniques to analyze data and assist in generating mechanistic and predictive models of data responses.

Knowledge and skill in application of instrumented and non-standard sampling techniques to collect plant response data in field and controlled environments including portable photosynthesis monitors, microclimatological instrumentation and computerized microclimate characterization, quantum sensors and radiometers.

Knowledge and skill in ecophysiological methods of data analysis including quantifying plant competition, calculation of growth efficiencies, modeling growth rates and applying calculus to describe growth model functions.

Skill in operating and maintaining laboratory equipment; specifically, automated instrumentation and procedures for total nonstructural carbohydrate concentrations and components thereof, freeze-dryers and drying ovens, and HPLC systems.

Skill in keeping exact and detailed records of data, supplies and daily observations using personal computers and software applications and recognizing unexpected or erroneous results and initiate action to resolve discrepancies.

Ability to follow complex instructions, coordinate and schedule work assignments and carry out multiple tasks for several simultaneously ongoing experiments, independently or as part of a team.

Ability to locate, organize and understand information from published literature for use as guidelines and new procedures and approaches.
Standard Job #403-07

A. Major Duties

Typical, but not all-inclusive, duties are illustrated by performance of any combination of the following:

Prepares and maintains field and controlled environment sites according to prescribed protocol and conducts limited research projects and assignments in the assigned areas.

Collects and processes samples, and conducts specific sample analyses from complex experiments primarily in field and grazed paddock situations, and sometimes controlled environments using a variety of equipment and instruments.

Selects the appropriate methods and procedures and/or devises and recommends alternative methods of standardized analysis to solve problems.

Records and calculates results, tabulates data, and performs statistical calculations and applies commercially available statistical methodology to complex data sets. Methods can be simple or more complex such as time-course and nonparametric statistical analysis, mixed-models techniques and modeling of multivariate data sets.

Searches literature and develops proficiency in specific aspects of principles, methods and procedures for ongoing research.

Participates in summarizing results and devises and recommends alternative methods, for approval, of standardized analysis to solve problems.

Keeps daily records of experiments and participates in preparing technical reports and manuscripts by providing concise summaries of research methodology and data.

Coordinates establishment and maintenance of controlled environment, field plot and paddock-scale pasture ecology experiments.

B. Evaluation Factors

1. Knowledge Required by the Position

Professional knowledge of the principles, theories, and practices of biology, plant ecology, agronomy, pasture management and livestock production.

Ability to recognize problems associated with suboptimal plant and livestock production; make pertinent observations; apply the procedures and techniques in common use in the area of assignment with increasing skill; and draw tentative conclusions from the laboratory observations as to the cause of these problems.
Skill in calibrating and operating standard and sophisticated analytical instrumentation and field and laboratory equipment.

Skill in evaluating established methods and making minor modifications.

2. Supervisory Controls

Supervisor provides continuing assignments, sets objectives, and indicates priorities and provides technical direction. The supervisor provides additional, specific instructions for new, difficult, or unusual assignments including suggested work methods or advice on source material available. The incumbent is responsible for independently completing recurring projects but refers deviations or problems not covered by instructions to the supervisor. Results are not checked in detail except when reported observations are inconclusive or deviate from those normally expected in a given situation. Completed work is reviewed for adherence to instructions, established laboratory procedures, and technical soundness of results. New or unusual assignments may be reviewed in progress.

3. Guidelines

Guidelines are the technical literature and precedents that are applicable to the work. These guides do not always specifically apply to the work. Incumbent must exercise judgment in selecting the most appropriate guides and references and must adapt established precedents to the specific requirements and problems of the work. The incumbent analyzes the results to ensure that the changes are valid and may recommend and implement further changes. Situations to which the existing guidelines cannot be applied or significant proposed deviations are referred to the supervisor.

4. Complexity

Assignments involve a variety of limited, unrelated research tasks. Judgment and initiative are required in planning details of work, deciding how to collect and present results, determining methods and techniques to use and making minor modifications. The incumbent must consider various factors such as the biological, chemical and physical properties of the sample, the information sought, and the expected composition and properties of the substances in order to select from established alternatives the appropriate procedures to be adapted and applied.

5. Scope and Effect

The work involves performance and development of specific experiments, analyses and measurements in support of the research project objectives. The results of the work affect the scientific adequacy and accuracy of the research project.

6. Personal Contacts

Personal contacts are principally with scientists within the immediate work unit or other laboratories within the location. Occasionally, contacts with scientists outside the location may be required.
7. Purpose of Contacts

Contacts are for the purpose of obtaining, clarifying, or exchanging information, receiving instructions, or reporting progress and results of work.

8. Physical Demands

The work sometimes requires standing for prolonged periods of time.

9. Work Environment

Work is performed outdoors, in controlled environments and laboratory settings. Incumbent is exposed occasionally to irritant and in rare instances potentially toxic chemicals; on such occasions, special safety precautions are required and the incumbent uses protective clothing and gear such as laboratory coat, respirators, safety glasses and gloves.

C. Other Considerations (Check if applicable)

[ ] Supervisory Responsibilities (EEO Statement)
[ ] Training Activities - Career Intern, Student Career Experience Program
X Motor Vehicle or Commercial Driver's License Required
X Pesticide Applicators License Required
[ ] Safety/Radiological Safety Collateral Duties
[ ] EEO Collateral Duties
[ ] Drug Test Required
[ ] Vaccine(s) Required
[ ] Financial Disclosure Required
[ ] Special Physical Requirements/Demands
[ ] Other:

September 26, 1996