



## CERTIFICATE OF ACCOMPLISHMENT IN ENTERPRISE ARCHITECTURE

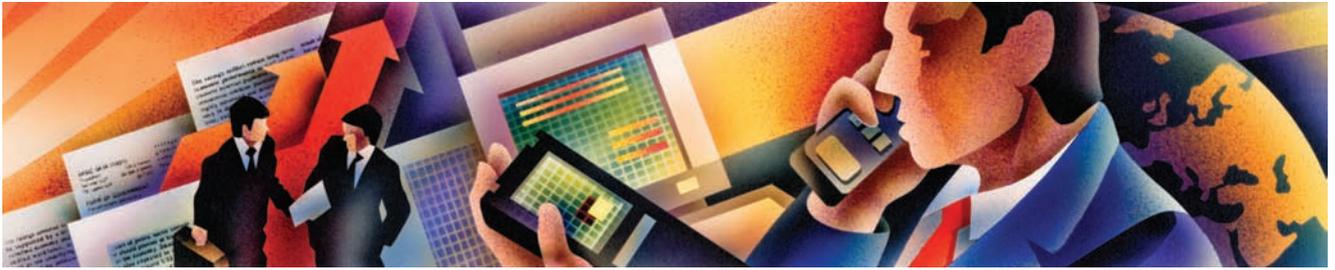
# TurntoUs

*to successfully link people, technology  
and business.*

**Enterprise Architecture:**

**Creating business solutions  
that prepare government  
agencies for modernization.**

# ENTERPRISE ARCHITECTURE



## WHAT IS ENTERPRISE ARCHITECTURE (EA) ALL ABOUT?

**The enterprise architecture (EA) approach** to creating business solutions prepares government agencies for modernization. It is a problem-solving framework that produces transition “blueprints” which enable organized and accelerated public sector change. Moreover, the approach is business-driven, thereby directly linking constrained government resources such as technology with the appropriate programmatic needs.

The Graduate School Certificate of Accomplishment in Enterprise Architecture is designed to equip developing enterprise architects, as well as staff and line leadership, with the requisite knowledge and skills to manage an agency’s enterprise architecture program office or other strategic functions. Content is intended to assist leaders in effective implementation of the Clinger-Cohen and E-Government mandates. The curriculum provides a thorough practitioner-focused foundation for development of viable, cost-effective enterprise architectures. You acquire the skills to serve as an effective “change agent,” learn to select among alternative approaches to improve business processes and eliminate duplication of services, and gain critical knowledge in facilitating data sharing for effective decision making across the enterprise and government at large. Course content is designed to address and complement requirements for achieving improved results in OMB’s “completion, use and results” criteria on the current *Federal Enterprise Architecture Program EA Assessment Framework*.

### Who should attend:

- ▶ Enterprise Architects
- ▶ Solutions Architects
- ▶ Information Technology Specialists
- ▶ Business Program Leaders
- ▶ Strategic Planners
- ▶ Capital Planning and Financial Leaders
- ▶ Acquisition Leaders

In December 2005, the Office of Management and Budget released the *Enterprise Architecture (EA) Framework Version 2.0*. Subsequent versions refined the current framework, which will be used to focus agency attention on completing and using EA to realize tangible results toward achieving an agency mission. The EA Assessment Framework will be used to assess an agency’s EA practice in three dimensions: completion, use and results. OMB also released the updated version of the FEA Data Reference Model (DRM). This version will better support information sharing and reuse, as well as provide a standard approach to describing, categorizing and sharing government data. The DRM will provide lines of business (LoB) and other communities of practice with an improved framework and methodology for data harmonization, standardization and integration across government.

# COURSES

## INTRODUCTION TO ENTERPRISE ARCHITECTURE

ENR7000T ♦ 3 DAYS ♦ 1.8 CEU ♦ TUITION \$1,195

This course provides an introduction and overview of enterprise architecture. Architecture frameworks and approaches will be reviewed in conjunction with legislative and regulatory requirements, including those published by OMB's Federal Enterprise Architecture Program Management Office (FEA-PMO).

### What You Will Learn

- ▶ The purpose and use of an enterprise architecture
- ▶ The value of an enterprise architecture vis-à-vis organizational planning and decision making
- ▶ Federal agency EA roles and responsibilities
- ▶ The importance of effectively communicating an enterprise architecture to agency executives, management and general personnel for organizational buy-in

### Who should attend

All those interested in learning about enterprise architecture, including aspiring and existing enterprise architects; CPIC coordinators; modernization change agents; program/project managers; and IT, program, planning and budget specialists.

### Course Objectives

Upon completion of this course you will be able to:

- ▶ Understand the context of EA relative to both the President's Management Agenda (PMA) and the Federal Transition Framework.
- ▶ Understand the benefit and use associated with leveraging the Federal Enterprise Architecture reference models in assessing "as-is" architectures and in developing "to-be" architectures.
- ▶ Implement an agency enterprise architecture, including an "as-is" and "to-be" architecture and a transition plan for migrating from existing to targeted states.
- ▶ Discuss the relationship between an EA Transition and Sequencing Plan and a Capital Planning and Investment Control (CPIC) Plan in the context of OMB's Performance Improvement Lifecycle.
- ▶ Understand the requirements for "Getting to Green" vis-à-vis the current *Federal Enterprise Architecture Program EA Assessment Framework*.

## IMPLEMENTING AN ENTERPRISE ARCHITECTURE

ENR 7001 ♦ 3 DAYS ♦ 1.8 CEU ♦ TUITION \$1,195

In this course, participants learn how to provide business value to their agency; how to meet associated needs; and how to address current *Federal Enterprise Architecture Program EA Assessment Framework* requirements for "Getting to Green" relative to "completion, use and results."

### What you will learn

- ▶ The context of EA vis-à-vis the Performance Improvement Lifecycle
- ▶ Techniques for developing business-oriented, data-oriented and service-oriented architectural models structured to your agency's mission, culture and programs
- ▶ Techniques and approaches for documenting your agency's "as-is" architecture and mapping the latter to both the FEA Reference Models and the Federal Transition Framework (FTF)
- ▶ How to effectively leverage the FEA reference models in the development of your agency's "to-be" architecture
- ▶ Techniques and approaches for documenting your agency's "to-be" architecture
- ▶ Techniques for selecting and developing segment architectures
- ▶ Techniques for identifying and assessing gaps between baseline and target architectures
- ▶ Requirements to be addressed in transition and sequencing plans consistent with the FEA Practice Guidance
- ▶ The value of legacy portfolio management within the context of EA
- ▶ How to effectively leverage CPIC to achieve and report results
- ▶ Scenarios where service-oriented architectures can best be leveraged to facilitate data sharing and interoperability between systems
- ▶ The role of standards development and configuration management in EA implementations

### Who Should Attend

Anyone who is interested in learning about enterprise architecture and wants to explore an approach to enterprise architecture which directly addresses the business of their organization and facilitates organizational participation in the development of the same. This audience would include: aspiring and existing enterprise, solutions and technical architects; CPIC coordinators; modernization change agents; program/project managers; and IT, program, planning and budget specialists.

For training at your location, call  
**(202) 314-3600**

## Course Objectives

Upon completion of this course you will be able to:

- ▶ Develop an EA governance process that viably addresses your agency's mission and business requirements, and results in the "completion" and "use" of your EA with documented "results" to improve the effectiveness of your agency.
- ▶ Create and implement an EA strategy that effectively addresses current *Federal Enterprise Architecture Program EA Assessment Framework* requirements.
- ▶ Effectively work with the business in developing an agency's targeted enterprise architecture, and associated transition and sequencing plan.
- ▶ Develop a "to-be" architecture by: (1) assessing the effectiveness of your agency's "as-is" architecture vis-à-vis its mission and strategic objectives, (2) identifying duplication in services and the collection of data, (3) inventorying best practices, and (4) surveying emerging technologies and markets.
- ▶ Better manage legacy capital portfolios via performance oversight, configuration management, and system development lifecycle techniques.
- ▶ Reconcile a sub-entity's EA to an agency-level and/or Federal EA.
- ▶ Leverage techniques to facilitate effective communication and use of your EA.

*Prerequisite: Introduction to Enterprise Architecture (ENTR7000T).*

## EA ORGANIZATION AND GOVERNANCE

**ENTR8000T ♦ 2 DAYS ♦ 1.2 CEU ♦ TUITION \$945**

In this course, EA governance is presented as a powerful tool for modernization and change management, and is discussed in the context of the organization. EA governance provides the umbrella framework under which business process reviews, standards development, organizational modernization, capital planning and investment control (CPIC), and configuration and change management take place. EA governance guides, facilitates, sustains and institutionalizes these processes within continuously viable, agile organizations.

### What You Will Learn

- ▶ Techniques for forming, socializing and harmonizing EA governance bodies and teams within the context of your organization
- ▶ Requirements to manage the business of your organization within the context of its EA and "to-be" architecture goals

### Who Should Attend

Anyone who is interested in learning about enterprise architecture and wants to explore an approach to enterprise architecture which directly addresses the business of their organization and facilitates organizational participation in the development of the same. This audience would include: aspiring and existing enterprise, solutions and technical architects; CPIC coordinators; program/project managers; and IT, program, planning and budget specialists.

## Course Objectives

Upon completion of this course you will be able to:

- ▶ Pattern your EA governance structure to best address the business orientation and culture of your organization.
- ▶ Establish EA governance policies and procedures which address all current *Federal Enterprise Architecture Program EA Assessment Framework* requirements for the same.

*Prerequisite: Implementing an Enterprise Architecture (ENTR7001T).*

## SERVICE-ORIENTED ARCHITECTURES – COMPONENTS AND SERVICES

**ENTR8001T ♦ 2 DAYS ♦ 1.2 CEU ♦ TUITION \$945**

This course provides a general overview of the application and use of service oriented architectures (SOA) in the context of EA. The identification, scope and reuse of services (and components) are addressed not only in this context but also relative to business processes and data.

### What You Will Learn

- ▶ The benefits of implementing a service-oriented architecture; i.e., data sharing system interoperability, reuse and application agility
- ▶ Background, history and definition of service-oriented architectures, and how they can be effectively applied in your enterprise
- ▶ How to design services to support the Federal Enterprise as a community of Agency service providers and consumers
- ▶ How Government and Industry are designing and developing SOA based language and systems standards and tools
- ▶ How SOA Registries and Repositories are used to facilitate the visibility and execution of service interactions in a community of interest

### Who Should Attend

Enterprise, solutions and technical architects, and program/project managers with an understanding of enterprise architecture and associated FEA requirements.

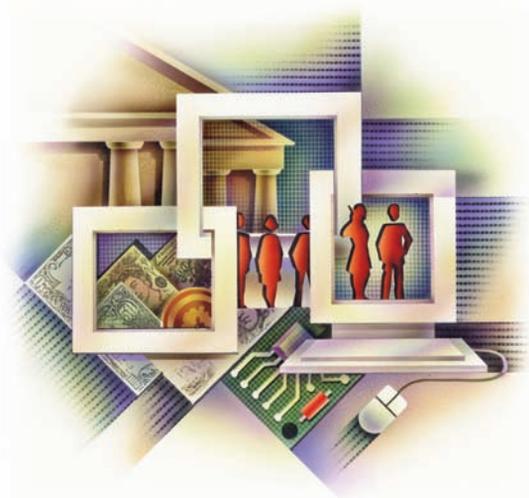
## Course Objectives

Upon completion of this course you will be able to:

- ▶ Identify and scope services (and components) for reuse across the enterprise.
- ▶ Effectively leverage the FEA Service Component Reference Model (SRM) to develop a targeted architecture within your organization.
- ▶ Link services to business processes appropriately.
- ▶ Evaluate the feasibility of introducing and implementing a service-oriented architecture into your environment.
- ▶ Understand how UML, IDEF0 and BPMN can be used to identify services and associated requirements.

*Prerequisite: Implementing an Enterprise Architecture (ENTR7001T), or one year of experience in the practice of federal enterprise architecture.*

For current schedules and to register, visit  
[www.grad.usda.gov/ea](http://www.grad.usda.gov/ea)



## PERFORMANCE REFERENCE MODELS AND LINKAGE TO STRATEGIC PLANS

**ENTR9000T ♦ 2 DAYS ♦ 1.2 CEU ♦ TUITION \$945**

This course addresses FEA performance reference model (PRM) requirements vis-à-vis mission and business results, customer results, processes and technology. PRM linkages to agency strategic plans and performance objectives are addressed, as are differences between outcomes versus outputs.

### What You Will Learn

- ▶ Differences between outcomes versus outputs and associated metrics
- ▶ Examples of common objective, quantitative measures used to monitor performance
- ▶ Approaches to link FEA PRM indicators/metrics to agency strategic performance plans, business processes, systems and assets for portfolio management
- ▶ Approaches for identifying key business process data inputs and outputs for performance metrics
- ▶ Strategies to mine data from existing agency databases and link to your agency's EA model to provide for executive dashboarding

### Who Should Attend

Enterprise, solutions and technical architects; strategic planners and budget specialists; IS and technical managers; and database managers and administrators having an understanding of enterprise architecture and associated FEA requirements.

### Course Objectives

Upon completion of this course you will be able to:

- ▶ Identify objective, quantitative (and qualitative) FEA PRM performance metrics to address mission and business results, customer results, processes and technology.
- ▶ Link PRM performance metrics to agency strategic plans and OMB Exhibit 300 business cases to monitor project implementation and conduct post-implementation reviews.
- ▶ Link performance metrics to business processes and portfolio assets for trend analysis and planning.

*Prerequisites: Implementing an Enterprise Architecture (ENTR7001T), EA Organization and Governance (ENTR8000T) and Service-Oriented Architectures – Components and Services (ENTR8001T).*

## TECHNICAL ARCHITECTURES

**ENTR8002 ♦ 2 DAYS ♦ 1.2 CEU ♦ TUITION \$945**

This course addresses the FEA Technical Reference Model (TRM) as it is aligned and structured in the Federal Enterprise Architecture Program Management Office (FEAPMO) Consolidated Reference Model (CRM). The associated relationships with organizational management, integration of mission focused technical architectures, and deployment of mission-focused technical architectures. The course will equip participants with an understanding of the need for technical architectures, the context in which they are used, how technical architectures can be tailored to varying organizational needs, development of effective technical architectures, and strategies for continual improvement of technical architectures.

### What You Will Learn

- ▶ Why Technical Architectures are needed
- ▶ How to articulate the value of Technical Architecture
- ▶ How to identify existing technical architectures in their organization
- ▶ Different approaches and styles of implementing Technical Architecture based on the organizational core mission
- ▶ Techniques to develop effective Technical Architectures
- ▶ Methodologies for integrating Technical Architecture with an organizational CPIC, IRM, project management and strategic planning groups
- ▶ How to analyze Technical Architectures for improvement to future organizational goals
- ▶ Strategies and processes for continuous improvement of the technical architecture within an organization

### Who Should Attend

Enterprise Architects, Solutions & Technical Architects, Information Technologists and Business Partners with a general understanding of enterprise architecture and associated FEA requirements.

### Course Objectives

- ▶ Create awareness on the Technical Reference Model and technical architectures in context of federal government agencies and the Federal Enterprise Architecture Program Management Office (FEAPMO).
- ▶ Develop appropriate business acumen regarding the value of technical architectures as impacting on federal Agency's core missions.
- ▶ Develop the skill and ability to lead the program to determine an Agency's technical architecture current state.
- ▶ Develop the skill and ability to design and lead the documentation of an Agency's technical architecture current state.
- ▶ Develop the skill and ability to design and lead the creation of an Agency's technical architecture future vision.
- ▶ Develop the skill and ability to analyze the current and future technical architecture states and then build an action plan to bridge them.
- ▶ Create and implement strategies to implement changes to the technical architecture.
- ▶ Create the ability to develop and implement technical architecture continuous improvement strategies.

*Prerequisites: (Recommended for those taking the Certificate Program) Implementing an Enterprise Architecture (ENTR7001T), EA Organization and Governance (ENTR8001T) and Service-Oriented Architectures – Components and Service (ENTR8001T).*

## DATA ARCHITECTURES

**ENTR8003T** ♦ 2 DAYS ♦ 1.2 CEU ♦ TUITION \$945

This course provides an overview of how to implement an effective data management program. The course includes a synopsis of data architectures, data architecture frameworks, and approaches to implement them. The key concepts of the FEA Data Reference Model (DRM) are discussed as well as associated data management functions.

### What You Will Learn

- ▶ How to leverage the FEA DRM in support of your agency's mission and business needs
- ▶ The fundamentals of enterprise data management in the context of successful DRM implementation
- ▶ The information supply chain in the context of the FEA reference models
- ▶ How to inform an information sharing services solution using data architectures
- ▶ How to measure DRM implementation progress and effectiveness

### Who Should Attend

Enterprise, solutions and technical architects; IS and technical managers; information, data and database managers; and data administrators having an understanding of enterprise architecture and associated FEA requirements.

### Course Objectives

Upon completion of this course you will be able to:

- ▶ Explain the development of data architectures in support of key business objectives.
- ▶ Create a DRM implementation strategy.
- ▶ Understand the fundamentals of enterprise data management to maintain data architectures.
- ▶ Understand how to manage data as a national asset.

*Prerequisites: (Recommended for those taking the Certificate Program) Implementing an Enterprise Architecture (ENTR7001T), Enterprise Architecture and Governance (ENTR800T) and Service-Oriented Architectures – Components and Service (ENTR8001T).*

## EA AND BUSINESS MODELING – CONCEPTS AND PRACTICES

**ENTR9001T** ♦ 2 DAYS ♦ 1.2 CEU ♦ TUITION \$945

In this course, you learn how to capture EA content employing different modeling notations. Three primary process/object modeling notations are explored, along with the pros and cons associated with each. EA modeling tools are also explored and assessed relative to each of these modeling notations. The importance of involving business leader participation in visualization and development of an agency's EA model are highlighted throughout this course.

### What You Will Learn

- ▶ The concepts of Unified Modeling Language (UML), Integration Definition for Function Modeling (IDEFO) and Business Process Modeling Notation (BPMN) and the circumstances under which each is best employed
- ▶ Circumstances under which these modeling notations can best be employed to capture and reflect your agency's EA content

- ▶ The importance of “purpose-based” modeling and the criticality of business leader involvement in the development of the same
- ▶ Approaches for leveraging EA models for knowledge management and executive dash boarding

### Who Should Attend

Enterprise, solutions and technical architects; business partners; and technologists having an understanding of enterprise architecture and associated FEA requirements.

### Course Objectives

Upon completion of this course you will be able to:

- ▶ Distinguish the differences and circumstances under which UML, IDEFO and BPMN are best employed.
- ▶ Employ these modeling techniques to capture and reflect your agency's EA.
- ▶ Incorporate EA modeling into the development and maintenance of your agency's EA governance process.

*Prerequisites: Implementing an Enterprise Architecture (ENTR7001T), EA Organization and Governance (ENTR8000T) and Service-Oriented Architectures – Components and Services (ENTR8001T).*

## FACILITATING EA COMMUNICATION AND BUY-IN

**ENTR9003T** ♦ 1 DAY ♦ .6 CEU ♦ TUITION \$495

This course addresses strategies for communicating an agency's EA and cultivating the agency's business ownership of the same.

### What You Will Learn

- ▶ Different strategies for communicating an agency's EA to business participants
- ▶ The role of an EA tool for “selling” an agency's EA and engaging the business
- ▶ Strategies for eliciting EA participation in the business of the agency

### Who Should Attend

Enterprise architects, business partners and technologists with a general understanding of enterprise architecture and associated FEA requirements.

### Course Objectives

Upon completion of this course you will be able to:

- ▶ Create a common vision of solutions to build consensus among divergent stakeholders.
- ▶ Evaluate, select and implement the most effective communication strategies to elicit your agency's buy-in of its EA.
- ▶ Select and develop the most effective representation of your agency's EA for addressing its requirements.
- ▶ Incorporate change management strategies and techniques into EA transition plans and governance processes.
- ▶ Develop an EA communications strategy and plan.

*Prerequisites: Implementing an Enterprise Architecture (ENTR7001T), EA Organization and Governance (ENTR8000T) and Service-Oriented Architectures – Components and Services (ENTR8001T).*

## APPLIED ENTERPRISE ARCHITECTURE: AFFECTING STRATEGIC CHANGE

ENTR9002T ♦ 3 DAYS ♦ 1.8 CEU ♦ TUITION \$1,195

This course is designed to engage participants in an applied, problem-solving group exercise to develop a working enterprise architecture that can be effectively leveraged to support the business of an agency. In addition to developing “as-is” and “to-be” architectures, and associated transition and sequencing plans, participants develop accompanying EA communications and governance strategies to facilitate the development and maintenance of the EA. Change management issues are addressed in conjunction with resource realignment strategies during the development of a group project.

### What You Will Learn

- ▶ How to determine the scope of an architecture
- ▶ How to determine the information needed to populate your chosen enterprise architecture framework
- ▶ How to select an EA toolset
- ▶ How to incorporate EA into agency decision-making processes; i.e., CPIC, configuration management, system development life cycle
- ▶ How to maintain an EA (data collection, refresh, change control)
- ▶ How to develop a communications strategy
- ▶ How to develop performance metrics
- ▶ The role of the architectural compliance process (governance)
- ▶ Practices and methods of using architecture as a strategic tool to resolve business problems; i.e., the value of EA
- ▶ The role of the architect in leading change and introducing sustainable solutions

### Who Should Attend

Practicing enterprise and solutions architects, business partners and technologists with a general understanding of enterprise architecture and associated FEA requirements.

### Course Objectives

Upon completion of this course you will be able to:

- ▶ Create an actionable EA program.
- ▶ Leverage an EA to demonstrate a return on investment for proposed business solutions.
- ▶ Understand the role of the architect in leading change and introducing sustainable solutions.
- ▶ Demonstrate compliance with federal mandates.

*Prerequisites: Implementing an Enterprise Architecture (ENTR7001T), EA Organization and Governance (ENTR8000T), Service-Oriented Architectures – Components and Services (ENTR8001T) and any 3 other certificate elective courses.*

## CERTIFICATE OF ACCOMPLISHMENT IN ENTERPRISE ARCHITECTURE

ENTR9100T

Introduction to Enterprise Architecture (ENTR7000T) is designed to provide participants with an overview of enterprise architecture and all current OMB/FEA requirements. While all participants are encouraged to take this class, it is required only for participants with less than one year of hands-on experience in enterprise architecture. Required courses must be taken prior to elective courses and Implementing an Enterprise Architecture (ENTR7001T) is a prerequisite to all other required courses. The sequence in which remaining elective courses are taken is left to the discretion of the individual. However, participants electing to take Applied Enterprise Architecture: Affecting Strategic Change (ENTR9002T) are encouraged to take this course last. You have three years to complete the program.

### PREREQUISITE (Required for those with less than one year of experience in the practice of federal enterprise architecture)

- ▶ Introduction to Enterprise Architecture  
ENTR7000T ♦ 1.8 CEU

### REQUIRED COURSES

- ▶ Implementing an Enterprise Architecture  
ENTR7001T ♦ 1.8 CEU
- ▶ Enterprise Architecture Organization and Governance  
ENTR8000T ♦ 1.2 CEU
- ▶ Service-Oriented Architectures – Components and Services  
ENTR8001T ♦ 1.2 CEU

### ELECTIVE COURSES (select 4 courses)

- ▶ Performance Reference Models and Linkage to Strategic Plans  
ENTR9000T ♦ 1.2 CEU
- ▶ Technical Architectures  
ENTR8002T ♦ 1.2 CEU
- ▶ Data Architectures  
ENTR8003T ♦ 1.2 CEU
- ▶ EA and Business Modeling – Concepts and Practices  
ENTR9001T ♦ 1.2 CEU
- ▶ Facilitating EA Communication and Buy-In  
ENTR9003T ♦ .6 CEU
- ▶ Applied Enterprise Architecture: Affecting Strategic Change  
ENTR9002T ♦ 1.8 CEU

**ENTERPRISE ARCHITECTURE  
A BLUEPRINT FOR  
MODERNIZATION**



## FEDERAL ENTERPRISE ARCHITECTS TEACHING COURSES

Suzanne Acar, Senior Enterprise Data Architect,  
Department of the Interior

Richard Burk, Former Chief Architect,  
Office of Management and Budget

Pamela Corsini, Chief Enterprise Architect,  
Bureau of Engraving and Printing

Arlen Ken Griffey, Chief Enterprise Architect (Acting),  
National Aeronautics and Space Agency

Jerad Speigel, Enterprise Architect,  
Consultant to the Department of the Interior

George Thomas, Chief Enterprise Architect,  
General Services Administration

Gary Washington, Chief Enterprise Architect,  
Food and Drug Administration

## ON-SITE TRAINING

For on-site training, contact our IT training consultants at  
(202) 314-3600 or e-mail [appliedtech@grad.usda.gov](mailto:appliedtech@grad.usda.gov).

## MORE INFORMATION

For further information on programs  
offered by the Graduate School, USDA, please contact:

Registrar  
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Phone: (888) 744-4723  
Fax: (866) 329-4723  
E-mail: [client\\_relations@grad.usda.gov](mailto:client_relations@grad.usda.gov)

## [WWW.GRAD.USDA.GOV/EA](http://WWW.GRAD.USDA.GOV/EA)

If you require information about this program, activity or  
facility in a language other than English (or in Braille, large print,  
audiotape, etc.), contact the registrar of the Graduate School,  
USDA at (888) 744-4723.



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