

Report Information				
Award Type	Award Number	Prime DUNS	Calendar Year / Quarter	Final Report
Grant	0907752	066470972	2010 / 1	No

Award Recipient Information	
<b>Recipient DUNS Number</b> 066470972	<b>Recipient Address 1</b> 107 SAMFORD HALL
<b>Recipient Account Number</b> 219030	<b>Recipient Address 2</b>
<b>Recipient Congressional District</b> 02	<b>Recipient City</b> AUBURN
<b>Parent DUNS Number</b> 066470972	<b>Recipient State</b> AL
<b>Recipient Type</b> 2U.95.G6.M8.OH.VW	<b>Recipient ZIP Code + 4</b> 368490001
<b>Recipient Legal Name</b> AUBURN UNIVERSITY	<b>Recipient Country</b> USA
<b>Recipient DBA Name</b>	

Project / Award Information	
<b>Funding Agency Code</b> 4900	<b>Total Number of Sub Awards less than \$25,000/award</b> 0
<b>Awarding Agency Code</b> 4900	<b>Total Amount Sub Awards less than \$25,000/award</b> 0.00
<b>Program Source (TAS) Code</b> 49-0101	<b>Total Number of Sub Awards to Individuals</b> 0
<b>Sub Account Number for Program Source</b>	<b>Total Amount of Sub Awards to Individuals</b> 0.00
<b>CFDA Number</b> 47.082	<b>Total Number of Payments to Vendors less than \$25,000/award</b> 3
<b>Amount of Award</b> 203183.00	<b>Total Amount of Payments to Vendors less than \$25,000/award</b> 474.03
<b>Award Date</b> 05/21/2009	
<b>Award Description</b> This project will allow the PI to continue to establish fundamental theories for various nonautonomous and random differential, paying special attention to the effects of the time/space dependence and randomness on the dynamics of the underlying problems and to the applications of the new concepts and theories to the relevant problems in applied science. Among the existing techniques and theories in literature to be employed in the project are skew-product (semi-) flows, (random) fixed point theorems, ergodic theorems, invariant measures, invariant manifolds, and exponential dichotomies.	

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**Project Information**

<p><b>Project Name or Project/ Program Title</b></p> <p><b>Quarterly Activities/ Project Description</b></p>	<p>Dynamical Aspects in Nonautonomous and Random Differential Equations and Applications</p> <p>The following six research papers related to the project have been accomplished to date (the last two were accomplished during the current quarter (/1/1/2010-3/31/2010))</p> <ol style="list-style-type: none"> <li>1. Wenxian Shen, Existence, uniqueness, and stability of generalized traveling waves in time dependent monostable equations, submitted.</li> <li>2. Wenxian Shen and Aijun Zhang, Spreading speeds for monostable equations with nonlocal dispersal in space periodic habitats, submitted.</li> <li>3. Janusz Mierczynski and Wenxian Shen, Spectral theory for forward nonautonomous parabolic equations and applications, submitted.</li> <li>4. Zhongwei Shen, Shengfan Zhou, and Wenxian Shen, One-dimensional random attractor and rotation number of the stochastic damped Sine-Gordon equation, to appear in Journal of Differential Equations.</li> <li>5. Janusz Mierczynski and Wenxian Shen, Persistence in Forward Nonautonomous Competitive Systems of Parabolic Equations, submitted.</li> <li>6. Zhongwei Shen, Shengfan Zhou and Wenxian Shen, Asymptotic Dynamics of a Class of Coupled Oscillators Driven by White Noises, submitted.</li> </ol> <p>In the next quarter, the PI together with her collaborators will start to investigate some new problems related to the project.</p>	<p><b>Activity Codes (NAICS or NTEE-NPC) (up to 10)</b></p> <p><b>Activity Code 1</b> B43 - NTEE</p> <p><b>Activity Code 2</b></p> <p><b>Activity Code 3</b></p> <p><b>Activity Code 4</b></p> <p><b>Activity Code 5</b></p> <p><b>Activity Code 6</b></p> <p><b>Activity Code 7</b></p> <p><b>Activity Code 8</b></p> <p><b>Activity Code 9</b></p> <p><b>Activity Code 10</b></p>
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<p><b>Project Status</b> Less than 50% completed</p> <p><b>Total Federal Amount ARRA</b> 29453.45</p> <p><b>Funds Received/ Invoiced</b></p> <p><b>Number of Jobs</b> 0.00</p> <p><b>Description of Jobs Created</b> none this quarter</p> <p><b>Total Federal Amount of ARRA</b> 29453.45</p> <p><b>Expenditure</b></p> <p><b>Total Federal ARRA</b> 0.00</p> <p><b>Infrastructure Expenditure</b></p> <p><b>Infrastructure Purpose and Rationale</b></p>
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**Infrastructure Contact**

Name	Street Address 1
Email	Street Address 2
Phone	Street Address 3
Ext	City
	State
	ZIP Code + 4

**Primary Place of Performance**

<b>Address 1</b>	Department of Mathematics and Statistics
<b>Address 2</b>	221 Parker Hall
<b>City</b>	Auburn University
<b>Country Code</b>	US
<b>State</b>	AL
<b>ZIP Code + 4</b>	36849 - 0001
<b>Congressional District</b>	02

**Recipient Highly Compensated Officers**

<b>Prime Recipient Indication of Reporting Applicability</b>	No	<b>Officer 3 Name</b>
<b>Officer 1 Name</b>		<b>Officer 3 Compensation</b>
<b>Officer 1 Compensation</b>		<b>Officer 4 Name</b>
<b>Officer 2 Name</b>		<b>Officer 4 Compensation</b>
<b>Officer 2 Compensation</b>		<b>Officer 5 Name</b>
		<b>Officer 5 Compensation</b>

**Report Audit Trail**

<b>Created By</b>	Cindy Selman
<b>Date Created</b>	04/02/2010 11:39 AM
<b>Last Updated By</b>	Cindy Selman
<b>Last Updated On</b>	04/07/2010 10:04 AM