

# RESEARCH GRANTS

Principal or co-principal investigator of more than 40 major research grants from various funding agencies such as NSF, DHS, ARO, Navy, AFOSR, USGS, MDOT, ERDC, CARUP, D.C. Government, and other agencies. This information is summarized below.

<b>Funding Agency</b>	<b>No. of Grants</b>	<b>Remarks</b>
NSF	11	6 Research Grants; 2 Research Equipment; 3 Research/Education
Army Research Office	4	3 Research Grants; one Research/Education, one Equipment
Air Force Office of Scientific Research	1	Research
ERDC	11	8 Research, three Education
ARA/ERDC	1	Research
Navy	1	Research
DHS	2	Research
DOD	3	2 Research, one Education
U.S.G.S.	5	Research
MDOT	14	8 Research, one Equipment, 5 Education
D.C. Government	1	Research
Army Corps. of Engineers	2	Research
CARUP	2	Research
BCD	1	Research
UDC	2	Research
U.S. DOT	4	Two Research, two Education
NASA	1	Research
MS Licensing Board	5	Equipment
<b>Total No. of Grants</b>	<b>71</b>	

## **FUNDED NSF Grants**

1. Title: Targeted Infusion Project: Earlier Access to Cutting-Edge Research Experiences for Undergraduate STEM Education at Jackson State University  
PI: K. Wen; Co-PI: F. Amini; Y. Yin  
Funding Agency: National Science Foundation  
Amount 400,000.00  
Dates: 9/1/2021 – 9/1/2024

2. Title: Development of Augmented Learning-Facilitated Teaching Model to Enhance STEM Education  
PI: F. Amini, Co-PI: L. Li, Y. Li; J. Yin, W. Walters  
Funding Agency: National Science Foundation  
Amount: \$350,000 (FUNDED)  
Dates: 2018-2022
3. Title: Investigating the Effect of Active-Flipped Learning in STEM Education  
PI: F. Amini; Co-PI, L. Li; J. Yin, T. Kewmbe  
Funded by National Science Foundation,  
Amount: \$350,000  
Dates: 2016-2021
4. Title: Collaborative Research: Mixed Reality Transformation of Engineering Education  
PI: F. Amini at JSU; PI at RPI: T. Abdoun (Lead University)  
Funding Agency: National Science Foundation  
Amount: \$1.2M (JSU Share: 25K over four years) (FUNDED)  
Supported by: National Science Foundation,  
Dates: 1/1/2020-1/1/2024
5. Title: MRI: Acquisition of a Multi-Beam SEM/FIB for Multidisciplinary Materials Study and Training  
PI: L. Li, Co-PI: F. Amini, W. Walters, A. Hamme  
Funding Agency: National Science Foundation,  
Amount: \$559,660.00 (FUNDED)  
Supported by: National Science Foundation,  
Dates: October 2015-September 2018
6. Title: CSEM Enhancement Program  
PI: F. Amini; Co-PI: Loretta Moore  
Total Amount: \$ 343,700.00 (FUNDED)  
Supported by: National Science Foundation  
Dates: 2001-2007
7. Title: ESEM for Soil Liquefaction Research  
PI: F. Amini  
Total Amount: \$ 192,900.00 (FUNDED)  
Supported by: National Science Foundation  
Dates: 2002-2004
8. Title: Behavior of Stratified Sand-Gravel Composites under Seismic Liquefaction Conditions  
PI: F. Amini

Total Amount: \$ 157,723.00 (FUNDED)  
Supported by: National Science Foundation (NSF)  
Dates: 1996 to 1999

9. Title: Research Equipment for Soil Dynamics Testing and Study of the Effect of Time on Dynamic Soil Properties. This grant provided both salary (about 60K) and equipment funds (60K) (Indirect cost: 22K)  
PI: F. Amini  
Total Amount: \$ 120,000.00 (FUNDED)  
Supported by: National Science Foundation (NSF)  
Dates: 1992 to 1995

10. Title: Active Control of Structures Instrumented with Optical Fiber Sensors under Earthquake Loading. (Simulation Studies as well as Experiments on Shake Table, Neural Networks Application in Identification and Control)  
PI: J. C. S. Yang, G. Z. Qi, F. Amini, and J. Sirkus  
Total Amount: \$ 229,425.00 (FUNDED)  
Supported by: National Science Foundation (NSF)  
Dates: 1992-1995

11. Title: Identification and Active Control of Structures under Earthquake Loading (Neural Networks Application in Identification and Control)  
PI: J. C. S. Yang, G. Z. Qi, and F. Amini  
Total Amount: \$ 50,000.00 (FUNDED)  
Supported by: National Science Foundation (NSF)  
Dates: 1991-1992

#### **Other Grants (Partial List)**

12. Title: Improved Penetration Methodology Testing  
PI: S. Khan; Co-PI: F. Amini  
Total Amount: 6.4M (1.6M/year)  
Supported by: ARA/ERDC  
Dates: 2023-2027
13. Title: Enhancement of Surveying Engineering Laboratory to Support ABET-EAC Accredited Civil Engineering Program at Jackson State University
14. PI: K. Wen; Co-PI: F. Amini  
Total Amount: 33.5K  
Supported by: MS Board for Licensure for Professional Engineers & Surveyors  
Dates: 2023
15. Title: Innovative Soil Improvement through Bio-Cementitious Materials to Mitigate Bridge Scour

- PI: K. Wen and Co-PI: F. Amini  
Total Amount: \$ 200,000.00 (FUNDED)  
Supported by: Mississippi Department of Transportation (MDOT)  
Dates: 7/12022- 6/30/2025
16. Title: Advanced Landslide Investigation Protocol Using Geophysical Testing  
PI: S. Khan; Co-PI: F. Amini  
Total Amount: \$ 300,000.00 (FUNDED)  
Supported by: Mississippi Department of Transportation (MDOT)  
Dates: 7/12020- 6/30/2023
17. Title: Performance Evaluation of Highway Slopes on Yazoo Clay  
PI: S. Khan and F. Amini  
Total Amount: \$ 196,500.00 (FUNDED)  
Supported by: Mississippi Department of Transportation (MDOT)  
Dates: 2018- 2020
18. Title: Airborn Survey System for Enhancement of Surveying Engineering Laboratory to Support ABET Accredited Civil Engineering Program at Jackson State University  
PI: S. Khan; Co-PI: F. Amini  
Total Amount: \$ 31,600.00.00 (FUNDED)  
Supported by: MS Board for Licensure for Professional Engineers & Surveyors  
Dates: 2018-2019
19. Title: Enhancement of Environmental Engineering Laboratory to Support ABET Accredited Civil Engineering Program at Jackson State University  
PI: Danuta Leszczynska and Co-PI: F. Amini  
Total Amount: \$ 22,000.00 (FUNDED)  
Supported by: MS Board for Licensure for Professional Engineers & Surveyors  
Dates: 20018- 2020
20. Title: Summer Transportation Institute  
PI: L. Li; Co-PI: F. Amini  
Total Amount: \$ 62,000.00 (FUNDED)  
Supported by: Mississippi Department of Transportation (MDOT)  
Dates: 2018
21. Title: Numerical Water Quality and Contaminant Modeling  
PI: F. Amini  
Total Amount: \$ 280,000.00 (FUNDED)  
Supported by: DOD  
Dates: October 1, 2014-November 30, 2016

22. Title: Update and Documentation of MDOT Warranty Process and Distress Thresholds  
PI: F. Wang; Co-PI: F. Amini  
Total Amount: \$ 198,992.00 (FUNDED)  
Supported by: Mississippi Department of Transportation (MDOT)  
Dates: 10/1/2016- 6/30/2019
23. Title: JSU-ERDC Education and Research Programs  
PI: Y. Li, Co-PI: PI: F. Amini  
Total Amount: \$ 1,600,000.00 (FUNDED)  
Supported by: DOD/ERDC  
Dates: 2017-2022
24. Title: Enhancement of Surveying Engineering Laboratory to Support ABET-EAC Accredited Civil Engineering Program at Jackson State University  
PI: F. Amini  
Total Amount: \$ 25,000.00  
Supported by: MS Board for Licensure for Professional Engineers & Surveyors  
Dates: 2016
25. Title: Enhancement of Hydraulics Engineering Laboratory to Support ABET-EAC Accredited Civil Engineering Program at Jackson State University  
PI: H. Das and Co-PI: F. Amini  
Total Amount: \$ 27,168.00  
Supported by: MS Board for Licensure for Professional Engineers & Surveyors  
Dates: 2016
26. Title: Innovative Levee Strengthening and Testing under Full-Scale Overtopping Conditions  
PI: F. Amini; Co-PI: Dr. Lin Li  
Total Amount: \$ 1,000,000.00.00 (FUNDED)  
Supported by: Department of Homeland Security (DHS)  
Dates: 2009-2012
27. Title: High-Performance Turf Reinforcement Mat Strengthened Levee under Combined Wave and Storm Surge Turbulent Overtopping Conditions  
PI: F. Amini; Co-PI: Dr. Lin Li  
Total Amount: \$ 450,000.00 (FUNDED)  
Supported by: Department of Homeland Security (DHS)  
Dates: 2011-2012
28. Title: Summer Transportation Institute  
PI: L. Li; Co-PI: F. Amini  
Total Amount: \$ 58,000.00 (FUNDED)  
Supported by: Mississippi Department of Transportation (MDOT)

Dates: 2016

29. Title: Summer Transportation Institute  
PI: L. Li; Co-PI: F. Amini  
Total Amount: \$ 62,000.00 (FUNDED)  
Supported by: Mississippi Department of Transportation (MDOT)  
Dates: 2017
30. Title: Summer Transportation Institute  
PI: L. Li; Co-PI: F. Amini  
Total Amount: \$ 58,000.00 (FUNDED)  
Supported by: Mississippi Department of Transportation (MDOT)  
Dates: 2015
31. Title: Long-Term Field Studies and Monitoring of Paving Fabric Systems to Reduce Reflective Cracking  
PI: F. Amini  
Total Amount: \$ 218,000.00 (FUNDED)  
Supported by: Mississippi Department of Transportation (MDOT)  
Dates: 2005- 2016
32. Title: Summer Transportation Institute  
PI: L. Li; Co-PI: F. Amini  
Total Amount: \$ 58,000.00 (FUNDED)  
Supported by: Mississippi Department of Transportation (MDOT)  
Dates: 2014
33. Title: Numerical Water Quality and Contaminant Modeling (L-9)  
PI: F. Amini  
Total Amount: \$ 63,000.00 (FUNDED)  
Supported by: DOD  
Dates: 2013-2014
34. Title: Hyper-Velocity Impact Resistant and Self-Healing Nano Materials in Space Applications  
PI: F. Amini (Peter Sukanek; Al-Ostaz, & F. Amini, et al.)  
Total Amount: \$ 20,000.00 (FUNDED)  
Supported by: NASA  
Dates: 2013-2016
35. Title: Numerical Water Quality and Contaminant Modeling  
PI: F. Amini  
Total Amount: \$ 120,000.00 (FUNDED)  
Supported by: DOD  
Dates: 2012-2014

36. Title: Summer Transportation Institute  
PI: L. Li; Co-PI: F. Amini  
Total Amount: \$ 58,000.00 (FUNDED)  
Supported by: Mississippi Department of Transportation (MDOT)  
Dates: 2013
37. Title: Assessment of Pavement Infrastructure  
PI: F. Wang; Co-PI: F. Amini; L. Li  
Total Amount: \$ 712,000.00 (FUNDED)  
Supported by: US Department of Transportation  
Dates: 2010-2012
38. Title: Summer Internship Program  
PI: Y. Li, Co-PI: PI: F. Amini  
Total Amount: \$ 2,000,000.00 (FUNDED)  
Supported by: DOD/ERDC  
Dates: 2012-2017
39. Title: Cost-Effectiveness Study of the Pavement Warranty Program in Mississippi  
PI: Qi, Y., Co-PI: F. Wang & F. Amini  
Total Amount: \$ 130,000.00 (FUNDED)  
Supported by: Mississippi Department of Transportation (MDOT)  
Dates: 2011-2013
40. Title: Evaluation of MDOT's Distress Thresholds for Maintained Pavement Projects  
PI: F. Wang; Co-PI: F. Amini  
Total Amount: \$ 120,000.00 (FUNDED)  
Supported by: Mississippi Department of Transportation (MDOT)  
Dates: 2009-2011
41. Title: Comparative Slope Stability Analysis for Hurricane Protection Systems Using the Method of Planes and the Method of Slices  
PI: F. Amini  
Total Amount: \$ 119,119.00 (FUNDED)  
Supported by: Burns Cooley Dennis Inc.  
Dates: 2007-2008
42. Title: Lake Chicot Display Center  
PI: F. Amini; Co-PI: L. Li  
Total Amount: \$ 12,425.00 (FUNDED)  
Supported by: U.S. Army Corps. of Engineers – Vicksburg District  
Dates: 2007-2008

43. Title: Protective Technology Research  
Principal Investigator: F. Amini  
Supported by: U.S. Army Engineering, Research, and Development Center (ERDC)  
Total Amount: \$463,000.00 (FUNDED)  
Dates: 2003-2006
44. Title: Scientific Visualization of Soil Liquefaction for the Design and Maintenance of Seismic Dams  
PI: F. Amini; Co-PI: S. Rahman  
Supported by: Engineering, Research, and Development Center (ERDC)  
Total Amount: \$ 39,700.00 (FUNDED)  
Dates: 2003-2004
45. Title: Research on Potential Applications of the Static and Dynamic Cone Penetrometers in MDOT Pavement Design and Construction  
PI: F. Amini  
Total Amount: \$ 35,700.00 (FUNDED)  
Supported by: Mississippi Department of Transportation (MDOT)  
Dates: 2002-2003
46. Title: Research on Applications of Paving Fabrics to Reduce Reflective Cracking  
PI: F. Amini  
Total Amount: \$ 37,000.00 (FUNDED)  
Supported by: Mississippi Department of Transportation (MDOT)  
Dates: 2003-2004
47. Title: Acquisition of Superpave for CE Program Enhancement at JSU  
PI: F. Amini  
Total Amount: \$ 125,000.00 (FUNDED)  
Supported by: Mississippi Department of Transportation (MDOT)  
Dates: 2002-2003
48. Title: Computer-Based Unix Laboratory  
PI: M. Manzoul, Co-PI: F. Amini, and S. White  
Total Amount: \$ 138,000.00 (FUNDED)  
Supported by: Army Research Office (ARO)  
Dates: 2002-2003
49. Title: Liquefaction at Depth  
PI: F. Amini  
Supported by: Stennis Space Center, DOD-Navy  
Total Amount: \$100,000.00 (FUNDED)  
Dates: 2001-2002



50. Title: Microstructure Features of Particulate Materials Using ESEM  
PI: F. Amini  
Supported by: Army Research Office (ARO)  
Total Amount: \$237,000.00 (FUNDED)  
Dates: 1998 to 2000
51. Title: Microstructure Features and Dynamic Macro-Behavior of Particulate Materials  
PI: F. Amini  
Supported by: Air Force Office of Scientific Research  
Total Amount: \$ 49,570.00 (FUNDED)  
Date: 1997
52. Title: Behavior of Stratified Undrained Contractive Silty Sands Under Seismic Liquefaction Conditions  
PI: F. Amini  
Total Amount: \$ 120,000.00 (FUNDED)  
Supported by: Army Research Office (ARO)  
Dates: 1993 to 1995
53. Title: Liquefaction of Layered Silty Sands  
PI: F. Amini  
Total Amount: \$ 28,698.00 (FUNDED)  
Supported by: Army Research Office; Dates: 1994-1995
54. Title: Performance Tests for Model Sand Filters  
PI: F. Amini and F. F. M. Chang  
Total Amount: \$ 10,000.00 (FUNDED)  
Supported by: D.C. Government  
Date: 1993
55. Title: An Experimental Study of the Optimal Thickness of Sand Layer in a Sand Filter Water Quality Structure  
PI: F. Amini and F. F. M. Chang  
Total Amount: \$ 31,733.00 (FUNDED)  
Supported by: U.S. Geological Survey, Dept. of Interior  
Dates: 1993-1994
56. Title: Definition of Groundwater Flow in the Water Table Aquifer of the Downtown Washington D.C. Area  
PI: F. Amini & G. Matheson  
Total Amount: \$ 42,185.00 (FUNDED)  
Supported by: U.S. Geological Survey, Dept. of Interior  
Dates: 1994-1995

57. Title: Definition of Groundwater Flow and Water Quality in the Water Table Aquifer of the Southern Anacostia River Basin  
PI: F. Amini & G. Matheson  
Total Amount: \$ 20,526.00 (FUNDED)  
Supported by: U.S. Geological Survey, Dept. of Interior  
Dates: 1993-1994
58. Title: Definition of Groundwater Flow and Water Quality in the Water Table Aquifer of the Southern Anacostia River Basin  
PI: F. Amini;  
Total Amount: \$ 20,526.00 (FUNDED)  
Supported by: U.S. Geological Survey, Dept. of Interior;  
Dates: 1993-1994
59. Title: A New Procedure for Estimation of Soil Parameters for Use in Slope Stability Analysis in Northern Virginia  
PI: F. Amini  
Total Amount: \$ 5,120.00 (FUNDED)  
Supported by: Center for Applied Research and Urban Policy (CARUP),  
Date: 1990
60. Title: Dynamic Soil Behavior under Impulse Loading Conditions Considering Nonlinear Effects  
PI: F. Amini  
Total Amount: \$ 4,495.00 (FUNDED)  
Supported by: Academic Affairs, Peer-Reviewed Faculty Senate Research, UDC,  
Date: 1991
61. Title: Dynamic Soil Behavior under Impulse Loading Conditions  
PI: F. Amini  
Total Amount: \$ 5,000.00 (FUNDED)  
Supported by: Academic Affairs, Peer-Reviewed Faculty Senate Research, UDC  
Date: 1990
62. Title: Transportation Research and Education Enhancement Program through Graduate Students Support at JSU  
PI: F. Amini  
Total Amount: \$ 16,348.00 (FUNDED)  
Supported by: FTA  
Dates: 2007-2008
63. Title: Enhancement of JSU Transportation Engineering through Financial Assistance to Students PI: F. Amini  
Total Amount: \$ 25,800.00 (FUNDED)  
Supported by: FTA

Dates: 2007-2008

64. Title: Enhanced K-12 Outreach for Metropolitan Transportation Education

PI: L. Li; Co-PI: F. Amini

Total Amount: \$ 10,159.00 (FUNDED)

Supported by: FTA

Dates: 2007-2008

65. Title: Summer Transportation Institute

PI: I. Simone; Co-PI: F. Wang & F. Amini

Total Amount: \$ 10,000.00 (FUNDED)

Supported by: Mississippi Department of Transportation (MDOT)

Dates: Summer 2011