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Final Report: Analysis of Stable Isotopes by Triple Quadrupole GC/MS (GC-QQQ) for the Determination of Metabolic Flux and Stress Resistance (Resiliency)

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5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER
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6. AUTHORS
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5d. PROJECT NUMBER

5e. TASK NUMBER

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7. PERFORMING ORGANIZATION NAMES AND ADDRESSES
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The views, opinions and/or findings contained in this report are those of the author(s) and should not contrued as an official Department of the Army position, policy or decision, unless so designated by other documentation.

14. ABSTRACT
The instrument proposal was for acquisition of a Triple Quadrupole GC/MS (GC-QQQ) to markedly increase throughput, method development, and current stable isotope analysis capabilities. Using the GC-QQQ purchased, we have made progress in establishing sensitive approaches to assessing both metabolism and stress resistance using a variety of models (in vitro, animal, and human subjects) to address our hypotheses. The expanded instrumentation in our laboratory has led to new collaborations, new proposal submissions including 2 in review at ARO, 6 new publications, and many more in preparation/review. We now provide expanded student research

15. SUBJECT TERMS
Instrumentation, Triple Quadrupole GC/MS, isotope analysis, metabolism, stress resistance, resilience

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	15. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			Benjamin Miller
UU	UU	UU	UU		19b. TELEPHONE NUMBER 970-491-3291

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Prescribed by ANSI Std. Z39.18

Report Title

Final Report: Analysis of Stable Isotopes by Triple Quadrupole GC/MS (GC-QQQ) for the Determination of Metabolic Flux and Stress Resistance (Resiliency)

ABSTRACT

The instrument proposal was for acquisition of a Triple Quadrupole GC/MS (GC-QQQ) to markedly increase throughput, method development, and current stable isotope analysis capabilities. Using the GC-QQQ purchased, we have made progress in establishing sensitive approaches to assessing both metabolism and stress resistance using a variety of models (in vitro, animal, and human subjects) to address our hypotheses. The expanded instrumentation in our laboratory has led to new collaborations, new proposal submissions including 2 in review at ARO, 6 new publications, and many more in preparation/review. We now provide expanded student research training including those via HSAP/URAP mechanisms.

Enter List of papers submitted or published that acknowledge ARO support from the start of the project to the date of this printing. List the papers, including journal references, in the following categories:

(a) Papers published in peer-reviewed journals (N/A for none)

Received Paper

TOTAL:

Number of Papers published in peer-reviewed journals:

(b) Papers published in non-peer-reviewed journals (N/A for none)

Received Paper

TOTAL:

Number of Papers published in non peer-reviewed journals:

(c) Presentations

Number of Presentations: 0.00

Non Peer-Reviewed Conference Proceeding publications (other than abstracts):

Received Paper

TOTAL:

Number of Non Peer-Reviewed Conference Proceeding publications (other than abstracts):

Peer-Reviewed Conference Proceeding publications (other than abstracts):

Received Paper

TOTAL:

Number of Peer-Reviewed Conference Proceeding publications (other than abstracts):

(d) Manuscripts

Received Paper

TOTAL:

Number of Manuscripts:

Books

Received Book

TOTAL:

Received	Book Chapter

TOTAL:

Patents Submitted

Patents Awarded

Awards

Graduate Students

NAME	PERCENT_SUPPORTED

FTE Equivalent:
Total Number:

Names of Post Doctorates

NAME	PERCENT_SUPPORTED

FTE Equivalent:
Total Number:

Names of Faculty Supported

NAME	PERCENT_SUPPORTED

FTE Equivalent:
Total Number:

Names of Under Graduate students supported

NAME	PERCENT_SUPPORTED

FTE Equivalent:
Total Number:

Student Metrics

This section only applies to graduating undergraduates supported by this agreement in this reporting period

The number of undergraduates funded by this agreement who graduated during this period: 0.00

The number of undergraduates funded by this agreement who graduated during this period with a degree in science, mathematics, engineering, or technology fields:..... 0.00

The number of undergraduates funded by your agreement who graduated during this period and will continue to pursue a graduate or Ph.D. degree in science, mathematics, engineering, or technology fields:..... 0.00

Number of graduating undergraduates who achieved a 3.5 GPA to 4.0 (4.0 max scale):..... 0.00

Number of graduating undergraduates funded by a DoD funded Center of Excellence grant for Education, Research and Engineering:..... 0.00

The number of undergraduates funded by your agreement who graduated during this period and intend to work for the Department of Defense 0.00

The number of undergraduates funded by your agreement who graduated during this period and will receive scholarships or fellowships for further studies in science, mathematics, engineering or technology fields: 0.00

Names of Personnel receiving masters degrees

NAME

Total Number:

Names of personnel receiving PHDs

NAME

Total Number:

Names of other research staff

NAME PERCENT_SUPPORTED

FTE Equivalent:
Total Number:

Sub Contractors (DD882)

Inventions (DD882)

Scientific Progress

This grant funded the purchase of a piece of equipment that continues to play a vital role in analyses that have resulted in submission of two new proposals that are currently in some stage of consideration (proposals 70737LS, 66274LS).

Technology Transfer