

STUDENT TECHNOLOGY

GRANT PROPOSALS

2019 - 2020

2020.006
Card - ✓
Spectrometer -

TRACY BROWN: ACCEPTED

OPPOSED:

COMMENTS:

SIGNATURE: 

DATE: 12/2/19

HEATH FITTS: ACCEPTED

OPPOSED:

COMMENTS:

n/a

SIGNATURE: 

DATE: 12/4/19

SHAWN PARR: ACCEPTED

OPPOSED:

COMMENTS:

SIGNATURE: 

DATE: 12/3/19

BLAYNE HENSON: ACCEPTED

OPPOSED:

COMMENTS:

SIGNATURE: _____

DATE: _____

PHILLIP MARTIN: ACCEPTED

OPPOSED:

COMMENTS:

SIGNATURE: 

DATE: 12-3-19

2020.006

FF

Northwestern State University of Louisiana

2019-2020 Student Technology Fee Grant Application

Please Complete the Entire Application

Prepared by: Dr Massimo D Bezoari For: Northwestern State University

Department/Unit: Scholars' College College: Arts & Sciences Campus: Natchitoches

Which NSTEP Goals/Objectives does this project meet?

#1, #3, #7, #8

Requested equipment will be located/installed/housed? Building: Fournet Room : 227

Does the department receive lab fees? (circle one) YES

Are department property policies and procedures in place for requested equipment? YES Which individual will be responsible for property control of the requested equipment? Signature:

Dr. Massimo Bezoari *M. Bezoari* Date: November 16, 2019

Proposal Requested Amount: \$ \$3,740.45 Budget Attached (circle one): YES

Proposal delivered to Student Technology located in Watson Library, Room 113. Date 11/20/2019

Please be sure to include detailed specifications, vendor information, state contract information, descriptions, and quantities in the application.

1. Describe the target audience.

- a) Students of any discipline or intended career who take core and other science courses in Scholars' College: General Chemistry I and II, and Organic Chemistry I and II Lab courses;
- b) Students taking chemistry courses in Dept of Biological and Physical Sciences.

2. Describe the project/initiative.

NSU's state-of-the-art Gas Chromatograph-Mass Spectrometer (GCMS) instrument requires upgrading in order to utilize Windows 10 and modern computer hardware. The new hardware and software being requested will enable this necessary upgrade. The older computer, which controlled the instrument, used Windows XP - it no longer works, is too old to repair, and NSU does not use Windows XP any longer. A new computer has been obtained, but the

2 (continued)

instrument and the computer require additional hardware within the GCMS instrument as well as hardware for the connections between the new computer and the GCMS instrument.

3. State measurable objectives that will be used to determine the impact/effectiveness of the project.

- a) Students will use modern gas chromatography-mass spectrometry techniques to analyze complex mixtures in forensic science (e.g., determination of arson accelerants in fire debris), environmental science (e.g., determination of organosulfur compounds in foods), organic chemistry (e.g., identification of volatile organic compounds in surface waters), and analytical chemistry (e.g., determination of pesticides in water and/or food) experiments;
- b) Students will demonstrate improved knowledge in gas chromatography-mass spectrometry theory and experimental variables.

4. Please explain the evaluation process for each project objective.

- a) Students will write detailed formal lab reports for the experiments performed; b) Pre-testing and post-testing relating to the use of gas chromatography-mass spectrometry in scientific applications will determine learning levels and experiential improvements.

5. Which NSTEP <http://www.nsula.edu/nstep/NSTEP.pdf> objective(s) will this funding of this project advance? How will the funding of the project advance the University and College/unit technology plan?

Obj #1. The instrument embodies the best modern method of analyzing complex mixtures of chemical substances, and is utilized in all industrial and investigative laboratories. The requested funds will allow use of the instrument to be continued in forensic science (e.g., analysis of fire debris), environmental science (e.g., pesticides in water; odoriferous components of plants) and relevant experiments (e.g., analysis of volatile organic compounds and pesticides in water/food). Such experiences prepare students for post-graduate studies and professional careers.

Obj #3. Upgrading of the computer and instrument technology from Windows XP to Windows 10.

Obj #7. Requested upgrades will allow the computer to be used by all science faculty in all lab courses relating to analysis of complex mixtures of chemical compounds.

Obj #8. The instrument has been used in the past for research projects, including analysis of vapors from e-cigarettes ("vaping"), and analysis of volatile organic compounds in Natchitoches water supplies. By upgrading and keeping the instrument in operating condition, such projects are encouraged and supported.

6. Please justify funding for the project. Provide the number of students that will be served per academic year and in what ways. Please also indicate any unique needs of the target group.

a. About 45 students per year, in Scholars' College General Chemistry I and II Labs. In Gen Chem I, students carry out a 3-session lab to determine fire accelerants in fire debris ("Was it arson?"). In Gen Chem II, students carry out a 3-session lab to determine organosulfur compounds in foods.

b. About 15 students per year, by taking Scholars' College Organic Chemistry I and II Labs; In Organic I, students analyze organic compound mixtures and determine mass spectrometric properties of organic compounds. In Organic II, they analyze water samples to determine the presence of pesticides.

c. In the Dept of Biological and Physical Sciences Organic II and Analytical Chemistry Labs, faculty have not yet implemented regular GCMS-related experiments in chemistry lab courses, but

6 (continued)

have been using the instrument to devise suitable experiments. The potential impact is estimated to be at least 45-75 students per year.

7. List the individuals who will be responsible for the implementation of the project/initiative and indicate their demonstrated abilities to accomplish the objectives of the project.

Dr. Massimo Bezoari, Richard Lounsbury Professor of Chemistry. His expertise was recognized by the National Science Foundation with a \$200,000 grant (2008) for acquisition of the instrument. He has published or presented nine papers relating to GCMS teaching experiments and research in peer-reviewed journals (e.g. *Chemical Educator* **2012**, 17, 6–14), as well as national and regional science meetings. He has been using the instrument regularly in teaching labs, and has been performing required maintenance of the instrument for the past 10 years.

8. Describe any personnel (technical or otherwise) required to support the project/initiative.

A visit from the instrument manufacturers (Shimadzu) is required. This has been included in the estimate of project costs. In addition, a brief amount of time from NSU IT personnel may be required for installation of a computer card. Faculty seeking to implement the use of the equipment will do any preparative work as part of their regular lab preparation activities.

9. Provide a schedule for implementation and evaluation.

Assuming grant funds available in Jan 2020:

- a) Visit by Shimadzu personnel and installation of new computer-instrument hardware: Feb 2020;
- b) Teaching experiments and evaluations will resume by March 2020.

10. Estimate the expected life of hardware and software. Explain any anticipated equipment/software upgrades during the next five years.

The previous computer-control CPU lasted 10 years. We expect the same for the new setup.

11. Explain in detail a plan and policy that will be in place to ensure property security/controls for any equipment received through a Student Technology Fee. If requested equipment that will be either/or checkout to students or moved within the department, please provide a checkout/loan policy.

A policy is already in place, with permanent housing of the instrument in Room 227, Fournet. This plan has been in effect since 2008-2009, when the instrument was first acquired with a successful National Science Foundation Grant (\$200K). The lab is air-conditioned, and locked when not in use. No checkout/movement policy is needed.

12. Does the department receive lab fees? If so, please explain the need for Student Technology Fee funds.

The Scholars' College receives lab fees that are for expendables and do not provide for the necessary upgrades and repairs for the instrument.

13. Attach a detailed budget.

Attached.

14. Attach two (2) letters of support for the project from the following individuals: the requesting department's Dean, the appropriate Vice President, or for student request, the SGA President from the requesting campus.

Attached



NORTHWESTERN STATE COLLEGE OF ARTS AND SCIENCES

November 20, 2019

Dear Grant Selection Committee:

I am writing this letter in support of Dr. Massimo Bezoari's proposal to upgrade the computer hardware/software used to control the Gas Chromatograph-Mass Spectrometer (GCMS) Fournet Hall. The acquisition of this equipment is needed for the continued use of NSU's state-of-the-art GCMS. A GCMS is instrumentation necessary for the instruction of laboratory activities in forensic and environmental science as well as organic and analytical chemistry.

The proposed technology will be used by students who take core and other science courses in the Louisiana Scholars' College. This represents approximately 50 students per year. Students taking chemistry courses through the School of Biological and Physical Sciences will also have the opportunity to use the GCMS.

Dr. Bezoari has my support in the submission of this grant proposal. I trust that you will give him every consideration as he works diligently to improve the student experience at the Louisiana Scholars' College and Northwestern State University. If you have any questions regarding my recommendation or support, please do not hesitate to contact me.

Sincerely,

Francene J. Lemoine, Ph.D.
Interim Dean and Professor
College of Arts and Sciences
Northwestern State University of Louisiana
Natchitoches, LA 71497
Phone (318)357-5805
Fax (318)357-4255
Email lemoinef@nsula.edu

DEDICATED TO ONE GOAL. **YOURS.**[™]

Phone: 318-357-4330 | Fax: 318-357-4255 | 128 Caspari Hall | Natchitoches, LA 71497



Louisiana Scholars' College

Northwestern State University | 110 Morrison Hall | 326 Caspari St | Natchitoches, LA 71497
318.357.4577 | nsula.edu/scholars

19 November 2019

Selection Committee
Student Technology Fee Grant Applications
Northwestern State University
Natchitoches, LA

Dear Selection Committee Members,

I am writing regarding in regards to Dr. Massimo Bezoari's application for technology and hardware necessary to run the Gas Chromatograph-Mass Spectrometer (GCMS). Dr. Bezoari is a leader in conducting undergraduate research with students and this machine is critical to their understanding of the nuances of the multi-faceted world of chemistry.

As this machine is utilized by members of the Scholars' College and the Biological and Physical Sciences, this seems a very sound use of the fees.

I strongly support this application and truly hope you will do the same.

Thank you for your consideration.

V/r,

Kirsten A. Bartels, PhD
Director
Associate Professor of English

**Detailed Budget for Student Technology Grant Application: Gas Chromatography-Mass
Spectrometry Maintenance Upgrade**

- | | |
|--|-----------|
| 1. Shimadzu Travel, Labor, Parts (see detailed quote, attached): | \$3188.00 |
| 2. Dell Firewire Card and Cord (see detailed quote, attached) | \$ 52.45 |

TOTAL: \$3240.45

Customer Name and Address
 Northwestern State University
 CENTRAL RECEIVING
 998 SOUTH JEFFERSON

 Date
 11-Nov-19

 Estimate Number
 464148

 Valid until
 11-Dec-19

 Prepared by
 SAMIRA BOBSAITH

NATCHITOCHEs LA 71497

 Contact Phone
 MASSIMO BEZOARI 318-357-4583

 Model Number Serial Number
 GCMS-QP2010 O20504650128

	Hours	PerHour	Totals
Travel	3.00	\$280.00	\$840.00
Labor	5.00	\$280.00	\$1,400.00
Parts			\$1,448.00
Expenses			\$0.00
Total			\$3,688.00

Estimate to upgrade to WIN10. Please note, this is only an estimate. Additional parts and labor may be required to restore your instrument to proper operation.

PartNumber	Quantity	Description	PriceEach	Total
225-21017-00	1	CHASSIS, CPU-A.	\$60.00	\$60.00
225-21000-42	1	PCB ASSY, CPU-A-RO (New Style)	\$720.00	\$720.00
220-97301-04	1	USB Cable, A to B, 4 Pin, shielded with f	\$22.00	\$22.00
225-21030-42	1	PCB ASSY, Pre Amp-A-RO (New Style).	\$123.00	\$123.00
225-21019-41	1	Cable, Pre Amp-A to CPU (New Style).	\$23.00	\$23.00
SvcAdj	1	LED PCB	\$500.00	\$500.00

The price and terms of this estimate are not subject to verbal changes or other agreements unless approved in writing by the Corporate Office of the Seller. Typographical and mathematical errors subject to correction before acceptance. Credit approval is required before any formal purchase order is accepted. Purchaser assumes liability for patent and copyright infringement when goods are made to Purchaser's specifications. Returns which are not the faults of the Seller are subject to a 20% restocking fee. Returns due to incompatibility of software used with any computer not purchased from or approved by Seller will not be accepted. Service charges of 1 ½% per month will be charged on all outstanding balances.

Conditions not specifically stated herein shall be governed by the U.S. Commercial Code. Terms inconsistent with those stated herein which may appear on Purchaser's formal purchase order may not be binding on the Seller.



Savings	\$8.54
Subtotal (1)	\$52.45
Estimated Shipping	\$0.00
Total	\$52.45

✓ You've successfully saved a new eQuote - #1000409679601

Details

NSU-Scholars-Firewire
Quote number # 1000409679601

Created November 4, 2019
Expires December 4, 2019
Created by ehlersa@nsula.edu
Authorized buyer Markalyn Williams

Billing

Order contact
Alfred Ehlers, Northwestern State University
Dell Contract Code: C000000010742
Customer agreement number: -4400002525
Phone number: (318) 357-6482
Additional:: ehlersa@nsula.edu

Billing information
ACCOUNTS PAYABLE,
NORTHWESTERN STATE UNIV
PO BOX 5655, NATCHITOCHE,
LA, 71497-0001
Customer number: 28657231
Phone number: (318) 357-5716
Additional:: (318) 357-4378
WILLIAMSM@NSULA.EDU

Tax exemption
I am tax exempt

Shipping

Shipping information
Markalyn Williams,
NORTHWESTERN STATE UNIV ,
Purchasing
998 South Jefferson,
NATCHITOCHE, LA, 71497-0001
Phone number: (318) 357-5716
Additional:: williamsm@nsula.edu

Delivery method
FREE Standard Delivery

Trade compliance
No, I will not be exporting

Payment method

Description

Dr. Bezoari's Fournet 225 Firewire Card

Items	Quantity	Unit Price	Item total
 <p>2-port StarTech.com 3 Port 2b 1a Low Profile 1394 PCI Express FireWire Card Adapter - FireWire adapter - 2 ports</p> <p>Discounted unit price: \$52.45 Dell Contract Code: C000000010742 Manufacturer Part# : PEX1394B3LP Dell Part# : A6790559</p> <p>Estimated Ship Date 11/05/2019</p> <p>Premier discount</p>	1	\$60.99	\$60.99
			-\$8.54
			Item total: \$52.45

Savings:	\$8.54
Subtotal (1):	\$52.45
Savings	\$8.54

Subtotal (1)	\$52.45
Estimated Shipping	\$0.00
Total	\$52.45

Ultrabook, Celeron, Celeron Inside, Core Inside, Intel, Intel Logo, Intel Atom, Intel Atom Inside, Intel Core, Intel Inside, Intel Inside Logo, Intel vPro, Itanium, Itanium Inside, Pentium, Pentium Inside, vPro Inside, Xeon, Xeon Phi, Xeon Inside, and Intel Optane are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries.

Same day shipment subject to order size limitations, Dell standard shipping methods and payment via credit card, gift card or Dell Business Credit. Notification will be provided if there are payment delays which could impact shipping date. Electronics and accessories may ship separately.

Smart Selection. Limited quantities. Only available for orders placed by 5:59 p.m. CT Mon.–Thurs. Systems shipped the next business day after an order is placed. Subject to order approval. Software and accessories not part of the configuration will be shipped separately and may arrive after your system. Please note that Smart Selection Configuration pricing cannot be combined with other pricing offers or discounts provided or agreed to by Dell. ** Orders with Custom Factory Integration might require additional processing time.

***Dell Business Credit:** Offered to business customers by WebBank, Member FDIC, who determines qualifications for and terms of credit. Taxes, shipping and other charges are extra and vary. Minimum monthly payments are the greater of \$15 or 3% of the new balance shown on the monthly billing statement. Dell and the Dell logo are trademarks of Dell Inc.

****Payment solutions provided and serviced by Dell Financial Services L.L.C. or its affiliate or designee ("DFS") for qualified customers.** Offers may not be available or may vary in certain countries. Where available, offers may be changed without notice and are subject to product availability, credit approval, execution of documentation provided by and acceptable to DFS, and may be subject to minimum transaction size. Offers not available for personal, family or household use. Dell and the Dell logo are trademarks of Dell Inc. Restrictions and additional requirements may apply to transactions with governmental or public entities.

¹Subject to applicable law and regulations.

ALL ORDERS ARE SUBJECT TO APPROVAL AND ACCEPTANCE BY DELL. Pricing, availability and other terms of offer may be withdrawn or changed without notice. Dell cannot be held responsible for errors in typography or photography.

Cookie Consent