2016 UNIDATA COMMUNITY EQUIPMENT AWARD PROPOSAL

AWIPS-II Infrastructure Upgrade at the University of Louisiana at Monroe

Date:	1 March 2016
Principal Investigator:	Dr. Todd Murphy
Title:	Assistant Professor of Atmospheric Science
Institution:	University of Louisiana at Monroe
Telephone Number:	318.342.3428
Fax Number:	318.342.1879
Street Address:	700 University Ave, Monroe, LA 71209-9000
Email:	murphy@ulm.edu

[redacted]

Co-Principal Investigator:	Dr. Kenneth Leppert, II
Title:	Assistant Professor of Atmospheric Science
Institution:	University of Louisiana at Monroe
Telephone Number:	318.342.1918
Fax Number:	318.342.1879
Street Address:	700 University Ave, Monroe, LA 71209-9000
Email:	leppert@ulm.edu

[redacted]

Institutional Official:	Dr. Leonard Clark
Title:	Director, Graduate School University Authorizing Official
Institution:	University of Louisiana at Monroe
Telephone Number:	318.342.1039
Fax Number:	318.342.1479
Street Address:	700 University Ave, Monroe, LA 71209-9000
Email:	ospr@ulm.edu

[redacted]

Amount Requested: $19,404

1. PROJECT SUMMARY

The University of Louisiana at Monroe (ULM) is a doorway to diverse academic studies for residents of northeast Louisiana and the Lower Mississippi Delta region, historically an economically disadvantaged area. Enrollment for the Fall 2015 semester was 8,854 students, which includes students from every parish in Louisiana, 45 other states, and 53 foreign countries. The Department of Atmospheric Science (ATMS) within the School of Sciences offers the *only* B.S. degree in atmospheric science or meteorology in Louisiana, with a curriculum that meets guidelines established by the American Meteorological Society and federal government (GS-1340). The program typically has 40-60 majors, many first-generation college students from disadvantaged socio-economic groups, and is continually recognized as a *Program of Excellence* by the Louisiana Board of Regents. The ATMS program has five faculty members and its own teaching and research facilities like the Weather Research Center (WRC) and the Synoptic Meteorology Lab (SML). Additionally, through a combination of internal and external funding, the department has made significant improvements to its teaching and research infrastructure, including the acquisition of a mobile radiosonde system that has facilitated the start of an undergraduate weather balloon team. The department recently finalized construction on a new polarimetric S-band Doppler weather radar, making ULM the *only* primarily undergraduate institution in the nation with such equipment. Existing classroom space will soon be remodeled for a dedicated radar-teaching laboratory. With the recent infrastructure improvements, and implementation of new recruiting and retention strategies, program enrollment is expected to grow by 30-50% over the next 3-5 years.

ULM, and specifically the ATMS program, continues to thrive despite repeated cuts in funding for higher education in Louisiana. However, computing infrastructure within the SML (some originally purchased under a 2009 Unidata Equipment Award) are nearing end of life and unable to keep up with current software demands. Given the expected program growth and age of current computing resources, the objective of this proposal is to request funds for the improvement and replacement of computer hardware in the ULM ATMS program. *Specifically, this proposal requests funding to acquire a dedicated AWIPS-II (EDEX) data server and five CAVE client workstations to deploy AWIPS-II and expand additional Unidata visualization and data analysis for meteorological education at ULM.* The current budget situation in Louisiana means that without Unidata support, ULM would not be able to purchase this equipment in the foreseeable future.

2. PROJECT DESCRIPTION

a. Background and Goals

The ULM ATMS program is unique in that it is the *only* program in Louisiana and Arkansas and one of only a few programs across the United States that exclusively educates undergraduates. ULM is an active participant in University Corporation for Atmospheric Research (UCAR) activities, particularly those pertaining to undergraduate education, and became a full UCAR voting member in 2013 after serving as an academic affiliate member for several years. The ATMS program is also an active participant in the Unidata community and an active user of Unidata programs and data (e.g., IDV, GEMPAK, McIDAS) in both teaching and research. However, ULM would like to contribute more to UCAR and Unidata activities (especially with

the new radar coming online), which will require upgraded computing facilities to make the department more comparable to existing full member institutions.

ULM's ATMS curriculum is biased towards operational meteorology, where both theoretical and applied coursework are emphasized. Numerous opportunities for hands-on learning are built into current courses using meteorological instruments, research, and fieldwork (e.g., surface instruments, weather balloon launches, radar operations). Students also receive scientific computing experience utilizing Unidata programs and advanced scientific programming throughout numerous courses, including a dedicated computer applications course for atmospheric science majors. A significant fraction of our students intend to pursue post-graduate employment with the National Weather Service (NWS) or other private forecasting firms, with smaller percentages interested in broadcast meteorology, environmental science, or continuing their education with an advanced degree and becoming involved in research or academia.

The department's current computing infrastructure available to students and faculty is primarily housed in the SML, which is a hybrid classroom-laboratory comprised of four Linux student workstations, one Linux instructor workstation, four Apple Mac Mini's, one dedicated AWIPS workstation, and one high-performance Linux workstation dedicated to running the Weather Research and Forecasting (WRF) model. The four Linux student workstations (originally purchased under a 2009 Unidata Equipment Award) and the dedicated AWIPS workstation *are near end of life and in need of immediate replacement.* ATMS students also have access to 15 Windows based computers in a shared geosciences computer lab and 5 Windows based computers in the WRC. In the past, ULM has operated a LDM server (hardware originally purchased in 2009) to easily support Unidata program use in teaching and research; however, it recently experienced a hardware failure. Given the LDM server's age and lack of funds, it has not been repaired or replaced, impeding recent students from gaining full use of Unidata programs and data. With construction completed on the polarimetric S-band Doppler radar, the department is adding a hybrid radar classroom-laboratory with an additional 10-15 radar workstations available to students and faculty. Funding for this new space and infrastructure comes from a dedicated external grant used to purchase the radar system and cannot be used for other infrastructure improvements. The radar lab is not expected to be fully operational until mid-to-late 2017.

Given the current situation, ULM does not have the ability to train students using the next-generation AWIPS-II. This represents a significant problem since a vast majority of our students will seek employment with the NWS. More importantly, > 50% of current hardware in the SML is near end of life and potential hardware failures would not be repaired given its age. ULM typically provides biannual, short-term, low cost funding opportunities dedicated to equipment repair and refresh; these would be utilized to extend the life of newer, existing equipment, including those proposed herein. However, ongoing budget issues in Louisiana have greatly limited significant funding opportunities for complete replacement of outdated or failed hardware.

The equipment request herein represents a significant upgrade and replacement of current infrastructure. It will allow the ULM ATMS program to continue and expand the use of the Unidata software suite in teaching and research, as well as implementing AWIPS-II within the

curriculum. In addition to the five CAVE clients requested, the EDEX data server would allow other current (Mac Mini's) and future (radar workstations) hardware to also operate as CAVE clients; important if the program reaches the expected growth. With the help of Unidata and other partners (e.g., NWS), we plan to ingest the local ULM radar data into AWIPS-II, which may allow specially designed software testing in AWIPS using a non-NWS radar. Finally, we plan to develop a web site dedicated to real-time weather nowcasting and forecasting that will showcase (1) Unidata output, (2) local WRF numerical simulations, (3) ULM radar data, and (4) local radiosonde data. The PI and co-PI currently have grant funds pending to purchase a microwave profiling radiometer, whose data would also be added to this nowcasting web site if awarded.

b. Equipment Request

We are requesting funds for the purchase of computing hardware that would support an AWIPS-II EDEX data server and five AWIPS-II CAVE client machines. The configuration of the EDEX server and CAVE machines are based on Unidata recommendations. Personnel from ULM's Computing Center will install the EDEX server in ULM's primary server room. The CAVE machines are expected to replace five older workstations (7-8 years old) in the SML that are unable to run the CAVE client and struggle with newer meteorological software. The proposed CAVE clients will operate alongside four Mac Mini's (capable of operating as CAVE clients) and a modeling workstation that utilizes the WRF model for teaching and research. The department is in the process of converting existing classroom space into a radar computer lab, where an additional 10-15 student radar workstations will be installed with minimum specifications that would allow them to operate as CAVE clients. Furthermore, the department maintains rotating student Matlab and IDL licenses that are available on any workstation. All workstations will be dual-boot enabled for Windows and Linux, helping reinforce the Linux environment in the undergraduate curriculum. Below is an itemized equipment request for this proposal:

Dell PowerEdge R730 Server (EDEX server)
Intel Xeon E5-2640 v3 (8C/16T 2.6 GHz) Processor
2 x 8 GB RDIMM (2133 MT/s) RAM
2 x 200 GB SSD SATA 6Gbps (Operating System)
8 x 1 TB 7,200 RPM SATA 6Gbps Hard Drives (Storage)
PERC H730 RAID Controller, 1 GB Cache
DVD ROM
CentOS 6.5

CAVE Client Machines (assembled by Eastern Data Inc.)
Intel Core i7-4790K (Quad Core 4 GHz) Processor
2 x 8 GB (DDR3 1600 MHz) RAM
256 GB Samsung 850 Pro Series SSD (Operating System and Storage)
PNY GeForce GTX 960 (2048MB GDDR5 memory)
LG 24x DVD/CD Burner
2 x Dell UltraSharp 24" Widescreen LCD Monitor
Dual Boot Windows / CentOS 6.5

c. Benefits to ULM Atmospheric Science Education

Numerous education and professional benefits stand to be gained by upgrading our computing infrastructure, expanding use of Unidata products, and implementing AWIPS-II into the curriculum. As previously mentioned, a majority of our students seek employment with the NWS upon graduation. The deployment of AWIPS-II will provide opportunities for those students to gain meaningful experience with software used on a daily basis at NWS Weather Forecast Offices (WFO). Currently, some students make a 90-minute (one-way) trip to NWS WFO Shreveport or Jackson to job shadow or volunteer, and ultimately gain some experience using NWS products. While volunteering at local WFOs will always be important for job prospects, integrating the software into our curriculum will allow students and NWS meteorologists a better use of time during the volunteer period.

Below is a description of courses that currently use Unidata products or how we expect to expand the use of the Unidata software suite with the proposed equipment:

- *ATMS 2000 – Weather Analysis and Forecasting:* Sophomore level students are introduced to basic weather analysis and forecasting concepts. Students are first introduced to Unidata products (IDV) for use in homework assignments or data visualization during lecture. This will expand to learning the basics of weather analysis using AWIPS-II.

- *ATMS 3000 – Computer Applications in Atmospheric Science:* Junior and senior level students are introduced to the basics of scientific computing, including the Linux environment and data visualization using Unidata products and other scientific programming languages (Python and IDL).

- *ATMS 3025 – Intermediate Weather Forecasting:* Second semester sophomore through senior level students compete against the GFS MOS at making site-specific daily weather forecasts. Students currently use and interpret weather data from a variety of Internet sources. The deployment of AWIPS-II will consolidate much of their data gathering and transform this course into a mock NWS forecasting shift.

- *ATMS 4003 – Synoptic Meteorology:* Senior level students build on physical and dynamical conceptual models to gain insight into the formation and evolution of synoptic scale weather features. Students partake in a rigorous forecasting practicum in which they compete against their peers and numerical models for "top" forecaster. Students also give daily weather briefings and forecast discussions for various locations across the United States. Currently, students use weather maps/charts/data from various Internet sources. By expanding the use of Unidata products and deploying AWIPS-II, students will generate their own products for use in daily weather briefings.

- *ATMS 4004 – Mesoscale Meteorology:* Senior level capstone course primarily dedicated to the physical and dynamical framework of severe convective weather. Students use IDV for mesoscale forecast discussions, assignments, and data analysis and visualization

in their semester research projects. AWIPS-II would expand into this course during nowcast and forecast discussions.

- *ATMS 4006 – Radar Meteorology:* Junior and senior level students develop an understanding of polarimetric Doppler weather radar with a focus on analysis of radar products in an operational setting. Students currently use the NOAA Weather and Climate Toolkit for a majority of radar visualization; however, we plan to heavily feature AWIPS-II for analysis of current radar products and IDV for past case studies. As the ULM radar begins full operations, we hope to ingest and visualize its data using AWIPS-II.

- *Independent Research:* Students across all levels use Unidata software for analysis and visualization of weather data. Data output has been used in conference presentations and reports.

In summary, the requested hardware will be leveraged across the ATMS curriculum to provide students with a necessary and important skillset to better prepare them for post-graduate employment.

d. Benefits to Research

Faculty and students in the ULM ATMS program are focused on a wide range of research topics, including atmospheric chemistry, climate processes, radar and satellite meteorology, severe convective storms, and tropical meteorology. Observational case studies using integrated instruments and numerical simulations comprise > 50% of the research conducted in the program, with efforts supported by both external agencies (e.g., National Oceanic and Atmospheric Administration, National Aeronautics Space Administration, National Science Foundation, Louisiana Board of Regents, among others) and internal programs (Dean's Support Fund, Student Technology Access Plan, Salary Recovery Funding, and Emerging Scholars). Our primary data visualization is with scientific programming languages (IDL, Python, NCL, etc.). This is often out of reach for most undergraduates who participate in semester (or slightly longer) projects that demand near immediate results. The proposed equipment would enable *interactive* data visualization and analysis from a variety of research data sources, further promoting undergraduate research that engages both upper- *and* lower-division students early in their academic careers. Students engaged in research are more likely to persevere through the challenging parts of the curriculum, making retaining and graduating students more likely. Additionally, we are interested in integrating local ULM instrument data (radar, radiosonde, radiometer) into AWIPS-II for real-time local nowcasting or post-event analysis. This will not only benefit the program, but also the NWS or other agencies that use these data for decision-making purposes.

e. Benefits to Unidata

The most valuable aspect of Unidata is the community support, feedback, and assistance when implementing new software and data dissemination techniques into undergraduate and graduate education. More importantly, the Unidata community actively listens to its end users to further improve their software suite. The ULM ATMS program has been using Unidata programs and

data through various incarnations for the past 15+ years, however, our participation in the Unidata community increased substantially after winning a 2009 Unidata Equipment Award. Updating and expanding our infrastructure to include the deployment of AWIPS-II will allow our faculty and students to continue to use and provide feedback for Unidata products. We also propose to ingest local instrument data (radar, radiosonde, radiometer) into AWIPS-II, creating a mini test-bed to examine the benefits of high-resolution datasets within operational software and how such datasets could be integrated into the NWS.

Finally, the ULM ATMS program participates in the Bayou Discovery Science Camp, held each summer on ULM's campus. The weeklong camp immerses K-8 students in STEM disciplines, where they take part in various laboratory and other science experiments. In the past, ATMS labs have consisted of data collection using simple meteorological instruments (thermometer, barometer, sling psychrometer, etc.), weather map analysis, tornado in a bottle, and forecasting exercises. The deployment of AWIPS-II would allow the development of activities for camp participants to imitate NWS forecasting exercises.

3. BUDGET

For ULM to become fully capable of utilizing AWIPS-II and extending Unidata visualization and data access, the following computing hardware will be purchased at the following cost:

Quantity	Item	Unit Cost	Total Cost
1	Dell PowerEdge AWIPS II EDEX server	$6,896.40	$6,896.40
5	CAVE client workstations	$1,149.50	$5,747.50
5	Dell UltraSharp 24" dual-monitor bundle (10 total monitors)	$600.58	$3,002.90
10	Displayport-to-Displayport Cable	$12.03	$120.30
	Indirect Costs (41% on $8,870.70)		$3,636.99
	Grand Total Requested		**$19,404.09**

ULM's Facilities and Administrative rate agreement (41% of the modified total direct costs) does not include overhead on individual items exceeding $5,000. The above costs include a five-year hardware warranty. While there will not be any direct cost sharing by ULM for the above equipment, the PI, Co-PI, and Computing Center staff will donate time for the installation, configuration, and maintenance of the system. The PI will also donate time to train other faculty and students in the use of AWIPS-II and incorporation into undergraduate coursework. The PI plans to install the CAVE software on the radar workstations upon completion of the radar laboratory, adding an additional 10-15 CAVE clients to our future department computing infrastructure. Specific manufacture quotes are included at the end of this proposal.

4. PROJECT MILESTONES

Vendor quotes have already been acquired which will facilitate placement of purchase orders immediately upon notification of an award in late May or early June 2016. This will allow project personnel to install equipment early in summer break so that all systems are configured and tested well before the 2016-2017 academic year begins in August. The new hardware and

AWIPS-II will be immediately incorporated into course work during the Fall 2016 semester in the senior Synoptic Meteorology and sophomore Weather Analysis and Forecasting courses. It will then expand throughout the remaining curriculum in subsequent semesters. The real-time nowcasting and forecasting website is already under development with plans for final release during the 2016-17 academic year. Unidata products would be integrated into the site beginning January 2017, after curriculum improvements have occurred. There are no expected dependencies that may alter the project goals or deadlines.

Quote 1022823556900.1
UNIV OF LA MONROE

Salesperson

Salesperson Name
Nathan Kolodziej

Salesperson Email
Nathan_Kolodziej@Dell.com

Salesperson Phone
18009993355

Salesperson Extension
5131042

Quote Details

Quote Date
03/17/2016

Quote Validity
06/15/2016

Solution ID
-

Billing Details

Company Name
UNIV OF LA MONROE

Customer Number
87419975

Phone Number
1 (318) 3425100

Address
700 UNIVERSITY AVE
CONTROLLER'S OFFICE ADM 1-71
MONROE
LA
71209
US

Price Summary

Description	Quantity	Unit Price	Subtotal Price
PowerEdge R730	1	$6,896.40	$6,896.40

Subtotal	$6,896.40
Tax	$0.00
Shipping and Handling	$0.00
Environmental Fee	$0.00
Total	**$6,896.40**

Note: All tax quoted above is an estimate; final taxes will be listed on the invoice.

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Regards,
Nathan Kolodziej

Order this quote easily online through your Premier page, or if you do not have Premier, using Quote to Order

Product Details by Shipment

Shipping Group 1

Shipping Contact:	CHANCE EPPINETTE	Subtotal	$6,896.40
Shipping Phone No:	1 (318) 3425015	Tax	$0.00
Shipping via:	Standard Ground	Shipping and Handling	$0.00
Shipping Address:	ULM WHSE 501 WARHAWK WAY MONROE LA 71209-0001 US	Environmental Fee	$0.00
		Total	$6,896.40

Description	Quantity	Unit Price	Subtotal Price
PowerEdge R730	1	$6,896.40	$6,896.40

Estimated Delivery Date:	04/01/2016
Contract Code:	WN14AGW
Customer Agreement No:	-4400002525

210-ACXU	PowerEdge R730 Server	1	-	-
591-BBCH	PowerEdge R730/R730xd Motherboard	1	-	-
350-BBEP	Chassis with up to 16, 2.5" Hard Drives	1	-	-
340-AKKB	PowerEdge R730 Shipping	1	-	-
338-BFFO	Intel Xeon E5-2640 v3 2.6GHz,20M Cache,8.00GT/s QPI,Turbo,HT,8C/16T (90W) Max Mem 1866MHz	1	-	-
374-BBBX	No Additional Processor	1	-	-
330-BBCO	R730/xd PCIe Riser 2, Center	1	-	-
330-BBCQ	R730 PCIe Riser 3, Left	1	-	-
374-BBHS	R730 PCIe Riser 1 Filler Blank, Right	1	-	-
370-ABUF	2133MT/s RDIMMs	1	-	-
370-ABSK	Advanced ECC	1	-	-
370-ABUJ	8GB RDIMM, 2133MT/s, Dual Rank, x8 Data Width	2	-	-
780-BBKC	Unconfigured RAID for H330/H730/H730P (1-16 HDDs or SSDs)	1	-	-
405-AAEG	PERC H730 Integrated RAID Controller, 1GB Cache	1	-	-
400-AEFC	1TB 7.2K RPM SATA 6Gbps 2.5in Hot-plug Hard	8	-	-

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	Drive,13G			
400-AIFV	200GB Solid State Drive SATA Mix Use MLC 6Gpbs 2.5in Hot-plug Drive, S3610	2	-	-
540-BBBB	Intel X520 DP 10Gb DA/SFP+, + I350 DP 1Gb Ethernet, Network Daughter Card	1	-	-
429-AAPU	DVD ROM, SATA, INTERNAL	1	-	-
350-BBEJ	Bezel	1	-	-
770-BBBQ	ReadyRails Sliding Rails Without Cable Management Arm	1	-	-
384-BBBL	Performance BIOS Settings	1	-	-
450-ADWM	Dual, Hot-plug, Redundant Power Supply (1+1), 1100W	1	-	-
492-BBDI	C13 to C14, PDU Style, 12 AMP, 6.5 Feet (2m) Power Cord, North America	2	-	-
631-AAJG	Electronic System Documentation and OpenManage DVD Kit, PowerEdge R730/xd	1	-	-
619-ABVR	No Operating System	1	-	-
421-5736	No Media Required	1	-	-
370-ABWF	DIMM Blanks for System with 1 Processor	1	-	-
374-BBHM	Standard Heatsink for PowerEdge R730/R730xd	1	-	-
750-AAEL	PCIe Slot Filler, R730/R730xd	1	-	-
385-BBCB	VFlash, 8GB SD Card for iDRAC Enterprise	1	-	-
385-BBHO	iDRAC8 Enterprise, integrated Dell Remote Access Controller, Enterprise	1	-	-
332-1286	US Order	1	-	-
976-8706	Dell Hardware Limited Warranty Plus On Site Service	1	-	-
976-8795	Basic Hardware Services: Business Hours (5X10) Next Business Day On Site Hardware Warranty Repair 5 Year	1	-	-
991-2878	Dell ProSupport Service Offering Declined	1	-	-
996-8029	Declined recommended ProSupport service - Call your Dell Sales Rep if Upgrade Needed	1	-	-
900-9997	On-Site Installation Declined	1	-	-
973-2426	Declined Remote Consulting Service	1	-	-

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Eastern Data, Inc.

4386 Park Drive
Norcross, GA 30093
United States
Phone: (770) 279-8888
Fax: (770) 279-9188

Quotation

Date	Page
Mar 8, 2016	1
Order Number	
QT00006415	

Sold To:

U. OF LOUISIANA AT MONROE
322 STADIUM DRIVE
MONORE, LA 71209

Ship To:

ULM Technical Services
4100 NE Drive
Library 213B
MONROE, LA, 71209
US

Reference	PO Number	Customer No.	Salesperson	Order Date	Ship Via	Terms
		AD-UOF001	AD	Mar 8, 2016	UPSGRD	CCARD

Qty. Ord.	Qty. Shp.	Qty. B/O	Item Number	Description	Unit Price	UOM	Extended Price
1	0	1	SYS-EDI-ASSEMBLEWS	Labor charge for workstation assembly	25.00	EA	25.00
1	0	1	MIS-EDGE750	Antec EDGE750 750W 80 PLUS Gold Power S	126.000000	EA	126.00
1	0	1	MIS-TEMP	VCGGTX9602XPB - PNY XLR8 GeForce GTX	195.000000	EA	195.00
1	0	1	CPU-ITL-I7.4790K	Intel LGA1150 Core-i7 x4/8 4GHz 88W 8MB (H	325.00	EA	325.00
1	0	1	MIS-RR212E20PKR2	Cooler Master RR-212E-20PK-R2 Hyper 212 E	31.000000	EA	31.00
1	0	1	MBD-ASU-Z97AUSB31	ASUS Z97-A/USB3.1 ATX LGA1150 4xDDR3	148.000000	EA	148.00
1	0	1	SSD-SAM-MZ7KE256BW	Samsung 850 Pro-Series 2.5" 256GB SATA3 S	135.00	EA	135.00
1	0	1	ODD-LGS-GH24NSC0B	LG 24x SATA DVDRW Black NO Software	16.00	EA	16.00
1	0	1	MIS-NSK4100	Antec NSK4100 ATX Mid-Tower (Black) NO PS	57.000000	EA	57.00
1	0	1	FDD-MIS-INTANAU6MR	iMicro 3.5" USB2.0 Card Reader w/o Floppy Bl	5.00	EA	5.00
1	0	1	MIS-KHX16C9T3K2/16X	Kingston KHX16C9T3K2/16X	69.000000	EA	69.00
1	0	1	MIS-BOX-	Shipping box	17.50	EA	17.50
			FRT	Shipping and Handling			0.00

Comments:

Tax Summary:

GA	0.00

Less	
Included Tax	**0.00**
Order Discount	**0.00**
Subtotal	**1,149.50**
Total sales tax	**0.00**
Total order	**1,149.50**

Adam Taylor

From: Dell (please do not reply) <automated_email@dell.com> on behalf of Dell Inc. <dell_automated_email@dell.com>
Sent: Tuesday, March 08, 2016 12:18 PM
To: Adam Taylor
Subject: Dell Computer - Saved Quote Information - 1018820635903



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eQuote Name	Cave Monitors
Saved By	ataylor@ulm.edu
eQuote Description	
Authorized Buyer	
Notes/Comments	
Account Name	The University of Louisiana at Monroe NASPO ValuePoint 4400002525 / WN14AGW
Contract Code	WN14AGW

Shipping Info

Adam Taylor
501 Warhawk Way
Monroe, US 71209
(318) 342-3354

Billing Info

ACCOUNTS PAYABLE
CONTROLLERS OFFICE COENEN
HALL 103
MONROE, US 71209-0001

eQuote Summary

Description	Quantity	Unit Discounted Price	Subtotal Discounted Price

DISPLAYPORT TO DISPLAYPORT CABLE 6 FEET, GOLD PLATED	1	$12.03	$12.03
Dell UltraSharp 24 Dual Monitor Bundle - U2414H with MDS14	1	$600.58	$600.58

eQuote Subtotal	$612.61
Shipping*	$0.00
Shipping Discount*	$0.00
Tax*	$0.00
Environmental Disposal Fee*	$0.00
eQuote Total*	**$612.61**

*The eQuote total, including applicable taxes and additional fees, may be viewable online.

eQuote Details

Description	Quantity	Price
DISPLAYPORT TO DISPLAYPORT CABLE 6 FEET, GOLD PLATED Sku [A7237305]	1	$13.99
Premier Discount		-$1.96
		$12.03
Dell UltraSharp 24 Dual Monitor Bundle - U2414H with MDS14 Sku [DU2414H]	1	$769.97
Premier Discount		-$169.39
		$600.58

eQuote Subtotal	$612.61
Shipping*	$0.00
Shipping Discount*	$0.00
Tax*	$0.00
Environmental Disposal Fee*	$0.00

eQuote Total* **$612.61**

*The eQuote total, including applicable taxes and additional fees, may be viewable online.

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