



SUPPLEMENTAL/BID BULLETIN

Project Reference No. IB No. 23-40
Name of the Project Procurement of Various Laboratory Equipment for Genome Sequencing Laboratory
Location of the Project WVSU Medical Center

ADDENDUM NO. 01 - 2023
July 21, 2023

This Addendum No. 01 is issued to modify or amend items in the Bidding Documents. Attached is the Revised Section VII. Technical Specifications (pages 18-26). This shall form an integral part of the Bidding Documents.

A. Invitation to Bid

Table with 2 columns: 'As indicated in the Bidding Documents' and 'Corrections/Modifications/Amendments (in bold & italicized words)'. It contains items 9 through 13 regarding bid opening procedures, contract award, and website information.

B. Section VII Technical Specifications

Table with 2 columns: 'As indicated in the Bidding Documents' and 'Corrections/Modifications/Amendments (in bold & italicized words)'. It details technical specifications for a Thermal Cycler/ End Point PCR Machine, including format, block options, temperature range, and gradient requirements.



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	<ul style="list-style-type: none"> Heated lid pressure: Adjustable Program interface: At least 10" inch HD Touchscreen Data transfer: USB port Auto re-start on power failure Connectivity: Remote run and system monitoring via app Security: Authorize USB device as user's login key Dimensions (L x W x H) in mm: not greater than 470 x 535 x 330 Weight: 30-35kg Power requirements: Autovolt: 100-230V, 50/60Hz Power: 900W Electricity used in a standard 2 step, 30 cycle program (single block running): c0.3 kWh Accessories: PCR tube strips, or PCR tubes compatible with the unit, USB Stick, DNA polymerase 500 U, dNTP mix, Compatible UPS 																																																																																																																																																																																																																																																																																																																																																																																																																							
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As indicated in the Bidding Documents		Corrections/Modifications/Amendments (in bold & italicized words)
Item No.	Item Description	
3	qPCR / RT-PCR	
	<ul style="list-style-type: none"> Excitation Source 8 dye specific LEDs per optical module Detection Sources 8 silicon photo-detectors per optical module 	
	FILTERS	
	a. Dyes SYBR/FAM 462.5 – 516.0nm, Detectable Ct for 0.001ng/DNA per reaction (R2 > 0.980)	
	b. HEX 535.0 – 555.0nm Detectable Ct for 0.001ng/DNA per reaction (R2 > 0.980)	
	c. ROX 585.0 – 610.0nm Detectable Ct for 0.001ng/DNA per reaction (R2 > 0.980)	
	d. CY3 542.0 – 568.5nm Detectable Ct for 0.001ng/DNA per reaction (R2 > 0.980)	
	e. CY5 635.0 – 665.0nm Detectable Ct for 0.001ng/DNA per reaction (R2 > 0.980)	
	f. Alto 425 – 435 – 475.0nm Detectable Ct for 0.001ng/DNA per reaction (R2 > 0.980)	
	<ul style="list-style-type: none"> 6 slots, swappable cartridges Custom cartridges, available upon request Reaction Volume: 10µl to 30µl Chemistries Supported SYBR, Probe, HRM Thermal System Six Peltier made from two ceramic plates with semi-conductor elements, 96 well Thermal System Temperature Range 25.0 – 99.9°C Heating: 6°C/sec Cooling: 2.5°C/sec Accuracy: ± 0.2°C Dynamic Range 9 orders of magnitude Comparative Quantitation 2x(Range 1.3x to 3x), 10x(Range 6.5x to 15x) Multiplex 5 channels Sensitivity (FAM) Discriminates between 2fold populations ranging from 100k to 12 copies with 95% confidence Cq uniformity Cq St Dev <0.20 at fast cycling (5sec 95°C/10sec 60°C) Uniformity ± 0.25°C Tm Uniformity with HRM ± 0.1°C St. Dev. Less than or equal to 0.03°C Data acquisition time 3 sec for data acquisition in all six channels Autovolt: 100 – 240VAC, 50/60Hz, 1100A Operating Environment 18 – 35°C (65 – 95°F), 85% non-condensing humidity 7500 feet, max altitude Weight: Not greater than 50 lbs. (23 kg) Dimensions: Not greater than 19.7" W x 18.1 D x 16.5" H (50cm x 46cm x 42cm) Includes Electronic Tracking qPCR Software. The new ET version showcases secure application login, database file management, electronic audit trail, and report generation (PDF, ppt). Includes using 21 CFR Part 11 compatible features. Program easily at the plate and well level. 	
	Features	
	<ul style="list-style-type: none"> Secure application login with unique username, encrypted Database file management for storing and tracking data Audit trail tracks when files are created, modified, or archived Report generation for audit trail, user accounts, and error logs Request introduction to Quantitative PCR guide 	



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	Inclusions:	
	• Compatible UPS	
	• Laptop with CORE i7 windows 10 Pro	
	• Start up Kit with qPCR tube strips and qPCR master mix	
	• 1 year warranty including Calibration and Preventive Maintenance	• 1 year warranty including Calibration and Preventive Maintenance (<i>Provide Certification</i>)
4	Refrigerated Centrifuge	
	• Voltage: ~ 200 – 240 V 1 ~	
	• Frequency: 60 Hz	
	• Consumption: 450 VA	
	• Emission, immunity: EN/IEC 61326-1, class B	
	• Max. capacity: 30 x 1.5 / 2.0 ml	• Max. capacity: ≥ 24 x 1.5 / 2.0 ml
	• Max. RPM: 15,000 min-1p	• Max. RPM: 15,000 or higher
	• Max. RCF: 21,382	• Max. RCF: 21,380 or higher
	• Running time: 1 – 99 min: 59 s, 1 continuous run,	
	• Short cycle mode (impulse button)	
	• Dimensions (WxDxH): 281 x 553 x 260 mm	• Dimensions (WxDxH): 280-281 x 290-553 x 260-550 mm
	• Weight: approx. 28 kg	• Weight: approx. ≤ 35 kg
	• Noise level : ≤ 59 dB (A)	• Noise level : <60 dBA
	• Temperature control, infinitely variable: from -10 to +40 °C	• Temperature control, infinitely variable: from -20 to +40 °C
	Includes:	
	• Angle Rotor 24 Placer (aerosol tight)	
	• Adapter for 1.5ml tubes (24 pcs)	
	• Microplate Centrifuge with SWING OUT ROTOR FOR 2 PLACER MICROTITER PLATES 96 WELLS and CARRIER	
	• Compatible AVR	
	• 1year warranty including Calibration and Preventive Maintenance	• 1year warranty including Calibration and Preventive Maintenance (<i>Provide Certification</i>)
5	Vortex Mixer	
	• Overheat protection self-resetting	
	• Permissible ambient conditions 5 - 31 °C at 80 % rel. humidity 32 - 40 °C decreasing linearly up to max. 50 % rel. humidity Weight 2.8 kg	
	• Protection class DIN EN 60529 IP 22	
	• Rotation speed range 0 - 2,500 rpm	
	• Power input 51 W	
	• Dimensions: Not more than (w/d/h)134x172 x 105 mm	
	• Operating Mode automatic or continuous	
	• Rotation speed setting analog	
	• Orbit / Stroke 5 mm	
	• Plate for 20-mm diameter test tubes is included as a standard. Test tube tray for flasks up to 50-mm diameter is optionally available in the accessory section	
	• 1year warranty including Calibration and Preventive Maintenance	• 1year warranty including Calibration and Preventive Maintenance (<i>Provide Certification</i>)
6	Mini Centrifuge	
	• Simple Operation and Fixed Speed –6,000 rpm (2,000 x g) fixed speed with Speed Accuracy of +/- 100 RPM	
	• Magnetic Rotor and Tube Versability – 8-place 1.5 mL/2.0 mL magnetic microtube rotor and 16-place PCR magnetic tube rotor included	
	• Small footprint	
	• Suitable for use in hoods and cold rooms	



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	<ul style="list-style-type: none"> • Carbon dust insulation and safe drainage provisions incorporated into the design • Quick Spin Applications • Closed rotor • Speed rpm/RCF 6,000 rpm/2,000 x g • Speed rpm/RCF 6,000 rpm/2,000 x g • Capacity 8 Place Magnetic Closed Rotor, 1.5 mL/2.0 mL Microcentrifuge Tubes • Tube Adapters - Reduction Adaptors for 0.2 mL and 0.5 mL Microtubes • Imbalance Detection • Noise Level <55dB • Dimensions (W x D x H) not greater than 6.4 x 6.2 x 4.5 in 	
	<ul style="list-style-type: none"> • 1year warranty including Calibration and Preventive Maintenance 	<ul style="list-style-type: none"> • 1year warranty including Calibration and Preventive Maintenance <i>(Provide Certification)</i>
7	Automated Nucleic Acid Extraction System	
	<ul style="list-style-type: none"> • With a paramagnetic particle mover • Easy-to-use interface: <ul style="list-style-type: none"> o Touch screen to start o Prepare and loads sample cartridges o Integrated with Fluorometer option • DNA extraction from multiple sample types: <ul style="list-style-type: none"> o Blood, Buccal Swabs, Cells, FFPE, Tissue, Plants and Food, Saliva Tubes, Plasma, Stool (Microbiome) o RNA extraction from multiple sample types: Blood, Cells, FFPE, Tissue, Plants, Plasma o Available publication on the utilization of extraction kit relevant for medical diagnostics or research. (Please provide certification or cite the journal). • Cartridge set up can be automated and integrated with a liquid handling • Processing Time: 25-60 minutes • Number of Samples: 1 up to 16 • Elution Volume: 30 to 100 ul (dependent on kit and/or user) • UV Bulb for Decontamination: Average lifetime approximately 6,000 hours, length 135.9mm, diameter 16mm, 4W, 0.17A current, 29V, spectral peak F 253.7, UV output 0.9W • Weight: Not greater than 24.2lb (11kg) • Dimensions: Not greater than 13W x 13.6D x 11.8H inches (330.2 x 345.2 x 299.7mm) and fits inside a biosafety cabinet • Power Requirements: Autovolt: 100-240VAC, 50/60Hz, 2.5A • Fuse: 250VAC, 2.5A, low breaking capacity, time-lag fuse (AC250V, T2.5AL, 5 x 20mm) • Samples are eluted in a snap cap tube • Utilizes ready to use cartridge • With windows tablet • Provide 1 box of ready to use cartridge • With option for barcode reader 	
	<ul style="list-style-type: none"> • 1year warranty on parts and service 	<ul style="list-style-type: none"> • 1year warranty on parts and service <i>(Provide certification)</i>
8	Gel Electrophoresis System	
	<ul style="list-style-type: none"> • Safety: Physical interlock between lid and tank • Max buffer volume: Approx 230 ml (200-225 ml) • Electrodes: Platinum wire • Gel capacity: One 10.5 x 10 cm or one 10.5 x 6 cm; 0.5 cm thick • Transilluminator: Blue LED, 465 nm 	



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	<ul style="list-style-type: none"> • Viewing dimensions: 10.5 x 10.5 cm • Dimensions: Not greater than 190 x 210 x 140 mm • Weight: Not greater than 0.75 kg • Electrical: 230V, 60Hz 	
	Features of Power Supply Unit	
	<ul style="list-style-type: none"> • Touch screen control with simple operations and programming • Bright color display with all parameters shown simultaneously • Dual orientation possible, allowing to fit on a crowded bench • Automatic crossover function allowing for voltage or current control • Safety features include no load detection, overload detection and power limitation 	
	Specifications of Power Supply Unit	
	<ul style="list-style-type: none"> • Output voltage: 10 to 300V, 1V increment • Voltage accuracy: ± 2% of displayed value or 3V (whichever is greater) • Output current: 4 to 400mA, 1mA increments • Current accuracy: ± 2% of displayed value or 5mA (whichever is greater) • Max power: 100W • Output terminals: 4 pairs in parallel • Timer: 1 min to 9 hrs 59 mins • Control panel: 2 x 2 in, TFT color capacitive touch screen • Dimensions (WxDxH): 8.5 x 6.3 x 4.0 inches; 21.5 x 15.5 x 9.75 cm • Weight: 1.5 lbs; 0.68 kg • Power requirements: Autovolt: 100 to 240VAC, 50/60Hz 	
	Accessories:	
	<ul style="list-style-type: none"> • inclusive of gel tank with orange filter, casting stand, divider, two trays for short gels, one tray for long gels, two double-sided combs of 12/22 teeth, mini SmartBlue transilluminator and imaging enclosure • Includes the ff: <ul style="list-style-type: none"> ○ Nucleic Acid Dye, 500ul ○ TAE Buffer 10X, 1L ○ 100g, Agarose, Biotechnology Grade, 	
	<ul style="list-style-type: none"> • 1 year warranty including Calibration and Preventive Maintenance 	<ul style="list-style-type: none"> • 1 year warranty including Calibration and Preventive Maintenance (Provide Certification)
9	PCR Cabinet <ul style="list-style-type: none"> • Automatic safety controller • Clear 360° degree viewing • Bonded carbon and/or HEPA filtration • Integral base with deep spill lip • Ductless filter type; No ductwork required; • No installation required - plugs directly into a standard 110V or 220V electrical outlet • Clear polycarbonate shell for 360° visibility • Available in standard height or tall version • Extremely quiet operation < 49dBA • Constant monitoring of fume hood face velocity with variable airflow control to user preset value • Gas phase bonded carbon filtration • Lab event timer 	



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	<ul style="list-style-type: none"> • Safety Features <ul style="list-style-type: none"> ○ Brushless, sparkless blower in post-filter ○ Deep base ○ Electronic gas detection ○ Filter and electronics are located above the workspace ○ Filter safety lockout ○ Low airflow alarm warns the user both visually and audibly ○ Real time monitoring of installed filtration bed • Shipped fully assembled • Tested to UL 61010- C22.2 No. 61010-1, and EN 61326-1 • Conventional hood design • Filter Type Ductless, Bonded Carbon/HEPA • Vertical sash • Dimension: Width 32 inch (813 mm); Depth 25 inch (635 mm); Height 40 inch (1016 mm) • Certifications: UL, CSA, CE • Includes compatible AVR • 1year warranty including Calibration and Preventive Maintenance 	<ul style="list-style-type: none"> • 1year warranty including Calibration and Preventive Maintenance <i>(Provide Certification)</i>
10	<p>-20 degrees Freezer</p> <ul style="list-style-type: none"> • Main power switch: convenient operation • Microprocessor controller: LED digital display • Environment friendly refrigerant: CFC-Free and HCFC-Free • Powder coated galvanized steel interior • Powder coated steel exterior • Multiple malfunction alarm: high/low temperature alarm, sensor error alarm, door ajar alarm • Safety lock • Two types of alarm indications: audible buzzing and visible flashing light • Capacity: 278L • External size (WDH): Not greater than 651 x 574 x 1656 mm • Internal size (WDH): Not greater than 480 x 415 x 1460 mm • Temperature range: -10 to -25°C • Ambient temperature: 10 to 32°C • Refrigeration type: Direct cooling • Manual defrost • 1 foaming door • Noise: 40 dBa • Shelves/Drawers: 6/7 • Power requirement: Autovolt 220V, 50/60Hz, 170W • Standard accessories: Door lock and keys, casters, levelling feet, test hole • 1year warranty including Calibration and Preventive Maintenance 	<ul style="list-style-type: none"> • 1year warranty including Calibration and Preventive Maintenance <i>(Provide Certification)</i>
11	<p>Portable Next Generation Sequencer</p> <ul style="list-style-type: none"> • Capable of Read length DNA or RNA presented from short to ultra-long (longest >4 Mb) • Dimension Size: not greater than W 145 mm, H 35 mm, D 120 mm • Weight: not greater than 455 g <p>Suitable applications include:</p> <ul style="list-style-type: none"> • Whole genomes/exomes • Metagenomics 	



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Table with 2 columns: 'As indicated in the Bidding Documents' and 'Corrections/Modifications/Amendments (in bold & italicized words)'. It lists technical specifications for sequencing equipment and includes amendments such as '2x Ligation Sequencing Kit V14' and '1year warranty including Calibration and Preventive Maintenance'.

For guidance and information of all concerned.

Signature of Patricia P. Tupas, D.D.M., Vice Chairperson Bids and Awards Committee

Received by the Bidder:

Printed Name & Signature

Name of Bidder/Company

Date:

Section VII. Technical Specifications

*IR No. UMC 23-40 Procurement of Various Laboratory Equipment for Genome Sequencing Laboratory
(Revised as indicated in the Bid Bulletin No. 01-2023)*

Items No.	Specification	Statement of Compliance				
		<i>[Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-anvined sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc.. as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.]</i>				
Procurement of Various Laboratory Equipment for Genome Sequencing Laboratory		Qty	Unit	Brand	Model	Statement of Compliance
1	Thermal Cycler/ End Point PCR Machine	1	Unit			
	<ul style="list-style-type: none"> • Format: Dual block 96 Well format • Block Options: 96 or 384 well format (Maximum heating rate: 3.4°C per second) • Block temperature range: 10°C to 100°C (4°C final hold) • Block uniformity at 55°C: ± 0.3°C • Temperature accuracy at 55°C: ± 0.25°C • Gradient: Yes; Maximum Gradient: 29°C • Minimum Gradient: 1°C • Maximum number of programs stored: 1000 • Maximum fan noise: 50dB single block running, 55db both blocks running • Type: 8 peltier elements • Adjustable heated lid temperature: 30°C to 115°C or off • Heated lid pressure: Adjustable • Program interface: At least 10" inch HD Touchscreen • Data transfer: USB port • Auto re-start on power failure • Connectivity: Remote run and system monitoring via app • Security: Authorize USB device as user's login key • Dimensions (L x W x H) in mm: not greater than 470 x 535 x 330 • Weight: 30-35kg • Power requirements: Autovolt: 100-230V, 50/60Hz • Power: 900W • Electricity used in a standard 2 step, 30 cycle program (single block running): c0.3 kWh • Accessories: PCR tube strips, or PCR tubes compatible with the unit, USB Stick, DNA polymerase 500 U, dNTP mix, Compatible UPS 					
	<ul style="list-style-type: none"> • 1 year warranty including Calibration and Preventive Maintenance (Provide Certification) 					
2	Micropipettes	6	Unit			
	<ul style="list-style-type: none"> • Air displacement pipettes • With variable volume • With color coded push button • Light and comfortable body for both right- and left-handed users • Fully autoclavable • With lockable volume • GLP compliant (Serial number and 2D code for traceability) • Complies with ISO 8655 • With name Tag • Plastic or stainless steel tip ejector options 					

Section VII. Technical Specifications

*IB No. UMC 23-40 Procurement of Various Laboratory Equipment for Genome Sequencing Laboratory
(Revised as indicated in the Bid Bulletin No. 01-2023)*

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	<ul style="list-style-type: none"> • Universal tip compatibility • 3 Sets with each set includes 6 single channel manual micropipettes (P2, P10, P20, P100, P200, and P1000) with 1 carousel pipette holder • 1 year warranty including Calibration and Preventive Maintenance <i>(Provide Certification)</i> 																																																																																																																																																																																																								
	<table border="1" style="width: 100%; border-collapse: collapse; font-size: 8px;"> <thead> <tr> <th rowspan="2">Model</th> <th rowspan="2">Vol (ul)</th> <th colspan="4">Manufacturer's Tips</th> <th colspan="4">ISO 8655</th> </tr> <tr> <th>Systematic Error (1%)</th> <th>Random Error (ul)</th> <th>Systematic Error (%)</th> <th>Random Error (%CV)</th> <th>Systematic Error (ul)</th> <th>Random Error (ul)</th> <th>Systematic Error (%)</th> <th>Random Error (%CV)</th> </tr> </thead> <tbody> <tr> <td rowspan="4">P2</td> <td>0.1</td> <td>±0.024</td> <td><0.017</td> <td>±12.0</td> <td>±5.0</td> <td>±0.08</td> <td>±0.04</td> <td>±40.0</td> <td>±20.0</td> </tr> <tr> <td>0.5</td> <td>±0.025</td> <td>±0.012</td> <td>±5.0</td> <td>±2.1</td> <td>±0.08</td> <td>±0.04</td> <td>±16.0</td> <td>±8.0</td> </tr> <tr> <td>1</td> <td>±0.027</td> <td>±0.013</td> <td>±2.7</td> <td>±1.3</td> <td>±0.08</td> <td>±0.04</td> <td>±8.0</td> <td>±4.0</td> </tr> <tr> <td>2.5</td> <td>±0.030</td> <td><0.014</td> <td>±1.5</td> <td>±0.7</td> <td>±0.08</td> <td>±0.04</td> <td>±4.0</td> <td>±2.0</td> </tr> <tr> <td rowspan="4">P10</td> <td>0.5</td> <td>±0.049</td> <td>±0.016</td> <td>±8.0</td> <td>±3.2</td> <td>±0.12</td> <td>±0.06</td> <td>±24.0</td> <td>±12.0</td> </tr> <tr> <td>1</td> <td>±0.025</td> <td>±0.012</td> <td>±2.5</td> <td>±1.2</td> <td>±0.12</td> <td>±0.08</td> <td>±12.0</td> <td>±6.0</td> </tr> <tr> <td>5</td> <td>±0.075</td> <td>±0.030</td> <td>±1.5</td> <td>±0.6</td> <td>±0.12</td> <td>±0.08</td> <td>±2.4</td> <td>±1.6</td> </tr> <tr> <td>10</td> <td>±0.100</td> <td>±0.040</td> <td>±1.0</td> <td>±0.4</td> <td>±0.12</td> <td>±0.08</td> <td>±1.2</td> <td>±0.8</td> </tr> <tr> <td rowspan="4">P20</td> <td>2</td> <td>±0.10</td> <td>±0.030</td> <td>±5.0</td> <td>±1.5</td> <td>±0.2</td> <td>±0.1</td> <td>±10.0</td> <td>±5.0</td> </tr> <tr> <td>10</td> <td>±0.10</td> <td>±0.050</td> <td>±1.0</td> <td>±0.5</td> <td>±0.2</td> <td>±0.1</td> <td>±2.0</td> <td>±1.0</td> </tr> <tr> <td>20</td> <td>±0.25</td> <td><0.060</td> <td>±1.0</td> <td>±0.3</td> <td>±0.2</td> <td>±0.1</td> <td>1.0</td> <td>±0.5</td> </tr> <tr> <td>100</td> <td>±0.35</td> <td>±0.10</td> <td>±0.5</td> <td>±0.1</td> <td>±0.8</td> <td>±0.3</td> <td>±8.0</td> <td>±4.0</td> </tr> <tr> <td rowspan="4">P100</td> <td>50</td> <td>±0.40</td> <td>±0.12</td> <td>±0.8</td> <td>±0.24</td> <td>±0.8</td> <td>±0.3</td> <td>±3.0</td> <td>±0.8</td> </tr> <tr> <td>100</td> <td>±0.80</td> <td>±0.15</td> <td>±0.8</td> <td>±0.15</td> <td>±0.6</td> <td>±0.3</td> <td>±0.8</td> <td>±0.3</td> </tr> <tr> <td>200</td> <td>±0.50</td> <td>±0.20</td> <td>±1.2</td> <td>±0.3</td> <td>±1.6</td> <td>±0.6</td> <td>±8.0</td> <td>±3.0</td> </tr> <tr> <td>1000</td> <td>±0.40</td> <td>±0.25</td> <td>±0.8</td> <td>±0.25</td> <td>±1.6</td> <td>±0.6</td> <td>±1.6</td> <td>±0.6</td> </tr> <tr> <td rowspan="2">P1000</td> <td>1000</td> <td>±1.60</td> <td>±0.30</td> <td>±0.8</td> <td>±0.15</td> <td>±1.6</td> <td>±0.6</td> <td>±0.8</td> <td>±0.3</td> </tr> <tr> <td>500</td> <td>±1.0</td> <td>±0.6</td> <td>±0.8</td> <td>±0.6</td> <td>±3.0</td> <td>±0.8</td> <td>±8.0</td> <td>±3.0</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Model	Vol (ul)	Manufacturer's Tips				ISO 8655				Systematic Error (1%)	Random Error (ul)	Systematic Error (%)	Random Error (%CV)	Systematic Error (ul)	Random Error (ul)	Systematic Error (%)	Random Error (%CV)	P2	0.1	±0.024	<0.017	±12.0	±5.0	±0.08	±0.04	±40.0	±20.0	0.5	±0.025	±0.012	±5.0	±2.1	±0.08	±0.04	±16.0	±8.0	1	±0.027	±0.013	±2.7	±1.3	±0.08	±0.04	±8.0	±4.0	2.5	±0.030	<0.014	±1.5	±0.7	±0.08	±0.04	±4.0	±2.0	P10	0.5	±0.049	±0.016	±8.0	±3.2	±0.12	±0.06	±24.0	±12.0	1	±0.025	±0.012	±2.5	±1.2	±0.12	±0.08	±12.0	±6.0	5	±0.075	±0.030	±1.5	±0.6	±0.12	±0.08	±2.4	±1.6	10	±0.100	±0.040	±1.0	±0.4	±0.12	±0.08	±1.2	±0.8	P20	2	±0.10	±0.030	±5.0	±1.5	±0.2	±0.1	±10.0	±5.0	10	±0.10	±0.050	±1.0	±0.5	±0.2	±0.1	±2.0	±1.0	20	±0.25	<0.060	±1.0	±0.3	±0.2	±0.1	1.0	±0.5	100	±0.35	±0.10	±0.5	±0.1	±0.8	±0.3	±8.0	±4.0	P100	50	±0.40	±0.12	±0.8	±0.24	±0.8	±0.3	±3.0	±0.8	100	±0.80	±0.15	±0.8	±0.15	±0.6	±0.3	±0.8	±0.3	200	±0.50	±0.20	±1.2	±0.3	±1.6	±0.6	±8.0	±3.0	1000	±0.40	±0.25	±0.8	±0.25	±1.6	±0.6	±1.6	±0.6	P1000	1000	±1.60	±0.30	±0.8	±0.15	±1.6	±0.6	±0.8	±0.3	500	±1.0	±0.6	±0.8	±0.6	±3.0	±0.8	±8.0	±3.0															
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3	<p>qPCR / RT-PCR</p> <ul style="list-style-type: none"> • Excitation Source 8 dye specific LEDs per optical module • Detection Sources 8 silicon photo-detectors per optical module <p>FILTERS</p> <ul style="list-style-type: none"> a. Dyes SYBR/FAM 462.5 – 516.0nm, Detectable Ct for 0.001ng/DNA per reaction (R2 > 0.980) b. HEX 535.0 – 555.0nm Detectable Ct for 0.001ng/DNA per reaction (R2 > 0.980) c. ROX 585.0 – 610.0nm Detectable Ct for 0.001ng/DNA per reaction (R2 > 0.980) d. CY3 542.0 – 568.5nm Detectable Ct for 0.001ng/DNA per reaction (R2 > 0.980) e. CY5 635.0 – 665.0nm Detectable Ct for 0.001ng/DNA per reaction (R2 > 0.980) f. Atto 425 – 435 – 475.0nm Detectable Ct for 0.001ng/DNA per reaction (R2 > 0.980) <ul style="list-style-type: none"> • 6 slots, swappable cartridges • Custom cartridges, available upon request • Reaction Volume: 10ul to 30ul • Chemistries Supported SYBR, Probe, HRM <ul style="list-style-type: none"> • Thermal System Six Peltier made from two ceramic plates with semiconductor elements, 96 well • Thermal System Temperature Range 25.0 – 99.9°C Heating: 6°C/sec Cooling: 2.5°C/sec Accuracy: ± 0.2°C • Dynamic Range 9 orders of magnitude 	1	Unit																																																																																																																																																																																																						

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	Procurement of Various Laboratory Equipment for Genome Sequencing Laboratory	Qty	Unit	Brand	Model	Statement of Compliance
	<ul style="list-style-type: none"> • Comparative Quantitation 2x (Range 1.3x to 3x), 10x (Range 6.5x to 15x) 					
	<ul style="list-style-type: none"> • Multiplex 5 channels 					
	<ul style="list-style-type: none"> • Sensitivity (FAM) Discriminates between 2fold populations ranging from 100k to 12 copies with 95% confidence 					
	<ul style="list-style-type: none"> • Cq uniformity Cq St Dev <0.20 at fast cycling (5sec 95°C/10sec 60°C) 					
	<ul style="list-style-type: none"> • Uniformity ± 0.25°C 					
	<ul style="list-style-type: none"> • Tm Uniformity with HRM ± 0.1°C St. Dev. Less than or equal to 0.03°C 					
	<ul style="list-style-type: none"> • Data acquisition time 3 sec for data acquisition in all six channels 					
	<ul style="list-style-type: none"> • Autovolt: 100 – 240VAC, 50/60Hz, 1100A 					
	<ul style="list-style-type: none"> • Operating Environment 18 – 35°C (65 – 95°F), 85% non-condensing humidity 7500 feet, max altitude 					
	<ul style="list-style-type: none"> • Weight: Not greater than 50 lbs. (23 kg) 					
	<ul style="list-style-type: none"> • Dimensions: Not greater than 19.7" W x 18.1 D x 16.5" H (50cm x 46cm x 42cm) 					
	<ul style="list-style-type: none"> • Includes Electronic Tracking qPCR Software. The new ET version showcases secure application login, database file management, electronic audit trail, and report generation (PDF, ppt). 					
	<ul style="list-style-type: none"> • Includes using 21 CFR Part 11 compatible features. Program easily at the plate and well level. 					
	Features					
	<ul style="list-style-type: none"> • Secure application login with unique username, encrypted 					
	<ul style="list-style-type: none"> • Database file management for storing and tracking data 					
	<ul style="list-style-type: none"> • Audit trail tracks when files are created, modified, or archived 					
	<ul style="list-style-type: none"> • Report generation for audit trail, user accounts, and error logs 					
	<ul style="list-style-type: none"> • Request Introduction to Quantitative PCR guide 					
	Inclusions:					
	<ul style="list-style-type: none"> • Compatible UPS 					
	<ul style="list-style-type: none"> • Laptop with CORE i7 windows 10 Pro 					
	<ul style="list-style-type: none"> • Start up Kit with qPCR tube strips and qPCR master mix 					
	<ul style="list-style-type: none"> • 1 year warranty including Calibration and Preventive Maintenance <i>(Provide Certification)</i> 					
4	Refrigerated Centrifuge	1	Unit			
	<ul style="list-style-type: none"> • Voltage: ~ 200 – 240 V 1 ~ 					
	<ul style="list-style-type: none"> • Frequency: 60 Hz 					
	<ul style="list-style-type: none"> • Consumption: 450 VA 					
	<ul style="list-style-type: none"> • Emission, immunity: EN/IEC 61326-1, class B 					
	<ul style="list-style-type: none"> • Max. capacity: ≥ 24 x 1.5 / 2.0 ml 					
	<ul style="list-style-type: none"> • Max. RPM: 15,000 or higher 					
	<ul style="list-style-type: none"> • Max. RCF: 21,380 or higher 					
	<ul style="list-style-type: none"> • Running time: 1 – 99 min: 59 s, ii continuous run. 					
	<ul style="list-style-type: none"> • Short cycle mode (impulse button) 					

Section VII. Technical Specifications

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Item No.	Specification	Statement of Compliance			
		Qty	Unit	Brand	Model
	Procurement of Various Laboratory Equipment for Genome Sequencing Laboratory				
	<ul style="list-style-type: none"> • Dimensions (WxDxH): 280-281 x 290-553 x 260-550 mm • Weight: approx. ≤ 35 kg • Noise level : <60 dBA • Temperature control, infinitely variable: from -20 to +40 °C Includes: <ul style="list-style-type: none"> • Angle Rotor 24 Placer (aerosol tight) • Adapter for 1.5ml tubes (24 pcs) • Microplate Centrifuge with SWING OUT ROTOR FOR 2 PLACER MICROTITER PLATES 96 WELLS and CARRIER • Compatible AVR • 1year warranty including Calibration and Preventive Maintenance (Provide Certification) 				
5	Vortex Mixer	1	Unit		
	<ul style="list-style-type: none"> • Overheat protection self-resetting • Permissible ambient conditions 5 - 31 °C at 80 % rel. humidity 32 - 40 °C decreasing linearly up to max. 50 % rel. humidity Weight 2.8 kg • Protection class DIN EN 60529 IP 22 • Rotation speed range 0 - 2,500 rpm • Power input 51 W • Dimensions: Not more than (w/d/h)134x172 x 105 mm • Operating Mode automatic or continuous • Rotation speed setting analog • Orbit / Stroke 5 mm • Plate for 20-mm diameter test tubes is included as a standard. Test tube tray for flasks up to 50-mm diameter is optionally available in the accessory section • 1year warranty including Calibration and Preventive Maintenance (Provide Certification) 				
6	Mini Centrifuge	1	Unit		
	<ul style="list-style-type: none"> • Simple Operation and Fixed Speed –6,000 rpm (2,000 x g) fixed speed with Speed Accuracy of +/- 100 RPM • Magnetic Rotor and Tube Versatility – 8-place 1.5 mL/2.0 mL magnetic microtube rotor and 16-place PCR magnetic tube rotor included • Small footprint • Suitable for use in hoods and cold rooms • Carbon dust insulation and safe drainage provisions incorporated into the design • Quick Spin Applications • Closed rotor • Speed rpm/RCF 6,000 rpm/2,000 x g • Speed rpm/RCF 6,000 rpm/2,000 x g • Capacity 8 Place Magnetic Closed Rotor, 1.5 mL/2.0 mL Microcentrifuge Tubes • Tube Adapters - Reduction Adaptors for 0.2 mL and 0.5 mL Microtubes 				

Section VII. Technical Specifications

*1B No. UMC 23-40 Procurement of Various Laboratory Equipment for Genome Sequencing Laboratory
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Item No.	Specification	Statement of Compliance				
	Procurement of Various Laboratory Equipment for Genome Sequencing Laboratory	Qty	Unit	Brand	Model	Statement of Compliance
	<ul style="list-style-type: none"> • Imbalance Detection • Noise Level <55dB • Dimensions (W x D x H) not greater than 6.4 x 6.2 x 4.5 in • 1 year warranty including Calibration and Preventive Maintenance <i>(Provide Certification)</i> 					
7	<p>Automated Nucleic Acid Extraction System</p> <ul style="list-style-type: none"> • With a paramagnetic particle mover • Easy-to-use interface: <ul style="list-style-type: none"> o Touch screen to start o Prepare and loads sample cartridges o Integrated with Fluorometer option • DNA extraction from multiple sample types: <ul style="list-style-type: none"> o Blood, Buccal Swabs, Cells, FFPE, Tissue, Plants and Food, Saliva Tubes, Plasma, Stool (Microbiome) o RNA extraction from multiple sample types: Blood, Cells, FFPE, Tissue, Plants, Plasma o Available publication on the utilization of extraction kit relevant for medical diagnostics or research. (Please provide certification or cite the journal). • Cartridge set up can be automated and integrated with a liquid handling • Processing Time: 25-60 minutes • Number of Samples: 1 up to 16 • Elution Volume: 30 to 100 ul (dependent on kit and/or user) • UV Bulb for Decontamination: Average lifetime approximately 6,000 hours, length 135.9mm, diameter 16mm, 4W, 0.17A current, 29V, spectral peak F 253.7, UV output 0.9W • Weight: Not greater than 24.2lb (11kg) • Dimensions: Not greater than 13W x 13.6D x 11.8H inches (330.2 x 345.2 x 299.7mm) and fits inside a biosafety cabinet • Power Requirements: Autovolt: 100-240VAC, 50/60Hz, 2.5A • Fuse: 250VAC, 2.5A, low breaking capacity, time-lag fuse (AC250V, T2.5AL, 5 x 20mm) • Samples are eluted in a snap cap tube • Utilizes ready to use cartridge • With windows tablet • Provide 1 box of ready to use cartridge • With option for barcode reader • 1 year warranty on parts and service <i>(Provide certification)</i> 	1	Unit			
8	<p>Gel Electrophoresis System</p> <ul style="list-style-type: none"> • Safety: Physical interlock between lid and tank • Max buffer volume: Approx 230 ml (200-225 ml) • Electrodes: Platinum wire • Gel capacity: One 10.5 x 10 cm or one 10.5 x 6 cm; 0.5 cm thick 	1	Unit			

Section VII. Technical Specifications

*IB No. UMC 23-40 Procurement of Various Laboratory Equipment for Genome Sequencing Laboratory
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Item No.	Specification	Statement of Compliance				
	Procurement of Various Laboratory Equipment for Genome Sequencing Laboratory	Qty	Unit	Brand	Model	Statement of Compliance
	<ul style="list-style-type: none"> ● Transilluminator: Blue LED, 465 nm ● Viewing dimensions: 10.5 x 10.5 cm ● Dimensions: Not greater than 190 x 210 x 140 mm ● Weight: Not greater than 0.75 kg ● Electrical: 230V, 60Hz 					
	Features of Power Supply Unit					
	<ul style="list-style-type: none"> ● Touch screen control with simple operations and programming ● Bright color display with all parameters shown simultaneously ● Dual orientation possible, allowing to fit on a crowded bench ● Automatic crossover function allowing for voltage or current control ● Safety features include no load detection, overload detection and power limitation 					
	Specifications of Power Supply Unit					
	<ul style="list-style-type: none"> ● Output voltage: 10 to 300V, 1V increment ● Voltage accuracy: ± 2% of displayed value or 3V (whichever is greater) ● Output current: 4 to 400mA, 1mA increments ● Current accuracy: ± 2% of displayed value or 5mA (whichever is greater) ● Max power: 100W ● Output terminals: 4 pairs in parallel ● Timer: 1 min to 9 hrs 59 mins ● Control panel: 2 x 2 in, TFT color capacitive touch screen ● Dimensions (WxDxH): 8.5 x 6.3 x 4.0 inches; 21.5 x 15.5 x 9.75 cm ● Weight: 1.5 lbs; 0.68 kg ● Power requirements: Autovolt: 100 to 240VAC, 50/60Hz 					
	Accessories:					
	<ul style="list-style-type: none"> ● Inclusive of gel tank with orange filter, casting stand, divider, two trays for short gels, one tray for long gels, two double-sided combs of 12/22 teeth, mini SmartBlue transilluminator and imaging enclosure ● Includes the ff: <ul style="list-style-type: none"> ○ Nucleic Acid Dye, 500ul ○ TAE Buffer 10X, 1L ○ 100g, Agarose, Biotechnology Grade, ● 1 year warranty including Calibration and Preventive Maintenance <i>(Provide Certification)</i> 					
9	PCR Cabinet	1	Unit			
	<ul style="list-style-type: none"> ● Automatic safety controller ● Clear 360° degree viewing ● Bonded carbon and/or HEPA filtration ● Integral base with deep spill lip ● Ductless filter type; No ductwork required; 					

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Item No.	Specification	Statement of Compliance				
		[Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.]				
Procurement of Various Laboratory Equipment for Genome Sequencing Laboratory		Qty	Unit	Brand	Model	Statement of Compliance
	<ul style="list-style-type: none"> • No installation required - plugs directly into a standard 110V or 220V electrical outlet 					
	<ul style="list-style-type: none"> • Clear polycarbonate shell for 360° visibility 					
	<ul style="list-style-type: none"> • Available in standard height or tall version 					
	<ul style="list-style-type: none"> • Extremely quiet operation < 49dBA 					
	<ul style="list-style-type: none"> • Constant monitoring of fume hood face velocity with variable airflow control to user preset value 					
	<ul style="list-style-type: none"> • Gas phase bonded carbon filtration 					
	<ul style="list-style-type: none"> • Lab event timer 					
	<ul style="list-style-type: none"> • Safety Features <ul style="list-style-type: none"> ○ Brushless, sparkless blower in post-filter ○ Deep base ○ Electronic gas detection ○ Filter and electronics are located above the workspace ○ Filter safety lockout ○ Low airflow alarm warns the user both visually and audibly ○ Real time monitoring of installed filtration bed 					
	<ul style="list-style-type: none"> • Shipped fully assembled 					
	<ul style="list-style-type: none"> • Tested to UL 61010- C22.2 No. 61010-1, and EN 61326-1 					
	<ul style="list-style-type: none"> • Conventional hood design 					
	<ul style="list-style-type: none"> • Filter Type Ductless; Bonded Carbon/HEPA 					
	<ul style="list-style-type: none"> • Vertical sash 					
	<ul style="list-style-type: none"> • Dimension: Width 32 inch (813 mm); Depth 25 inch (635 mm); Height 40 inch (1016 mm) 					
	<ul style="list-style-type: none"> • Certifications: UL, CSA, CE 					
	<ul style="list-style-type: none"> • Includes compatible AVR 					
	<ul style="list-style-type: none"> • 1 year warranty including Calibration and Preventive Maintenance (Provide Certification) 					
10	<ul style="list-style-type: none"> • -20 degrees Freezer 	1	Unit			
	<ul style="list-style-type: none"> • Main power switch: convenient operation 					
	<ul style="list-style-type: none"> • Microprocessor controller: LED digital display 					
	<ul style="list-style-type: none"> • Environment friendly refrigerant: CFC-Free and HCFC-Free 					
	<ul style="list-style-type: none"> • Powder coated galvanized steel interior 					
	<ul style="list-style-type: none"> • Powder coated steel exterior 					
	<ul style="list-style-type: none"> • Multiple malfunction alarm: high/low temperature alarm, sensor error alarm, door ajar alarm 					
	<ul style="list-style-type: none"> • Safety lock 					
	<ul style="list-style-type: none"> • Two types of alarm indications: audible buzzing and visible flashing light 					
	<ul style="list-style-type: none"> • Capacity: 278L 					
	<ul style="list-style-type: none"> • External size (WDH): Not greater than 651 x 574 x 1656 mm 					
	<ul style="list-style-type: none"> • Internal size (WDH): Not greater than 480 x 415 x 1460 mm 					

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		<p><i>[Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.]</i></p>				
	Procurement of Various Laboratory Equipment for Genome Sequencing Laboratory	Qty	Unit	Brand	Model	Statement of Compliance
	<ul style="list-style-type: none"> • Temperature range: -10 to -25°C • Ambient temperature: 10 to 32°C 					
	• Refrigeration type: Direct cooling					
	• Manual defrost					
	• 1 foaming door					
	• Noise: 40 dBa					
	• Shelves/Drawers: 6/7					
	• Power requirement: Autovolt: 220V, 50/60Hz, 170W					
	• Standard accessories: Door lock and keys, casters, levelling feet, test hole					
	• 1 year warranty including Calibration and Preventive Maintenance (Provide Certification)					
11	Portable Next Generation Sequencer	1	Unit			
	<ul style="list-style-type: none"> • Capable of Read length DNA or RNA presented from short to ultra-long (longest >4 Mb) • Dimension Size: not greater than W 145 mm, H 35 mm, D 120 mm • Weight: not greater than 455 g 					
	Suitable applications include:					
	<ul style="list-style-type: none"> • Whole genomes/exomes • Metagenomics • Targeted sequencing • Whole transcriptome (cDNA) • Smaller transcriptomes (direct RNA) • Multiplexing for smaller samples • High yields, Up to 50 Gb Flow Cell / 2.8 Gb per Flongle Flow Cell* 					
	* Theoretical max output when system is run for 72 hours (or 16 hours for Flongle) at 420 bases / second. Outputs may vary according to library type, run conditions					
	All-in-one device					
	<ul style="list-style-type: none"> • High-resolution touchscreen — simple device control and visualization of results • Complete connectivity — LAN and Wi-Fi enabled • Integrated, powerful compute — pre-installed basecalling and analysis software • Multiplexing kits for higher sample throughput 					

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		Qty	Unit	Brand	Model	Statement of Compliance
	Procurement of Various Laboratory Equipment for Genome Sequencing Laboratory					
	Package Includes:					
	• 1x Flow Cell Wash Kit, 6 rxns, EXP-WSH004					
	• 1x Control Expansion, 24 rxns, EXP-CTL001					
	• 1x MinION Mk1C MIN-101C					
	• 2x Ligation Sequencing Kit V14 (multiplexing samples), 6 rxns, includes a Flow Cell Priming Reagent, 6 rxns SQK-LSK114					
	• 1x Flow Cell (R10.4.1) FLO-MIN114					
	• 1x Software Licence & Device warranty					
	• 1x Training Workshop					
	Accessories: Laptop with at least 16GB RAM and 1TB SSD for data analysis, UPS(compatible)					
	1year warranty <i>(Provide Certification)</i>					
	-- Nothing Follows--					

Name of Bidder: _____

Submitted by: _____
(Printed Name and Signature)

Designation: _____

Date: _____