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**Hyatt Regency**  
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**Microfluidic chip detection of HLA-B\*5701.** Avula R, O Kane DJ. Department of Laboratory Medicine and Pathology, Mayo Clinic, Rochester, MN.

### **Poster 2**

**Magnetizable proteins with antibody like binding properties.** Dehal PK<sup>1</sup>, Livingston CF<sup>1</sup>, Geekie C<sup>1</sup>, Pritchard DJ<sup>1</sup>. <sup>1</sup>Research and Development. Axis-Shield Diagnostics Ltd, The Technology Park, Luna Place, Dundee, DD2 1XA Scotland, UK.

### **Poster 3**

**Rapid, inexpensive, accurate, and user friendly DNA detection for diverse settings.**

Lipscomb JH<sup>1</sup>, Krider H<sup>1</sup>, Raffauf, Sr. R<sup>1</sup>, Robert Bernstine<sup>2</sup>, Albrecht K<sup>3</sup>. <sup>1</sup>X-Bar Diagnostic Systems, Inc., Mendenhall, PA., <sup>2</sup>Intuition Design, Inc., <sup>3</sup>Department of Genetics and Genomics, Boston University School of Medicine, Boston, MA.

### **Poster 4**

**New fixation technology for simultaneous preservation of morphology and nucleic acids in tissue.** Grölz D<sup>1</sup>, Lenz C<sup>2</sup>, Dettmann N<sup>2</sup>, Hilker M<sup>2</sup>, Tränert E<sup>2</sup>, Oelmüller U<sup>1</sup>, Rainen L<sup>1</sup>.

<sup>1</sup>PreAnalytiX GmbH, Hombrechtikon, CH, and <sup>2</sup>QIAGEN GmbH, Hombrechtikon, CH.

### **Poster 5**

**Rapid visualization of genomic DNA from clinical specimens.** Klonoski, J<sup>1</sup>, Ward, D<sup>2</sup>,

Jenison, R<sup>1</sup>. <sup>1</sup>Great Basin Scientific 2400 Trade Center Ave., Longmont, CO, 80503, <sup>2</sup>Nevada Cancer Institute, Las Vegas, NV.

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**The detection of HIV-1 proviral DNA in less than 20 minutes: The potential for recombinase polymerase amplification technology as a diagnostic tool in resource limited settings.** Boyle DS<sup>1</sup>, Lehman DA<sup>2</sup>, Overbaugh J<sup>2</sup>, Piepenburg O<sup>3</sup>, Armes NA<sup>3</sup>, Singhal M<sup>1</sup>, Gerlach JL<sup>1</sup>, Weigl BH<sup>1</sup>. <sup>1</sup>Program for Appropriate Technology in Health (PATH), Seattle, WA, <sup>2</sup>Fred Hutchinson Cancer Research Center, Seattle, WA, and <sup>3</sup>TwistDX Ltd, Cambridgeshire, UK.

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**Point-of-care serology system for HIV and opportunistic infection screening and diagnosis.** Lochhead MJ<sup>1</sup>, Todorof K<sup>1</sup>, Delaney M<sup>1</sup>, Heil JR<sup>1</sup>, Ives J<sup>1</sup>, Zhang X<sup>2</sup>, Reed S<sup>2</sup>, Schooley RT<sup>2</sup>, Myatt CJ<sup>1</sup>. <sup>1</sup>mBio Diagnostics/Precision Photonics Corporation, Boulder, CO, and <sup>2</sup>University of California, San Diego, CA.

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**Integrating microfluidics and lens-less imaging for point-of-care testing.** Moon SJ<sup>1</sup>, Keles HO<sup>1</sup>, Khademhosseini A<sup>2,3</sup>, Kuritzkes D<sup>2</sup>, Demirci U<sup>1,3</sup>. <sup>1</sup>Bio-Acoustic-MEMS in Medicine (BAMM) Laboratory, Center for Bioengineering, Brigham and Women's Hospital, Harvard Medical School, <sup>2</sup>Brigham and Women's Hospital, Harvard Medical School, and <sup>3</sup>Harvard-MIT Health Sciences and Technology, Cambridge, MA.

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**Use of peptide nucleic acid probe for homogenous detection of low abundant, amantadine-resistant influenza A virus.** Chiou CC, Cheng TL. Department of Medical Biotechnology and Laboratory Science, Chang Gung University, Taoyuan, Taiwan.

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**The CD4 initiative: enabling the research and development of a simple, point-of-care assay for CD4 testing in HIV infected individuals in resource limited settings.** A. Burshteyn, E. Jachimowicz, G. Spruill, I. Munoz-Antoni, I. Borodowsky, J. Wen and S. D'Costa. Beckman Coulter, Miami, FL.

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**Reagentless electrochemical biosensors for clinical diagnostics.** Georganopoulou D. Ohmx Corporation, Evanston, IL.

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**Effect of sample flow rate on the sensitivity of an ion channel switch bilayer sensor.** Cornell B<sup>1</sup>, Handy M<sup>2</sup>, Mangin A-G<sup>3</sup>, Richards R<sup>1</sup>. <sup>1</sup>Surgical Diagnostics PL., Sydney, Australia, <sup>2</sup>University of Technology, Sydney, Sydney, Australia, and <sup>3</sup>Claude Bernard University of Lyon, Lyon, France.

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**A novel and inexpensive sensor for detecting biomarkers in urine and serum at femtogram levels.** Maraldo D<sup>1</sup>, Rijal K<sup>1</sup>, Mutharasan R<sup>1,2</sup> and Naagy P<sup>2</sup>. <sup>1</sup>Drexel University, Philadelphia, PA, and <sup>2</sup>Leversense LLC, Newton Square, PA.

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**On-line coupling of a microfluidic enzyme reactor with reversed phase chromatography and mass spectrometry detection for quantitative measurement of protein toxins.** Kuklennyik Z<sup>1</sup>, Aravamudhan S<sup>2</sup>, Boyer AE<sup>1</sup>, Joseph P<sup>2</sup>, Barr JR<sup>1</sup>. <sup>1</sup>Centers for Disease Control and Prevention, Division of Laboratory Sciences, and <sup>2</sup>Georgia Institute of Technology, Micro Electronics Research Center, Atlanta, GA.

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**Dynabeads® MyOne™ SILANE designed for molecular diagnostic applications.** Bosnes M, Keiserud A, Lindstrom H, Ellis D. Life Technologies, Invitrogen Dynal, Oslo, Norway.

#### **Poster 21**

**A new multiplexable, quantitative, real-time system for detection of nucleic acids.** Lai R<sup>1</sup>, Pearson D<sup>1</sup>, Phua, ZY, Whiley D<sup>2</sup>, Sloots T<sup>2</sup>, Barnett GR<sup>1</sup>, Barnard RT<sup>3</sup>. <sup>1</sup>Biochip Innovations Ltd., Brisbane, Qld. Australia, <sup>2</sup>Sir Albert Sakzewski Virus Research Centre, Herston, Qld, and <sup>3</sup>Biotechnology Program, School of Chemical and Molecular Biosciences, The University of Queensland, St Lucia, Queensland, Australia.

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**Sensitive and specific quantification of 1-84 PTH in serum and plasma by immunocapture-*in situ* digestion LC-MS/MS.** Kumar V, Barnidge DR, Twentyman J, Grebe SK, Singh RJ. Endocrine Laboratory, Department of Laboratory Medicine and Pathology, Mayo Clinic College of Medicine, Rochester, MN.

**Poster 23**

**Quantitative detection of PCA3, PSA, and internal control in a quantitative, multiplex, universal real-time transcription-mediated amplification assay format.** Nelson NC, Lyakhov DL, Phelps SS, Chelliserrykattil J, Carlson JD, Kaminsky MB, Gordon PC, Hashima SM, Ngo TV, Siegrist J and Brentano ST. Gen-Probe Incorporated, San Diego, CA.

**Poster 24**

**Performance evaluation of three LC-MS methods implemented on Ion Trap Mass Spectrometer for drug testing in urine.** Jiang G, Kozak M, Nimkar S. Thermo Fisher Scientific, San José, CA.

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**A novel, miniaturized, potentiometric, sensor for immunoassays.** Piran U, Frew E, Rehak M, Morris R, Gover A. DxTech LLC, Merrimack, NH.

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**Evaluation of Nanogen's NexusDx<sup>®</sup> multianalyte POC assay system.** Egan R<sup>1</sup>, Vukajlovich S<sup>1</sup>, Shaw J<sup>1</sup>, Madsen R<sup>1</sup>, Krodel E<sup>2</sup>, Belenky A<sup>1</sup>, Bluestein B<sup>1</sup>, Lidgard G<sup>1</sup>. <sup>1</sup>Nanogen, Inc., San Diego, CA, and <sup>2</sup>HX Diagnostics, Emeryville, CA.

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**Universal nanoparticle-based platform for rapid clinical diagnostic.** Lowery TJ, Kumar S, Mozeleski B, Taktak S, Fritzeimer M, Rittershaus C, Demas V, Prado PJ. T2 Biosystems, Cambridge, MA.

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**Spinning disc platform for digital PCR.** Sundberg SO<sup>1</sup>, Gale BK<sup>2</sup>, Wittwer CT<sup>3</sup>. <sup>1</sup>Bioengineering, <sup>2</sup>Mechanical Engineering, <sup>3</sup>Pathology, University of Utah, Salt Lake City, UT.

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**On line sample extraction technique vs traditional sample preparation methods for LC-MS toxicology screening.** Jiang G, Kozak M, Nimkar S. Thermo Fisher Scientific, San José, CA

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**LAMP without electric heat: a chemically-heated, non-instrumented nucleic-acid amplification assay platform for point of care use.** LaBarre PD,<sup>1</sup> Gerlach J,<sup>1</sup> Wilmoth J,<sup>1</sup> Beddoe A,<sup>1</sup> Singleton JL,<sup>1</sup> Weigl BH<sup>1</sup>. <sup>1</sup>PATH, Seattle, WA.

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**Bacteria detection with integrated on-chip sample preparation, PCR, and fluorescence detection with novel remote valve switching fluidic control.** Sauer-Budge AF<sup>1,2</sup>, Klapperich CM<sup>2,3</sup>, Mirer PL<sup>1</sup>, Chatterjee A<sup>3</sup>, Sharon A<sup>1,3</sup>. <sup>1</sup>Fraunhofer Center for Manufacturing Innovation, Brookline, MA, <sup>2</sup>Biomedical Engineering Department, Boston University, Boston, MA, and <sup>3</sup>Mechanical Engineering Department, Boston University, Boston, MA.

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**Rapid concentration of bacteria in a disposable microfluidic device using enhanced evaporation technique for a Point-of-Care (POC) infectious disease diagnostic device.** Do J, Zhang JY, Klapperich CM. Department of Biomedical Engineering, Boston University, Boston, MA.

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**CRP and PCT detection with an optical PMMA chip.** Baldini F<sup>1</sup>, Bolzoni L<sup>2</sup>, Giannetti A<sup>1</sup>, Porro G<sup>2</sup>, Trono C<sup>1</sup>. <sup>1</sup>CNR-IFAC, Sesto Fiorentino (FI), Italy, and <sup>2</sup>Datamed S.r.l., Rodano (MI), Italy.

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**Instability of human plasma peptide biomarkers caused by intrinsic peptidase activity.** Yi J, Craft D, O'Mullan P, Ju G, Liu ZX. BD Diagnostics, Franklin Lakes, NJ.

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**ReLIA: a portable low cost point of care immunoassay platform with high sensitivity, low CV, broad dynamic range and connectivity.** Liu H, Sierra GH, Ye J, Zhang JZ, Rutter WJ. ReLIA Diagnostic Systems, Inc., Burlingame, CA.

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**Disposable bacterial detection device applying DNA extraction and isothermal helicase-dependent amplification.** Mahalanabis M<sup>1</sup>, Muayad H<sup>1</sup>, Klapperich CM<sup>1,2</sup>. <sup>1</sup>Departments of Biomedical Engineering, and <sup>2</sup>Manufacturing Engineering, Boston University, Boston, MA

### **Poster 38**

**The evaluation of platelet function on two diagnostic platforms – VerifyNow<sup>®</sup> V's TEG<sup>®</sup>.** Carville DGM<sup>1</sup>, Walker CT<sup>2</sup>. <sup>1</sup>Indiana University South Bend, South Bend, IN, and <sup>2</sup>Heart First, Baptist Hospital, Pensacola, FL.

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**Evaluating coagulopathies and anticoagulation (UFH & LMWH) therapy using a novel point-of-care (POC) intrinsic and extrinsic coagulation analyzer.** Spencer J<sup>1</sup>, Ridgway HR<sup>1</sup>, Rullman RL<sup>1</sup>, Carville DGM<sup>1,2</sup>. <sup>1</sup>Helena POC, Beaumont, TX, and <sup>2</sup>Indiana University South Bend, South Bend, IN.

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**An instrument-free point-of-care CD4 T-cell test using a novel method for rapid and inexpensive cell counting.** Zaugg F, McManus-Munoz S, Yu F, Tobias R, Ruiz-Taylor L, Venkataraman S, Kernen P, Wagner P. Zyomyx, Inc., Hayward, CA.

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**A rapid, sensitive, multiplexed HIV diagnostic for resource limited settings.** Cull MG, Roark C, West AB, Beacon Biotechnology LLC, Aurora, CO.

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**DNA sequencing using digital microfluidics.** Thwar P<sup>1</sup>, Rouse JL<sup>1</sup>, Eckhardt AE<sup>1</sup>, Srinivasan V<sup>1</sup>, Pamula VK<sup>1</sup>, Griffin P<sup>2</sup>, Fair RB<sup>3</sup>, Pollack MG<sup>1</sup>. <sup>1</sup>Advanced Liquid Logic, Research Triangle Park, NC, <sup>2</sup>Stanford University, Palo Alto, CA, and <sup>3</sup>Duke University, Durham, NC.

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**Analysis of DNA amplification performance: applying lagrangian thermal modeling to a continuous-flow microfluidic polymerase chain reaction.** Kim MC<sup>2</sup>, Cao QQ<sup>1</sup>, Mahalanabis M<sup>2</sup>, and Klapperich CM<sup>1,2</sup>. <sup>1</sup>Departments of Mechanical Engineering, and <sup>2</sup>Biomedical Engineering, Boston University, Boston, MA.

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**Intra-feature and inter-feature multiplexing using diffractive optics technology: more information from less sample.** Lin Y<sup>1</sup>, Bernstein G<sup>1</sup>, Pak BJ<sup>1</sup>, Fu Q<sup>2</sup>, van Eyk J<sup>3</sup>, Ndao M<sup>4</sup>, Vasquez-Camargo F<sup>4</sup>, Goyette S<sup>4</sup>, Ward BJ<sup>4</sup>, Hu W<sup>1</sup> and Houle JF<sup>1</sup>. <sup>1</sup>Axela Inc., Toronto, ON, <sup>2</sup>Department of Medicine, <sup>3</sup>Department of Biological Chemistry, and <sup>3</sup>Biomedical Engineering at Johns Hopkins Bayview Proteomics Center, Johns Hopkins University, Baltimore, MD, and <sup>4</sup>National Reference Centre for Parasitology/McGill University, Montreal, QC.

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**A rapid and compact on-site molecular analyzer.** Wong S<sup>1</sup>, Ugaz V<sup>2</sup>, Wallek B<sup>1</sup>, Shandy S<sup>1</sup>, Ragucci T<sup>1</sup>, Soirez L<sup>1</sup>. <sup>1</sup>Lynntech, Inc., College Station, TX, and <sup>2</sup>Texas A&M University, College Station, TX.

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**A novel ELISA-based assay for the determination of symmetric dimethylarginine (SDMA).** Pande R<sup>1</sup>, Padmanabhan M<sup>1</sup>, Murthy Y<sup>1</sup>, Atkinson M<sup>1</sup>, Nesbit S<sup>2</sup>, Fan T<sup>2</sup>, Yeung K<sup>1</sup>. <sup>1</sup>IDEXX Laboratories, Westbrook, ME, and <sup>2</sup>Beacon Analytical, Portland, ME.

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**Digital microfluidics: a novel platform for multiplexing assays used in newborn screening.** Rouse J<sup>1</sup>, Eckhardt AE<sup>1</sup>, Millington DS<sup>2</sup>, Pamula VK<sup>1</sup>. <sup>1</sup>Advanced Liquid Logic, RTP, NC, and <sup>2</sup>Pediatrics, Duke University, Durham, NC.

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**Evaluation of Dynabeads<sup>®</sup> MyOne<sup>™</sup> SILANE for purification of sequencing reactions.** Berchanskiy D<sup>1</sup>, Ellis D<sup>2</sup>, Kalve I<sup>1</sup>, Dinauer D<sup>1</sup>. <sup>1</sup>Life Technologies, Brown Deer, WI, and <sup>2</sup>Invitrogen Dynal AS, Oslo, Norway.

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**Piezo-optical point-of-care immunoassay.** Ross SA, Carter TJN. Vivacta Ltd, Kent Science Park, UK.

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**Poster 51**

**Development of a novel, universal real-time transcription-mediated amplification based format for use in multiplex nucleic acid assays.** Lyakhov DL, Carlson J, Nelson NC, Phelps SS, Chelliserrykattil J, Gordon PC, Kaminsky MB, Hashima SM, Ngo TV, Bretano ST. Gen-Probe Incorporated, San Diego, CA.

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