

JAYSON V. PAGADUAN, PhD, DABCC

Cell: 801-6151508 | jayson.pagaduan@imail.org

RELEVANT WORK EXPERIENCE

CLIA Laboratory Director- Intermountain Life Flight **June 2020 to present**

- Ensures regulatory compliance as a moderate complexity laboratory under CLIA and ensure quality clinical results by regularly evaluating point-of-care instruments.
- Identify deficiencies and direct corrective actions to continuously improve clinical service.

Adjunct Assistant Professor- University of Utah School of Medicine (Pathology) **April 2020 to present**

- Educate pathology residents and clinical chemistry fellows on clinical chemistry, clinical toxicology, point-of-care-testing, laboratory information systems and laboratory management.
- Engage residents and fellows in case-based discussions of laboratory results.

Medical Director- Chemistry Work Group- Intermountain Healthcare **March 2020 to present**

- Educate technical consultants, managers, and supervisors from 24 high complexity, high throughput, hospital laboratories of the health system about new diagnostic tests, clinical assay trouble shooting, workflow optimization, ensure regulatory compliance and review of standard operating procedures.
- Support LIS coding of complex calculations such as CKD-EPI eGFR equations and Kidney Failure Risk Equations

Clinical Chemist - Intermountain Healthcare **August 2019 to present**

- Clinical Consultant for physicians that covers clinical chemistry, clinical toxicology and point-of-care-testing.
- Evaluates laboratory instruments, performs method development and validation and participates in CAP inspection.
- Performs data extraction and analysis to guide decision making in laboratory operations.

CERTIFICATIONS

Diplomate of American Board of Clinical Chemistry (Certificate No. 1240)

New York Department of Health, Certification of Qualification (CQ Code: PAGAJ2)

EDUCATION AND TRAINING

Baylor College of Medicine/Texas Children's Hospital, Houston TX

July 2017- July 2019

Clinical Chemistry Fellow

Department of Pathology and Immunology
2-year COMACC accredited Program

Special Chemistry Training

SPEP/UPEP, Alpha 1 antitrypsin phenotyping, beta-2 transferrin, oligoclonal banding, hemoglobin variant analysis/ peptide mapping, Congenital adrenal hyperplasia panel (LC-MS/MS)

Clinical Chemistry Rotations: *MD Anderson Cancer Center, Michael E. DeBakey VA Medical Center, Ben Taub Hospital and The Houston Methodist Hospital*

Other rotations at Texas Children's Hospital: *Clinical microbiology, molecular pathology, blood bank and coagulation*

Johns Hopkins University, Baltimore MD

April 2015- June 2017

Joint postdoctoral fellow in Departments of Chemical and Biomolecular Engineering and Anesthesiology and Critical Care Medicine (Tissue Engineering and Cardiovascular Biology)

Training at Center for Nanoscale Science and Technology NIST, for thin film deposition using electron beam evaporator.

Brigham Young University, Provo UT

August 2008- March 2015

Ph.D. in Biochemistry

Dissertation: Immunoassays of Potential Cancer Biomarkers in Microfluidic Devices

Brigham Young University-Hawaii, Laie HI

August 2002- June 2008

B.S. in Biochemistry, Minor: Computer Science, *Cum Laude*

Research: Proteomic Profiling of Mouse Embryonic Fibroblast Conditioned-Media using LC/MS

PATENT

WO2019079809A1

U.S. Patent Application No. 16/758,030

Biomimetic Platforms to Model Vascular Pathophysiology, Diagnostics, and Therapy.

Lewis Romer, David Gracias, **Jayson V. Pagaduan**, Ani Bhatta and Xing Chen (*equal contributions*). Johns Hopkins University. JHU Reference: C14034_P14034-01

RESEARCH EXPERIENCE

Johns Hopkins University, Baltimore MD

2015- 2017

Biomimetic Tissue Engineering of Arterioles

- Designed, optimized, and fabricated self-folding thin films.
- Optimized surface modification of thin films for cell attachment and alignment.

- Analyzed tissue growth and functions of biomimetic arterioles using laser confocal imaging and biochemical analyses.

Brigham Young University, Provo UT

2008-2015

Development of Microfluidic Immunoassay for Serum Protein Cancer Marker

- Designed and fabricated polymeric microfluidic devices.
- Characterized binding and dissociation of novel antibody.
- Developed a protocol for sample preparation and microfluidic analysis of antigen-antibody complexes, protein, and nucleic acids.
- Performed fluorescent molecule conjugation to antibody, protein and peptides.

Integration of Monolithic Columns in Microfluidic Devices

- Developed easy and reproducible protocol for synthesizing and optimizing monolithic columns.
- Analyzed morphology of monolithic columns using electron microscopy.
- Determined compatible surface chemistry for attachment of bioactive ligands on monolithic columns integrated in polymer microfluidics
- Extracted and detected target protein on-chip from complex biological fluid.

Brigham Young University-Hawaii, Laie HI

2006-2008

Mass spectrometry Proteomic Profiling of Mouse Embryonic Fibroblasts Conditioned-Media

- Designed a strategy to determine and quantify the protein profile excreted by the mouse fibroblast cells into the culture media.
- Learned to use and troubleshoot different analytical machines such as 2-D gel electrophoresis, mass spectrometry, and UV-vis spectrophotometer.
- Maintained laboratory and equipment to ensure sterility and proper functions.
- Performed quality control of sterile reagents and cells used in the lab.

TEACHING EXPERIENCE

University of Utah School of Medicine, Salt Lake City UT

2020-present

Clinical Chemistry Resident/Fellow Rotation

Cystic Fibrosis Biology and Diagnosis

Bilirubin and Laboratory Testing

Blood Gas Testing

Laboratory Information

Topics of Interests

Baylor College of Medicine/Texas Children's Hospital, Houston TX

2017- 2019

Taught pathology residents and medical technologists on aspects of clinical chemistry such as test interpretation, instrumentation principles, trouble shooting, and method validation.

Johns Hopkins University, Baltimore MD

2015- 2017

Mentored undergraduates, graduate students and postdoctoral fellows in biomimetic research.

Brigham Young University, Provo UT

2008 and 2012

Analytical Chemistry Laboratory Teaching Assistant

- Guided students to answer their questions regarding chemistry and instrumental principles involved in the experiments.
- Organized review sessions to prepare students for the examinations.
- Graded examinations and laboratory reports.

Brigham Young University, Provo UT

2008

General Chemistry Laboratory Teaching Assistant

- Set-up instrumentation for class demonstration.
- Directed students to help them answer their questions regarding the chemistry principles.
- Graded examinations and laboratory reports.

Brigham Young University Provo, UT

2008

Biochemistry Lecture Teaching Assistant

- Corrected examinations, homework and quizzes for about 100 students.
- Answered questions and guided students to solve biochemistry problems.

Brigham Young University-Hawaii, Laie HI

2007

Organic Spectroscopy Teaching Assistant

- Facilitated in-class discussion to solve chemical structures based on different spectroscopy data.
- Conducted review sessions and one-on-one tutoring.

PUBLICATIONS

22. Choosing the Appropriate Regression Analysis for your Data. **Pagaduan, JV** Ask the Expert section, Clinical Laboratory News, April 2023, *invited article*

21. Plasma is Denser than Cells and Gel barriers. Is this Possible? **Pagaduan JV***, Altawalbeh G. Clinical Chemistry, *accepted in press 2023*.

20. Advances in TB Testing. **Pagaduan JV**, Altawalbeh G. Advances in Clinical Chemistry, Elsevier (*Book Chapter, in press 2023*)

19. Validation of the newly FDA-approved Buhlmann fCal Turbo assay for measurement of fecal calprotectin in a pediatric population. Garnett ER, **Pagaduan JV**, Rajapakshe D, Tam E,

Kellermayer R, Devaraj S. Practical Laboratory Medicine 2020, November
doi.org/10.1016/j.plabm.2020.e00178

18. Trust Your Endocrinologist- Report and Recommendations on Ordering of Reverse T3 Testing. Garnett ER, **Pagaduan JV**, Devaraj S. Ann Clin Lab Sci 2020 May;50(3):383-385

17. Now you see it, now you don't: ecstasy or not? **Pagaduan JV**, Benyon M, Devaraj S. *Toxicology Cases for the Clinical and Forensic Laboratory*. 2020, 247-249. (Case presentation)
DOI: 10.1016/B978-0-12-815846-3.00055-7 ·

16. Biomimetic human small muscular pulmonary arteries, Jin Q,* Bhatta A,* **Pagaduan JV**,* Chen X,* West-Foyle H, Liu J, Hou A, Berkowitz D, Askin FB, Nguyen TD, Gracias DH,‡ Romer LH,‡ *Science Advances* (2020) [***Equal contribution**;‡co-corresponding author] Sci Adv 2020 03 25;6(13):eaaz2598.

15. Biodegradable thermomagnetically responsive soft untethered grippers. Kobayashi K, Yoo CK, Oh SY, **Pagaduan JV**, Gracias D. ACS Appl Mater Interfaces 2019 Jan 20;11(1):151-159

14. Validation of the Siggaard-Andersen Acid-base Nomogram for Hemoglobin F; Implications for Fetal Cord Blood Gas Analysis. Whitham M, **Pagaduan JV**, Singh I, Belfort M, Devaraj S, Cao J, Shetty A, Pai S, and Clark S, Am J Perinatol 2019 12 23;36(14): 481-1484

13. Self-folding hybrid graphene skin for 3D biosensing. Xu W, Paidi SK, Qin Z, Yu CH, Huang Q, **Pagaduan JV**, Buehler MJ, Barman I, Gracias D. Nano Lett 2019 03 19;19(3):1409-1417

12. Validation of the Procalcitonin Assay on Abbott Architect i1000. **Pagaduan JV**. Tam E, and Devaraj S. JALM 2018 DOI: 10.1373/jalm.2018.027904

11. 3D Hybrid Small Scale Devices. **Pagaduan JV**, Bhatta A, Romer L, Gracias D. Small. 2018 May 10:e1702497. doi: 10.1002/sml.201702497

10. Revisiting Sweat Chloride Test Results Based on Recent Guidelines for Diagnosis of Cystic Fibrosis. **Pagaduan JV**, Ali M, Dowlin M, Suo L, Ward T, Ruiz F, Devaraj S. Practical Laboratory Medicine 2018 10:34-37

9. Mechanical trap surface enhanced Raman spectroscopy (MTSERS) for 3D molecular imaging of single live cells. Jin Q, Li M, Polat B, Paidi SK, Dai A, Zhang A, **Pagaduan JV**, Barman I, Gracias DH. Angew. Chem. Int. Ed. 2017 DOI: 10.1002/anie.201700695

8. Applications of Microfluidics and Microchip Electrophoresis of Potential Clinical Biomarker Analysis. **Pagaduan JV**, Sahore V, Woolley AT. Anal. And Bioanal. Chem. 2015 407:6911-6922

7. Microchip Immunoaffinity Electrophoresis of Antibody-Thymidine Kinase 1 Complex. **Pagaduan JV**, Ramsden M, O'Neill K, Woolley AT. Electrophoresis 2015 36: 813-817

6. On chip preconcentration and fluorescence labeling of model proteins by use of monolithic columns: device fabrication, optimization and automation. Yang R, **Pagaduan JV**, Yu M, Woolley AT. Anal. and Bioanal. Chem. 2015 407(3):737-47
5. Integrated Affinity and Electrophoresis Systems for Multiplexed Biomarker Analysis. Nge PN, **Pagaduan JV**, Yang W, Woolley AT. Clinical Applications of Capillary Electrophoresis, Methods in Molecular Biology Volume 919, 2013, pp 189-201 (book chapter)
4. Microfluidic Chips with Reversed-Phase Monoliths for Solid Phase Extraction and On-chip Labeling. Nge PN, **Pagaduan JV**, Yu M, Woolley AT. J Chromatogr A. 2012 Oct 23; 1261:129-35
3. Single-Monomer Formulation of Polymerized Polyethylene Glycol Diacrylate as Nonadsorptive Material for Microfluidics. Rogers CI, **Pagaduan JV**, Nordin GP, Woolley AT. Anal. Chem. 2011, 83(16):6418-6425
2. Ion-permeable membrane for on-chip preconcentration and separation of cancer marker proteins. Nge PN, Yang W, **Pagaduan JV**, Woolley AT. Electrophoresis. 2011 May; 32(10):1133-40
1. Optimization of monolithic columns for microfluidic devices. **Pagaduan JV**, Yang W, Woolley AT. Proc. SPIE 8031, Micro- and Nanotechnology Sensors, Systems, and Applications III, 80311V (13 May 2011)

ORAL PRESENTATIONS

Calcium Biology and Bone Disorders, *Invited Lecturer for Pathology Residents*, The Metro Health System, delivered online May 27, 2022.

Pagaduan, J.V., Essential Statistics for Medical Laboratory Professionals: To accept or to Reject? Chicago IL, July 2022

Pagaduan, J.V., Utility of Procalcitonin Measurement: Current Evidence and Clinical Utility in Pediatric and Adult Populations. Roundtable Discussion, AACC, Anaheim CA, August 2019

Pagaduan J.V., Tam Estella, Devaraj S. Validation of B.R.A.H.M.S. Procalcitonin Assay on Abbott Architect i1000. ACLPS, Houston TX, June 2018

Pagaduan J.V., Ali M., Dowlin M., Suo L., Ward T., Ruiz F., Devaraj S. Revisiting Sweat Chloride Test Results Based on Recent Guidelines for Diagnosis of Cystic Fibrosis. Presented at Annual Local Section Texas AACC, Dallas TX, November 2017

Pagaduan J.V., Derenthal S., Ramsden M., Hamilton C., O'Neill K., Woolley A.T. Development of a Microfluidic Device Assay for Isoforms of a Serum Protein Cancer Biomarker Using a Novel Antibody, Presented at Pittcon Chicago, IL, March 2014

Pagaduan J.V., Derenthal S., Ramsden M., Hamilton C., O'Neill K., Woolley A.T. Development of Assay for Detecting Isoforms of Serum Protein Using Novel Antibody in Polymeric Microfluidic

Devices. Presented at the 246th ACS National Meeting, Division of Industrial and Engineering Chemistry, Indianapolis, IN, September 2013

Pagaduan J.V., Nge P.N., Yu M., Yang W., Woolley A.T. Microfluidic Salivary IL-8 Assay as a Possible Oral Cancer Screening System. Presented at Pittcon Orlando, FL, March 2012

POSTER PRESENTATIONS

Pagaduan J.V. Investigating beyond antigen-antibody interference in urine drug screen immunoassay: Metronidazole Inhibition of glucose 6-phosphate dehydrogenase. AACC, Atlanta GA, September 2021

Pagaduan J.V., Schneider, Randal J, Kwon S. Evaluation of Concordance of Fentanyl Urine SEFRIA Immunoassay with LC-MS/MS Method. AACC, Atlanta GA, September 2021

Pagaduan J.V. Laboratory Test Stewardship in Evaluation of Mass Spectrometry Assay for Congenital Adrenal Hyperplasia Screening in Pediatric Hospital. MSASCL, Palm Springs CA, April 2019

Pagaduan J.V., Tam Estella, Devaraj S. Validation of B.R.A.H.M.S. Procalcitonin Assay on Abbott Architect i1000. AACC, Chicago IL, July 2018

Pagaduan J.V., Sonker M., Kumar S., Woolley A.T. Microfluidic Separation of Disease Biomarkers. HPLC 2014 41st International Symposium on High Performance Liquid Phase Separations and Related Techniques, New Orleans Louisiana, May 2014

Pagaduan J.V., Shah D., Clegg J., Taylor R.; Kedia K., Dagleish J., Prince J. Development of an efficient, integrated proteomic search engine "Corymb", HUPO World Congress 2012 Boston, MA (all authors contributed equally), September 2012

Pagaduan J.V., Yang W., Woolley A.T. Development of On-chip Extraction and Analysis of Nucleic Acid Cancer Biomarkers. Presented at Pittcon 2011, Atlanta, GA, March 2011

AWARDS

Laboratory Director Grant Awardee, MSACL 2022	2022
Educational Grant Awardee, MSACL 2019	2019
Siemens Medical and Scientific Exchange Program	2018
Society for Young Clinical Laboratorians Travel Grant, AACC	2018
1st Place Abstract, TEXAS AACC, Plano TX	2017
2nd Place Cardiovascular Section ACCM Research Day, JHU	2015
Honorable Mention 3-Minute Thesis, BYU	2015
2nd Place Spring Research Presentation Award, BYU	2012

BYU Graduate Research Presentation Travel Award	2011
BYU-Hawaii Alumni International Graduate Scholarship	2009
Outstanding Incoming Graduate Student	2008
Outstanding Undergraduate Biochemistry Research- ACS Hawaii	2008

CURRENT AFFILIATIONS

American Association of Clinical Chemistry (AACC)	2017- present
Rocky Mountain American Association of Clinical Chemistry	2019- present
Mass Spectrometry and Advances in the Clinical Lab	2020-present
Patient Centric Sampling Interest Group	2022-present

PROFESSIONAL SERVICE

PLUGS Informatics Committee Member	2023-present
Review Editor- Frontiers Nanotechnology	2023-present
CLSI – DCC on EP09	2023-present
Topic Editor- Micromachines	2020- present
Rocky Mountain American Association of Clinical Chemistry Program Committee	2022
College of American Pathology Inspector	2023-present
Clinical & Forensic Toxicology News (CFTN) Editorial Advisory Board	August 2022- present
Admissions Committee University of Utah School of Medicine	August 2022- present