

CURRICULUM VITAE

Stephen M. Roper, PhD, DABCC

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Address and Telephone Numbers:

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Present Position:

2022-Present	Associate Professor of Pathology & Immunology, Division of Laboratory and Genomic Medicine, Washington University, St. Louis, MO
2021-Present	Secondary appointment, Department of Pediatrics, Washington University, St. Louis, MO.

Education:

2004	B.S., Biology, Texas Tech University, Lubbock, TX.
2007	M.S., Molecular Pathology, Texas Tech University HSC, Lubbock, TX.
2015	Ph.D., Biomedical Science, Medical University of South Carolina, Charleston, SC, with Dr. Richard Drake

Academic Positions/Employment:

2015-2017	Postdoctoral Trainee in Clinical Chemistry, Baylor College of Medicine and Texas Children's Hospital, Houston, TX, with Dr. Sridevi Devaraj
2017-2022	Assistant Professor of Pathology and Immunology, Division of Laboratory and Genomic Medicine, Washington University School of Medicine, St. Louis, MO (Promoted to Associate Professor July 2022)

Clinical Title and Responsibilities:

2024-present	CLIA Medical Director, St. Louis Children's Hospital Laboratory, St. Louis, MO
2017-2024	Assistant Medical Director, Clinical Chemistry, St. Louis Children's Hospital, St. Louis, MO
2018-present	Assistant Medical Director, Shriners Hospital Laboratory, St. Louis, MO

2021-present	Medical Director, SLCH Children's Specialty Care Center Laboratory, South County, St. Louis, MO.
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University and Hospital Appointments and Committees:

2017-current	SLCH GO team laboratory representative
2017-current	SLCH Laboratory Utilization Committee
2018-current	BJC Pediatric Clinical Expert Council
2018-2020	Pathology Joint Quality and Safety Steering Committee

Medical Licensure and Board Certification:

2007	American Society for Clinical Pathology, Molecular Biology Technologist (#922)
2017	National Registry of Certified Chemists (#4499)
2019	American Board of Clinical Chemistry (#1215)

Honors and Awards:

2016	First place abstract award, ADLM Texas Section
2017	Best abstract, Lipoprotein and Vascular Disease Division, ADLM
2017	Travel award recipient, ADLM Annual Meeting
2019	Young Investigator Award, MSACL
2022	Lab Director grant recipient, MSACL
2022	Washington University Teaching Scholars Program
2024	Univants of Healthcare Excellence, Team of Distinction, Improving equity in maternal and newborn outcomes by eliminating disparities in maternal Drug screening.

Editorial Responsibilities:

2019-2023	Clinical Laboratory Standardization Institute (CLSI): NBS02 4 th edition. Newborn Screening Follow-up, Document Development Committee
2020-2021	Journal of Applied Laboratory Medicine: SYCL Liaison
2021-2024	Associate Editor: Journal of Mass Spectrometry and Advances in the Clinical Lab (JMSACL)
2022-2023	Editorial board member, Clinical Laboratory News (CLN) Daily
2022-present	Clinical Laboratory Standardization Institute (CLSI): C62 3 rd edition Liquid Chromatography Tandem Mass Spectrometry Methods, contributor

Professional Societies and Organizations:

2014-present	American Society for Clinical Pathology (ASCP), member
2015-present	Association for Diagnostics and Laboratory Medicine (ADLM), member
2017-2022	Association for Clinical Scientists, treasurer

2018-2021	ADLM Society for Young Clinical Laboratorians (SYCL), Core committee member
2018-2021	Academy of Clinical Laboratory Physicians and Scientists (ACLPS), member
2019-present	ADLM Mass Spectrometry and Separation Sciences (MSSS) Division Officer
2022-2024	ADLM Pediatric and Maternal Fetal Medicine (PMF) Division Officer
2024-present	ADLM PMF Division Science and Research Advisor
2022-present	Clinical Laboratory Standardization Institute (CLSI) member
2022-present	Cystic Fibrosis Foundation (CFF) Sweat Test Advisory Committee (STAC) Member

Major Invited Professorships and Lectures:

1. Invited Speaker, Mass Spectrometry Applications to the Clinical Lab National Meeting, Palm Springs, CA, April 2019. Concordance of Paired Maternal and Newborn Urine Drug Screens Using Low-cutoffs for Positivity.
2. Invited Speaker and Session Chair, Mass Spectrometry Applications to the Clinical Lab National Meeting (virtual meeting, July 2020). A Semi-targeted Approach for Detecting Fentanyl Analogs in Urine Using Precursor Ion Scan Mode.
3. Invited Speaker, American Association of Clinical Chemistry ASM (virtual, Dec 2020). Abstract: A Semi-targeted Approach for Detecting Fentanyl Analogs in Urine Using Precursor Ion Scan Mode.
4. Invited Speaker, American Association of Clinical Chemistry ASM, Atlanta, GA, Sept 2021. Biomarkers of Ethanol Consumption: Clinical Utility and Ethical Considerations for Testing.
5. Invited Speaker, American Association of Clinical Chemistry ASM, Atlanta, GA, Sept 2021. Laboratories Ally with Clinicians Mitigating the Burden of Heart Disease from Childhood.
6. Invited Speaker, Mass Spectrometry Applications to the Clinical Lab National Meeting, Monterrey, CA April 2022. Troubleshooting Rounds: Morphine and Oxycodone Co-positivity in Pain Management Urine Drug Testing
7. Invited Speaker, American Association of Clinical Chemistry ASM, Chicago, IL, July 2022. Testing Strategies for Detecting Pediatric Drug Exposure: A Case Based Discussion.
8. Invited Speaker, Association of Diagnostics and Laboratory Medicine ASM, Chicago, IL, July 2024. Real-time Mass Spectrometry; Design and Implementation of Direct to Mass Spectrometry Drug Screening in Children.

Consulting Relationships:

1. Guidepoint: ad hoc consulting on pediatric lab medicine, toxicology, mass spectrometry
2. Decibio Lifesciences: ad hoc consulting on urine drug testing, mass spectrometry
3. Legal expert witness on urine drug testing: St. Charles County District Attorney's office and Flesner Wentzel Law (St. Charles, MO).
4. Cystic Fibrosis Foundation (CFF) Sweat Testing Advisory Committee (STAC)

Research Support:

Patents:

Bibliography:Peer Reviewed Manuscripts:

1. **Roper SM** and Tatum OL. Forensic Aspects of DNA-based human identity testing. *J. Forensic Nurs.* Dec 2008, Vol. 4 (4), pp 150-156.
2. Cooper SJ, Tun HW, **Roper SM**, Kim Y, Kislinger T, et al. Current Status of Biomarker Discovery in Human clear Cell Renal Cell Carcinoma. *J. Mol Biomark Diagn.* 2012, S2:005.
3. **Roper SM**, Zemskova M, Neely BA, Martin A, Gao P, Jones EE, Kraft AS, and Drake RR. Targeted glycoprotein enrichment and identification in stromal cell secretomes using azido sugar metabolic labeling. *Proteomics Clin. Appl.* June 2013, Vol. 7 (5-6), pp 367-371.
4. Machida Y, Bruisma C, Hallinger DR, **Roper, SM**, Garcia E, Ahima R, and Imai Y. Chronic enhanced expression of neuropeptide Y in beta cells does not reduce beta cell area or beta cell compensation to high fat diet. *J Endocrinol.* Dec 2014, Vol. 155 (12). pp 4634-40.
5. Ali M, Tam E, **Roper SM**, Cao J, and Devaraj S. Validation of an Automated Assay for Levetiracetam (Keppra) on Vitros 5600. *J Appl Lab Med.* March 2017, Vol. 1 (5), pp 494-501.
6. **Roper SM**, Edwards R, Mpwo M, Mutandiro C, and Devaraj S. Reducing Errors in an Emergency Center Setting Using an Automated Fluorescence Immunoassay for Group A Streptococcus Identification. *Clin Pediatr (Phila).* June 2017, Vol. 56 (7), pp 675-677.
7. **Roper SM**, Cao J, Tam E, and Devaraj S. The Performance of Calculated and Directly-Measured Low-density Lipoprotein Cholesterol in a Pediatric Population. *Am J Clin Pathol.* July 2017, 148 (1), pp 42-48.
8. **Roper SM**, Michael M, Brewer ED, Lee J, Orjuela AH, Akbas N, and Devaraj S. CYP3A5 genotyping may reduce the cost of care and guide dosing in paediatric renal transplant recipients treated with tacrolimus: A report of two paediatric renal transplant cases. *Australas Med J.* 2017, 10 (5), pp 413-417
9. Ali M, **Roper SM**, Cao J, and Devaraj S. An Adolescent Female with Jaundice and Edema. *J Appl Lab Med.* March 2018, 2(5), pp 797-802.
10. **Roper SM**, Rubin J, Ali M, Gibbons W, Zarutskie P, and Devaraj S. Accuracy of Two Progesterone Immunoassays for Monitoring In Vitro Fertilization. *J Appl Lab Med.* March 2018, 2(5), pp 770-776.
11. Tesfazghi MT, Farnsworth CW, **Roper SM**, Gronowski AM, and Dietzen DJ. A Confounding Case of Hemolysis in a Patient with Acute Leukemia. *Clin Chem.* Dec 2018, 64(12), pp 1690-1694.
12. Cao J, Sonilal M, **Roper SM**, Ali M, Devaraj S. Evaluation of a multiplex liquid

- chromatography tandem mass spectrometry method for congenital adrenal hyperplasia in pediatric patients. *Clin Mass Spectrom*. 2018, 9, pp 18-22.
13. Budelier MM, Farnsworth CW, **Roper SM**. An Often-Missed Laboratory Error. *Clin Chem*. Jun 2019, 65(6), pp 814-815.
 14. Gonzalez I, **Roper SM**. Elevated Lipase in an Infant with Altered Mental Status. *Lab Med*. Jul 2020, 51(4), pp e38-e41.
 15. Farnsworth CW, Dietzen DJ, **Roper SM**. Atypical Findings on a Urine Organic Acid Profile. *J Appl Lab Med*. Jan 2020, 5(2), 388-393.
 16. Budelier MM, Franks CE, Logsdon NM, Jannetto PJ, Scott MG, **Roper SM**, Farnsworth CW. Comparison of two commercially available fentanyl screening immunoassays for clinical use. *J Appl Lab Med*. May 2020 [Epub ahead of Print].
 17. Lawrie CM, Sally J, Barrack T, **Roper SM**, Wright R, Nunley R, Barrack R. Local Delivery of Tobramycin and Vancomycin in Primary Total Knee Arthroplasty Achieves Minimum Inhibitory Concentrations for Common Bacteria Causing Acute Prosthetic Joint Infection. *Bone Joint J*. Jun 2020, 102(6), pp 163-169.
 18. **Roper SM**. Yield of Serum Dexamethasone Measurement for Reducing False Positive Low Dose Dexamethasone Suppression Test Results. *J Appl Lab Med*. Mar 2021, 6(2):480-485.
 19. Budelier MM, Franks CE, Farnsworth CW, **Roper SM**. Detecting Fentanyl Analogs in Urine Using Precursor Ion Scan Mode. *J Anal Tox*. Jan 2021, [EPub Ahead of Print].
 20. Wang D, Smith BK, Janowski AB, Danis JE, Harvey IB, Zhao J, Farnsworth CW, Gronowski AM, **Roper SM**, Fremont DH. Seroprevalence of SARS-CoV-2 Antibodies in Children and Adults in St. Louis, Missouri. *mSphere*. Feb 2021, 6(1):1-7.
 21. Wang D, Smith BK, Janowski AB, Danis JE, Harvey IB, Zhao J, Farnsworth CW, Gronowski AM, **Roper SM**, Fremont DH. Progression of SARS-CoV-2 seroprevalence in St. Louis, Missouri through January 2021. *mSphere*. Aug 2021, 6(4): 1-5.
 22. Liss D, **Roper SM**, Dietzen DJ, Mullins M. In-vitro study of lithium binding by sodium Zirconium cyclosilicate (Lokelma) or patiromer (Valtressa). *Toxicol Commun*. Nov 2021, 5(1):161-164.
 23. Tesfazghi M, Bardelmeier R, Saunders AN, Riley SM, **Roper SM**, Dietzen DJ. Development and Implementation of One-Step, Broad-Spectrum, High-Sensitivity Drug Screening by Tandem Mass Spectrometry in a Pediatric Population. *J Appl Lab Med* Mar 2022, 7(2): 409-420.
 24. Tawiah K and **Roper SM**. A Seizure-like Episode in a Healthy 1 year old. *Clin Chem* Aug 2022, 68(8): 1108-1110.

25. Omosule C, Holmes V, Jasek C, **Roper SM**. Pediatric Ionized Calcium Reference Intervals from Archived Radiometer Data. *Clin Biochem* June 2022 Vol 104; 13-18.
26. Azimi V, Farnsworth CW*, **Roper SM***. Comparison of the Friedewald Equation with Martin and Sampson Equations for Estimating LDL Cholesterol. *Clin Biochem* Oct 2022 Vol 108; 1-4. (*authors contributed equally)
27. Wongkittichote P, Dietzen DJ, Grange D, **Roper SM**. A 3 year old girl with acute liver failure and status epilepticus. *Clin Chem*. Nov 2022 Vol 68 (11); 1471-1474.
28. Omosule CL, **Roper SM***, Farnsworth CW*. Frequency of Fentanyl Analogs and Metabolites Detected by LC-MS/MS in Clinical Specimens. *J Appl Lab Med*. Dec 2022 [Epub ahead of Print].
29. Tolan NV, Krasowski MD, Mathias PC...**Roper SM** et al. Cannabis Positivity Rates in Seventeen Emergency Departments Across the U.S. with Varying Degrees of Marijuana Legalization. *Clin Toxicol*. [Accepted Feb 2023].
30. Dietzen DJ, Blair CJ, **Roper SM**. Raising the Dead Volume: Analysis of Microsamples Diluted and Corrected with Near Infrared Tracer. *J Appl Lab Med* [Accepted March 2023].
31. Wongkittichote P, Cuddapah S, Master S, Grange DK, Dietzen DJ, **Roper SM**, Ganetzky R. Biochemical Characterization of Patients with Dihydrolipoamide Dehydrogenase Deficiency. *JIMD Rep* [Accepted July 2023].
32. Spies NC, Hubler Z, **Roper SM**, Omosule CL, Senter-Zapata M, Roemmich BL, Brown H, Gimple R, Farnsworth CW. GPT-4 Underperforms Experts in Detecting IV Fluid Contamination. [Submitted May 2023].
33. Omosule C, Dietzen DJ, **Roper SM**. Reexamining the Minimum Sweat Rate Requirement for Sweat Chloride Testing. *J Appl Lab Med* [Accepted August 2023].
34. Brown H, Dietzen DJ, **Roper SM**, Crews B. High Sensitivity Neonatal Urine Drug Testing has Similar Positivity Rates to Meconium for Detecting In Utero Exposure to Methamphetamine and Cocaine. *J Anal Tox* [Accepted Nov 2023].
35. Snozek C, Bryksin J, Dahal R,...**Roper SM** et al. Assessing Knowledge Gaps And Educational Needs in Urine Drug Test Interpretation Among Healthcare Professionals. *Am J Clin Pathol* [Accepted June 2024].
36. Lalos N, Vesoulis Z, Maucione C, Eby C, Dietzen DJ, **Roper SM**, Spies NC. Estimation Of Gestational Age-Specific Reference Intervals for Coagulation Assays in a Neonatal Intensive Care Unit Using Real-World Data. *J Thromb Haemoost* [Accepted Aug 2024].
37. Trammel C, Azimi V, Crews B, **Roper SM** et al. Xylazine Positivity in Opioid-positive Drug Screens on an Inpatient Labor Unit. *J Addict Med* [Accepted Sept 2024].
38. Azimi V, Trammel C, Nacke L, Rubin A, Severson L, Vaughn B, **Roper SM**, Zaydman MA, Jackups R, Riaz N, Schamel KP, Kelly JC. Racial Equity in Urine Drug Screening Policies in

Labor and Delivery. *JAMA Netw Open*. [Accepted Dec 2024].

39. Brown M, Lawless S, Roemmich B, **Roper SM**, Farnsworth CW. Cardiac Troponin I is Associated with ICU Admission in Pediatric Patients with RSV. *Clin Biochem* [Accepted Feb 2025].
40. Hubler Z, Spies NC, Zaydman MA, Farnsworth CW, **Roper SM**. Comparison of Low Density Lipoprotein Cholesterol (LDL-C) Estimates by In-lab and Point-of-Care Devices in the Context of Emerging LDL-C Equations. [Submitted Jan 2025].

Invited Publications:

1. Devaraj S, Cao J, and **Roper SM**. To Fast or Not to Fast: Comments on the Consensus Statement from the European Atherosclerosis Society/European Federation of Clinical Chemistry and Laboratory Medicine. *Arch Pathol Lab Med*. April 2017, Vol. 141 (4), pp 487-489.
2. **Roper SM**: Commentary on Persistent Jaundice and Multiple Fractures in a Newborn. *Clin Chem*. Dec 2019, 65(12), pp 1495-1496.
3. **Roper SM**: Screening for Biliary Atresia: Big Impact for Little Patients. ADLM Pediatric and Maternal Fetal Division Newsletter. Summer 2020.
4. **Roper SM** and Cao J. Laying the Foundation for Utilizing Cardiac Markers in Children and Infants. Editorial on Normative Values of High-Sensitivity Cardiac Troponin T and N-terminal pro-B-type Natriuretic Peptide in Children and Adolescents: A Study from the CALIPER Cohort. *J Appl Lab Med*. Mar 2021 6(2):337-340.
6. **Roper SM**. Improving Pediatric Urine Drug Testing. ADLM Pediatric and Maternal Fetal Division Newsletter. Spring 2022.
7. **Roper SM**. Universal Lipid Screening in Children: Time for a Checkup. ADLM Pediatric and Maternal Fetal Division Newsletter. Spring 2023.
8. **Roper SM**. Updates on Hyperbilirubinemia Management in Newborns. Ask the Expert. Clinical Laboratory News. July 2023.
9. **Roper SM**. Cotton ball urine collection: Is the Juice Worth the Squeeze? ADLM Pediatric and Maternal Fetal Division Newsletter. Spring 2024.

Other Media/Books:

1. "Maple Syrup Urine Disease and Other Disorders of Branched Chain Amino Acid Catabolism" A Pearl of Laboratory Medicine available on the *Clinical Chemistry Trainee Council Website* <https://www.ADLM.org/clinical-chemistry-trainee-council>

2. Kulkarni S, **Roper SM**, and Stoll J. Hepatic and Gastrointestinal Disorders in Biochemical and Molecular Basis of Pediatric Disease by Dietzen DJ, Wong E, Bennett MJ, and Haymond S (eds). 5th ed, 2021. Elsevier (London, UK).
3. Resident question bank contributor, American Society for Clinical Pathology. July 2021.
4. Lo S and **Roper SM**. Laboratory Medicine, Ch 747 in Nelson's Textbook of Pediatrics (22nd ed) [Forthcoming].
5. Lo S and **Roper SM**. Reference Intervals for Laboratory Tests and Procedures, Ch 748 in Nelson's Textbook of Pediatrics (22nd ed) [Forthcoming]
6. **Roper SM**, Weindel AL, Dietzen DJ. Comprehensive Determination of Amino Acids for Diagnosis of Inborn Errors of Metabolism. Methods in Molecular Biology [Accepted 2022]

Steph Roper
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