

Board Certified as a High complexity Clinical Laboratory director in Molecular Diagnostics with more than 15+ years of experience in diverse fields from Molecular biology, immunology to cancer biology. Experienced professional in molecular and cell biology Research and Development. Have a strong regulatory and compliance knowledge as a College of American Pathology (CAP) inspector. Lead three successful on-site CAP inspections as part of the CAP's Accreditation program. Experienced in grant writing, which lead to multiple publications in peer-reviewed journals such as Nature and Cell. Successfully obtained CPT-PLA codes from American Medical Association (AMA) for two newly validated laboratory developed tests for reimbursement.

Highly motivated, goal-oriented, problem solver, strategic planner with strong leadership capabilities. Collaborative, reliable, cooperative, flexible, and other skills of an effective team player. Conversant in Technical and Operational Quality Management skills. Leading team of professionals with focus on quality, efficiency and excellence.

EDUCATION

THE UNIVERSITY OF TEXAS AT DALLAS- USA PhD degree in Molecular and Cell Biology (GPA: 3.57/4.0) MS in Molecular and Cell Biology	August 2003-May 2010
GULBARGA UNIVERSITY- India MS in Microbiology	May 2000
GULBARGA UNIVERSITY- India BS in Microbiology	May 1998

CERTIFICATIONS

American Board of Bioanalysis- (ABB) High Complexity Laboratory Director (HCLD) in Molecular Diagnostics Technical Supervisor (TS) in Molecular Diagnostics	June 2019 January 2019
College of American Pathology (CAP) -Certified CAP Inspector in Molecular Pathology Molecular Inspector: Esoterix Laboratory services (A Labcorp Company), Denver, CO Inspection Team Member: Children's Hospital Orange County Hem Adv. Diagnostic lab in Orange, CA. Molecular Inspector: Monogram Biosciences. San Francisco, CA 94080	February 2019 December 2017 November 2015
NutriGenetic Research Institute-Functional Genomic Nutrition Certification	October 2018
UT Southwestern Medical Center (UTSW) Postdoctoral Certification in Scientific Management Postdoctoral Certification in Research	August 2014 August 2012

PROFESSIONAL EXPERIENCE

ADVANTA ANALYTICAL LABORATORIES -Tyler, TX	01/2020- Present
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Laboratory Director

Advanta Analytical Laboratories is a high-complexity CLIA and CAP accredited laboratory company consisting of professional scientists trained in pharmacology, biochemistry, toxicology, microbiology, cytogenetics, and molecular genetics.

- Responsible for the overall operation and administration of the laboratory, including the employment of personnel who are competent to perform test procedures and record and report test perform test procedures, and record and report test results promptly, accurate, and proficiently and for assuring compliance with the applicable regulations.
- Ensure that testing systems developed and used for each of the tests performed in the laboratory provide quality laboratory services for all aspects of test performance, which includes the pre-analytic, analytic, and post-analytic phases of testing

- Ensure that the laboratory is enrolled in CAP approved proficiency testing program for the testing performed and that--The proficiency testing samples are tested as required by CAP
- Oversees all standard operating procedures of Advanta Analytical Laboratories.
- Responsible for overall, direction, and advancement of multiple laboratory projects in conjunction with the strategy of Advanta management.
- Design and execute specific strategies focused on improving productivity by driving laboratory methodologies and advancing processes for maximum efficiency.

HISTOLOGY ASSOCIATES INC -St. Clair Shores, MI

01/2020- Present

Laboratory Director (off-site)

Histology Associates is a full-service anatomic pathology lab specializing in podiatric medicine. Accredited by the College of American Pathologists, licensed by the Clinical Laboratory Improvement Act, and are a proud Corporate Partner of the APMA and the AAWP.

- Responsible for the overall operation and administration of the laboratory, including compliance with the regulations
- Ensure that methods provide quality lab services for all phases of testing (preanalytical, analytical and postanalytical)
- Review and approve SOPs, Staff competency to process, test and report results of test procedures.
- Provide onsite, telephone, or electronic consultation as needed consultation as needed.
- Consultation to clients in the area of quality of the test results reported.
- Ensure that the laboratory is enrolled in CAP approved proficiency testing program for the testing performed and that--The proficiency testing samples are tested as required by CAP

REALTIME LABORATORIES, Inc (RTL)—Carrollton, TX

01/2015- 12/2019

Associate Laboratory Director

RTL, a CLIA/CAP accredited high complexity testing laboratory, aids in rapid and accurate diagnosis using Molecular, biochemistry and immunology tools such as ELISA for detection of mycotoxins and qPCR for life threatening fungal infections. As a Principle Investigator for two major Clinical studies called Fungal Infection New Diagnostics (FIND) we are evaluating Dual Amplification PCR Testing (MYCODART-PCR) of *Candida species* in Patients with Documented Candidemia/Invasive Candidiasis and *Aspergillus species* for diagnosis of Invasive Aspergillosis.

Obtained approval for Proprietary Laboratory Analyses (CPT-PLA) codes from AMA for our laboratory Developed test (LDT) on detection of Candida Infection (0068U) and Aspergillus infections (0109U) by MYCODART-PCR.

- Authorized supervisor for all aspect of laboratory including all tests/functions according to established policies, procedures and job specifications on a daily basis to identify and resolve problems and provide technical assistance.
- Reviewing and final reporting of all test results. Responsible for ensuring CAP and Clinical Laboratory Improvement Amendments (CLIA) regulatory compliance, technical oversight, quality assurance, and staff education and training.
- Provide daily support and guidance to Medical technologists on planning, execution, interpretation and troubleshooting of laboratory processes.
- Ensure timely completion and implementation of results setting, deadlines and work prioritization in order to maintain customer satisfaction, and to achieve company goals.
- Compiled and reviewed technical protocols and Standard Operating Procedures.
- As Biosafety officer ensured laboratory safety and compliance by developing Training and Competency protocols, such as Safety, Infectious Diseases, Shipping of Hazardous Goods and OSHA.
- Created operating policies and procedures for the laboratory, prepared the laboratory for initial inspection, responded to CAP deficiencies following the initial inspection and provided data to support good clinical practices ultimately resulting in CAP Accreditation.
- Monitored Levy-Jennings and Quality control metrics on a monthly basis and Conduct weekly staff and management meetings
- Perform CAP/CLIA-compliant Validations on molecular assays to provide validation packets and associated Standard Operating Procedures prior to release to the Laboratory Director. Laboratory developed Tests (LDTs) Validation and Implementation
- Engaging in clinical investigation, research, production, technical writing, technical support and consulting with physicians for testing and result interpretations and other related activities
- Managed collaborative research projects with external entities. Proficient in technical review and writing
- Present research data at scientific meetings in the form of posters and presentations.
- Day-to-day operations as Team lead for the R & D department and manage planning phases for FDA clinical trials.

Nutrigenomic Consultant

- As a consultant helped patients interpret their genetic variants and how they may impact overall health and wellness.
- Integrative Nutritional Genetic Analysis (INGA) test is a saliva DNA test that generate a raw data for clients/patients providing information on 200,000 SNPs.
- This raw data looks at various pathways involved in functional nutritional support and helps to tell a more comprehensive story of gene function.

MycoDART, Inc -Carrollton TX
(subsidiary of RTL)

10/2018- 12/2019

Medical Science Liaison (MSL)

- Worked to secure contracts with hospitals, cancer centers, healthcare networks and third-party payers on our new patented product MycoDART-PCR for detection of fungal infection in patients' blood.
- Involved in the decision-making process with Chiefs of Transplant, Oncology, and Infectious Disease, Laboratory Directors, and Hospital Financial Administrators.

THE UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER –Dallas, TX

07/2010- 12/2014

Postdoctoral Research Fellow

Project: Heart Regeneration in neonatal and adult mouse

Heart failure is a costly and deadly disease affecting over 5 million Americans. At the core of the pathophysiology of heart failure is the inability of the adult mammalian heart to regenerate following injury. In sharp contrast to the adult mammalian heart, we recently showed that the neonatal mammalian heart is capable of complete regeneration following resection and Meis1 transcription factor is a play as major regulatory role (Nature paper).

Postdoctoral Researcher

Project: Develop a novel class of Hedgehog (Hh) pathway inhibitors (IHR1 compounds) for deployment in a broad range of cancers

Define next generation IHR1 molecules that will bring together the tumor debulking capacity of various validated chemotherapeutic agents with the cancer stem cell targeting ability of Hh pathway inhibitors.

Investigate synthetically derived anti-cancer hybrid molecules based on the novel Wnt inhibitors (IWPs) that target the cell surface acyltransferase PORCN, a molecule frequently upregulated in lung cancer.

THE UNIVERSITY OF TEXAS AT DALLAS- Richardson, TX

08/2007-06/2010

Ph.D. Thesis and Research Assistant

Thesis: The role of Histone Deacetylases in γ - globin Gene Regulation

Understanding molecular mechanisms for globin gene up-regulation is required to develop treatment options for beta-hemoglobinopathies like sickle cell anemia. Our findings provided the first evidence for a positive regulatory role of HDAC9 in gamma- globin regulation (JBC paper). This study provided a basis for a protein as a new target for developing therapeutics approaches to treat individuals with sickle cell anemia.

ARK DIAGNOSTICS PVT LTD– Mumbai, India

11/2001- 03/2002

Quality Control Specialist

- Quality check, develop and validate applications on Biochemical analyzers such as Hitachi, Beckman etc.
- Handling customer service calls pertaining to analyzers including applications and troubleshooting.
- Product training for field staff
- Instrument programming Standardization of products

KEM HOSPITAL, DEPT OF MICROBIOLOGY – Mumbai, India

08/2000 – 10/2001

Project Manager– (Virology HIV/AIDS)

- Sentinel Surveillance, monthly correspondence with MDACS (Mumbai Districts AIDS Control Society, INDIA)
- Conducting project studies in collaboration with NACO (National AIDS Control Organization, INDIA)

RESEARCH GRANTS (Applied/Granted)

NIH Research Project (R01) grant - 1R01 AI148201-01 (Pending) Principle Investigator: Clinical Validation for the MycoDART Assay in High risk patients with Aspergillus and Yeast infections using Body Fluids (other than blood) and tissue.	2019
NIH Research Project (R21) grant - 1R21 AI149393-01 (Pending) Principle Investigator: Clinical Validation for the MycoDART-PCR as a diagnostic tool for Mucor/Rhizopus infections.	2019
American Heart Association- SWA Winter 2014 Postdoctoral Fellowship (14POST20450039) Principal Investigator: Shalini A Muralidhar Title: Role of Mlf1 in Regulation of Cardiomyocyte Proliferation	2014
miRagen Therapeutics Research Training Grant Discovering and developing innovative microRNA (miRNA)-targeting Cardiovascular diseases	2013
UTSW Postdoctoral Fellowship Award in Cardiovascular Biology Funded via NHLBI Cardiovascular Training Grant (T32) Project: Investigate novel cardiac regulatory genes involved in cardiomyocyte proliferation and heart regeneration	2011

TEACHING EXPERIENCE

NORTHLAKE COLLEGE – Irving TX Adjunct Faculty – Biology	09/2013- 12/2014
THE UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER –Dallas, TX <ul style="list-style-type: none">Graduate students, Postdoctoral fellows, Research AssistantsTeach STARS (Science Teacher Access to Resources at Southwestern) program students (high school and Middle school) bench work and conducting research	06/2010- 12/2014
THE UNIVERSITY OF TEXAS AT DALLAS- Richardson TX <ul style="list-style-type: none">Graduate Teaching Assistant in Genetics, Proteomics, Biochemistry and BiotechnologyTrain undergraduate and graduate students in laboratory techniquesUndergraduate Supplemental Instructor and Workshop OrganizerMentoring new graduate undergraduate and summer students with bench work and conducting research	08/2004-06/2007
MENTORSHIP <ul style="list-style-type: none">HERO Mentor Training by uplifteducation.org - Mentor and help high school student to set goals to collegeUplift Education Science Fair and Irma Rangel Science Fair, Texas (2015)	

MANAGEMENT EXPERTISE

Carpei Audientiam: Executive Level Presence- Training Certification (The Brook Groups, PA) January 2018

- Expert in identification, analysis, and resolution of diverse operational issues, Detail oriented and highly organized.
- Expert in efficient time-management
- Skilled in efficient use of financial budget with limited resources
- Expert in multitasking, problem solving, and being a team player
- Skilled presenter, communicator, and trainer
- Highly focused on adhering to organizational protocols and missions while efficiently completing daily tasks
- Computer skills include Microsoft Office Suite, Adobe Illustrator and Photoshop. Data input and analysis including creating graphs, schematics of mechanisms, and PowerPoint presentations of research

TECHNICAL EXPERTISE

Molecular Biology: Basic and advanced molecular and biological techniques includes- Cloning, Isolation of DNA and RNA, Genotyping, quantitative and qualitative reverse transcriptase PCR (RT-PCR), DNA sequencing and fragment analysis, Restriction enzyme digestion, gel electrophoresis, In-situ hybridization, FACS, ChIP assay, Seq-ChIP assay. Recombinant DNA technology. Techniques in Mycology and biochemistry

Next-generation sequencing (NGS): NGS is based on research foundation, I performed various NGS experimental setups including working with fragile FFPE samples and genomic DNA for lung and bladder cancers. I also researched literature for clinically actionable genes resulting in one of these genes into our custom panel design. During my postdoctoral training, I have supported DNA sequencing and Proteomic projects, including handling projects on bacterial, human, and patient samples. Performed research on aspects of sample processing from extraction to analysis using the Sanger sequencing. Sequence clinical samples confirm mutations in samples, some experience using Ion Torrent next-generation sequencing platform and dye-terminating sequencing on ABI-3500 genetic analyze.

Genetic Testing: Knowledge of Pharmacogenomics or (PGx) genetic testing for variations to medications and Cancer Genomics (CGx) for Hereditary Cancer Marker Screening.

Immunohistochemistry: Formalin fixed paraffin embedded tissue macro and micro dissection, fresh frozen tissue processing, Immunoassaying, DNA and RNA isolation

Animal work: Knockout and transgenic mice maintenance, rising antibodies, chicken and mice staging of embryo, Dissection of tissues, Paraffin embedding and cut sections by microtome, Isolation of tissue explants cultures. Procedures on Mice – Mastered neonatal and adult heart surgeries (myocardial Infarction), echocardiograms, dissections, organ harvesting, subcutaneous injections, isolated muscle contractility experiments

Cell Culture: tissue culture, isolation and culturing of NRVMs, heterologous gene expression via transfections, regulation of endogenous gene expression via siRNA, luciferase assay, maintenance of primary cells and multiple cell lines including Mammalian cells.

Microscopy: Immunofluorescence, Immunohistochemistry, Laser scanning confocal microscopy, Real time microscopy, Digital imaging evaluations, and tissue patterning

Cell Biology: Cell culture, Preparation of 3D matrix, 3D-Coculture in collagen and matigels, Cell adhesion, cell migration (hepatotactic and chemotactic), cell proliferation, angiogenesis, invasion and tumorigenicity assays, soft agar assay for colony formation, Transfection, Lentil and Adeno viral mediated gene expression, siRNA knock down, Ligand uptake assays ligand internalization and degradation, Ligand blotting, Flow cytometry, Metabolic labeling, *In vivo* phosphorylation, kinase assays, phosphatase assay, G protein assays, phospho amino acid analysis, phosphopeptide mapping.

Protein Chemistry: Protein purification, Affinity chromatography and Protein coupling to sepharose , Western blotting , EMSA ELISA, Protein electrophoresis, 2D-DIGE, Western blots , Subcellular fractionations and Cell surface biotinylation, iodination of proteins, Immunoprecipitation, ChIP and Pull down assays

PUBLICATIONS

Intranasal Nystatin Therapy in Patients with Chronic Illness Associated with Mold and Mycotoxins

Joseph H. Brewer, Dennis Hooper, [Shalini Muralidhar](#)

GJMR. 2015 Volume 15 Issue5: 33-36

Intranasal Antifungal Therapy in Patients with Chronic Illness Associated with Mold and Mycotoxins: An Observational Analysis

Joseph Brewer, Dennis Hooper, [Shalini Muralidhar](#)

GJMR. 2015 Volume 15 Issue 2: 29-33.

Hypoxic Metabolism in Human Hematopoietic Stem Cells

Kocabas F, Xie L, Xie J, Yu Z, DeBerardinis RJ, Kimura W, Thet S, Elshamy AF, Abouellail H, [Muralidhar S](#), Liu X, Chen C, Sadek HA, Zhang CC, Zheng J.

Cell Biosci. 2015

Hypoxia fate mapping identifies cycling cardiomyocytes in the adult heart.

Kimura W, Xiao F, Canseco DC, [Muralidhar S](#), Thet S, Zhang HM, Abderrahman Y, Chen R, Garcia JA, Shelton JM, Richardson JA, Ashour AM, Asaithamby A, Liang H, Xing C, Lu Z, Zhang CC, Sadek HA.

Nature. 2015

Redox Signaling in Cardiac Renewal.

Kimura W, Muralidhar S, Canseco D, Puente B, Zhang C, Xiao F, Abderrahman Y, Sadek H.

Antioxid Redox Signal. 2014 Jul 7.

The oxygen-rich postnatal environment induces cardiomyocyte cell-cycle arrest through DNA damage response.

Bao N, Puente, Wataru Kimura, Shalini A. Muralidhar, Jesung Moon, James F. Amatruda, Kate L. Phelps, David Grinsfelder, Beverly A. Rothermel, Rui Chen, Joseph A. Garcia, Celio X. Santos, SuWaneeThet, Eiichiro Mori, Michael T. Kinter, Paul M. Rindler, Serena Zacchigna, Shibani Mukherjee, David J. Chen, Ahmed I. Mahmoud, Mauro Giacca, Peter S. Rabinovitch, AsaithambyAroumougame, Ajay M. Shah, Luke I. Szveda, and Hesham A. Sadek.

Cell. 04/2014 157(3):565-79

Harnessing the Power of Dividing Cardiomyocytes

Shalini A. Muralidhar, Ahmed I. Mahmoud and Hesham A. Sadek

Global Cardiology Science and Practice Vol. 2013 3, 29

Meis1 is a key regulator of post-natal cardiomyocyte cell cycle arrest

Shalini A Muralidhar, Ahmed I. Mahmoud, Fatih Kocabas, Wataru Kimura, Ahmed S. Koura, Suwannee Thet, Enzo R. Porrello and Hesham A. Sadek

Nature: May 2013 (497) 249–253

Histone Deacetylase 9 Activates γ -Globin Gene Expression in Primary Erythroid Cells

Shalini A. Muralidhar, Valya Ramakrishnan, Inderdeep S. Kalra, Wei Li, and Betty S. Pace

Journal of Biological Chemistry: Jan 2011(286) ;2343-2353

High-density SNP genotyping to define β -globin locus haplotypes.

Li Liu, Shalini Muralidhar, Manisha Singh, Caprice Sylvan, Inderdeep Kalra, Charles T. Quinn, Onyinye C. Onyekwere, Betty Pace

Blood Cells and Molecular Disease. 2009 Jan-Feb; 42(1):16-24

POSTERS

Early Detection of Fungi and Yeast Using Species Specific Dual Amplification PCR (Mycodart™) for Clinical Diagnosis.

2017, American Molecular Pathology (AMP), Salt Lake City

Early Clinical Diagnosis by Species Specific fungal DNA in Body Fluids Of Patients with Fungal Infection

2015, American Molecular Pathology (AMP), Houston

Hoxb13 is a Meis1 Cofactor in Transcriptional Regulation of Cardiomyocyte Cell Cycle Arrest

2013; American Heart Association Scientific Session, Dallas

Role of HDAC9 in γ -Globin Gene Regulation

2009; 51st American Society of Hematology Annual Meeting and Exposition, New Orleans

Characterization of Histone deacetylases Involved in γ -Globin Gene Regulation

2008; 50th American Society of Hematology Annual Meeting and Exposition, San Francisco

Identification of Functional Single Nucleotide Polymorphisms (SNPs) that alter γ -Globin Gene Expression

2006; 11th Biology and Chemistry Spring Symposium, UT Dallas

HONORS AND AWARDS

American Heart Association (AHA) postdoctoral grant award (2014-2016)

miRagen Therapeutics Research training grant (2013-2014)

NHLBI Cardiovascular Training Grant (T32 grant) (2011-2013)

Winner for the best research poster award (2006), 11th Biology and Chemistry Spring Symposium, UT Dallas

Honor Merit student, MS Microbiology University of Gulbarga, India (1998-2000)

PROFESSIONAL AFFILIATIONS AND MEMBERSHIP

American Board of Bioanalysis (ABB) – **(Since 2018)**

American Association of Bioanalysis (AAB)- **(Since 2018)**

College of American Pathology (CAP)- **(Since 2015)**

American Molecular Pathology (AMP)- **(Since 2015)**

American Heart Association (AHA)-**(2012- 2014)**

American Society of Hematology (ASH)- **(2009-2010)**