CURRICULUM VITAE

## Dr. Jumana Samara

## MD, MSc (Pediatrics), CABP, RCPSC Subspecialist Affiliate in Neonatology

## MSc (Microbiology and Infectious Diseases)

## Staff Neonatologist, Neonatal Critical Care, Calgary

E-mail: jumana.samara@albertahealthservices.ca

Phone: 587-8300023

# QUALIFICATIONS

2023 RCPSC Royal College Pediatrics Exam

2022 MSc Master’s in Microbiology and Infectious Diseases

University of Calgary

2017 SEAP. Subspecialist Affiliate of the Royal College of Physicians and Surgeons of Canada in Neonatal- perinatal Medicine

2014 LMCC Licentiate of the Medical Council of Canada No.

123590. MINC No. CAMD-0075-6988.

2004 CABP Certificate of Arab Board of Pediatrics

Damascus, Syria

2004 MD/MSc Certificate of Graduate Studies in Paediatrics

Faculty of Medicine, Damascus University, Syria

1999 MD Doctor of Medicine

Faculty of Medicine, Aleppo University, Syria

# AWARDS

1. **University of Calgary David Proud Research Excellence Award** for the *Cell Host and Microbe* journal’s publication “ Probiotic Supplementation Accelerates Gut Microbiome Maturation in Extremely Preterm Infants”
2. **University of Calgary Snyder trainee day poster award** for poster “The Gut Microbiome of Premature Infants: An Ecological Analysis of a Probiotic Intervention Study”
3. **Appreciation certificate** from King Abdelaziz National Guard Hospital and Ministry of Health for outstanding contribution in the Baby Friendly Hospital International Accreditation**.**
4. **Ministry of Higher Education Scholarship Award** for being the 3rd top student in the Academic Year 1997-1998, Faculty of Medicine, Aleppo University, Aleppo, Syria.
5. **United Nations Relief and Works Agency (UNRWA) Scholarship:** 1993 -1999

# APPOINTMENTS

Oct 2023- present Staff Neonatologist, Neonatal Critical Care, department of Pediatrics, Calgary

April 2023-May2023 Neonatologist, Cape Breton Regional Hospital NICU, level III, locum

July 2020-Oct 2023 House Medical Officer in Neonatology

Section of Neonatology, Winnipeg, Manitoba

July 2021-pesent Clinical teacher at University of Manitoba

Sept 2017 – 2022 Master Student

Microbiology and Infectious Disease (MID)

Cumming School of Medicine, University of Calgary

Jul 2015 – Jun 2018 Neonatal-Perinatal Medicine Resident

University of Calgary, Alberta

Jun 2013 – Jun 2015 LMCC preparation and Exam

Application and preparation for Neonatal-Perinatal Medicine Program fellowship

Sep 2012 – May 2013 Occasional Student

Community Health Sciences, University of Manitoba

Oct 2009 – Feb 2010 Assistant Consultant, Pediatrics

King Abdulaziz National Guard Hospital, Al-Ahsa, Saudi Arabia

Jun 2005 – Oct 2009 Staff Physician, Paediatrics

King Abdulaziz National Guard Hospital, Al-Ahsa, Saudi Arabia

Oct 1999 – Sep 2003 Pediatric Residency training

Damascus University Children Hospital, Damascus, Syria

# EDUCATION

Sep 2017 – Feb 2022 **Master of Science**

Microbiology and Infectious Diseases

Cumming School of Medicine, University of Calgary

I joined the Microbiology and Infectious diseases master’s program at the university of Calgary in the fall of 2017, my project was based on RCT initiated after during the program end of 2017, I was involved in final adjustment for protocol, consent forms and ethics application, recruitment, clinical data collection, follow up in NICU and after discharge, sample processing including DNA extraction, qPCR etc.

Publications related to the project

* Probiotic Supplementation Accelerates Gut Microbiome Maturation in Extremely Preterm Infants, Published in *Cell Host and Microbe* journal, May 2022, [DOI: 10.1016/j.chom.2022.04.005](https://doi.org/10.1016/j.chom.2022.04.005) (impact factor 31.3) this puplication also won University of Calgary David Proud Research Excellence Award
* Effects of Probiotics on Feeding Tolerance and Intestinal Microbiota in Extremely Preterm Infants: A Randomized-Controlled Trial, Pediatric Research March 2022,  DOI : [10.1038/s41390-022-02004-z](https://doi-org.ezproxy.lib.ucalgary.ca/10.1038/s41390-022-02004-z" \t "_blank)
* The gut microbiome of premature infants: an ecological analysis of a probiotic intervention study, master's thesis, University of Calgary, Calgary, AB, 2021, <http://hdl.handle.net/1880/114035>

Sep 2016 – Mar 2017 **Quality Improvement and Patient Safety course**

University of Calgary

As a QI project for this course, I developed an algorithm / flow diagram to handle transport calls and shorten the time between the call initiation and decision to mobilize the team. I presented this project at ACH Quality Improvement Forum, and at the 3rd Transport of High-Risk Infants Conference, Oxford, UK, in 2017.

Jul 2015 – Jun 2018 **Neonatal-Perinatal Medicine Residency Training**

Program, Postgraduate Medical Education

Cumming School of Medicine, University of Calgary

Sep 2012 – May 2013 **Occasional Student**

Community Health Sciences, University of Manitoba

Oct 1999 – Sep 2003 **Pediatric Residency, Ministry of Higher Education**

**Arab Board specialization training program in Pediatrics**

Damascus University Children Hospital (combined program)

Damascus, Syria

Oct 1999-Sep 2002 **Graduate Studies “Masters in Pediatrics”**

Thesis: “Tuberous Sclerosis, the Diagnostic Criteria in Children”

Faculty of Medicine, Damascus University

Damascus, Syria

Sept 1993 – Aug 1999 **Medical School**

Faculty of Medicine, Aleppo University

Aleppo, Syria

# COURSES and WORKSHOPS

March 2023 Co-facilitator for EPIQ Workshop, Ob/Gyn Calgary

Nov 2022 Co-facilitator for EPIQ Workshop, NICU Winnipeg

June 2022 EPIQ Train the Trainer Workshop

Oct 2021 Neonatal Hemodynamics and Echocardiography ( e-conference)

Oct 2021 Canadian NRP 8th Ed Instructor Course

Section of Neonatology, Winnipeg

Sept 2020 Canadian 7th Edition NRP, Section of Neonatology, Winnipeg

August 2020 POCUS Neo: Lung & Upper Airway Ultrasound Course

Nov 2019 Arrieta lab Microbiome Workshop 2019 (R studio: Diversity)

Oct 2019 Evidence-Based Practice for Improving Quality (EPIQ) Workshop

Feb - Jun 2019 Alberta Strategy for Patient-Oriented Research: Pragmatic Clinical Trials

Oct 2018 Arrieta lab Microbiome Workshop 2018 (Introduction to R studio)

Feb 2018 Canadian 7th Edition NRP, Section of Neonatology, Calgary

May 2017 Quality improvement workshop, QI Macros, Section of Neonatology, Calgary

Sept 2016-Mar 2017 Quality Improvement and Patient Safety course at University of Calgary

Mar 2017 Peter Lougheed Hospital NICU CME Day, Section of Neonatology, Calgary

Feb 2017 Targeted-Neonatal Echocardiography workshop

Section of Neonatology, Calgary

Winter 2013 Economic Evaluation of Health Care

Department of Community Health Sciences

Faculty of Medicine, University of Manitoba

Fall 2012 Core Concepts in Public Health

Department of Community Health Sciences

Faculty of Medicine, University of Manitoba

Fall 2012 Principles of Epidemiology 1

Department of Community Health Sciences

Faculty of Medicine, University of Manitoba

May 2009 Basic Medication Safety Course instructor

National Guard Health Affairs, Saudi Arabia

August 2008 Breast Feeding Counseling *Trainer* Program,

National Guard Health Affairs, Saudi Arabia

# REGISTRATIONS AND LICENSURE

1. College of Physician and surgeon of Alberta, Full Speciality Practice
2. College of Physician and surgeon of Nova Scotia, Full Speciality Practice (2023)
3. College of Physician and surgeon of Manitoba, Full Specialty Practice
4. College of Physician and surgeon of Alberta, Provisional Register - Postgraduate Trainee July 2015- June 2018
5. College of Physician and Surgeon of Manitoba, application for Conditional Registration 2012
6. Saudi Council of Health Specialties as Senior Registrar, No: 05-R-M-5250 May 2005 – May 2010

# CLINICAL EXPERIENCE

1. In my current appointment as a staff neonatologist with the neonatal critical care team in Calgary, I lead a team of NPM fellow, Pediatrics residents, bedside physicians, and medical student in caring for level II and level III neonatal patient including extreme preterm and sick term infants in addition to providing consults and counselling for parents at different stages of pregnancy and after birth. I serve Calgary zone NICUs at RGH, ACH and FMC, and provide consult at MFM as needed.

In addition to clinical work and mentoring learners, I work on improving patient’s care through QI projects; currently working on using point of care lung ultrasound in assisting clinical decision for infant in respiratory distress. I am a member in fellows wellness committee, and a faculty advisor for peds residents. Additionally, I continued to be part of BLOOM study in collaboration with Arrieta lab at university of Calgary

1. In my previous appointment as a neonatology specialist with Winnipeg Regional Health Authority, I take care of critically ill newborn term and preterm infants in two tertiary NICUs at the Health Sciences Centre and St. Boniface Hospital. Both units are referral hospitals to the rest of Manitoba, west Ontario, and Nunavut. The team provides antenatal consults, resuscitation, and postnatal care for extremely preterm infants down to 23 weeks gestational age, as well as term infants with surgical, congenital hear diseased and complicated clinical presentations. Both unites continued to be overcapacity of 54 and 32 beds respectively for the last two years.

Working with the amazing team in Winnipeg provided me with great opportunity thorough educational courses and hands-on experience to learn and become comfortable with point of care lung ultrasound, currently I am completing hands-on bedside training of intestinal ultrasound as a member of gut health quality improvement group.

I continued to get involved in quality improvement of patient care in the NICU, recently I completed EPIQ Train the Trainer course with University of Alberta, I will co-facilitate the next EPIQ course in Winnipeg-November 2022. Additionally, I am a member of CNN and quality improvement EPIQ local committees for Gut Health and co-chair for Nosocomial Infection group.

I am a clinical teacher appointed by University of Manitoba to provide mentorship and evaluation for trainees in the NICU. On daily basis I support learners in the NICU and facilitate their hands on experience, I always start by discussing their goals in the rotation on the first day and help them to arrange priorities then guide them to achieve specific goals such as procedures, patient/clinical conditions that matches their learning needs, related reading material along with supervising these activities.

1. My clinical training at University of Calgary as neonatal perinatal fellow enhanced my clinical skills in treating high risk preterm infants from the gestational age of 23 weeks and above in a high turnover level 3 NICU. In addition to providing care to 1200 infants born per year in FMC, the NICU team participates on a daily basis in managing sick newborns and preterm infants born before 32 weeks of gestation referred to our care by the rest of Southern Alberta. The role of senior fellow in the two level 3 NICU unites in Calgary includes bedside patients care, leading the team during resuscitation, running morning and evening rounds. FMC NICU unit receive almost every high-risk newborn in the southern part of Alberta, including the extreme preterm infants, multiples, hydrops fetalis, HIE and congenital heart disease to perform long term care, and short-term care for patients require further cardiac or surgical cases until appropriate referral is performed. On the other hand, patients admitted to Alberta Children hospital NICU need surgical or multidisciplinary care, as a senior fellow I used to manage a variety of cases with coordination of multiple specialties to provide inpatient care and outpatient long term plan.

Furthermore, this great experience and exposure allowed me to initiate and participate in multiple research projects related to management and outcomes of high-risk preterm infants. Additionally, I lead couple of QI projects to improve patient’s care and ensure safety. While being a member in Open Lung Committee the first cycle of QI project of (Improving the documentation of respiratory status and plan on daily basis by fellows) was completed, this project had to go through charts audit to recognize the deficiencies, and eventually creating guidelines for notes writing. Another project aimed to improve transportation call process involved Southern Alberta transport team, changes were achieved at the end of this project on the level of transport call documentation form, and creation of transport algorithm after the auditing and analyzing all transport calls received by FMC NICU team during 2016 – 2017.

1. From 2005-2010 I worked in King Abdulaziz National Guard Hospital, Kingdome of Saudi Arabia (KSA) covering mostly NICU day and calls in addition to general pediatric ward and PICU, as senior the pediatric team, this included supervising staff physicians and training program residents. Having the residency training at the Damascus University Children Hospital, which is one of the largest pediatric centers in the Middle East, and then working at King Abdulaziz Hospital for National Guard in KSA were great opportunities for me to manage most of pediatric diseases in general, and providing critical care for all cases either in the PICU or NICU at a senior level.
2. I joined the residency training between 1999-2003 in Damascus University Children Hospital, which is the biggest children’s hospital in Syria, located at the capital city of Damascus at Mazeh compound in proximity to large medical centers and university of Damascus. Children’s hospital is the main referral center for the rest of the country for all subspecialities in pediatrics. It has 425 inpatient beds, in addition to surgical unit, general pediatrics and subspeciality outpatients’ clinics, and emergency department with attached short stay unit. My training included rotations in all pediatric subspecialties, namely, neonatology, pediatric intensive care, trauma and emergency, hematology and oncology, nephrology, gastroenterology, endocrinology, metabolic and genetics, rheumatology, psychiatry and infectious diseases. Each rotation included providing care for inpatients, covering night shifts, and attending the prospective follow up clinic of the subspeciality. Additionally, I had to spend rotations in Women’s hospital/ Damascus to be trained in providing immediate neonatal care and level 2 NICU. During the training I had to master hands on procedures such as blood sampling, peripheral IV insertion, UVC and UAC, intubation, chest tube or taping, paracentesis, lumbar puncture, bone marrow aspiration, and ventilation for neonate and children. I spent my electives in Neurology, my master project was supervised by pediatric neurology group, and I passed my master exam during the fourth year of training. During the training I received regular feedback and evaluation from my mentors at the end of each 4 weeks block, I had to write annual exams, oral and OSCE in addition to Arab Board exams that included two written exams and one OSCE after finishing four years of training and meeting all eligibility criteria.

# TEACHING EXPERIENCE

1. The most recent teaching experience included teaching resident and junior fellows in NICU setup and Academic half days. The teaching activities covered a variety of hands-on procedures for pediatrics residents and fellows, multiple presentation sessions for both fellows and residents, mentoring and evaluating pediatrics residents in NICU, presentations for neonatal follow up clinic staff, and a session about exam preparation for neonatal fellows. Furthermore, in my current position, I participate in mentoring family and pediatrics residents and fellows in their education. I work with University of Manitoba as clinical teacher, and I am an examiner for oral structured exam and OSCE for fellows in the royal college neonatal perinatal medicine residency program, in addition to NRP 8th edition instructor.
2. Years earlier I was breastfeeding counselor and trainer. I had participated in educating maternity and child departments’ staff including nurses, physicians, and allied health professionals, the WHO course “Breastfeeding Promotion and Support in A Baby-Friendly Hospital, A 20 Hour Course for Maternity Staff”.
3. I was an instructor for the Basic Medication Safety course at King Abdulaziz Hospital
4. Supervised and taught training program residents and junior staff in the general pediatric ward, PICU and currently in NICU.
5. I participated in medical and nursing scientific activity in Neonatology Division, PICU, and General Pediatric Ward

# ONGOING RESEARCH

The Alberta BLOOM Preterm Neonate Study (ongoing observational study)

# PUBLICATIONS (Including Abstracts)

1. Probiotic Supplementation Accelerates Gut Microbiome Maturation in Extremely Preterm Infants, Published in *Cell Host and Microbe* journal, May 2022, [DOI: 10.1016/j.chom.2022.04.005](https://doi.org/10.1016/j.chom.2022.04.005) (impact factor 31.3)
2. Effects of Probiotics on Feeding Tolerance and Intestinal Microbiota in Extremely Preterm Infants: A Randomized-Controlled Trial, Pediatric Research March 2022,  DOI : [10.1038/s41390-022-02004-z](https://doi-org.ezproxy.lib.ucalgary.ca/10.1038/s41390-022-02004-z)
3. The gut microbiome of premature infants: an ecological analysis of a probiotic intervention study, master's thesis, University of Calgary, Calgary, AB, 2021, <http://hdl.handle.net/1880/114035>
4. Contribution of fungal microbiome to intestinal physiology, early-life immune development and mucosal inflammation in mice. *Nature Communications,* 2020,  DOI: 10.1101/819979
5. Rare Presentation of Infantile Fibrosarcoma, (conference paper) *4th International Neonatology Association Conference, Ghent, Belgium, 2018.*
6. Improving the Quality of transportation call in Southern Alberta Neonatal transportation program (Abstract), *Journal of Pediatric and Neonatal Individualized Medicine, 2017,*DOI:10.7363/060214
7. Risk Factors Associated with Bronchopulmonary Dysplasia (BPD) among Infants born < 33 Weeks’ Gestation Managed on Continuous Positive Airway Pressure (CPAP) during the First Week of Life, (Abstract), *American Academy of Paediatrics, District 8 conference, USA, 2017*
8. Risk Factors Associated with Bronchopulmonary Dysplasia (BPD) among Infants born < 33 Weeks’ Gestation Managed on Continuous Positive Airway Pressure (CPAP) during the First Week of Life, (Abstract), *Pediatric Academic Societies 2017 Meeting, San Francisco, CA, USA*
9. Antibiotic Sensitivity Pattern of Common Community-Acquired Uropathogens in Children in a Saudi Tertiary Care Hospital***,*** *Saudi Medical Journal 2012; Vol. 33 (5): 565-567.*ISSN: 0379-5284 , 1658-3175; PMID: 22588821
10. Tuberous Sclerosis, the Diagnostic Criteria in Children, *Damascus University Journal, June 2003*

# INVITED ORAL PRESENTATIONS

1. “*Probiotics Modulate the Intestinal Microbiome in Extremely Premature Infants:  
   A Randomized Controlled Trial*” oral presentation at Alberta children hospital research institute research retreat on December 13th 2019 at Banff-Alberta, and PAS 2020.
2. *“The Gut Microbiome of Premature Infants: An Ecological Analysis of a Probiotic Intervention Study”*, multiple presentations at University of Calgary: Snyder Institute for Chronic Diseases Grad Program Seminar series, Airway seminar, and Microbiome group
3. *“Probiotics and the risk of atopy in preterm infants”*, Airway Seminar series, Snyder institute for Chronic diseases, University of Calgary, April 2018.
4. *“Improving Mobilisation Decision Process and Time Using A Call Handling Algorithm”*, Transport of High-Risk Infants Conference, 3rd edition, Oxford, UK, August 2017
5. *“Improving Mobilisation Decision Process and Time Using A Call Handling Algorithm”,* Alberta Children’s Hospital Quality Improvement Forum, June 2017
6. *“Anemia at birth: Diagnosis and Management”*, Neonatal Grand Round, Section of Neonatology, November 2016

# Additional ACADEMIC SERVICES

I provided peer reviews for Computational and Structural Biotechnology and BMC pediatrics Journals

# **COMMUNITY ACTIVITIES**

April 2019 University of Calgary Medicine Magazine

“With Holly's Help” by Caitlyn MacQueen, Snyder Institute for Chronic Diseases This article talked researchers’ collaboration with International Microbiome Centre to discover how probiotics might affect preterm infant, additionally it focused on challenges faced by parents in NCIU regarding research participation. I represented the clinical researcher side of the story and the Arrieta lab, in addition to provide help in preparations and communications prior to the interview.

# INTERESTS

**GUT HEALTH**

* Use point of care intestinal ultrasound as additional tool alongside clinical assessment to understand pathophysiology of gastric symptoms and improve patient care.
* Study the impact of intestinal and cardiovascular hemodynamics on gut microbiome changes in preterm and sick term infants.

**MICROBIOME RESEARCH**

* Study host physiology, feeding practices and medical interventions impact on gut microbiome colonization and alteration in preterm infants, in addition to microbiome and biological factor changes following exposure to risk factors (antenatal antibiotics, PPROM, postnatal antibiotics or lack of breast feeding) and effects on neonatal outcomes especially preterm infants and NEC, BPD, and late onset sepsis
* Gut health and Infectious diseases in term newborn and preterm infants, the rule of microbiome in changing early and late out comes especially in preterm infants.

**QUALITY IMPROVEMENT AND PATIENT SAFETY**

* Apply Evidence-based Practice for Improving Quality of patient in care in NICU, and work with a team of health care providers and stake holders to achieve quality improvement goals
* Focus of quality improvement on problems related to gut health, growth, and infection control
* Support the role of parents in NICU as clinical and research partner towards improving the quality of preterm infant’s care and neonatal research.

**A LEARNER AND A MENTOR**

* Continue to improve my own personal clinical and research skills, with current clinical focus on point of care ultrasound for lung and gut, and research focus to improve my skills in handling bioinformatics data
* Participate and support the role of NICU in educating and training pediatrics resident and NPM fellows, including clinical skills, research skills and care for parents.
* Facilitate EPIQ workshops for health care workers and trainers in the NICU and support related quality improvement projects